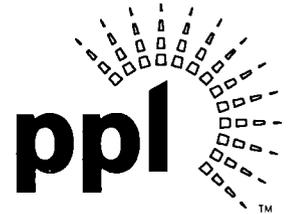


Britt T. McKinney
Sr. Vice President & Chief Nuclear Officer

PPL Susquehanna, LLC
769 Salem Boulevard
Berwick, PA 18603
Tel. 570.542.3149 Fax 570.542.1504
btmckinney@pplweb.com



JUL 7 2008

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Mail Stop OP1-17
Washington, DC 20555

**SUSQUEHANNA STEAM ELECTRIC STATION
PROPOSED AMENDMENT NO. 300 TO LICENSE
NPF-14 AND PROPOSED AMENDMENT NO. 270
TO LICENSE NPF-22: REQUEST FOR ADOPTION
OF TSTF-475, REV. 1, "CONTROL ROD NOTCH
TESTING FREQUENCY AND SRM INSERT CONTROL
ROD ACTION," USING THE CONSOLIDATED LINE
ITEM IMPROVEMENT PROCESS (CLIIP)
PLA-6330**

**Docket Nos. 50-387
and 50-388**

In accordance with the provisions of 10 CFR 50.90, PPL Susquehanna, LLC (PPL) is submitting a request for an amendment to the Technical Specifications (TS) for Susquehanna Steam Electric Station Units 1 and 2.

The proposed amendment would: (1) delete Technical Specification Surveillance Requirement (SR) 3.1.3.2 (specifies a 7-day test frequency for fully withdrawn rods) in TS 3.1.3, "Control Rod OPERABILITY," (2) revise SR 3.1.3.3 to make its 31-day test frequency applicable not only to partially withdrawn rods but also to fully withdrawn rods, and (3) revise Example 1.4-3 in Section 1.4 "Frequency" to clarify the applicability of the 1.25 surveillance test interval extension.

These proposed changes have been reviewed by both the Plant Operations Review Committee (PORC) and the Susquehanna Review Committee (SRC).

Attachment 1 provides a description of the proposed changes, the requested confirmation of applicability, and plant-specific verifications. Attachment 2 provides the existing Technical Specifications pages marked-up to show the proposed changes. Attachment 3 provides the existing Bases pages marked-up to show the proposed changes. Attachment 4 provides a summary of the regulatory commitments made in this submittal.

Similar amendment requests have been submitted by Duane Arnold Energy Center (December 20, 2007), Vermont Yankee Nuclear Power Station (February 6, 2008), James A. Fitzpatrick Nuclear Power Plant (February 7, 2008), Monticello Nuclear

A001
NRR

Generating Plant (April 22, 2008), Clinton Power Station, Unit 1 (June 9, 2008), Dresden Nuclear Power Station, Units 2 and 3 (June 9, 2008), LaSalle County Station, Units 1 and 2 (June 9, 2008), Oyster Creek Nuclear Generating Station (June 9, 2008), Peach Bottom Atomic Power Station, Units 2 and 3 (June 9, 2008), and Quad Cities Nuclear Power Station, Units 1 and 2 (June 9, 2008).

PPL requests approval of the proposed license amendments by January 15, 2009 with the amendments being implemented within 60 days following approval.

In accordance with 10 CFR 50.91(b), a copy of this application, with its attachments, is being provided to the designated Commonwealth of Pennsylvania state official.

If you should have any questions regarding this submittal, please contact Mr. C. E. Manges, Jr. at (570) 542-3089.

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

Executed on: 7708



B. T. McKinney

Attachments:

- Attachment 1 – Description and Assessment
- Attachment 2 - Proposed Technical Specification Changes Units 1 & 2,
(Mark-ups)
- Attachment 3 - Proposed Technical Specification Bases Changes Units 1 & 2,
(Mark-ups for Information Only)
- Attachment 4 – Regulatory Commitments

cc: NRC Region I
Mr. R. R Janati, DEP/BRP
Mr. F. W. Jaxheimer, NRC Sr. Resident Inspector
Mr. B. K. Vaidya, NRC Project Manager

Attachment 1 to PLA-6330

Description and Assessment

- 1.0 Description
- 2.0 Assessment
 - 2.1 Applicability of Published Safety Evaluation
 - 2.2 Optional Changes and Variations
- 3.0 Regulatory Analysis
 - 3.1 No Significant Hazards Consideration Determination
 - 3.2 Verification of Commitments
- 4.0 Environmental Evaluation

EVALUATION OF PROPOSED CHANGE

1.0 DESCRIPTION

The proposed amendment would: (1) delete Technical Specifications (TS) Surveillance Requirement (SR) 3.1.3.2 (specifies a 7-day test frequency for fully withdrawn rods) in TS 3.1.3, "Control Rod OPERABILITY," (2) revise SR 3.1.3.3 to make its 31-day test frequency applicable not only to partially withdrawn rods but also to fully withdrawn rods, and (3) revise Example 1.4-3 in Section 1.4 "Frequency" to clarify the applicability of the 1.25 surveillance test interval extension.

The other change in TSTF-475, Revision 1 that clarifies the SRM TS action for fully inserting control rods with one or more SRMs inoperable in Mode 5 is only applicable to BWR/6 plants. SSES Units 1 and 2 are BWR/4 plants, and this clarification already exists in the SSES Units 1 and 2 TS.

The changes are consistent with Nuclear Regulatory Commission (NRC) approved Industry/Technical Specification Task Force (TSTF) STS change TSTF-475, Revision 1. The **Federal Register** notice published on November 13, 2007, announced the availability of this TS improvement through the consolidated line item improvement process (CLIIP).

2.0 ASSESSMENT

2.1 **Applicability of Published Safety Evaluation**

PPL Susquehanna, LLC (PPL) has reviewed the safety evaluation dated November 13, 2007, as part of the CLIIP. This review included a review of the NRC staff's evaluation, as well as the supporting information provided to support TSTF-475, Revision 1. PPL has concluded that the justifications presented in the TSTF proposal and the safety evaluation prepared by the NRC staff are applicable to Susquehanna Steam Electric Station (SSES) Units 1 and 2 and justify this amendment for the incorporation of the changes to the SSES TS.

2.2 **Optional Changes and Variations**

PPL is not proposing variations or deviations from the TS changes described in TSTF-475, Revision 1 and the NRC staff's model safety evaluation dated November 13, 2007 (72 FR 63935) as part of the CLIIP Notice of Availability. However, some editorial changes are proposed and are described below.

The renumbering of the TS SRs has not been incorporated as these editorial changes would create conflicts with other documented references, if adopted. The existing SR numbering is maintained by identifying SR 3.1.3.2 as “not used.”

3.0 REGULATORY ANALYSIS

3.1 No Significant Hazards Consideration

PPL Susquehanna, LLC has reviewed the no significant hazards consideration determination (NSHCD) published in the **Federal Register** as part of the CLIIP. PPL has concluded that the proposed NSHCD presented in the **Federal Register** notice is applicable to SSES Units 1 and 2 and is hereby incorporated by reference to satisfy the requirements of 10 CFR 50.91(a).

3.2 Verification and Commitments

As discussed in the notice of availability published in the **Federal Register** on November 13, 2007 for this TS improvement, PPL verifies the applicability of TSTF-475 to SSES Units 1 and 2, and commits to establishing Technical Specification Bases for the TS as proposed in TSTF-475, Revision 1 with the exception that some editorial changes are included to provide clarity and to reflect the decision to not renumber the TS SRs.

These changes are based on TSTF change traveler TSTF-475, (Revision 1), that proposes revisions to the STS by: (1) deleting SR 3.1.3.2, (2) revising the frequency of notch testing of fully withdrawn control rods, from “7 days after the control rod is withdrawn and THERMAL POWER is greater than the Low Power Set Point (LPSP) of the Rod Worth Minimizer (RWM)” to “31 days after the control rod is withdrawn and THERMAL POWER is greater than the LPSP of the RWM,” by changing the scope of SR 3.1.3.3 to include all withdrawn rods (i.e., both partially and fully withdrawn rods) and (3) revising Example 1.4-3 in Section 1.4 “Frequency” to clarify that the 1.25 surveillance test interval extension in SR 3.0.2 is applicable to time periods discussed in NOTES in the “SURVEILLANCE” column in addition to the time periods in the “FREQUENCY” column.

4.0 ENVIRONMENTAL EVALUATION

PPL has reviewed the environmental evaluation included in the model safety evaluation dated November 13, 2007, as part of the CLIIP. PPL has concluded that the staff’s findings presented in that evaluation are applicable to SSES Units 1 and 2 and the evaluation is hereby incorporated by reference for this application.

Attachment 2 to PLA-6330
Proposed Technical Specification Changes
Units 1 & 2
(Mark-ups)

1.4 Frequency

EXAMPLES

EXAMPLE 1.4-2 (continued)

"Thereafter" indicates future performances must be established per SR 3.0.2, but only after a specified condition is first met (i.e., the "once" performance in this example). If reactor power decreases to <25% RTP, the measurement of both intervals stops. New intervals start upon reactor power reaching 25% RTP.

EXAMPLE 1.4-3

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>-----NOTE----- Not required to be performed until 12 hours after $\geq 25\%$ RTP. -----</p>	7 days
Perform channel adjustment.	

The interval continues whether or not the unit operation is <25% RTP between performances.

As the Note modifies the required performance of the Surveillance, it is construed to be part of the "specified Frequency." Should the 7 day interval be exceeded while operation is <25% RTP, this Note allows 12 hours after power reaches $\geq 25\%$ RTP to perform the Surveillance. The Surveillance is still considered to be within the "specified Frequency." Therefore, if the Surveillance were not performed within the 7 day interval (plus the extension allowed by SR 3.0.2), but operation was <25% RTP, it would not constitute a failure of the SR or failure to meet the LCO. Also, no violation of SR 3.0.4 occurs when changing MODES, even with the 7 day Frequency not met, provided operation does not exceed 12 hours (plus the extension allowed by SR 3.0.2) with power $\geq 25\%$ RTP.

(continued)

1.4 Frequency

EXAMPLES

EXAMPLE 1.4-3 (continued)

Once the unit reaches 25% RTP, 12 hours would be allowed for completing the Surveillance. If the Surveillance were not performed within this 12 hour interval **(plus the extension allowed by SR 3.0.2)**, there would then be a failure to perform a Surveillance within the specified Frequency, and the provisions of SR 3.0.3 would apply.

EXAMPLE 1.4-4

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
-----NOTE----- Only required to be met in MODE 1. -----	
Verify leakage rates are within limits.	24 hours

Example 1.4-4 specifies that the requirements of this Surveillance do not have to be met until the unit is in MODE 1. The interval measurement for the Frequency of this Surveillance continues at all times, as described in Example 1.4-1. However, the Note constitutes an "otherwise stated" exception to the Applicability of this Surveillance. Therefore, if the Surveillance were not performed within the 24 hour interval (plus the extension allowed by SR 3.0.2), but the unit was not in MODE 1, there would be no failure of the SR nor failure to meet the LCO. Therefore, no violation of SR 3.0.4 occurs when changing MODES, even with the 24 hour Frequency exceeded, provided the MODE change was not made into MODE 1. Prior to entering MODE 1 (assuming again that the 24 hour Frequency were not met), SR 3.0.4 would require satisfying the SR.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	<p>A.3 Perform SR 3.1.3.2 and SR 3.1.3.3 for each withdrawn OPERABLE control rod.</p> <p><u>AND</u></p> <p>A.4 Perform SR 3.1.1.1.</p>	<p>24 hours from discovery of Condition A concurrent with THERMAL POWER greater than the low power setpoint (LPSP) of the RWM.</p> <p>72 hours</p>
B. Two or more withdrawn control rods stuck.	B.1 Be in MODE 3.	12 hours
C. One or more control rods inoperable for reasons other than Condition A or B.	<p>C.1 -----NOTE----- RWM may be bypassed as allowed by LCO 3.3.2.1, if required, to allow insertion of inoperable control rod and continued operation. -----</p> <p>Fully insert inoperable control rod.</p> <p><u>AND</u></p>	<p>3 hours</p> <p>(continued)</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.1.3.1 Determine the position of each control rod.	24 hours
SR 3.1.3.2 NOT USED <hr/> <p style="text-align: center;">NOTE</p> <p style="text-align: center;">Not required to be performed until 7 days after the control rod is withdrawn and THERMAL POWER is greater than the LPSP of RWM.</p> <hr/> <p style="text-align: center;">Insert each fully withdrawn control rod at least one notch.</p>	7 days
SR 3.1.3.3 -----NOTE----- Not required to be performed until 31 days after the control rod is withdrawn and THERMAL POWER is greater than the LPSP of the RWM. ----- Insert each partially withdrawn control rod at least one notch.	31 days
SR 3.1.3.4 Verify each control rod scram time from fully withdrawn to notch position 05 is ≤ 7 seconds.	In accordance with SR 3.1.4.1, SR 3.1.4.2, SR 3.1.4.3, and SR 3.1.4.4

(continued)

1.4 Frequency

EXAMPLES

EXAMPLE 1.4-2 (continued)

"Thereafter" indicates future performances must be established per SR 3.0.2, but only after a specified condition is first met (i.e., the "once" performance in this example). If reactor power decreases to < 25% RTP, the measurement of both intervals stops. New intervals start upon reactor power reaching 25% RTP.

EXAMPLE 1.4-3

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>-----NOTE----- Not required to be performed until 12 hours after ≥ 25% RTP. -----</p>	
<p>Perform channel adjustment.</p>	<p>7 days</p>

The interval continues whether or not the unit operation is < 25% RTP between performances.

As the Note modifies the required performance of the Surveillance, it is construed to be part of the "specified Frequency." Should the 7 day interval be exceeded while operation is < 25% RTP, this Note allows 12 hours after power reaches ≥ 25% RTP to perform the Surveillance. The Surveillance is still considered to be within the "specified Frequency." Therefore, if the Surveillance were not performed within the 7 day interval (plus the extension allowed by SR 3.0.2), but operation was < 25% RTP, it would not constitute a failure of the SR or failure to meet the LCO. Also, no violation of SR 3.0.4 occurs when changing MODES, even with the 7 day Frequency not met, provided operation does not exceed 12 hours (plus the extension allowed by SR 3.0.2) with power ≥ 25% RTP.

(continued)

1.4 Frequency

EXAMPLES

EXAMPLE 1.4-3 (continued)

Once the unit reaches 25% RTP, 12 hours would be allowed for completing the Surveillance. If the Surveillance were not performed within this 12 hour interval **(plus the extension allowed by SR 3.0.2)**, there would then be a failure to perform a Surveillance within the specified Frequency, and the provisions of SR 3.0.3 would apply.

EXAMPLE 1.4-4

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>-----NOTE----- Only required to be met in MODE 1. -----</p> <p>Verify leakage rates are within limits.</p>	<p>24 hours</p>

Example 1.4-4 specifies that the requirements of this Surveillance do not have to be met until the unit is in MODE 1. The interval measurement for the Frequency of this Surveillance continues at all times, as described in Example 1.4-1. However, the Note constitutes an "otherwise stated" exception to the Applicability of this Surveillance. Therefore, if the Surveillance were not performed within the 24 hour interval (plus the extension allowed by SR 3.0.2), but the unit was not in MODE 1, there would be no failure of the SR nor failure to meet the LCO. Therefore, no violation of SR 3.0.4 occurs when changing MODES, even with the 24 hour Frequency exceeded, provided the MODE change was not made into MODE 1. Prior to entering MODE 1 (assuming again that the 24 hour Frequency were not met), SR 3.0.4 would require satisfying the SR.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	<p>A.3 Perform SR 3.1.3.2 and SR 3.1.3.3 for each withdrawn OPERABLE control rod.</p> <p><u>AND</u></p> <p>A.4 Perform SR 3.1.1.1.</p>	<p>24 hours from discovery of Condition A concurrent with THERMAL POWER greater than the low power setpoint (LPSP) of the RWM.</p> <p>72 hours</p>
B. Two or more withdrawn control rods stuck.	B.1 Be in MODE 3.	12 hours
C. One or more control rods inoperable for reasons other than Condition A or B.	<p>C.1 -----NOTE----- RWM may be bypassed as allowed by LCO 3.3.2.1, if required, to allow insertion of inoperable control rod and continued operation. -----</p> <p>Fully insert inoperable control rod.</p> <p><u>AND</u></p>	<p>3 hours</p> <p>(continued)</p>

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.3.1	Determine the position of each control rod.	24 hours
SR 3.1.3.2	<p>NOT USED</p> <p>-----NOTE----- Not required to be performed until 7 days after the control rod is withdrawn and THERMAL POWER is greater than the LPSP of RWM.</p> <p>-----</p> <p>Insert each fully withdrawn control rod at least one notch.</p>	7 days
SR 3.1.3.3	<p>-----NOTE----- Not required to be performed until 31 days after the control rod is withdrawn and THERMAL POWER is greater than the LPSP of the RWM.</p> <p>-----</p> <p>Insert each partially withdrawn control rod at least one notch.</p>	31 days
SR 3.1.3.4	Verify each control rod scram time from fully withdrawn to notch position 05 is ≤ 7 seconds.	In accordance with SR 3.1.4.1, SR 3.1.4.2, SR 3.1.4.3, and SR 3.1.4.4

(continued)

Attachment 3 to PLA-6330
Proposed Technical Specification Bases Changes
Units 1 & 2
(Mark-ups for Information Only)

BASES

ACTIONS

A.1, A.2, A.3 and A.4 (continued)

Therefore, a verification that the separation criteria are met must be performed immediately. The separation criteria are not met if a) the stuck control rod occupies a position adjacent to two "slow" control rods, b) the stuck control rod occupies a position adjacent to one "slow" control rod and the one "slow" control rod is also adjacent to another "slow" control rod, or, c) if the stuck control rod occupies a location adjacent to one "slow" control rod when there is another pair of "slow" control rods adjacent to one another. Adjacent control rods include control rods that are either face or diagonally adjacent. The description of "slow" control rods is provided in LCO 3.1.4, "Control Rod Scram Times." In addition, the associated control rod drive must be disarmed in 2 hours. The allowed Completion Time of 2 hours is acceptable, considering the reactor can still be shut down, assuming no additional control rods fail to insert, and provides a reasonable time to perform the Required Action in an orderly manner. Isolating the control rod from scram prevents damage to the CRDM. The control rod can be isolated from scram and normal insert and withdraw pressure, yet still maintain cooling water to the CRD.

Monitoring of the insertion capability of each withdrawn control rod must also be performed within 24 hours from discovery of Condition A concurrent with THERMAL POWER greater than the low power setpoint (LPSP) of the RWM. ~~SR 3.1.3.2 and~~ SR 3.1.3.3 performs periodic tests of the control rod insertion capability of withdrawn control rods.

Testing each withdrawn control rod ensures that a generic problem does not exist. This Completion Time also allows for an exception to the normal "time zero" for beginning the allowed outage time "clock." The Required Action A.3 Completion Time only begins upon discovery of Condition A concurrent with THERMAL POWER greater than the actual LPSP of the RWM, since the notch insertions may not be compatible with the requirements of rod pattern control (LCO 3.1.6) and the RWM (LCO 3.3.2.1). The allowed Completion Time provides a reasonable time to test the control rods, considering the potential for a need to reduce power to perform the tests. To allow continued operation with a withdrawn control rod stuck, an evaluation of adequate SDM is also required within 72 hours. Should a DBA or transient require a shutdown, to preserve the single failure criterion, an additional control rod would have to be assumed to fail to insert when

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.1.3.1 (continued)

determined by the use of OPERABLE position indicators, by moving control rods to a position with an OPERABLE indicator, or by the use of other appropriate methods. The 24 hour Frequency of this SR is based on operating experience related to expected changes in control rod position and the availability of control rod position indications in the control room.

SR 3.1.3.2 and SR 3.1.3.3

NOT USED

SR 3.1.3.3

Control rod insertion capability is demonstrated by inserting each partially or fully withdrawn control rod at least one notch and observing that the control rod moves. The control rod may then be returned to its original position. This ensures the control rod is not stuck and is free to insert on a scram signal. These Surveillances are not required when THERMAL POWER is less than or equal to the actual LPSP of the RWM, since the notch insertions may not be compatible with the requirements of the Banked Position Withdrawal Sequence (BPWS) (LCO 3.1.6) and the RWM (LCO 3.3.2.1). ~~The 7 day Frequency of SR 3.1.3.2 is based on operating experience related to the changes in CRD performance and the ease of performing notch testing for fully withdrawn control rods. Partially withdrawn control rods are tested at a 31 day Frequency, based on the potential power reduction required to allow the control rod movement and considering the large testing sample of SR 3.1.3.2. Furthermore, the 31 day Frequency takes into account operating experience related to changes in CRD performance. At any time, if a control rod is immovable, a determination of that control rod's ability to trip (OPERABILITY) must be made and appropriate action taken.~~

SR 3.1.3.4

Verifying that the scram time for each control rod to notch position 05 is ≤ 7 seconds provides reasonable assurance that the control rod will insert when required during a DBA or transient, thereby completing its shutdown function. This SR is performed in conjunction with the control rod scram time testing of SR 3.1.4.1, SR 3.1.4.2, SR 3.1.4.3, and SR 3.1.4.4. The LOGIC SYSTEM FUNCTIONAL TEST in

(continued)

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.1.3.4 (continued)

LCO 3.3.1.1, "Reactor Protection System (RPS) Instrumentation," and the functional testing of SDV vent and drain valves in LCO 3.1.8, "Scram Discharge Volume (SDV) Vent and Drain Valves," overlap this Surveillance to provide complete testing of the assumed safety function. The associated Frequencies are acceptable, considering the more frequent testing performed to demonstrate other aspects of control rod OPERABILITY and operating experience, which shows scram times do not significantly change over an operating cycle.

SR 3.1.3.5

Coupling verification is performed to ensure the control rod is connected to the CRDM and will perform its intended function when necessary. The Surveillance requires verifying a control rod does not go to the withdrawn overtravel position. The overtravel position feature provides a positive check on the coupling integrity since only an uncoupled CRD can reach the overtravel position. The verification is required to be performed any time a control rod is withdrawn to the "full out" position (notch position 48) or prior to declaring the control rod OPERABLE after work on the control rod or CRD System that could affect coupling. This includes control rods inserted one notch and then returned to the "full out" position during the performance of SR 3.1.3.32. This Frequency is acceptable, considering the low probability that a control rod will become uncoupled when it is not being moved and operating experience related to uncoupling events.

REFERENCES

1. 10 CFR 50, Appendix A GDC 26, GDC 27, GDC 28, and GDC 29.
2. FSAR, Section 4.3.2.
3. FSAR, Section 4.6.
4. FSAR, Section 15.
5. Final Policy Statement on Technical Specifications Improvements, July 22, 1993 (58 FR 39132).

BASES

ACTIONS

D.1 and D.2 (continued)

maintaining a control rod block. The allowed Completion Time of 1 hour is sufficient to accomplish the Required Action, and takes into account the low probability of an event requiring the SRM occurring during this interval.

E.1 and E.2

With one or more required SRM inoperable in MODE 5, the ability to detect local reactivity changes in the core during refueling is degraded. CORE ALTERATIONS must be immediately suspended and action must be immediately initiated to **fully** insert all insertable control rods in core cells containing one or more fuel assemblies. Suspending CORE ALTERATIONS prevents the two most probable causes of reactivity changes, fuel loading and control rod withdrawal, from occurring. Inserting all insertable control rods ensures that the reactor will be at its minimum reactivity given that fuel is present in the core. Suspension of CORE ALTERATIONS shall not preclude completion of the movement of a component to a safe, conservative position.

Action (once required to be initiated) to insert control rods must continue until all insertable rods in core cells containing one or more fuel assemblies are inserted.

SURVEILLANCE
REQUIREMENTS

The SRs for each SRM Applicable MODE or other specified conditions are found in the SRs column of Table 3.3.1.2-1.

SR 3.3.1.2.1 and SR 3.3.1.2.3

Performance of the CHANNEL CHECK ensures that a gross failure of instrumentation has not occurred. A CHANNEL CHECK is normally a comparison of the parameter indicated on one channel to a similar parameter on another channel. It is based on the assumption that instrument channels monitoring the same parameter should read approximately the same value. Significant deviations between the instrument channels could be an indication of excessive instrument drift in one of the channels or something even more serious. A CHANNEL CHECK will detect gross channel failure; thus, it

(continued)

BASES

ACTIONS

A.1, A.2, A.3 and A.4 (continued)

Therefore, a verification that the separation criteria are met must be performed immediately. The separation criteria are not met if a) the stuck control rod occupies a position adjacent to two "slow" control rods, b) the stuck control rod occupies a position adjacent to one "slow" control rod and the one "slow" control rod is also adjacent to another "slow" control rod, or, c) if the stuck control rod occupies a location adjacent to one "slow" control rod when there is another pair of "slow" control rods adjacent to one another. Adjacent control rods include control rods that are either face or diagonally adjacent. The description of "slow" control rods is provided in LCO 3.1.4, "Control Rod Scram Times." In addition, the associated control rod drive must be disarmed in 2 hours. The allowed Completion Time of 2 hours is acceptable, considering the reactor can still be shut down, assuming no additional control rods fail to insert, and provides a reasonable time to perform the Required Action in an orderly manner. Isolating the control rod from scram prevents damage to the CRDM. The control rod can be isolated from scram and normal insert and withdraw pressure, yet still maintain cooling water to the CRD.

Monitoring of the insertion capability of each withdrawn control rod must also be performed within 24 hours from discovery of Condition A concurrent with THERMAL POWER greater than the low power setpoint (LPSP) of the RWM. ~~SR 3.1.3.2 and~~ SR 3.1.3.3 performs periodic tests of the control rod insertion capability of withdrawn control rods. Testing each withdrawn control rod ensures that a generic problem does not exist. This Completion Time also allows for an exception to the normal "time zero" for beginning the allowed outage time "clock." The Required Action A.3 Completion Time only begins upon discovery of Condition A concurrent with THERMAL POWER greater than the actual LPSP of the RWM, since the notch insertions may not be compatible with the requirements of rod pattern control (LCO 3.1.6) and the RWM (LCO 3.3.2.1). The allowed Completion Time provides a reasonable time to test the control rods, considering the potential for a need to reduce power to perform the tests. To allow continued operation with a withdrawn control rod stuck, an evaluation of adequate SDM is also required within 72 hours. Should a DBA or transient require a shutdown, to preserve the single failure criterion, an additional control rod would have to be assumed to fail to insert when

(continued)

BASES

SURVEILLANCE REQUIREMENTS SR 3.1.3.1 (continued)

determined by the use of OPERABLE position indicators, by moving control rods to a position with an OPERABLE indicator, or by the use of other appropriate methods. The 24 hour Frequency of this SR is based on operating experience related to expected changes in control rod position and the availability of control rod position indications in the control room.

SR 3.1.3.2 and SR 3.1.3.3

NOT USED

SR 3.1.3.3

Control rod insertion capability is demonstrated by inserting each partially or fully withdrawn control rod at least one notch and observing that the control rod moves. The control rod may then be returned to its original position. This ensures the control rod is not stuck and is free to insert on a scram signal. These Surveillances are not required when THERMAL POWER is less than or equal to the actual LPSP of the RWM, since the notch insertions may not be compatible with the requirements of the Banked Position Withdrawal Sequence (BPWS) (LCO 3.1.6) and the RWM (LCO 3.3.2.1). ~~The 7 day Frequency of SR 3.1.3.2 is based on operating experience related to the changes in CRD performance and the ease of performing notch testing for fully withdrawn control rods. Partially withdrawn control rods are tested at a 31 day Frequency, based on the potential power reduction required to allow the control rod movement and considering the large testing sample of SR 3.1.3.2. Furthermore, the~~ 31 day Frequency takes into account operating experience related to changes in CRD performance. At any time, if a control rod is immovable, a determination of that control rod's ability to trip (OPERABILITY) must be made and appropriate action taken.

SR 3.1.3.4

Verifying that the scram time for each control rod to notch position 05 is ≤ 7 seconds provides reasonable assurance that the control rod will insert when required during a DBA or transient, thereby completing its shutdown function. This SR is performed in conjunction with the control rod scram time testing of SR 3.1.4.1, SR 3.1.4.2, SR 3.1.4.3, and SR 3.1.4.4. The LOGIC SYSTEM FUNCTIONAL TEST in

(continued)

BASES

**SURVEILLANCE
REQUIREMENTS**

SR 3.1.3.4 (continued)

LCO 3.3.1.1, "Reactor Protection System (RPS) Instrumentation," and the functional testing of SDV vent and drain valves in LCO 3.1.8, "Scram Discharge Volume (SDV) Vent and Drain Valves," overlap this Surveillance to provide complete testing of the assumed safety function. The associated Frequencies are acceptable, considering the more frequent testing performed to demonstrate other aspects of control rod OPERABILITY and operating experience, which shows scram times do not significantly change over an operating cycle.

SR 3.1.3.5

Coupling verification is performed to ensure the control rod is connected to the CRDM and will perform its intended function when necessary. The Surveillance requires verifying a control rod does not go to the withdrawn overtravel position. The overtravel position feature provides a positive check on the coupling integrity since only an uncoupled CRD can reach the overtravel position. The verification is required to be performed any time a control rod is withdrawn to the "full out" position (notch position 48) or prior to declaring the control rod OPERABLE after work on the control rod or CRD System that could affect coupling. This includes control rods inserted one notch and then returned to the "full out" position during the performance of SR 3.1.3.32. This Frequency is acceptable, considering the low probability that a control rod will become uncoupled when it is not being moved and operating experience related to uncoupling events.

REFERENCES

1. 10 CFR 50, Appendix A GDC 26, GDC 27, GDC 28, and GDC 29.
2. FSAR, Section 4.3.2
3. FSAR, Section 4.6
4. FSAR, Section 15.
5. Final Policy Statement on Technical Specifications Improvements, July 22, 1993 (58 FR 39132).

BASES

ACTIONS

D.1 and D.2 (continued)

maintaining a control rod block. The allowed Completion Time of 1 hour is sufficient to accomplish the Required Action, and takes into account the low probability of an event requiring the SRM occurring during this interval.

E.1 and E.2

With one or more required SRM inoperable in MODE 5, the ability to detect local reactivity changes in the core during refueling is degraded. CORE ALTERATIONS must be immediately suspended and action must be immediately initiated to **fully** insert all insertable control rods in core cells containing one or more fuel assemblies. Suspending CORE ALTERATIONS prevents the two most probable causes of reactivity changes, fuel loading and control rod withdrawal, from occurring. Inserting all insertable control rods ensures that the reactor will be at its minimum reactivity given that fuel is present in the core. Suspension of CORE ALTERATIONS shall not preclude completion of the movement of a component to a safe, conservative position.

Action (once required to be initiated) to insert control rods must continue until all insertable rods in core cells containing one or more fuel assemblies are inserted.

SURVEILLANCE
REQUIREMENTS

The SRs for each SRM Applicable MODE or other specified conditions are found in the SRs column of Table 3.3.1.2-1.

SR 3.3.1.2.1 and SR 3.3.1.2.3

Performance of the CHANNEL CHECK ensures that a gross failure of instrumentation has not occurred. A CHANNEL CHECK is normally a comparison of the parameter indicated on one channel to a similar parameter on another channel. It is based on the assumption that instrument channels monitoring the same parameter should read approximately the same value. Significant deviations between the instrument channels could be an indication of excessive instrument drift in one of the channels or something even more serious. A CHANNEL CHECK will detect gross channel failure; thus, it

(continued)

Attachment 4 to PLA-6330
Regulatory Commitments

List of Regulatory Commitments

The following table identifies the regulatory commitments in this document. Any other statements in this submittal represent intended or planned actions, are provided for informational purposes, and are not considered to be regulatory commitments.

Regulatory Commitments	Due date/event
PL Susquehanna, LLC will establish the Technical Specification Bases for TS B 3.1.3 and TS B 3.3.1.2 consistent with those shown in TSTF-475, Revision 1, "Control Rod Notch-Testing Frequency and SRM Insert Control Rod Action." except for editorial differences included to provide clarity and as a result of not renumbering the SSES Surveillance Requirements.	To be implemented concurrently with implementation of the associated license amendments.