



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

October 1, 2018

MEMORANDUM TO: David J. Wrona, Chief  
Plant Licensing Branch LPL3  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

FROM: Michael D. Waters, Chief /RA/  
Instrumentation and Controls Branch  
Division of Engineering  
Office of Nuclear Reactor Regulation

SUBJECT: EXELON FLEET NUCLEAR POWER PLANT ADOPTION OF  
TECHNICAL SPECIFICATIONS TASK FORCE TRAVELER  
TSTF-546, REVISION 0, "REVISE APRM CHANNEL  
ADJUSTMENT SURVEILLANCE REQUIREMENT" (EPID No. L-  
2018-LLA-0167)

By license amendment request (LAR) dated June 15, 2018 (Agencywide Documents Access and Management System Accession No. ML18166A197), Exelon Generation Company, LLC (the licensee) submitted a license amendment request for Clinton Power Station, Unit No. 1; Dresden Nuclear Power Station, Units 2 and 3; James A. FitzPatrick Nuclear Power Plant; LaSalle County Station, Units 1 and 2; Limerick Generating Station, Units 1 and 2; Nine Mile Point Nuclear Station, Units 1 and 2; Peach Bottom Atomic Power Station, Units 2 and 3; and Quad Cities Nuclear Power Station, Units 1 and 2. Specifically, the licensee requested changes to the TSs to adopt Technical Specifications Task Force (TSTF) traveler TSTF-546, Revision 0, "Revise APRM (Average Power Range Monitor) Channel Adjustment Surveillance Requirement," dated April 21, 2016 (ADAMS Accession No. ML16112A208). The NRC approved the traveler on August 31, 2017 (ADAMS Accession No. ML17206A431).

Additionally, Clinton, FitzPatrick, Limerick, Nine Mile Point, and Peach Bottom, are requesting a 2-hour period for adjustment of the APRM output gain to restore compliance with the Surveillance Requirement (SR) limit before entering the associated Conditions and Required Actions.

Enclosure: As stated

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D. Wrona

The Instrumentation and the Controls Branch (EICB) has reviewed the instrumentation and controls aspects of the requested amendment. The EICB review, as discussed in the enclosed safety evaluation, determined the requested change is acceptable. This memorandum completes the EICB review under EPID No. L-2018-LLA-0167.

SUBJECT: EXELON FLEET POWER PLANT ADOPTION OF TECHNICAL SPECIFICATIONS TASK FORCE TRAVELER TSTF-546, REVISION 0, "REVISE APRM CHANNEL ADJUSTMENT SURVEILLANCE REQUIREMENT" (EPID No. L-2018-LLA-0167) DATE: OCTOBER 1, 2018

**ADAMS ACCESSION NO.: ML18254A398**

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<b>DATE</b>	8/29/2018	8/29/2018	10/ 01 /2018

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**SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION**  
**EXELON FLEET POWER PLANT ADOPTION OF**  
**TECHNICAL SPECIFICATIONS TASK FORCE TRAVELER TSTF-546, REVISION 0,**  
**“REVISE APRM CHANNEL ADJUSTMENT SURVEILLANCE REQUIREMENT”**

## **1.0 INTRODUCTION**

By license amendment request (LAR) dated June 15, 2018 (Agencywide Documents Access and Management System Accession No. ML18166A197), Exelon Generation Company, LLC (the licensee) requested changes to the technical specifications (TSs) for the following facilities:

1. Clinton Power Station (Clinton), Unit No. 1,
2. Dresden Nuclear Power Station (Dresden), Units 2 and 3,
3. James A. FitzPatrick Nuclear Power Plant (Fitzpatrick),
4. LaSalle County Station (LaSalle), Units 1 and 2,
5. Limerick Generating Station (Limerick), Units 1 and 2,
6. Nine Mile Point Nuclear Station (Nine Mile Point), Units 1 and 2,
7. Peach Bottom Atomic Power Station (Peach Bottom), Units 2 and 3, and
8. Quad Cities Nuclear Power Station (Quad Cities), Units 1 and 2.

The amendments revise the technical specification requirements to adopt Technical Specifications Task Force (TSTF) traveler TSTF-546, Revision 0, “Revise APRM (Average Power Range Monitor) Channel Adjustment Surveillance Requirement,” dated April 21, 2016 (ADAMS Accession No. ML16112A208). The NRC approved the traveler on August 31, 2017 (ADAMS Accession No. ML17206A431).

The proposed changes would revise a surveillance requirement (SR) to only require adjustment of the APRM channels if the calculated power exceeds the APRM output by more than 2 percent rated thermal power (RTP).

Additionally, Clinton, FitzPatrick, Limerick, Nine Mile Point, and Peach Bottom, are requesting a 2-hour period for adjustment of the APRM output gain to restore compliance with the Surveillance Requirement (SR) limit before entering the associated Conditions and Required Actions.

Section 2.2, “Proposed Changes to the Technical Specifications,” of this safety evaluation describes the specific changes to the technical specifications (TS), limiting conditions of operations (LCOs), and SRs.

## **2.0 REGULATORY EVALUATION**

### **2.1 SYSTEM DESCRIPTION**

The APRM system is a safety-related system with two purposes. One purpose is to monitor neutron flux within the core to provide an indication of core power. The other purpose is to provide reactor scram and control rod block signals to preserve the fuel cladding integrity. The APRM channels receive input signals from the local power range monitors (LPRM) located in diverse axial and radial locations within the reactor core to provide an indication of the power

distribution and local power changes. The APRM channels average the LPRM inputs and each APRM provides a continuous indication of average reactor power from a few percent to greater than rated thermal power (RTP).

A gain adjustment can be made to each APRM channel output allowing it to be calibrated to the calculated core thermal power. Section 2.1 of the approved Traveler TSTF-546, Revision 0, describes that the typical allowable absolute difference between calculated core thermal power and the APRM channel output is 2 percent.

## 2.2 PROPOSED TECHNICAL SPECIFICATION CHANGES

### 2.2.1 Clinton

The proposed amendment for Clinton modifies SR 3.3.1.1.2, which is associated with LCO 3.3.1.1, "Reactor Protection System (RPS) Instrumentation."

SR 3.3.1.1.2 currently states:

Verify the absolute difference between the average power range monitor (APRM) channels and the calculated power  $\leq 2\%$  RTP while operating at  $\geq 21.6\%$  RTP.

The proposed SR 3.3.1.1.2 would state:

Verify the calculated power does not exceed the average power range monitor (APRM) channels by greater than 2% RTP while operating at  $\geq 21.6\%$  RTP.

The entry point for this SR of 21.6% RTP is different than the value specified in TSTF-546 which is 25% RTP. This variation was noted by the licensee in the LAR and the NRC staff confirmed that the value of 21.6% is the value specified in the current Clinton licensing basis.

Additionally, the licensee proposed to add Note 2 under LCO 3.3.1.1 to allow for a 2-hour period for adjustment of the APRM output gain to restore compliance with the SR limit before entering the associated Conditions and Required Actions.

The proposed Note 2 under LCO 3.3.1.1 would state:

When Functions 2.b and 2.c channels are inoperable due to the calculated power exceeding the APRM output by more than 2% RTP while operating at  $\geq 21.6\%$  RTP, entry into associated Conditions and Required Actions may be delayed for up to 2 hours.

### 2.2.2 Dresden Units 2 and 3

The proposed amendment for Dresden Units 2 and 3 modifies SR 3.3.1.1.2, which is associated with LCO 3.3.1.1, "Reactor Protection System (RPS) Instrumentation."

SR 3.3.1.1.2 currently states:

Verify the absolute difference between the average power range monitor (APRM) channels and the calculated power is  $\leq 2\%$  RTP.

The proposed SR 3.3.1.1.2 would state:

Verify the calculated power does not exceed the average power range monitor (APRM) channels by greater than 2% RTP while operating at  $\geq 25\%$  RTP.

Additionally, the licensee proposed to update Note 2 under LCO 3.3.1.1 to reflect 2% increase in calculated power when compared to the APRM. Note 2 under LCO 3.3.1.1 currently states:

When Functions 2.b and 2.c channels are inoperable due to APRM indication not within limits, entry into associated Conditions and Required Actions may be delayed for up to 2 hours if the APRM is indicating a lower power value than the calculated power, and for up to 12 hours if the APRM is indicating a high power value than the calculated power.

The proposed Note 2 under LCO 3.3.1.1 would state:

When Functions 2.b and 2.c channels are inoperable due to the calculated power exceeding the APRM output by more than 2% RTP while operating at  $\geq 25\%$  RTP, entry into associated Conditions and Required Actions may be delayed for up to 2 hours.

### 2.2.3 FitzPatrick

The proposed amendment for FitzPatrick modifies SR 3.3.1.1.2, which is associated with LCO 3.3.1.1, "Reactor Protection System (RPS) Instrumentation."

SR 3.3.1.1.2 currently states:

Verify the absolute difference between the average power range monitor (APRM) channels and the calculated power is  $\leq 2\%$  RTP while operating at  $\geq 25\%$  RTP.

The proposed SR 3.3.1.1.2 would state:

Verify the calculated power does not exceed the average power range monitor (APRM) channels by greater than 2% RTP while operating at  $\geq 25\%$  RTP.

Additionally, the licensee proposed to add Note 2 under LCO 3.3.1.1 to allow for a 2-hour period for adjustment of the APRM output gain to restore compliance with the SR limit before entering the associated Conditions and Required Actions.

The proposed Note 2 under LCO 3.3.1.1 would state:

When Functions 2.b and 2.c channels are inoperable due to the calculated power exceeding the APRM output by more than 2% RTP while operating at  $\geq 25\%$  RTP, entry into associated Conditions and Required Actions may be delayed for up to 2 hours.

#### 2.2.4 LaSalle Units 1 and 2

The proposed amendments for LaSalle Units 1 and 2 modifies SR 3.3.1.1.2, which is associated with LCO 3.3.1.1, "Reactor Protection System (RPS) Instrumentation."

SR 3.3.1.1.2 currently states:

Verify the absolute difference between the average power range monitor (APRM) channels and the calculated power  $\leq 2\%$  RTP while operating at  $\geq 25\%$  RTP.

The proposed SR 3.3.1.1.2 would state:

Verify the calculated power does not exceed the average power range monitor (APRM) channels by greater than 2% RTP while operating at  $\geq 25\%$  RTP.

Additionally, the licensee proposed to update Note 2 under LCO 3.3.1.1 to reflect 2% increase in calculated power when compared to the APRM. Note 2 under LCO 3.3.1.1 currently states:

When Functions 2.b and 2.c channels are inoperable due to the APRM indication not within limits, entry into associated Conditions and Required Actions may be delayed for up to 2 hours if the APRM is indicating a lower power value than the calculated power, and for up to 12 hours if the APRM is indicating a high power value than the calculated power.

The proposed Note 2 under LCO 3.3.1.1 would state:

When Functions 2.b and 2.c channels are inoperable due to the calculated power exceeding the APRM output by more than 2% RTP while operating at  $\geq 25\%$  RTP, entry into associated Conditions and Required Actions may be delayed for up to 2 hours.

#### 2.2.5 Limerick Units 1 and 2

The proposed amendment for Limerick Units 1 and 2, modifies SR in Table 4.3.1.1-1(d) of TS 3/4.3.1, "Reactor Protection System Instrumentation".

The SR found in Table 4.3.1.1-1(d) for Limerick Unit 1 currently states:

The more frequent calibration shall consist of the adjustment of the APRM channel to conform to the power values calculated by a heat balance during OPERATIONAL CONDITION 1 when THERMAL POWER  $\geq 25\%$  of RATED

THERMAL POWER. Adjust the APRM channel if the absolute difference is greater than 2% of RATED THERMAL POWER.

The proposed SR found in Table 4.3.1.1-1(d) for Limerick Unit 1 would state:

The more frequent calibration shall consist of the adjustment of the APRM channel to conform to the power values calculated by a heat balance during OPERATIONAL CONDITION 1 when THERMAL POWER  $\geq$  25% of RATED THERMAL POWER. Verify the calculated power does not exceed the APRM channels by greater than 2% of RATED THERMAL POWER.

Additionally, a Note under LCO 3.3.1 for both units has been added to allow for a 2-hour period for adjustment of the APRM output gain to restore compliance with the SR limit before entering the associated Conditions and Required Actions.

The proposed Note under LCO 3.3.1 would state:

When Functional Unit 2.b and 2.c channels are inoperable due to the calculated power exceeding the APRM output by more than 2% of RATED THERMAL POWER while operating at  $\geq$  25% of RATED THERMAL POWER, entry into associated Actions may be delayed up to 2 hours.

#### 2.2.6 Nine Mile Point Unit 1

The proposed amendment for Nine Mile Point, Unit 1, modifies the SR in footnote (m) to Table 4.6.2a.

The SR found in in footnote (m) to Table 4.6.2a for Nine Mile Point Unit 1 currently states:

This calibration shall consist of the adjustment of the APRM channel to conform to the power values calculated by a heat balance during reactor operation when the THERMAL POWER  $\geq$  25% of RATED THERMAL POWER. Adjust the APRM channel if the difference is greater than +2.0/-1.9% of RATED THERMAL POWER. Any APRM channel gain adjustment made in compliance with Specification 2.1.2a shall not be included in determining the difference.

The proposed SR found in in footnote (m) to Table 4.6.2a for Nine Mile Point Unit 1 would state:

This calibration shall consist of the adjustment of the APRM channel to conform to the power values calculated by a heat balance during reactor operation when the thermal power  $\geq$  25% of rated thermal power. Verify the calculated power does not exceed the APRM channels by greater than 2% of rated thermal power. Any APRM channel gain adjustment made in compliance with Specification 2.1.2a shall not be included in determining the difference.

Additionally, the licensee proposed to update LCO 3.6.2.b(2) to include a 2-hour period for adjustment of the APRM output gain to restore compliance with the SR limit before entering the associated Conditions and Required Actions.



LCO 3.6.2.b(2) for Nine Mile Point Unit 1 currently states:

The APRM gain shall be adjusted in accordance with Specification 2.1.2a; or...

The proposed LCO 3.6.2.b(2) for Nine Mile Point Unit 1 would state:

Action shall be taken within two (2) hours to adjust the APRM gain in accordance with Specification 2.1.2a; or...

## 2.2.7 Nine Mile Point Unit 2

The proposed amendment for Nine Mile Point, Unit 2, modifies SR 3.3.1.1.3, which is associated with LCO 3.3.1.1, "Reactor Protection System (RPS) Instrumentation."

SR 3.3.1.1.3 currently states:

Verify the absolute difference between the average power range monitor (APRM) channels and the calculated power  $\leq 2\%$  RTP while operating at  $\geq 23\%$  RTP.

The proposed SR 3.3.1.1.3 would state:

Verify the calculated power does not exceed the average power range monitor (APRM) channels by greater than 2% RTP while operating at  $\geq 23\%$  RTP.

The entry point for this SR of 23% RTP is different than the value specified in TSTF-546 which is 25% RTP. This variation was noted by the licensee in the LAR and the NRC staff confirmed that the value of 23% is the value specified in the current Nine Mile Point Unit 2 licensing basis.

Additionally, the licensee proposed to add Note 2 under LCO 3.3.1.1 to allow for a 2-hour period for adjustment of the APRM output gain to restore compliance with the SR limit before entering the associated Conditions and Required Actions.

The proposed Note 2 under LCO 3.3.1.1 would state:

When Functions 2.b and 2.c channels are inoperable due to the calculated power exceeding the APRM output by more than 2% RTP while operating at  $\geq 23\%$  RTP, entry into associated Conditions and Required Actions may be delayed for up to 2 hours.

## 2.2.8 Peach Bottom Units 2 and 3

The proposed amendment for Peach Bottom, Units 2 and 3, modifies SR 3.3.1.1.2 of TS 3.3.1.1, "Reactor Protection System (RPS) Instrumentation."

SR 3.3.1.1.2 currently states:

Verify the absolute difference between the average power range monitor (APRM) channels and the calculated power  $\leq 2\%$  RTP while operating at  $\geq 22.6\%$  RTP.

The proposed SR 3.3.1.1.2 would state:

Verify the calculated power does not exceed the average power range monitor (APRM) channels by greater than 2% RTP while operating at  $\geq 22.6\%$  RTP.

The entry point for this SR of 22.6% RTP is different than the value specified in TSTF-546 which is 25% RTP. This variation was noted by the licensee in the LAR and the NRC staff confirmed that the value of 22.6% is the value specified in the current Peach Bottom Units 2 and 3 licensing basis.

Additionally, the licensee proposed to add Note 2 under LCO 3.3.1.1 to allow for a 2-hour period for adjustment of the APRM output gain to restore compliance with the SR limit before entering the associated Conditions and Required Actions.

The proposed Note 2 under LCO 3.3.1.1 would state:

When Functions 2.b and 2.c channels are inoperable due to the calculated power exceeding the APRM output by more than 2% RTP while operating at  $\geq 22.6\%$  RTP, entry into associated Conditions and Required Actions may be delayed for up to 2 hours.

#### 2.2.9 Quad Cities Units 1 and 2

The proposed amendment for Quad Cities, Units 1 and 2, modifies SR 3.3.1.1.2 of TS 3.3.1.1, "Reactor Protection System (RPS) Instrumentation."

SR 3.3.1.1.2 currently states:

Verify the absolute difference between the average power range monitor (APRM) channels and the calculated power  $\leq 2\%$  RTP.

The proposed SR 3.3.1.1.2 would state:

Verify the calculated power does not exceed the average power range monitor (APRM) channels by greater than 2% RTP while operating at  $\geq 25\%$  RTP.

Additionally, the licensee proposed to add Note 2 under LCO 3.3.1.1 to reflect 2% increase in calculated power when compared to the APRM. Note 2 under LCO 3.3.1.1 currently states:

When Functions 2.b and 2.c channels are inoperable due to APRM indication not within limits, entry into associated Conditions and Required Actions may be delayed for up to 2 hours if the APRM is indicating a lower power value than the calculated power, and for up to 12 hours if the APRM is indicating a high power value than the calculated power.

The proposed Note 2 under LCO 3.3.1.1 would state:

When Functions 2.b and 2.c channels are inoperable due to the calculated power exceeding the APRM output by more than 2% RTP while operating at  $\geq 25\%$  RTP, entry into associated Conditions and Required Actions may be delayed for up to 2 hours.

## 2.3 REGULATORY REQUIREMENTS AND GUIDANCE

The regulation at Title 10 of the Code of Federal Regulations (10 CFR) Section 50.36(a)(1) requires an applicant for an operating license to include in the LAR proposed TS in accordance with the requirements of 10 CFR 50.36. The applicant must include in the LAR a "summary statement of the bases or reasons for such specifications, other than those covering administrative controls...." However, per 10 CFR 50.36(a)(1), these technical specification bases "shall not become part of the technical specifications."

Additionally, 10 CFR 50.36(b) requires:

Each license authorizing operation of a ... utilization facility ... will include technical specifications. The technical specifications will be derived from the analyses and evaluation included in the safety analysis report, and amendments thereto, submitted pursuant to 10 CFR 50.34 "Contents of LARs; technical information." The Commission may include such additional technical specifications as the Commission finds appropriate.

The categories of items required to be in the TSs are provided in 10 CFR 50.36(c). As required by 10 CFR 50.36(c)(2)(i), the TSs will include LCOs, which are the lowest functional capability or performance levels of equipment required for safe operation of the facility. Per 10 CFR 50.36(c)(2)(i), when an LCO of a nuclear reactor is not met, the licensee shall shut down the reactor or follow any remedial action permitted by the TSs until the condition can be met.

The regulation at 10 CFR 50.36(c)(3) requires TSs to include items in the category of SRs, which are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the LCOs will be met.

Appendix A to 10 CFR Part 50, "General Design Criteria [GDC] for Nuclear Power Plants," was published in 1971. The LaSalle, Unit 1, facility was constructed prior to the 1971 publication of Appendix A, and was not licensed to the Appendix A, GDCs.

The Nine Mile Point, Unit 1, Updated Final Safety Analysis Report (USAR), Section 1, lists the principal design criteria for the design, construction and operation of the plant. The Nine Mile Point UFSAR Table I-1 refers to the Nine Mile Point, Unit 1 Technical Supplement to Petition for Conversion from Provision Operating License to Full-Term Operating License, dated July 1972, for the details of an assessment against the GDC current at that time. The review determined that the plant-specific requirements for Nine Mile Point, Unit 1, are sufficiently similar to the Appendix A GDC.

The applicable 10 CFR Part 50, Appendix A, GDCs are discussed below:

- Criterion 13 -Instrumentation and control. Instrumentation shall be provided to monitor variables and systems over their anticipated ranges for normal operation, for anticipated operational occurrences, and for accident conditions as appropriate to assure adequate safety, including those variables and systems that can affect the fission process, the integrity of the reactor core, the reactor coolant pressure boundary, and the containment and its associated systems. Appropriate controls shall be provided to maintain these variables and systems within prescribed operating ranges.
- Criterion 20 -Protection system functions. The protection system shall be designed (1) to initiate automatically the operation of appropriate systems, including the reactivity control systems, to assure that specified acceptable fuel design limits are not exceeded as a result of anticipated operational occurrences and (2) to sense accident conditions and to initiate the operation of systems and components important to safety.
- Criterion 21 -Protection system reliability and testability. The protection system shall be designed for high functional reliability and inservice testability commensurate with the safety functions to be performed. Redundancy and independence designed into the protection system shall be sufficient to assure that (1) no single-failure results in loss of the protection function and (2) removal from service of any component or channel does not result in loss of the required minimum redundancy unless the acceptable reliability of operation of the protection system can be otherwise demonstrated. The protection system shall be designed to permit periodic testing of its functioning when the reactor is in operation, including a capability to test channels independently to determine failures and losses of redundancy that may have occurred.
- Criterion 22 -Protection system independence. The protection system shall be designed to assure that the effects of natural phenomena, and of normal operating, maintenance, testing, and postulated accident conditions on redundant channels do not result in loss of the protection function, or shall be demonstrated to be acceptable on some other defined basis. Design techniques, such as functional diversity or diversity in component design and principles of operation, shall be used to the extent practical to prevent loss of the protection function.
- Criterion 29 -Protection against anticipated operational occurrences. The protection and reactivity control systems shall be designed to assure an extremely high probability of accomplishing their safety functions in the event of anticipated operational occurrences.

The NRC staff's guidance for the review of TSs is in Chapter 16, "Technical Specifications," of NUREG-0800, Revision 3, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants" (SRP), dated March 2010 (ADAMS Accession No. ML100351425).

### **3.0 TECHNICAL EVALUATION**

The approved Traveler TSTF-546, Revision 0, describes the need for, "...verification that the absolute difference between the APRM channels and the calculated power is  $\leq 2$  percent RTP...while operating at  $\geq 25$  percent RTP. If the absolute difference is greater than 2 percent, the APRM channel is declared inoperable." An acceptable way to restore operability is to adjust the gain for the APRM channel to restore the absolute difference to  $\leq 2$  percent. If the APRM indication is less than the calculated thermal power, then the APRMs may not initiate a trip

signal when the actual reactor power reaches the trip setpoint value. In a situation where the APRM signal is reading higher than the calculated thermal power, the initiation of a trip would occur at a lower actual power level.

The table below provides a summary of each facility's specified minimum RTP, as described in the TS attached to the LAR. The licensee is not modifying these operating limits. These values are specified in each facility's current licensing basis.

Table 1 - Minimum Percentage RTP per Facility

<b>Facility</b>	<b>% RTP min. operating limit</b>
Clinton Unit 1	21.6
Dresden Units 2 & 3	25
FitzPatrick	25
La Salle Units 1 & 2	25
Limerick Units 1 & 2	25
Nine Mile Point Unit 1	25
Nine Mile Point Unit 2	23
Peach Bottom Units 2 & 3	22.6
Quad Cities Units 1 & 2	25

The proposed change would require adjustment of the APRM channel only if the APRM is found to be lower than the calculated thermal power by more than 2% while operating at each facility's RTP min. operating limit shown in Table 1, above. In this amendment request, when the APRM is found to be lower than the calculated thermal power by more than 2%, the licensee requests a two-hour delay prior to entering the associated Conditions and Required Actions.

This two hour delay has previously been approved for the Dresden, LaSalle, and Quad Cities facilities part of this LAR and has also been approved for the Monticello Nuclear Generating Plant (ADAMS Accession No. ML12339A035) as provided in Reference 6.4 of the LAR. For the Dresden, LaSalle, and Quad Cities facilities, the note containing the two-hour delay has been updated to include the allowable 2% increase in calculated power when compared to the APRM before declaring the channel inoperable. Staff finds this change to be acceptable because the two-hour delay has been approved previously for these facilities and the 2% increase conforms to Traveler TSTF-546, Revision 0.

As described in Section 2.2 of this SE, the amendment requests adding this two-hour delay in proposed notes for the Clinton, FitzPatrick, Limerick, Nine Mile Point, and Peach Bottom facilities. The LAR references the LaSalle and Monticello precedents, which justify the 2-hour time frame based on other power distribution limit related completion times found in the TSs. Section 3.3, "Justification of a Two-Hour Completion Time," of the LAR states, "[a] two-hour completion time was selected based on the previously approved [LaSalle] Units 1 and 2 amendments..., which justified two hours as being reasonable since it is consistent with power distribution limit related completion times...." Section 3.3 of the LAR also states, "[s]imilarly, Monticello...received approval...citing the power distribution (thermal limits) as well as other completion times...for the restoration of parameters, subsystems, and channels within TS limits." The APRM systems for these facilities are similar in functionality to that of LaSalle and Monticello. Due to the similarities between the designs and TSs of these boiling water reactors,

staff has determined that the two-hour time limit is also reasonable for the Clinton, FitzPatrick, Limerick, Nine Mile Point, and Peach Bottom facilities. Staff finds that for the Clinton, FitzPatrick, Limerick, and Peach Bottom facilities, the proposed changes continue to meet GDCs 13, 20, 21, 22, and 29. As described in Section 2.3 of this SE, the plant-specific requirements for Nine Mile Point, Unit 1, are sufficiently similar to the Appendix A GDC. Therefore, staff finds that for Nine Mile Point, Unit 1, the proposed changes continue to meet the intent of GDCs 13, 20, 21, 22, and 29.

In a situation where the APRM signal is reading higher than calculated thermal power by more than 2%, the adjustment of the APRM channel is permitted, but not required. In this amendment request, the notes pertaining to time limits for adjusting the APRM channel when the difference between the APRM channel and calculated power is conservative have been deleted.

The applicant proposed SR language varies from the SR language specified in TSTF-546. The SR language specified in TSTF-546 states, “[c]ompare the average power range monitor (APRM) channels to the calculated power. Adjust the APRM channels if the calculated power exceeds the APRM output by more than 2% RTP while operating at  $\geq 25\%$  RTP.” In these amendment requests, the gain adjustment is provided in the notes alongside the two hour delay as opposed to within the SR text. Staff finds this difference to be acceptable as the gain adjustment is proposed to take place after the two hour delay.

The regulation at 10 CFR 50.36(c)(3) requires that the TSs contain SRs, which are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met. The NRC staff reviewed the changes proposed to each facility’s SR and any accompanying notes as described in this SE. The NRC staff determined that these changes continue to provide appropriate controls and acceptance criteria for adjustment of the APRMs to ensure that the APRMs appropriately reflect actual reactor power. The NRC staff determined that for each facility these changes continue to verify the operability of the APRMs and provide assurance that the necessary quality of systems and components is maintained.

The traveler discusses the applicable regulatory requirements and guidance, including the 10 CFR Part 50, Appendix A, GDC. Dresden, Units 2 and 3, Nine Mile Point, Unit 1, and Quad Cities, Units 1 and 2, were not licensed to the 10 CFR Part 50, Appendix A, GDC. Section 3.2, “Variations from the TSTF-546,” of the LAR describes that Dresden and Quad Cities equivalents to the referenced GDC are discussed in Section 3.1, “Conformance with the NRC General Design Criteria,” of the Updated Final Safety Analysis Report (UFSAR). This section of the UFSAR provides an assessment against the 70 draft GDC published in 1967 and concludes that the plant specific requirements are sufficiently similar to the Appendix A GDC. The Nine Mile Point UFSAR Table I-1 refers to the Nine Mile Point, Unit 1 Technical Supplement to Petition for Conversion from Provision Operating License to Full-Term Operating License, dated July 1972, for the details of an assessment against the GDC current at that time. The review determined that the plant-specific requirements for Nine Mile Point, Unit 1, are sufficiently similar to the Appendix A GDC. These differences do not alter the conclusion that the proposed changes are applicable to the facilities. Staff finds that the proposed changes described in the LAR continue to maintain compliance with the GDCs.

### 3.1 VARIATIONS FROM THE APPROVED TRAVELER

The licensee is proposing the following variations from the TS changes described in TSTF-546 or the applicable parts of the NRC staff's safety evaluation of TSTF-546:

1. Eliminate the SR requirement for when the APRM output is conservative with respect to calculated power.
2. Maintain the gain adjustment separate from the performance of the SR.
3. Retain the existing or add a new Action Table note, as applicable, to provide for a delay of up to two hours for the performance of the adjustment. In this case, the SR is considered met if the channel can be adjusted to within the limit during the two hour delay period.
4. As described in Table 1 of this SE, Clinton, Unit 1; Nine Mile Point, Unit 2; and Peach Bottom Units 2 & 3; contain different minimum facility power levels from the 25 percent stated in TSTF-546. This variation does not affect the applicability of TSTF-546 or the NRC staff's safety evaluation to the proposed license amendment.

These variations have been discussed in section 2.2, "Proposed Technical Specification Changes," and section 3.0, "Technical Evaluation," of this SE.

### 3.2 CONCLUSION

The NRC staff reviewed the proposed changes to each facility's TSs, and determined that they meet the standards for TSs in 10 CFR 50.36(b) and GDCs 13, 20, 21, 22, and 29. The proposed changes to the SR and any accompanying notes assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the LCOs will be met, and satisfy 10 CFR 50.36(c)(3). The addition of the two-hour delay for the Clinton, FitzPatrick, Limerick, Nine Mile Point, and Peach Bottom facilities continues to meet GDCs 13, 20, 21, 22, and 29. Additionally, the changes to the TSs were reviewed for technical clarity and consistency with customary terminology and format in accordance with SRP Chapter 16.