

**Kevin Cimorelli**  
Site Vice President

**Susquehanna Nuclear, LLC**  
769 Salem Boulevard  
Berwick, PA 18603  
Tel. 570.542.3795 Fax 570.542.1504  
Kevin.Cimorelli@TalenEnergy.com



December 16, 2021

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

10 CFR 50.90

**SUSQUEHANNA STEAM ELECTRIC STATION  
SUPPLEMENT TO LICENSE AMENDMENT TO  
REVISE REACTOR STEAM DOME PRESSURE –  
LOW INSTRUMENTATION FUNCTION  
ALLOWABLE VALUE  
PLA-7979**

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**Docket No. 50-387  
and 50-388**

- References:* 1) *Susquehanna letter to NRC, "Proposed Amendment to Licenses NPF-14 and NPF-22: Revise Reactor Steam Dome Pressure – Low Instrumentation Function Allowable Value (PLA-7950)," dated October 5, 2021 (ADAMS Accession No. ML21279A026).*
- 2) *NRC letter to Susquehanna, "Supplemental Information Needed for Acceptance of Requested Licensing Action Regarding Emergency Core Cooling Technical Specifications (EPID L-2021-LLA-0184)," dated November 18, 2021 (ADAMS Accession No. ML21316A124).*

Pursuant to 10 CFR 50.90, Susquehanna Nuclear, LLC (Susquehanna), submitted, in Reference 1, a request for an amendment to the Technical Specifications (TS) for the Susquehanna Steam Electric Station (SSES), Units 1 and 2, Facility Operating License numbers NPF-14 and NPF-22. The proposed amendment would modify TS 3.3.5.1, Emergency Core Cooling Systems (ECCS) Instrumentation. Specifically, the proposed amendment would modify the TS Allowable Values (AVs) for the ECCS Instrumentation, Core Spray and Low Pressure Coolant Injection Reactor Steam Dome Pressure – Low Instrumentation Functions 1.c, 1.d, 2.c, and 2.d, in TS Table 3.3.5.1-1.

The NRC notified Susquehanna in Reference 2 that additional information was required to complete its acceptance review of the application submitted in Reference 1. Enclosure 1 to this letter provides the requested information. As a result of the information provided in Enclosure 1 to this submittal, Susquehanna determined it was necessary to revise the TS changes requested

in Reference 1. Enclosures 2 and 3 provide the revised TS pages necessary to support the information provided in Enclosure 1 to this letter. Enclosures 2 and 3 of this letter supersede Enclosures 2 and 3 of Reference 1, respectively, in their entirety.

Based on the revised TS changes provided in Enclosures 2 and 3 to this letter, Susquehanna determined that no TS Bases changes are required to support the requested license amendment. Therefore, Susquehanna withdraws the marked-up TS Bases pages provided in Enclosure 4 to Reference 1 and will not provide a replacement Enclosure in this letter.

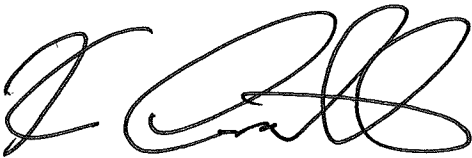
Susquehanna has reviewed the information supporting a finding of No Significant Hazards Consideration and the Environmental Consideration provided to the NRC in Reference 1 and determined the information provided herein does not impact the original conclusions in Reference 1.

There are no new or revised regulatory commitments contained in this submittal.

Should you have any questions regarding this submittal, please contact Ms. Melisa Krick, Manager – Nuclear Regulatory Affairs, at (570) 542-1818.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on December 16, 2021.

A handwritten signature in black ink, appearing to be 'K. Cimorelli', written in a cursive style.

K. Cimorelli

Enclosures:

1. Supplemental Information
2. Marked-Up Technical Specification Pages
3. Revised (Clean) Technical Specification Pages

Copy: NRC Region I  
Mr. C. Highley, NRC Senior Resident Inspector  
Ms. A. Klett, NRC Project Manager  
Mr. M. Shields, PA DEP/BRP

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**Enclosure 1 to PLA-7979**

**Supplemental Information**

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## Supplemental Information

On October 5, 2021, Susquehanna Nuclear, LLC (Susquehanna) submitted a license amendment request (LAR) for the Susquehanna Steam Electric Station (SSES), Units 1 and 2 in Reference 1. Specifically, Susquehanna requested a revision to Technical Specification (TS) 3.3.5.1, “Emergency Core Cooling Systems (ECCS) Instrumentation.” The proposed amendment would modify the TS Allowable Values (AVs) for the ECCS Instrumentation, Core Spray and Low Pressure Coolant Injection (LPCI) Reactor Steam Dome Pressure – Low Instrumentation Functions 1.c, 1.d, 2.c, and 2.d, in TS Table 3.3.5.1-1. In Reference 2, the NRC identified that additional information is required to complete its acceptance review of the LAR. The supplemental information requested by the NRC is provided below.

### NRC Question 1

The core spray (CS) and low-pressure core injection (LPCI) subsystems are part of the ECCS. At Susquehanna, one check valve and one power-operated pressure isolation valve (PIV) are available on the discharge side in each applicable piping of the CS and LPCI subsystems to isolate the subsystems from the RCS. The PIVs are normally closed and would open on a low reactor steam dome pressure signal, which is limited by a lower allowable value (AV) and an upper AV in TS Table 3.3.5.1-1, Functions 1.c, 1.d, 2.c, and 2.d. The incorporation of the lower AV in the TSs provides reasonable assurance that the CS and LPCI provide coolant to the RCS during a loss-of-coolant accident and satisfy the ECCS performance criteria in Title 10 of the Code of Federal Regulations (10 CFR), Section 50.46. The upper AV in the TSs provides reasonable assurance of RCS isolation. The proposed TS changes would delete the upper AV from the TSs.

NUREG-0800, “Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR [Light-Water Reactor] Edition,” Branch Technical Position (BTP) 5-4, “Design Requirements of the Residual Heat Removal System,” Revision 4 (ADAMS Accession No. ML070850123), Section B.2.B.ii describes an acceptable approach for isolating the discharge side of the residual heat removal system from the RCS (i.e., that one or more check valves in series with a normally power-operated PIV shall be provided on the discharge side of the residual heat removal and LPCI subsystems to isolate them from the RCS).

Therefore, the NRC staff needs additional information to evaluate the impact of removing the TS requirement for the upper AV on the ability to isolate the RCS. The NRC staff needs additional information that would allow the NRC staff to determine if there is reasonable assurance that the PIVs would remain closed above the upper AV value.

### Susquehanna Response

In order to demonstrate reasonable assurance that the PIVs would remain closed above the upper AV, Susquehanna proposes to re-establish the upper AV for SSES, Unit 1 and 2, TS Table 3.3.5.1-1, Functions 1.c, 1.d, 2.c, and 2.d. The Upper Analytical Limit (AL) will be increased from the current value of 440 psig to 445 psig. As stated in Reference 1, the design pressure is 450 psig for the Residual Heat Removal (RHR) System low pressure piping and 500 psig for the Core Spray (CS) System low pressure piping. NRC Safety Evaluations for Unit 1 TS Amendment 181 (Reference 3) and Unit 2 TS Amendment 155 (Reference 4) state:

The CS system and LPCI system initiation logic has a low-pressure permissive function which prevents the CS system injection valves HV-252-F005A/B and the LPCI system injection valves HV-251-F017A/B from opening until reactor pressure has decreased to the system's design pressure.

The selected upper AL meets the requirement stated in the Safety Evaluations which is also consistent with the SSES Updated Final Safety Analysis Report, Section 7.6.1a.3.3.1.

The lower AL remains the same as stated in Reference 1; i.e., 380 psig.

The upper and lower AVs and Nominal Trip Setpoints (NTSPs) were calculated using the NRC approved General Electric topical report NEDC-31336P-A. As stated in Reference 1, the pressure switches were replaced with Cameron-Barton 288A switches in 2017. The revised evaluations use the reported vendor accuracy for the newly installed switches in the calculation of the upper and lower AV and NTSP. The new values are shown in Table 1. Note that Table 1 below provides the currently approved values, the originally proposed values in Reference 1, and the revised proposed values as calculated for this supplement.

**Table 1 – Changes to Calculated Parameters**

<b>Parameter</b>	<b>Current (psig)</b>	<b>Original Proposed (psig)</b>	<b>Revised Proposed (psig)</b>
Upper Analytical Limit	440	NONE	445
Upper Allowable Value	433	NONE	443
Upper Nominal Trip Setpoint	427	NONE	428.5
Setpoint	420	420	412.5
Lower Nominal Trip Setpoint	413	393	396.5
Lower Allowable Value	407	387	382
Lower Analytical Limit	400	380	380

Re-establishing the upper AV for SSES Unit 1 and 2 TS Table 3.3.5.1-1, Functions 1.c, 1.d, 2.c, and 2.d will provide reasonable assurance that the PIVs will remain closed above the upper AV. As a result of re-establishing the upper AV, Susquehanna proposes to lower the revised lower AV from 387 psig (as proposed in Reference 1) to 382 psig. This change utilizes some of the existing margin between the lower AV and the lower AL while still ensuring the fuel peak clad temperature will not exceed 2200°F during a postulated accident.

Susquehanna has revised the TS markups to reflect re-establishment of the upper AV, and revision of the lower AV from what was provided in Enclosures 2 and 3 of Reference 1. Enclosures 2 and 3 to this letter provide the revised TS pages, and supersede Enclosures 2 and 3 of Reference 1, respectively, in their entirety. Further, based on re-establishment of the upper AV, Susquehanna has determined that no TS Bases changes are required to support the proposed license amendment. Therefore, Susquehanna hereby withdraws the marked-up TS Bases pages provided in Enclosure 4 to Reference 1 in their entirety; a replacement enclosure is not necessary and is not being provided with this letter.

## **NRC Question 2**

The submittal indicated that pressure relief valves (PRVs) are available for protecting the CS and LPCI systems from over-pressurization. However, the submittal does not describe the adequacy of the PRVs' capability to prevent over-pressurization of the low pressure piping from a loss of isolation between the RCS and low pressure piping.

If the licensee cannot show that the PIVs would remain closed above the upper AV value, then the NRC staff needs additional information for determining if there is reasonable assurance that the PRVs would protect the low pressure piping from over-pressurization when the PIVs and check valves cannot be closed.

## **Susquehanna Response**

As described in the response to Question 1, the PIVs are ensured to remain closed by retaining a revised upper AV within the TS. Therefore, additional information regarding the reasonable assurance that PRVs would protect the low pressure piping from over-pressurization when the PIVs and check valves cannot be closed is not required.

## **References**

1. Susquehanna letter to NRC, "Proposed Amendment to Licenses NPF-14 and NPF-22: Revise Reactor Steam Dome Pressure – Low Instrumentation Function Allowable Value (PLA-7950)," dated October 5, 2021 (ADAMS Accession No. ML21279A026).
2. NRC letter to Susquehanna, "Supplemental Information Needed for Acceptance of Requested Licensing Action Regarding Emergency Core Cooling Technical Specifications (EPID L-2021-LLA-0184)," dated November 18, 2021 (ADAMS Accession No. ML21316A124).
3. NRC letter to Susquehanna, "Susquehanna Steam Electric Station, Unit 1 – Issuance of Amendment Re: Technical Specification Changes on Reactor Steam Dome Pressure – Low Allowable Value (TAC No. MA4982)," dated May 25, 1999 (ADAMS Accession No. ML010160341).
4. NRC letter to Susquehanna, "Susquehanna Steam Electric Station, Unit 2, Technical Specification Changes on Reactor Steam Dome Pressure – Low Allowable Value (TAC No. MA2447)," dated March 4, 1999 (ADAMS Accession No. ML010160354).

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## **Enclosure 2 of PLA-7979**

### **Marked-Up Technical Specification Pages**

Revised Technical Specifications Pages

Unit 1 TS Pages  
3.3-42 and 3.3-43

Unit 2 TS Pages  
3.3-43 and 3.3-44

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Table 3.3.5.1-1 (page 1 of 6)  
Emergency Core Cooling System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION A.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Core Spray System					
a. Reactor Vessel Water Level – Low Low Low, Level 1	1, 2, 3	4 <sup>(a)</sup>	B	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5	≥ -136 inches
b. Drywell Pressure – High	1, 2, 3	4 <sup>(a)</sup>	B	SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5	≤ 1.88 psig
c. Reactor Steam Dome Pressure – Low (initiation)	1, 2, 3	4	B	SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5	≥ <del>407</del> <u>382</u> psig (lower) ≤ <del>433</del> <u>443</u> psig (upper)
d. Reactor Steam Dome Pressure – Low (injection permissive)	1, 2, 3	4	C	SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5	≥ <del>407</del> <u>382</u> psig (lower) ≤ <del>433</del> <u>443</u> psig (upper)
e. Manual Initiation	1, 2, 3	2 1 per Subsystem	C	SR 3.3.5.1.5	NA
2. Low Pressure Coolant Injection (LPCI) System					
a. Reactor Vessel Water Level – Low Low Low, Level 1	1, 2, 3	4 <sup>(b)</sup>	B	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5	≥ -136 inches

(a) Also required to initiate the associated diesel generator (DG), initiate Drywell Cooling Equipment Trip, and Emergency Service Water (ESW) Pump timer reset.

(b) Also required to initiate the associated DGs, ESW Pump timer reset and Turbine Building and Reactor Building Chillers trip.

Table 3.3.5.1-1 (page 2 of 6)  
Emergency Core Cooling System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION A.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
2. LPCI System (continued)					
b. Drywell Pressure – High	1, 2, 3	4 <sup>(b)</sup>	B	SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5	≤ 1.88 psig
c. Reactor Steam Dome Pressure – Low (initiation)	1, 2, 3	4	B	SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5	≥ <del>407</del> <u>382</u> psig (lower) ≤ <del>433</del> <u>443</u> psig (upper)
d. Reactor Steam Dome Pressure – Low (injection permissive)	1, 2, 3	4	C	SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5	≥ <del>407</del> <u>382</u> psig (lower) ≤ <del>433</del> <u>443</u> psig (upper)
e. Reactor Steam Dome Pressure – Low (Recirculation Discharge Valve Permissive)	1 <sup>(c)</sup> , 2 <sup>(c)</sup> , 3 <sup>(c)</sup>	4	C	SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5	≥ 216 psig

(b) Also required to initiate the associated DGs, ESW pump timer reset and Turbine Building and Reactor Building Chiller trip.

(c) With either associated recirculation pump discharge or bypass valves open.

Table 3.3.5.1-1 (page 1 of 5)  
Emergency Core Cooling System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION A.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Core Spray System					
a. Reactor Vessel Water Level – Low Low Low, Level 1	1, 2, 3	4 <sup>(a)</sup>	B	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5	≥ -136 inches
b. Drywell Pressure – High	1, 2, 3	4 <sup>(a)</sup>	B	SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5	≤ 1.88 psig
c. Reactor Steam Dome Pressure – Low (initiation)	1, 2, 3	4	B	SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5	≥ <del>407</del> 382 psig (lower) ≤ <del>433</del> 443 psig (upper)
d. Reactor Steam Dome Pressure – Low (injection permissive)	1, 2, 3	4	C	SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5	≥ <del>407</del> 382 psig (lower) ≤ <del>433</del> 443 psig (upper)
e. Manual Initiation	1, 2, 3	2 1 per Subsystem	C	SR 3.3.5.1.5	NA
2. Low Pressure Coolant Injection (LPCI) System					
a. Reactor Vessel Water Level – Low Low Low, Level 1	1, 2, 3	4 <sup>(b)</sup>	B	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5	≥ -136 inches

(a) Also required to initiate the associated diesel generator (DG), initiate Drywell Cooling Equipment Trip, and Emergency Service Water (ESW) Pump timer reset.

(b) Also required to initiate the associated DGs, ESW Pump timer reset and Turbine Building and Reactor Building Chillers trip.

Table 3.3.5.1-1 (page 2 of 5)  
Emergency Core Cooling System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION A.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
2. LPCI System (continued)					
b. Drywell Pressure – High	1, 2, 3	4 <sup>(b)</sup>	B	SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5	≤ 1.88 psig
c. Reactor Steam Dome Pressure – Low (initiation)	1, 2, 3	4	B	SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5	≥ <del>407</del> 382 psig (lower) ≤ <del>433</del> 443 psig (upper)
d. Reactor Steam Dome Pressure – Low (injection permissive)	1, 2, 3	4	C	SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5	≥ <del>407</del> 382 psig (lower) ≤ <del>433</del> 443 psig (upper)
e. Reactor Steam Dome Pressure – Low (Recirculation Discharge Valve Permissive)	1 <sup>(c)</sup> , 2 <sup>(c)</sup> , 3 <sup>(c)</sup>	4	C	SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5	≥ 216 psig
f. Manual Initiation	1, 2, 3	2 1 per Subsystem	C	SR 3.3.5.1.5	NA

(b) Also required to initiate the associated DGs, ESW pump timer reset and Turbine Building and Reactor Building Chiller trip.

(c) With either associated recirculation pump discharge or bypass valves open.

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## **Enclosure 3 of PLA-7979**

### **Revised (Clean) Technical Specification Pages**

Revised Technical Specifications Pages

Unit 1 TS Pages  
3.3-42 and 3.3-43

Unit 2 TS Pages  
3.3-43 and 3.3-44

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Table 3.3.5.1-1 (page 1 of 6)  
Emergency Core Cooling System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION A.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Core Spray System					
a. Reactor Vessel Water Level – Low Low Low, Level 1	1, 2, 3	4 <sup>(a)</sup>	B	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5	≥ -136 inches
b. Drywell Pressure – High	1, 2, 3	4 <sup>(a)</sup>	B	SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5	≤ 1.88 psig
c. Reactor Steam Dome Pressure – Low (initiation)	1, 2, 3	4	B	SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5	≥ 382 psig (lower) ≤ 443 psig (upper)
d. Reactor Steam Dome Pressure – Low (injection permissive)	1, 2, 3	4	C	SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5	≥ 382 psig (lower) ≤ 443 psig (upper)
e. Manual Initiation	1, 2, 3	2 1 per Subsystem	C	SR 3.3.5.1.5	NA
2. Low Pressure Coolant Injection (LPCI) System					
a. Reactor Vessel Water Level – Low Low Low, Level 1	1, 2, 3	4 <sup>(b)</sup>	B	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5	≥ -136 inches

(a) Also required to initiate the associated diesel generator (DG), initiate Drywell Cooling Equipment Trip, and Emergency Service Water (ESW) Pump timer reset.

(b) Also required to initiate the associated DGs, ESW Pump timer reset and Turbine Building and Reactor Building Chillers trip.

Table 3.3.5.1-1 (page 2 of 6)  
Emergency Core Cooling System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION A.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
2. LPCI System (continued)					
b. Drywell Pressure – High	1, 2, 3	4 <sup>(b)</sup>	B	SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5	≤ 1.88 psig
c. Reactor Steam Dome Pressure – Low (initiation)	1, 2, 3	4	B	SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5	≥ 382 psig (lower) ≤ 443 psig (upper)
d. Reactor Steam Dome Pressure – Low (injection permissive)	1, 2, 3	4	C	SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5	≥ 382 psig (lower) ≤ 443 psig (upper)
e. Reactor Steam Dome Pressure – Low (Recirculation Discharge Valve Permissive)	1 <sup>(c)</sup> , 2 <sup>(c)</sup> , 3 <sup>(c)</sup>	4	C	SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5	≥ 216 psig

(b) Also required to initiate the associated DGs, ESW pump timer reset and Turbine Building and Reactor Building Chiller trip.

(c) With either associated recirculation pump discharge or bypass valves open.

Table 3.3.5.1-1 (page 1 of 5)  
Emergency Core Cooling System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION A.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Core Spray System					
a. Reactor Vessel Water Level – Low Low Low, Level 1	1, 2, 3	4 <sup>(a)</sup>	B	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5	≥ -136 inches
b. Drywell Pressure – High	1, 2, 3	4 <sup>(a)</sup>	B	SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5	≤ 1.88 psig
c. Reactor Steam Dome Pressure – Low (initiation)	1, 2, 3	4	B	SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5	≥ 382 psig (lower) ≤ 443 psig (upper)
d. Reactor Steam Dome Pressure – Low (injection permissive)	1, 2, 3	4	C	SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5	≥ 382 psig (lower) ≤ 443 psig (upper)
e. Manual Initiation	1, 2, 3	2 1 per Subsystem	C	SR 3.3.5.1.5	NA
2. Low Pressure Coolant Injection (LPCI) System					
a. Reactor Vessel Water Level – Low Low Low, Level 1	1, 2, 3	4 <sup>(b)</sup>	B	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5	≥ -136 inches

(a) Also required to initiate the associated diesel generator (DG), initiate Drywell Cooling Equipment Trip, and Emergency Service Water (ESW) Pump timer reset.

(b) Also required to initiate the associated DGs, ESW Pump timer reset and Turbine Building and Reactor Building Chillers trip.



Table 3.3.5.1-1 (page 2 of 5)  
Emergency Core Cooling System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION A.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
2. LPCI System (continued)					
b. Drywell Pressure – High	1, 2, 3	4 <sup>(b)</sup>	B	SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5	≤ 1.88 psig
c. Reactor Steam Dome Pressure – Low (initiation)	1, 2, 3	4	B	SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5	≥ 382 psig (lower) ≤ 443 psig (upper)
d. Reactor Steam Dome Pressure – Low (injection permissive)	1, 2, 3	4	C	SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5	≥ 382 psig (lower) ≤ 443 psig (upper)
e. Reactor Steam Dome Pressure – Low (Recirculation Discharge Valve Permissive)	1 <sup>(c)</sup> , 2 <sup>(c)</sup> , 3 <sup>(c)</sup>	4	C	SR 3.3.5.1.2 SR 3.3.5.1.3 SR 3.3.5.1.5	≥ 216 psig
f. Manual Initiation	1, 2, 3	2 1 per Subsystem	C	SR 3.3.5.1.5	NA

(b) Also required to initiate the associated DGs, ESW pump timer reset and Turbine Building and Reactor Building Chiller trip.

(c) With either associated recirculation pump discharge or bypass valves open.