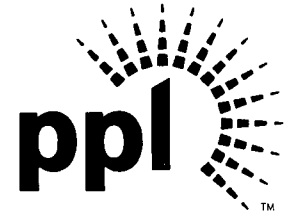


C. J. Gannon
Vice President Nuclear Operations

PPL Susquehanna, LLC
769 Salem Boulevard
Berwick, PA 18603
Tel. 570.542.3050 Fax 570.542.1504
cjgannon@pplweb.com



JUN 08 2007

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

**SUSQUEHANNA STEAM ELECTRIC STATION
PROPOSED AMENDMENT NO. 292 TO LICENSE
NPF-14 AND PROPOSED AMENDMENT NO. 261
TO LICENSE NPF-22; REQUEST FOR ADOPTION
OF TSTF-484, REV. 0, "USE OF TS 3.10.1 FOR SCRAM
TIME TESTING ACTIVITIES" USING THE
CONSOLIDATED LINE ITEM IMPROVEMENT
PROCESS (CLIIP)
PLA-6141**

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

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

The proposed amendment would revise LCO 3.10.1, and the associated Bases, to expand its scope to include provisions for temperature excursions greater than 200 °F as a consequence of inservice leak and hydrostatic testing, and as a consequence of scram time testing initiated in conjunction with an inservice leak or hydrostatic test, while considering operational conditions to be in Mode 4. The changes are consistent with NRC approved Revision 0 to Technical Specification Task Force (TSTF) Improved Standard Technical Specification Change Traveler, TSTF-484, "Use of TS 3.10.1 for Scram Time Testing Activities." The availability of the TS 3.10.1 revision was announced in the *Federal Register* on October 27, 2006 (71 FR 63050) as part of the consolidated line item improvement process (CLIIP).

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

Attachment 1 provides an evaluation of the proposed change. Attachment 2 provides the existing Technical Specifications pages marked-up to show the proposed change.

As001

NRR

Attachment 3 provides the existing Bases pages marked-up to show the proposed change. No regulatory commitments are made in this submittal.

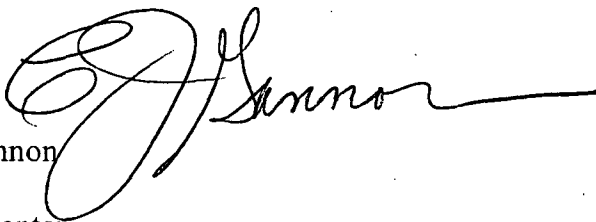
PPL Susquehanna, LLC requests approval of the proposed License Amendment by October 1, 2007 with the amendment being implemented within 30 days following approval.

In accordance with 10 CFR 50.91(b), PPL Susquehanna, LLC is providing the Commonwealth of Pennsylvania with a copy of this proposed License Amendment request.

If you have any questions regarding this submittal, please contact Mr. Cornelius T. Coddington at (610) 774-4019.

I declare under penalty of perjury under the laws of the United States of America that I am authorized by PPL Susquehanna, LLC to make this request and that the foregoing is true and correct.

Executed on: 6/8/2007


C. J. Gannon

Attachments:

- Attachment 1 – Evaluation of the Proposed Change
- 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)

cc: NRC Region I
Mr. A. J. Blamey, NRC Sr. Resident Inspector
Mr. R. V. Guzman, NRC Sr. Project Manager
Mr. R. R. Janati, DEP/BRP

Attachment 1 to PLA-6141

Evaluation of the Proposed Change

- 1.0 Description
- 2.0 Proposed Change
- 3.0 Background
- 4.0 Technical Analysis
- 5.0 Regulatory Safety Analysis
 - 5.1 No Significant Hazards Determination
 - 5.2 Applicable Regulatory Requirements/Criteria
- 6.0 Environmental Consideration
- 7.0 References

EVALUATION OF PROPOSED CHANGE

1.0 DESCRIPTION

The proposed amendments would revise LCO 3.10.1, and the associated Bases, to expand its scope to include provisions for temperature excursions greater than 200°F as a consequence of inservice leak and hydrostatic testing, and as a consequence of scram time testing initiated in conjunction with an inservice leak or hydrostatic test, while considering operational conditions to be in Mode 4. This change is consistent with NRC approved Revision 0 to Technical Specification Task Force (TSTF) Improved Standard Technical Specification Change Traveler, TSTF-484, "Use of TS 3.10.1 for Scram Time Testing Activities." The availability of the TS 3.10.1 revision was announced in the *Federal Register* on October 27, 2006 (71 FR 63050) as part of the consolidated line item improvement process (CLIIP).

2.0 PROPOSED CHANGE

Consistent with the NRC approved Revision 0 of TSTF-484, the proposed TS changes include a revised TS 3.10.1, "Inservice Leak and Hydrostatic Testing Operation." Proposed revisions to the TS Bases are also included in this application. Adoption of the TS Bases associated with TSTF-484, Revision 0 is an integral part of implementing these TS amendments. The changes to the affected TS Bases pages will be incorporated in accordance with the TS Bases Control Program.

This application is being made in accordance with the CLIIP. PPL Susquehanna, LLC is not proposing variations or deviations from the TS changes described in TSTF-484, Revision 0, or the NRC staff's model safety evaluation (SE) published on October 27, 2006 (71 FR 63050) as part of the CLIIP Notice of Availability.

3.0 BACKGROUND

The background for this application is adequately addressed by NRC Notice of Availability published on October 27, 2006 (71 FR 63050).

4.0 TECHNICAL ANALYSIS

PPL Susquehanna, LLC has reviewed the safety evaluation (SE) published on October 27, 2006, as part of the CLIIP Notice of Availability. PPL Susquehanna, LLC has concluded that the technical justifications presented in the SE prepared by the NRC staff are applicable to Susquehanna Steam Electric Station Units 1 and 2 and therefore,

justify these amendments for the incorporation of the proposed changes to the Susquehanna Steam Electric Station Units 1 and 2 Technical Specifications.

5.0 REGULATORY SAFETY ANALYSIS

5.1 No Significant Hazards Consideration

PPL Susquehanna, LLC has reviewed the no significant hazards determination published on August 21, 2006 (71 FR 48561) as part of the CLIIP Notice for Comment. The no significant hazards determination was made available on October 27, 2006 (71 FR 63050) as part of the CLIIP Notice of Availability. PPL Susquehanna, LLC has concluded that the determination presented in the notice is applicable to Susquehanna Steam Electric Station Units 1 and 2 and the determination is hereby incorporated by reference to satisfy the requirements of 10 CFR 50.91(a).

5.2 Applicable Regulatory Requirements/Criteria

A description of the proposed TS change and its relationship to applicable regulatory requirements was provided in the NRC Notice of Availability published on October 27, 2006 (71 FR 63050).

6.0 ENVIRONMENTAL EVALUATION

PPL Susquehanna, LLC has reviewed the environmental evaluation included in the safety evaluation (SE) published on October 27, 2006 (71 FR 63050), as part of the CLIIP Notice of Availability. PPL Susquehanna, LLC has concluded that the NRC staff's findings presented in that evaluation are applicable to Susquehanna Steam Electric Station Units 1 and 2 and the evaluation is hereby incorporated by reference for this application.

7.0 REFERENCES

1. *Federal Register* Notice, Notice of Availability published on October 27, 2006 (71 FR 63050)
2. *Federal Register* Notice, Notice for Comment published on August 21, 2006 (71 FR 48561)
3. TSTF-484 Revision 0, "Use of TS 3.10.1 for Scram Time Testing Activities"

Attachment 2 to PLA-6141
Proposed Technical Specification Changes
Units 1 & 2
(Mark-ups)

3.7	PLANT SYSTEMS	TS/3.7-1
3.7.1	Residual Heat Removal Service Water (RHRSW) System and the Ultimate Heat Sink (UHS)	TS/3.7-1
3.7.2	Emergency Service Water (ESW) System	3.7-4
3.7.3	Control Room Emergency Outside Air Supply (CREOAS) System	TS/3.7-6
3.7.4	Control Room Floor Cooling System	3.7-10
3.7.5	Main Condenser Offgas	3.7-13
3.7.6	Main Turbine Bypass System	TS/3.7-15
3.7.7	Spent Fuel Storage Pool Water Level	3.7-17
3.8	ELECTRICAL POWER SYSTEMS	TS/3.8-1
3.8.1	AC Sources – Operating	TS/3.8-1
3.8.2	AC Sources – Shutdown	TS/3.8-17
3.8.3	Diesel Fuel Oil, Lube Oil, and Starting Air	TS/3.8-20
3.8.4	DC Sources – Operating	3.8-23
3.8.5	DC Sources – Shutdown	3.8-29
3.8.6	Battery Cell Parameters	TS/3.8-32
3.8.7	Distribution Systems – Operating	TS/3.8-37
3.8.8	Distribution Systems – Shutdown	TS/3.8-41
3.9	REFUELING OPERATIONS	3.9-1
3.9.1	Refueling Equipment Interlocks	3.9-1
3.9.2	Refuel Position One-Rod-Out Interlock	3.9-3
3.9.3	Control Rod Position	3.9-5
3.9.4	Control Rod Position Indication	3.9-6
3.9.5	Control Rod OPERABILITY – Refueling	3.9-8
3.9.6	Reactor Pressure Vessel (RPV) Water Level	3.9-9
3.9.7	Residual Heat Removal (RHR) – High Water Level	3.9-10
3.9.8	Residual Heat Removal (RHR) – Low Water Level	3.9-13
3.10	SPECIAL OPERATIONS	TS/3.10-1
3.10.1	Inservice Leak and Hydrostatic Testing Operation	TS/3.10-1
3.10.2	Reactor Mode Switch Interlock Testing	3.10-4
3.10.3	Single Control Rod Withdrawal – Hot Shutdown	3.10-6
3.10.4	Single Control Rod Withdrawal – Cold Shutdown	3.10-9
3.10.5	Single Control Rod Drive (CRD) Removal – Refueling	3.10-13
3.10.6	Multiple Control Rod Withdrawal – Refueling	3.10-16
3.10.7	Control Rod Testing-Operating	3.10-18
3.10.8	SHUTDOWN MARGIN (SDM) Test – Refueling	3.10-20
4.0	DESIGN FEATURES	4.0-1
4.1	Site Location	4.0-1
4.2	Reactor Core	4.0-1
4.3	Fuel Storage	4.0-1

(continued)

3.10 SPECIAL OPERATIONS

3.10.1 Inservice Leak and Hydrostatic Testing Operation

LCO 3.10.1 The average reactor coolant temperature specified in Table 1.1-1 for Mode 4 may be changed to 212°F, and operation considered not to be in MODE 3; and the requirements of LCO 3.4.9, "Residual Heat Removal (RHR) Shutdown Cooling System - Cold Shutdown," may be suspended to allow reactor coolant temperature > 200°F:

- For ~~to allow~~ performance of an inservice leak or hydrostatic test,
- As a consequence of maintaining adequate pressure for an inservice leak or hydrostatic test, or
- As a consequence of maintaining pressure for control rod scram time testing initiated in conjunction with an inservice leak or hydrostatic test,

provided the following LCOs are met:

- a. LCO 3.3.6.2, "Secondary Containment Isolation Instrumentation," Functions 1, 3, 4, 5, 6, 7 and 8 of Table 3.3.6.2-1;
- b. LCO 3.6.4.1, "Secondary Containment";
- c. LCO 3.6.4.2, "Secondary Containment Isolation Valves (SCIVs)"; and
- d. LCO 3.6.4.3, "Standby Gas Treatment (SGT) System."

APPLICABILITY: MODE 4 with average reactor coolant temperature >200°F and ≤ 212°F.

1.0	USE AND APPLICATION	1.1-1
1.1	Definitions	1.1-1
1.2	Logical Connectors	1.2-1
1.3	Completion Times	1.3-1
1.4	Frequency	1.4-1
2.0	SAFETY LIMITS (SLs)	TS/2.0-1
2.1	SLs	TS/2.0-1
2.2	SL Violations	TS /2.0-1
3.0	LIMITING CONDITION FOR OPERATION (LCO) APPLICABILITY	TS/3.0-1
3.0	SURVEILLANCE REQUIREMENT (SR) APPLICABILITY	TS/3.0-4
3.1	REACTIVITY CONTROL SYSTEMS	3.1-1
3.1.1	Shutdown Margin (SDM)	3.1-1
3.1.2	Reactivity Anomalies	3.1-5
3.1.3	Control Rod OPERABILITY	3.1-7
3.1.4	Control Rod Scram Times	TS/3.1-12
3.1.5	Control Rod Scram Accumulators	3.1-15
3.1.6	Rod Pattern Control	3.1-18
3.1.7	Standby Liquid Control (SLC) System	3.1-20
3.1.8	Scram Discharge Volume (SDV) Vent and Drain Valves	TS/3.1-25
3.2	POWER DISTRIBUTION LIMITS	3.2-1
3.2.1	Average Planar Linear Heat Generation Rate (APLHGR)	3.2-1
3.2.2	Minimum Critical Power Ratio (MCPR)	3.2-3
3.2.3	Linear Heat Generation Rate (LHGR)	3.2-5
3.2.4	Average Power Range Monitor (APRM) Gain and Setpoints	3.2-7
3.3	INSTRUMENTATION	3.3-1
3.3.1.1	Reactor Protection System (RPS) Instrumentation	TS/3.3-1
3.3.1.2	Source Range Monitor (SRM) Instrumentation	3.3-10
3.3.1.3	Oscillation Power Range Monitor (OPRM) Instrumentation	TS/3.3-15a
3.3.2.1	Control Rod Block Instrumentation	3.3-16
3.3.2.2	Feedwater – Main Turbine High Water Level Trip Instrumentation	3.3-21
3.3.3.1	Post Accident Monitoring (PAM) Instrumentation	TS/3.3-23
3.3.3.2	Remote Shutdown System	TS/3.3-27
3.3.4.1	End of Cycle Recirculation Pump Trip (EOC-RPT) Instrumentation	3.3-30
3.3.4.2	Anticipated Transient Without Scram Recirculation Pump Trip (ATWS-RPT) Instrumentation	3.3-34
3.3.5.1	Emergency Core Cooling System (ECCS) Instrumentation	TS/3.3-37
3.3.5.2	Reactor Core Isolation Cooling (RCIC) System Instrumentation	3.3-48
3.3.6.1	Primary Containment Isolation Instrumentation	TS/3.3-52
3.3.6.2	Secondary Containment Isolation Instrumentation	3.3-63
3.3.7.1	Control Room Emergency Outside Air Supply (CREOAS) System Instrumentation	3.3-67

(continued)

3.7	PLANT SYSTEMS	TS/3.7-1
3.7.1	Residual Heat Removal Service Water (RHRSW) System and the Ultimate Heat Sink (UHS)	TS/3.7-1
3.7.2	Emergency Service Water (ESW) System	3.7-4
3.7.3	Control Room Emergency Outside Air Supply (CREOAS) System	TS/3.7-6
3.7.4	Control Room Floor Cooling System	3.7-10
3.7.5	Main Condenser Offgas	3.7-13
3.7.6	Main Turbine Bypass System	TS/3.7-15
3.7.7	Spent Fuel Storage Pool Water Level	3.7-17
3.8	ELECTRICAL POWER SYSTEMS	TS/3.8-1
3.8.1	AC Sources – Operating	TS/3.8-1
3.8.2	AC Sources – Shutdown	TS/3.8-19
3.8.3	Diesel Fuel Oil, Lube Oil, and Starting Air	TS/3.8-23
3.8.4	DC Sources – Operating	3.8-26
3.8.5	DC Sources – Shutdown	3.8-34
3.8.6	Battery Cell Parameters	TS/3.8-39
3.8.7	Distribution Systems – Operating	TS/3.8-44
3.8.8	Distribution Systems – Shutdown	3.8-50
3.9	REFUELING OPERATIONS	3.9-1
3.9.1	Refueling Equipment Interlocks	3.9-1
3.9.2	Refuel Position One-Rod-Out Interlock	3.9-3
3.9.3	Control Rod Position	3.9-5
3.9.4	Control Rod Position Indication	3.9-6
3.9.5	Control Rod OPERABILITY – Refueling	3.9-8
3.9.6	Reactor Pressure Vessel (RPV) Water Level	3.9-9
3.9.7	Residual Heat Removal (RHR) – High Water Level	3.9-10
3.9.8	Residual Heat Removal (RHR) – Low Water Level	3.9-13
3.10	SPECIAL OPERATIONS	TS/3.10-1
3.10.1	Inservice Leak and Hydrostatic Testing Operation	TS/3.10-1
3.10.2	Reactor Mode Switch Interlock Testing	3.10-4
3.10.3	Single Control Rod Withdrawal – Hot Shutdown	3.10-6
3.10.4	Single Control Rod Withdrawal – Cold Shutdown	3.10-9
3.10.5	Single Control Rod Drive (CRD) Removal – Refueling	3.10-13
3.10.6	Multiple Control Rod Withdrawal – Refueling	3.10-16
3.10.7	Control Rod Testing – Operating	3.10-18
3.10.8	SHUTDOWN MARGIN (SDM) Test – Refueling	3.10-20
4.0	DESIGN FEATURES	TS/4.0-1
4.1	Site Location	TS/4.0-1
4.2	Reactor Core	TS/4.0-1
4.3	Fuel Storage	TS/4.0-1

(continued)

3.10 SPECIAL OPERATIONS

3.10.1 Inservice Leak and Hydrostatic Testing Operation

LCO 3.10.1 The average reactor coolant temperature specified in Table 1.1-1 for Mode 4 may be changed to 212°F, and operation considered not to be in MODE 3; and the requirements of LCO 3.4.9, "Residual Heat Removal (RHR) Shutdown Cooling System - Cold Shutdown," may be suspended to allow reactor coolant temperature > 200°F:

- For, ~~to allow~~ performance of an inservice leak or hydrostatic test,
- As a consequence of maintaining adequate pressure for an inservice leak or hydrostatic test, or
- As a consequence of maintaining adequate pressure for control rod scram time testing initiated in conjunction with an inservice leak or hydrostatic test,

provided the following LCOs are met:

- a. LCO 3.3.6.2, "Secondary Containment Isolation Instrumentation," Functions 1, 3, 4, 5, 6, 7 and 8 of Table 3.3.6.2-1;
- b. LCO 3.6.4.1, "Secondary Containment";
- c. LCO 3.6.4.2, "Secondary Containment Isolation Valves (SCIVs)"; and
- d. LCO 3.6.4.3, "Standby Gas Treatment (SGT) System."

APPLICABILITY: MODE 4 with average reactor coolant temperature >200°F and ≤ 212°F.

Attachment 3 to PLA-6141
Proposed Technical Specification Bases Changes
Units 1 & 2
(Mark-ups – For Information Only)

B 3.10 SPECIAL OPERATIONS

B 3.10.1 Inservice Leak and Hydrostatic Testing Operation

BASES

BACKGROUND

The purpose of this Special Operations LCO is to allow certain reactor coolant pressure tests to be performed in MODE 4 with temperatures as high as 212°F when operational conditions or the metallurgical characteristics of the reactor pressure vessel (RPV) require the pressure testing at temperatures > 200°F (normally corresponding to MODE 3) or to allow completing these reactor coolant pressure tests when the initial conditions do not require temperatures > 200°F. Furthermore, the purpose is to allow continued performance of control rod scram time testing required by SR 3.1.4.1, SR 3.1.4.3 or SR 3.1.4.4 if reactor coolant temperatures exceed 200°F when the control rod scram time testing is initiated in conjunction with an inservice leak or hydrostatic test. These control rod scram time tests would be performed in accordance with LCO 3.10.4, "Single Control Rod Withdrawal – Cold Shutdown," during MODE 4 operation.

Inservice hydrostatic testing and system leakage pressure tests required by Section XI of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (Ref. 1) are performed prior to the reactor going critical after a refueling outage. Recirculation pump operation and a water solid RPV (except for an air bubble for pressure control) are used to achieve the ~~necessary~~ necessary temperatures and pressures required for these tests. The minimum temperatures (at the required pressures) allowed for these tests are determined from the RPV pressure and temperature (P/T) limits required by LCO 3.4.10, "Reactor Coolant System (RCS) Pressure and Temperature (P/T) Limits." These limits are conservatively based on the fracture toughness of the reactor vessel, taking into account anticipated vessel neutron fluence.

With increased reactor vessel fluence over time, the minimum allowable vessel temperature increases at a given pressure. Periodic updates to the RPV P/T limit curves are performed as necessary, based upon the results of analyses of irradiated surveillance specimens removed from the vessel. Hydrostatic and leak testing may eventually be required with minimum reactor coolant temperatures > 200°F. However, even with required minimum reactor

(continued)

BASES

BACKGROUND (continued)

coolant temperatures < 200°F, maintaining RCS temperatures within a small band during the test can be impractical. Removal of heat addition from recirculation pump operation and reactor core decay heat is coarsely controlled by control rod drive hydraulic system flow and reactor water cleanup system non-regenerative heat exchanger operation. Test conditions are focused on maintaining a steady state pressure, and tightly limited temperature control poses an unnecessary burden on the operator and may not be achievable in certain instances.

The hydrostatic and RCS system leakage tests requires increasing pressure to 1035 (+10, -0) psig. ~~The minimum allowable vessel temperature according to LCO 3.4.10 is approximately 110°F for Unit 1. The hydrostatic test pressure does not exceed the Safety Limit of 1375 psig.~~ Scram time testing required by SR 3.1.4.1 and SR 3.1.4.4 requires reactor pressures > 800 psig.

Other testing may be performed in conjunction with the allowances for inservice leak or hydrostatic tests and control rod scram time tests.

APPLICABLE SAFETY ANALYSES

Allowing the reactor to be considered in MODE 4 ~~during hydrostatic or leak testing~~, when the reactor coolant temperature is > 200°F, ~~but ≤ 242°F~~ during, or as a consequence of hydrostatic or leak testing, or as a consequence of control rod scram time testing initiated in conjunction with an inservice leak or hydrostatic test, effectively provides an exception to MODE 3 requirements, including OPERABILITY of primary containment and the full complement of redundant Emergency Core Cooling Systems. Since the ~~hydrostatic or leak~~ tests are performed nearly water solid, at low decay heat values, and near MODE 4 conditions, the stored energy in the reactor core will be very low. Under these conditions, the potential for failed fuel and a subsequent increase in coolant activity above the LCO 3.4.7, "RCS Specific Activity," limits are minimized. In addition, the secondary containment will be OPERABLE, in accordance with this Special Operations LCO, and will be capable of handling any airborne radioactivity or steam leaks that could occur during the performance of hydrostatic or leak testing. The required pressure testing conditions provide adequate assurance that the consequences of a steam leak will be conservatively bounded by the consequences of the postulated main steam line break outside of primary containment

(continued)

described in Reference 2. Therefore, these requirements will conservatively limit radiation releases to the environment.

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

In the event of a large primary system leak, the reactor vessel would rapidly depressurize, allowing the low pressure core cooling systems to operate. The capability of the low pressure coolant injection and core spray subsystems, as required in MODE 4 by LCO 3.5.2, "ECCS-Shutdown," would be more than adequate to keep the core flooded under this low decay heat load condition. Small system leaks would be detected by leakage inspections before significant inventory loss occurred.

For the purposes of this test, the protection provided by normally required MODE 4 applicable LCOs, in addition to the secondary containment requirements required to be met by this Special Operations LCO, will ensure acceptable consequences during normal hydrostatic test conditions and during postulated accident conditions.

As described in LCO 3.0.7, compliance with Special Operations LCOs is optional, and therefore, no criteria of the NRC Policy Statement apply. Special Operations LCOs provide flexibility to perform certain operations by appropriately modifying requirements of other LCOs. A discussion of the criteria satisfied for the other LCOs is provided in their respective Bases.

LCO

As described in LCO 3.0.7, compliance with this Special Operations LCO is optional. Operation at reactor coolant temperatures $> 200^{\circ}\text{F}$ but $\leq 212^{\circ}\text{F}$ can be in accordance with Table 1.1-1 for MODE 3 operation without meeting this Special Operations LCO or its ACTIONS. This option may be required due to plant conditions or P/T limits, however, which require testing at temperatures $> 200^{\circ}\text{F}$, while the ASME inservice test itself requires the safety/relief valves to be gagged, preventing their OPERABILITY. Additionally, even with required minimum reactor coolant temperatures $< 200^{\circ}\text{F}$, RCS temperatures may drift above 200°F during the performance of inservice leak and hydrostatic testing or during subsequent control rod scram time testing, which is typically performed in conjunction with inservice leak and hydrostatic testing. While this Special Operations LCO is provided for inservice leak and hydrostatic testing, and for scram time testing initiated in conjunction with an inservice leak or hydrostatic test, parallel performance of other tests and inspections is not precluded.

(continued)

BASES

LCO (continued)

If it is desired to perform these tests while complying with this Special Operations LCO, then the MODE 4 applicable LCOs and specified LCOs must be met. This Special Operations LCO allows changing Table 1.1-1 temperature limits for MODE 4 to " ≤ 212 " and suspending the requirements of LCO 3.4.9, "Residual Heat Removal (RHR) Shutdown Cooling System-Cold Shutdown." The additional requirements for secondary containment LCOs to be met will provide sufficient protection for operations at reactor coolant temperatures $> 200^{\circ}\text{F}$ for the purpose of performing ~~either an inservice leak or hydrostatic test, and for control rod scram time testing initiated in conjunction with an inservice leak or hydrostatic test.~~

This LCO allows primary containment to be open for frequent unobstructed access to perform inspections, and for outage activities on various systems to continue consistent with the MODE 4 applicable requirements ~~that are in effect immediately prior to and immediately after this operation.~~

APPLICABILITY

The MODE 4 requirements may only be modified for the performance of, or as a consequence of, inservice leak or hydrostatic tests, or as a consequence of control rod scram time testing initiated in conjunction with an inservice leak or hydrostatic test, so that these operations can be considered as in MODE 4, even though the reactor coolant temperature is $> 200^{\circ}\text{F}$. The additional requirement for secondary containment OPERABILITY according to the imposed MODE 3 requirements provides conservatism in the response of the unit to any event that may occur. Operations in all other MODES are unaffected by this LCO.

ACTIONS

A Note has been provided to modify the ACTIONS related to inservice leak and hydrostatic testing operation. Section 1.3, Completion Times, specifies that once a Condition has been entered, subsequent divisions, subsystems, components, or variables expressed in the Condition discovered to be inoperable or not within limits, will not result in separate entry into the Condition. Section 1.3 also specifies that Required Actions of the Condition continue to apply for each additional failure, with Completion Times based on initial entry into the Condition. However, the Required Actions for each requirement of the LCO not met provide appropriate compensatory measures for

(continued)

BASES

ACTIONS (continued)

separate requirements that are not met. As such, a Note has been provided that allows separate Condition entry for each requirement of the LCO.

A.1

If an LCO specified in LCO 3.10.1 is not met, the ACTIONS applicable to the stated requirements are entered immediately and complied with. Required Action A.1 has been modified by a Note that clarifies the intent of another LCO's Required Action to be in MODE 4 includes reducing the average reactor coolant temperature to $\leq 200^{\circ}\text{F}$.

A.2.1 and A.2.2

Required Action A.2.1 and Required Action A.2.2 are alternate Required Actions that can be taken instead of Required Action A.1 to restore compliance with the normal MODE 4 requirements, and thereby exit this Special Operation LCO's Applicability. Activities that could further increase reactor coolant temperature or pressure are suspended immediately, in accordance with Required Action A.2.1, and the reactor coolant temperature is reduced to establish normal MODE 4 requirements. The allowed Completion Time of 24 hours for Required Action A.2.2 is based on engineering judgment and provides sufficient time to reduce the average reactor coolant temperature from the highest expected value to $\leq 200^{\circ}\text{F}$ with normal cooldown procedures. The Completion Time is also consistent with the time provided in LCO 3.0.3 to reach MODE 4 from MODE 3.

SURVEILLANCE REQUIREMENTS

SR 3.10.1.1

The LCOs made applicable are required to have their Surveillances met to establish that this LCO is being met. A discussion of the applicable SRs is provided in their respective Bases.

REFERENCES

1. American Society of Mechanical Engineers, Boiler and Pressure Vessel Code, Section XI.
 2. FSAR, Section 15.6.4
-

B 3.10 SPECIAL OPERATIONS

B 3.10.1 Inservice Leak and Hydrostatic Testing Operation

BASES

BACKGROUND

The purpose of this Special Operations LCO is to allow certain reactor coolant pressure tests to be performed in MODE 4 with temperatures as high as 212°F when operational conditions or the metallurgical characteristics of the reactor pressure vessel (RPV) require the pressure testing at temperatures > 200°F (normally corresponding to MODE 3) or to allow completing these reactor coolant pressure tests when the initial conditions do not require temperatures > 200°F. Furthermore, the purpose is to allow continued performance of control rod scram time testing required by SR 3.1.4.1 SR 3.1.4.1 or SR 3.1.4.4 if reactor coolant temperatures exceed 200°F when the control rod scram time testing is initiated in conjunction with an inservice leak or hydrostatic test. These control rod scram time tests would be performed in accordance with LCO 3.10.4, "Single Control Rod Withdrawal – Cold Shutdown," during MODE 4 operation.

Inservice hydrostatic testing and system leakage pressure tests required by Section XI of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (Ref. 1) are performed prior to the reactor going critical after a refueling outage. Recirculation pump operation and a water solid RPV (except for an air bubble for pressure control) are used to achieve the necessary ~~necessary~~ temperatures and pressures required for these tests. The minimum temperatures (at the required pressures) allowed for these tests are determined from the RPV pressure and temperature (P/T) limits required by LCO 3.4.10, "Reactor Coolant System (RCS) Pressure and Temperature (P/T) Limits." These limits are conservatively based on the fracture toughness of the reactor vessel, taking into account anticipated vessel neutron fluence.

With increased reactor vessel fluence over time, the minimum allowable vessel temperature increases at a given pressure. Periodic updates to the RPV P/T limit curves are performed as necessary, based upon the results of analyses of irradiated surveillance specimens removed from the vessel. Hydrostatic and leak testing may eventually be required with minimum reactor coolant temperatures > 200°F. However, even with required minimum reactor coolant temperatures < 200°F, maintaining RCS temperatures within a small band during the test can be impractical. Removal of heat addition from recirculation pump operation and reactor core decay

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BASES

BACKGROUND (continued)

heat is coarsely controlled by control rod drive hydraulic system flow and reactor water cleanup system non-regenerative heat exchanger operation. Test conditions are focused on maintaining a steady state pressure, and tightly limited temperature control poses an unnecessary burden on the operator and may not be achievable in certain instances.

The hydrostatic and RCS system leakage tests requires increasing pressure to 1035 (+10, -0) psig. ~~The minimum allowable vessel temperature according to LCO 3.4.10 is 100°F for Unit 2. The hydrostatic test pressure does not exceed the Safety Limit of 1375 psig.~~ Scram time testing required by SR 3.1.4.1 and SR 3.1.4.4 requires reactor pressures > 800 psig.

Other testing may be performed in conjunction with the allowances for inservice leak or hydrostatic tests and control rod scram time tests.

APPLICABLE SAFETY ANALYSES

Allowing the reactor to be considered in MODE 4 ~~during hydrostatic or leak testing~~, when the reactor coolant temperature is > 200°F but ≤ 212°F, during, or as a consequence of hydrostatic or leak testing, or as a consequence of control rod scram time testing initiated in conjunction with an inservice leak or hydrostatic test, effectively provides an exception to MODE 3 requirements, including OPERABILITY of primary containment and the full complement of redundant Emergency Core Cooling Systems. Since the ~~hydrostatic or leak~~ tests are performed nearly water solid, at low decay heat values, and near MODE 4 conditions, the stored energy in the reactor core will be very low. Under these conditions, the potential for failed fuel and a subsequent increase in coolant activity above the LCO 3.4.7, "RCS Specific Activity," limits are minimized. In addition, the secondary containment will be OPERABLE, in accordance with this Special Operations LCO, and will be capable of handling any airborne radioactivity or steam leaks that could occur during the performance of hydrostatic or leak testing. The required pressure testing conditions provide adequate assurance that the consequences of a steam leak will be conservatively bounded by the consequences of the postulated main steam line break outside of primary containment described in Reference 2. Therefore, these requirements will conservatively limit radiation releases to the environment.

In the event of a large primary system leak, the reactor vessel would rapidly depressurize, allowing the low pressure core cooling systems to operate. The capability of the low pressure coolant injection and core spray subsystems, as required in MODE 4 by LCO 3.5.2,

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"ECCS-Shutdown," would be more than adequate to keep the core flooded under this low decay heat load condition. Small system leaks would be detected by leakage inspections before significant inventory loss occurred.

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BASES

APPLICABLE SAFETY ANALYSES (continued)

For the purposes of this test, the protection provided by normally required MODE 4 applicable LCOs, in addition to the secondary containment requirements required to be met by this Special Operations LCO, will ensure acceptable consequences during normal hydrostatic test conditions and during postulated accident conditions.

As described in LCO 3.0.7, compliance with Special Operations LCOs is optional, and therefore, no criteria of the NRC Policy Statement apply. Special Operations LCOs provide flexibility to perform certain operations by appropriately modifying requirements of other LCOs. A discussion of the criteria satisfied for the other LCOs is provided in their respective Bases.

LCO

As described in LCO 3.0.7, compliance with this Special Operations LCO is optional. Operation at reactor coolant temperatures $> 200^{\circ}\text{F}$ but $\leq 212^{\circ}\text{F}$ can be in accordance with Table 1.1-1 for MODE 3 operation without meeting this Special Operations LCO or its ACTIONS. This option may be required due to plant conditions or P/T limits, however, which require testing at temperatures $> 200^{\circ}\text{F}$, while the ASME inservice test itself requires the safety/relief valves to be gagged, preventing their OPERABILITY. Additionally, even with required minimum reactor coolant temperatures $< 200^{\circ}\text{F}$, RCS temperatures may drift above 200°F during the performance of inservice leak and hydrostatic testing or during subsequent control rod scram time testing, which is typically performed in conjunction with inservice leak and hydrostatic testing. While this Special Operations LCO is provided for inservice leak and hydrostatic testing, and for scram time testing initiated in conjunction with an inservice leak or hydrostatic test, parallel performance of other tests and inspections is not precluded.

If it is desired to perform these tests while complying with this Special Operations LCO, then the MODE 4 applicable LCOs and specified LCOs must be met. This Special Operations LCO allows changing Table 1.1-1 temperature limits for MODE 4 to " ≤ 212 " and suspending the requirements of LCO 3.4.9, "Residual Heat Removal (RHR) Shutdown Cooling System-Cold Shutdown." The additional requirements for secondary containment LCOs to be met will provide sufficient protection for operations at reactor coolant temperatures $> 200^{\circ}\text{F}$ for the purpose of performing either an inservice leak or hydrostatic test, and for control rod scram time testing initiated in conjunction with an inservice leak or hydrostatic test.

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BASES

LCO
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This LCO allows primary containment to be open for frequent unobstructed access to perform inspections, and for outage activities on various systems to continue consistent with the MODE 4 applicable requirements ~~that are in effect immediately prior to and immediately after this operation.~~

APPLICABILITY

The MODE 4 requirements may only be modified for the performance of, or as a consequence of inservice leak or hydrostatic tests, or as a consequence of control rod scram time testing initiated in conjunction with an inservice leak or hydrostatic test, so that these operations can be considered as in MODE 4, even though the reactor coolant temperature is $> 200^{\circ}\text{F}$. The additional requirement for secondary containment OPERABILITY according to the imposed MODE 3 requirements provides conservatism in the response of the unit to any event that may occur. Operations in all other MODES are unaffected by this LCO.

ACTIONS

A Note has been provided to modify the ACTIONS related to inservice leak and hydrostatic testing operation. Section 1.3, Completion Times, specifies that once a Condition has been entered, subsequent divisions, subsystems, components, or variables expressed in the Condition discovered to be inoperable or not within limits, will not result in separate entry into the Condition. Section 1.3 also specifies that Required Actions of the Condition continue to apply for each additional failure, with Completion Times based on initial entry into the Condition. However, the Required Actions for each requirement of the LCO not met provide appropriate compensatory measures for separate requirements that are not met. As such, a Note has been provided that allows separate Condition entry for each requirement of the LCO.

A.1

If an LCO specified in LCO 3.10.1 is not met, the ACTIONS applicable to the stated requirements are entered immediately and complied with. Required Action A.1 has been modified by a Note that clarifies the intent of another LCO's Required Action to be in MODE 4 includes reducing the average reactor coolant temperature to $\leq 200^{\circ}\text{F}$.

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BASES

ACTIONS
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A.2.1 and A.2.2

Required Action A.2.1 and Required Action A.2.2 are alternate Required Actions that can be taken instead of Required Action A.1 to restore compliance with the normal MODE 4 requirements, and thereby exit this Special Operation LCO's Applicability. Activities that could further increase reactor coolant temperature or pressure are suspended immediately, in accordance with Required Action A.2.1, and the reactor coolant temperature is reduced to establish normal MODE 4 requirements. The allowed Completion Time of 24 hours for Required Action A.2.2 is based on engineering judgment and provides sufficient time to reduce the average reactor coolant temperature from the highest expected value to $\leq 200^{\circ}\text{F}$ with normal cooldown procedures. The Completion Time is also consistent with the time provided in LCO 3.0.3 to reach MODE 4 from MODE 3.

SURVEILLANCE
REQUIREMENTS

SR 3.10.1.1

The LCOs made applicable are required to have their Surveillances met to establish that this LCO is being met. A discussion of the applicable SRs is provided in their respective Bases.

REFERENCES

1. American Society of Mechanical Engineers, Boiler and Pressure Vessel Code, Section XI.
 2. FSAR, Section 15.6.4
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