

November 29, 2007

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Mail Stop P1-137
Washington, DC 20555-0001

ULNRC-05459

Ladies and Gentlemen:



**DOCKET NUMBER 50-483
CALLAWAY PLANT
UNION ELECTRIC CO.
APPLICATION FOR AMENDMENT TO
FACILITY OPERATING LICENSE NPF-30
ADOPTION OF INDUSTRY TRAVELERS TSTF-247-A AND TSTF-352-A**

AmerenUE herewith transmits an application for amendment to Facility Operating License Number NPF-30 for the Callaway Plant.

The proposed changes adopt NRC-approved travelers TSTF-247-A and TSTF-352-A. These changes will extend the Completion Times for default Conditions in TS 3.4.10 (Required Action B.2) and TS 3.4.12 (Required Action G.1) and allow separate Condition entry for PORV block valves in TS 3.4.11.

The proposed change to TS 3.4.10, "Pressurizer Safety Valves," will revise the Completion Time of Required Action B.2 to be in MODE 4 below the COMS arming temperature (275°F) from 12 hours to 24 hours in accordance with NRC-approved TSTF-352-A.

The proposed changes to TS 3.4.11, "Pressurizer PORVs," will revise the ACTIONS Note to allow separate Condition entry for each pressurizer PORV block valve. In addition, Required Action F.1 in TS 3.4.11 to place associated PORVs in manual control in the case of more than one inoperable block valve would be deleted since it is redundant and repetitive to Required Action C.1 with separate Condition entry considered for the block valves. These changes are in accordance with NRC-approved TSTF-247-A.

The proposed change to TS 3.4.12, "Cold Overpressure Mitigation System (COMS)," will revise the Completion Time of Required Action G.1 to depressurize and vent the RCS from 8 hours to 12 hours in accordance with NRC-approved TSTF-352-A.

A001
NRR

Attachments 1 through 5 provide the Evaluation, Markup of Technical Specifications, Retyped Technical Specifications, Proposed Technical Specification Bases changes, and copies of TSTF-247-A and TSTF-352-A, respectively, in support of this amendment request. Attachments 4 and 5 are provided for information only. Final Bases changes will be processed under our program for updates per TS 5.5.14, "Technical Specifications Bases Control Program," at the time this amendment is implemented. No other commitments are contained in this amendment application.

It has been determined that this amendment application does not involve a significant hazard consideration as determined per 10 CFR 50.92. Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of this amendment.

The Callaway Onsite Review Committee and a subcommittee of the Nuclear Safety Review Board have reviewed and approved the attached licensing evaluations and have approved the submittal of this amendment application.

AmerenUE requests approval of this LAR prior to September 1, 2008. AmerenUE further requests that the license amendment be made effective upon NRC issuance, to be implemented within 90 days from the date of issuance.

In accordance with 10 CFR 50.91, a copy of this amendment application is being provided to the designated Missouri State official. If you have any questions on this amendment application, please contact me at (573) 676-8129, or Mr. Scott Maglio at (573) 676-8719.

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

Very truly yours,

Executed on: 11-29-07



Luke H. Graessle
Manager, Regulatory Affairs

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GGY/nls
Attachments

- 1 - Evaluation
- 2 - Markup of Technical Specifications
- 3 - Retyped Technical Specifications
- 4 - Proposed Technical Specification Bases Changes (for information only)
- 5 - Copies of Approved Travelers TSTF-247-A and TSTF-352-A

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EVALUATION

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EVALUATION

1.0 DESCRIPTION

The proposed changes adopt NRC-approved travelers TSTF-247-A and TSTF-352-A. These changes will extend the Completion Times for default Conditions in TS 3.4.10 (Required Action B.2) and TS 3.4.12 (Required Action G.1) and allow separate Condition entry for PORV block valves in TS 3.4.11.

2.0 PROPOSED CHANGES

The proposed change to TS 3.4.10, "Pressurizer Safety Valves," will revise the Completion Time of Required Action B.2 to be in MODE 4 below the COMS arming temperature (275°F) from 12 hours to 24 hours in accordance with NRC-approved TSTF-352-A.

The proposed changes to TS 3.4.11, "Pressurizer PORVs," will revise the ACTIONS Note to allow separate Condition entry for each pressurizer PORV block valve. In addition, Required Action F.1 in TS 3.4.11 to place associated PORVs in manual control in the case of more than one inoperable block valve would be deleted since it is redundant and repetitive to Required Action C.1 with separate Condition entry considered for the block valves. These changes are in accordance with NRC-approved TSTF-247-A.

The proposed change to TS 3.4.12, "Cold Overpressure Mitigation System (COMS)," will revise the Completion Time of Required Action G.1 to depressurize and vent the RCS from 8 hours to 12 hours in accordance with NRC-approved TSTF-352-A. This change will allow 12 hours to depressurize and vent the RCS when the RCS temperature is less than the COMS arming temperature (LCO Applicability begins at this arming temperature of 275°F) and two required relief valves are inoperable OR the Required Action and associated Completion Times of Conditions A, B, D, E, or F are not met OR COMS is inoperable for any other reason than Conditions A through F.

3.0 BACKGROUND

The pressurizer safety valves provide, in conjunction with the Reactor Trip System, overpressure protection for the reactor coolant system (RCS). The pressurizer safety valves are designed to prevent the system pressure from exceeding the RCS Safety Limit (SL), 2735 psig, which is 110% of the design pressure.

Overpressure protection is required in MODES 1, 2, 3, 4, 5, and 6 with the reactor vessel head on. In MODE 4 with one or more RCS cold leg temperatures $\leq 275^\circ\text{F}$, MODE 5 and MODE 6 with the reactor vessel head on, overpressure protection is provided by operating procedures and by meeting the requirements of TS 3.4.12.

The pressurizer safety valves are part of the primary success path and mitigate the effects of postulated accidents. Operability of the safety valves ensures that the RCS pressure will be limited to 110% of design pressure.

The pressurizer is equipped with pressurizer safety valves and PORVs for pressure relief. The PORVs are controlled to open when the pressurizer pressure increases and close when the pressurizer pressure decreases. The PORVs may also be manually operated from the control room. Block valves, which are normally open, are located between the pressurizer and the PORVs. The block valves are used to isolate the PORVs in case of excessive seat leakage or a stuck open PORV. Block valve closure is accomplished manually using controls in the control room. A stuck open PORV is, in effect, a small break loss of coolant accident (LOCA). As such, block valve closure terminates the RCS depressurization and coolant inventory loss.

The COMS controls RCS pressure at low temperatures so the integrity of the reactor coolant pressure boundary (RCPB) is not compromised by violating the pressure and temperature (P/T) limits of 10 CFR 50, Appendix G. The reactor vessel is the limiting RCPB component for demonstrating such protection. The reactor vessel material is less tough at low temperatures than at normal operating temperature. As the vessel neutron exposure accumulates, the material toughness decreases and becomes less resistant to pressure stress at low temperatures. RCS pressure, therefore, is maintained low at low temperatures and is increased only as temperature is increased. The potential for vessel overpressurization is most acute when the RCS is water solid, occurring only while shutdown; a pressure fluctuation can occur more quickly than an operator can react to relieve the condition. TS 3.4.12 provides RCS overpressure protection by having a minimum coolant input capability and having adequate pressure relief capacity. The pressure relief capacity requires either two redundant RCS relief valves or a depressurized RCS and an RCS vent of sufficient size. One RCS relief valve or the open RCS vent is the overpressure protection device that acts to terminate an increasing pressure event.

The COMS for pressure relief consists of two PORVs with reduced lift settings, or two residual heat removal (RHR) suction relief valves, or one PORV and one RHR suction relief valve, or a depressurized RCS and an RCS vent of sufficient size.

4.0 TECHNICAL ANALYSIS

Changes to TS 3.4.10 and TS 3.4.12

The changes to the Completion Times of TS 3.4.10 Required Action B.2 and TS 3.4.12 Required Action G.1 are taken from NRC-approved TSTF-352-A (see Attachment 5). The STS allows 12 hours to transition from MODE 1 normal operating full power condition to MODE 4 (< 350°F) during a required shutdown. However, the above Required Actions direct entry into plant conditions below MODE 4; therefore, additional

time is requested to perform the actions in a safe and controlled manner. The requested Completion Times are taken from TSTF-352-A.

Required Action B.2 of TS 3.4.10 requires the plant to be in MODE 4 and cooled down below the COMS arming temperature ($\leq 275^{\circ}\text{F}$) within 12 hours. Since the COMS arming temperature is below the MODE 4 entry temperature (350°F), additional time should be provided beyond the standard 12 hours allowed to reach MODE 4.

Required Action G.1 of TS 3.4.12 requires the plant to depressurize the RCS and establish a vent ≥ 2.0 square inches within 8 hours. The B&W STS NUREG-1430 allows 12 hours for this same Completion Time. The proposed change will extend the 8-hour Completion Time to 12 hours. Eight hours is insufficient time to plan a MODE change, cool the plant following the plant cooldown rate limits, plan and execute the maintenance activity of opening a vent, and cool the RCS sufficiently to safely open a vent.

Depending on the plant status when Condition G is entered, a MODE reduction, with its associated pre-planning, may be required. A plant cooldown would also be required with cooldown limits that have to be met. The maintenance activity of venting the RCS must be planned and executed. The additional time (4 hours) added to the Completion Time will maintain plant safety by allowing the operators to plan the shutdown and prevent challenges to plant systems which may initiate an overpressure event which the shutdown intends to prevent. Further, it is unlikely that the current 8 hour Completion Time can be met without water solid plant operation which is inherently riskier than maintaining a bubble in the pressurizer until a vent path can be established. The 12 hours allowed by NUREG-1430 is more appropriate.

Corresponding changes to the Bases have also been made. The above changes from TSTF-352-A, Revision 1, were approved by the NRC on April 13, 2000. Changes to NUREG-1431 STS 3.7.4 and STS 3.7.6 in TSTF-352-A are not applicable since the Callaway TSs don't rely on the steam generators for heat removal in MODE 4; those changes are not being adopted in this amendment application.

Changes to TS 3.4.11

The current ACTIONS Note in TS 3.4.11 allows separate condition entry for each PORV and the Conditions and Required Actions provide appropriate compensatory measures for separate Condition entry for each PORV. The Conditions and Required Actions in TS 3.4.11 also provide appropriate compensatory actions for separate Condition entry for each block valve. Therefore, the ACTIONS Note will be modified to allow separate condition entry for each block valve. This change is administrative in nature since the ACTIONS Note revision recognizes the existing LCO Conditions and Required Actions.

Corresponding changes to the Bases have also been made. This change is consistent with NRC-approved TSTF-247-A, Revision 0, as it applies to a plant like Callaway with two pressurizer PORVs and two pressurizer PORV block valves. The deletion of Required Action F.1 removes an unnecessary, redundant requirement since separate Condition

entry for each block valve means that Required Action C.1 would apply to each inoperable block valve at the time of Condition entry and would require its corresponding PORV be placed in manual control. The remaining changes to TS 3.4.11 Conditions C and F in TSTF-247-A apply to plants with 3 PORVs and 3 block valves. These changes do not apply to Callaway and are not adopted. NRC approved TSTF-247, Revision 0, on September 24, 1998.

5.0 REGULATORY SAFETY ANALYSIS

This section addresses the standards of 10 CFR 50.92 as well as the applicable regulatory requirements and acceptance criteria.

The proposed changes adopt NRC-approved travelers TSTF-247-A and TSTF-352-A. These changes will extend the Completion Times for default Conditions in TS 3.4.10 (Required Action B.2) and TS 3.4.12 (Required Action G.1) and allow separate Condition entry for PORV block valves in TS 3.4.11.

5.1 No Significant Hazards Consideration (NSHC)

AmerenUE has evaluated whether or not a significant hazards consideration is involved with the proposed amendment by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," Part 50.92(c), as discussed below:

1. Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No

Overall protection system performance will remain within the bounds of the previously performed accident analyses since there are no design changes. All design, material, and construction standards that were applicable prior to this amendment request will be maintained. There will be no changes to the design and operating temperature and pressure limits placed on the reactor coolant system.

The proposed changes will not adversely affect accident initiators or precursors nor alter the design assumptions, conditions, and configuration of the facility or the manner in which the plant is operated and maintained. The proposed changes will not alter or prevent the ability of structures, systems, and components (SSCs) from performing their intended functions to mitigate the consequences of an initiating event within the assumed acceptance limits.

The proposed changes do not physically alter safety-related systems nor affect the way in which safety-related systems perform their functions.

All accident analysis acceptance criteria will continue to be met with the proposed changes. The proposed changes will not affect the source term, containment isolation, or radiological release assumptions used in evaluating the radiological consequences of an accident previously evaluated. The proposed changes will not alter any assumptions or change any mitigation actions in the radiological consequence evaluations in the FSAR. The applicable radiological dose acceptance criteria will continue to be met.

Therefore, the proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No

There are no proposed design changes nor are there any changes in the method by which any safety-related plant SSC performs its safety function. The proposed changes will not affect the normal method of plant operation or change any operating parameters. No equipment performance requirements will be affected. The proposed changes will not alter any assumptions made in the safety analyses.

No new accident scenarios, transient precursors, failure mechanisms, or limiting single failures will be introduced as a result of this amendment. There will be no adverse effect or challenges imposed on any safety-related system as a result of this amendment.

The proposed amendment will not alter the design or performance of the 7300 Process Protection System, Nuclear Instrumentation System, or Solid State Protection System used in the plant protection systems.

Therefore, the proposed changes do not create the possibility of a new or different accident from any accident previously evaluated.

3. Does the proposed change involve a significant reduction in a margin of safety?

Response: No

There will be no effect on those plant systems necessary to assure the accomplishment of protection functions. There will be no impact on the overpower limit, departure from nucleate boiling ratio (DNBR) limits, heat flux hot channel factor (F_Q), nuclear enthalpy rise hot channel factor ($F_{\Delta H}$), loss of coolant accident peak cladding temperature (LOCA PCT), peak local power density, or any other margin of safety. The applicable radiological dose consequence acceptance criteria will continue to be met. The proposed changes do not eliminate any surveillances or alter the frequency of surveillances required by the Technical Specifications. None of the acceptance criteria for any accident analysis will be changed.

The proposed changes will have no impact on the radiological consequences of a design basis accident.

Therefore, the proposed changes do not involve a significant reduction in a margin of safety.

Conclusion:

Based on the above evaluation, AmerenUE concludes that the proposed amendment presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c) and, accordingly, a finding of "no significant hazards consideration" is justified.

5.2 Applicable Regulatory Requirements / Criteria

The regulatory requirements and guidance documents associated with this amendment application include 10 CFR 50 Appendix A, GDC 14 and 15, as discussed below.

GDC 14 states: "The reactor coolant pressure boundary shall be designed, fabricated, erected, and tested so as to have an extremely low probability of abnormal leakage, of rapidly propagating failure, and of gross rupture."

With respect to the structures, systems, and components (SSCs) affected by the proposed TS changes to LCOs 3.4.10, 3.4.11, and 3.4.12, the RCS and RHR piping will continue to be protected from overpressure by means of pressure-relieving devices (the pressurizer PORVs and safety valves and RHR suction relief valves), as required by ASME Section III.

GDC 15 states: "The reactor coolant system and associated auxiliary, control, and protection systems shall be designed with sufficient margin to assure that the design conditions of the reactor coolant pressure boundary are not exceeded during any condition of normal operation, including anticipated operational occurrences."

Steady-state and transient analyses are performed to ensure that reactor coolant system design conditions are not exceeded during normal operation. Protection and control setpoints are based on these analyses. With respect to the structures, systems, and components (SSCs) affected by the proposed TS changes to LCOs 3.4.10, 3.4.11, and 3.4.12, the RCS and RHR piping will continue to be protected from overpressure by means of pressure-relieving devices (the pressurizer PORVs and safety valves and RHR suction relief valves). These valves and their setpoints meet the ASME criteria for overpressure protection.

Additional regulatory requirements are found in the ASME Boiler and Pressure Vessel Code Sections III and XI and 10 CFR 50 Appendices G and K.

There are no changes being proposed in this amendment application such that commitments to the regulatory requirements and guidance documents above would come into question. The evaluations documented above confirm that Callaway Plant will continue to comply with all applicable regulatory requirements.

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

6.0 ENVIRONMENTAL CONSIDERATION

AmerenUE has evaluated the proposed amendment and has determined that the proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

7.1 REFERENCES

1. TSTF-247-A, Revision 0, "Provide Separate Condition Entry for each PORV and Block Valve.
2. TSTF-352-A, Revision 1, "Provide Consistent Completion Time to Reach MODE 4."

7.2 PRECEDENTS

A search of ADAMS indicates that Point Beach, North Anna, Beaver Valley, Prairie Island, and D.C. Cook adopted the applicable portions of TSTF-247-A during their ITS conversion projects. A separate search of ADAMS indicates that North Anna, Beaver Valley, Prairie Island, ANO, and D.C. Cook adopted TSTF-352-A during their ITS conversion projects. Other plants, such as Sequoyah and Millstone-3, have also adopted applicable portions of TSTF-352-A in non-ITS conversion amendment requests. These precedents are cited for general context only and are available through ADAMS.

ATTACHMENT 2

MARKUP OF TECHNICAL SPECIFICATIONS

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.10 Pressurizer Safety Valves

LCO 3.4.10 Three pressurizer safety valves shall be OPERABLE with lift settings ≥ 2411 psig and ≤ 2509 psig.

APPLICABILITY: MODES 1, 2, and 3,
MODE 4 with all RCS cold leg temperatures $> 275^\circ\text{F}$.

NOTES

The lift settings are not required to be within the LCO limits during MODES 3 and 4 for the purpose of setting the pressurizer safety valves under ambient (hot) conditions. This exception is allowed for 54 hours following entry into MODE 3 provided a preliminary cold setting was made prior to heatup.

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|--|--|
| A. One pressurizer safety valve inoperable. | A.1 Restore valve to OPERABLE status. | 15 minutes |
| B. Required Action and associated Completion Time not met. <u>OR</u> Two or more pressurizer safety valves inoperable. | B.1 Be in MODE 3. <u>AND</u> B.2 Be in MODE 4 with any RCS cold leg temperature $\leq 275^\circ\text{F}$. | 6 hours 12 hours 24 |

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.11 Pressurizer Power Operated Relief Valves (PORVs)

LCO 3.4.11 Each PORV and associated block valve shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

----- NOTE -----
 Separate Condition entry is allowed for each PORV *and each block valve.*

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|---|-----------------|
| A. One or more PORVs inoperable solely due to excessive seat leakage. | A.1 Close and maintain power to associated block valve. | 1 hour |
| B. One PORV inoperable for reasons other than excessive seat leakage. | B.1 Close associated block valve. | 1 hour |
| | <u>AND</u> | |
| | B.2 Remove power from associated block valve. | 1 hour |
| | <u>AND</u> | |
| | B.3 Restore PORV to OPERABLE status. | 72 hours |

(continued)

No changes

ACTIONS (continued)

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|---|--|
| C. One block valve inoperable. | <p>----- NOTE ----- Required Actions do not apply when block valve is inoperable solely as a result of complying with Required Actions B.2 or E.2. -----</p> <p>C.1 Place associated PORV in manual control.</p> <p><u>AND</u></p> <p>C.2 Restore block valve to OPERABLE status.</p> | <p>1 hour</p> <p>72 hours</p> |
| D. Required Action and associated Completion Time of Condition A, B, or C not met. | <p>D.1 Be in MODE 3.</p> <p><u>AND</u></p> <p>D.2 Be in MODE 4.</p> | <p>6 hours</p> <p>12 hours</p> |
| E. Two PORVs inoperable for reasons other than excessive seat leakage. | <p>E.1 Close associated block valves.</p> <p><u>AND</u></p> <p>E.2 Remove power from associated block valves.</p> <p><u>AND</u></p> <p>E.3 Be in MODE 3.</p> <p><u>AND</u></p> <p>E.4 Be in MODE 4.</p> | <p>1 hour</p> <p>1 hour</p> <p>6 hours</p> <p>12 hours</p> |

(continued)

ACTIONS (continued)

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|--|--------------------------------|
| <p>F. More than one block valve inoperable.</p> | <p>----- NOTE <i>F.1 does</i> Required Action do not apply when block valve is inoperable solely as a result of complying with Required Action B.2 or E.2. -----</p> <p>F.1 Place associated PORVs in manual control.</p> <p><u>AND</u></p> <p>F.2 <i>F.1</i> Restore one block valve to OPERABLE status.</p> | <p>1 hour</p> <p>2 hours</p> |
| <p>G. Required Action and associated Completion Time of Condition F not met.</p> | <p>G.1 Be in MODE 3.</p> <p><u>AND</u></p> <p>G.2 Be in MODE 4.</p> | <p>6 hours</p> <p>12 hours</p> |

ACTIONS (continued)

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|---|----------------------------------|
| <p>D. Required Action and associated Completion Time of Condition C not met.</p> | <p>D.1 Increase all RCS cold leg temperatures to > 275°F.</p> <p><u>OR</u></p> <p>D.2 Depressurize affected accumulator to less than the maximum RCS pressure for existing cold leg temperature allowed in the PTLR.</p> | <p>12 hours</p> <p>12 hours</p> |
| <p>E. One required RCS relief valve inoperable in MODE 4.</p> | <p>E.1 Restore required RCS relief valve to OPERABLE status.</p> | <p>7 days</p> |
| <p>F. One required RCS relief valve inoperable in MODE 5 or 6.</p> | <p>F.1 Restore required RCS relief valve to OPERABLE status.</p> | <p>24 hours</p> |
| <p>G. Two required RCS relief valves inoperable.</p> <p><u>OR</u></p> <p>Required Action and associated Completion Time of Condition A, B, D, E, or F not met.</p> <p><u>OR</u></p> <p>COMS inoperable for any reason other than Condition A, B, C, D, E, or F.</p> | <p>G.1 Depressurize RCS and establish RCS vent of ≥ 2.0 square inches.</p> | <p>8 hours 12</p> |

ATTACHMENT 3

RETYPE TECHNICAL SPECIFICATIONS

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.10 Pressurizer Safety Valves

LCO 3.4.10 Three pressurizer safety valves shall be OPERABLE with lift settings ≥ 2411 psig and ≤ 2509 psig.

APPLICABILITY: MODES 1, 2, and 3,
MODE 4 with all RCS cold leg temperatures $> 275^\circ\text{F}$.

----- NOTES -----

The lift settings are not required to be within the LCO limits during MODES 3 and 4 for the purpose of setting the pressurizer safety valves under ambient (hot) conditions. This exception is allowed for 54 hours following entry into MODE 3 provided a preliminary cold setting was made prior to heatup.

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|--|-------------------------|
| A. One pressurizer safety valve inoperable. | A.1 Restore valve to OPERABLE status. | 15 minutes |
| B. Required Action and associated Completion Time not met. <u>OR</u> Two or more pressurizer safety valves inoperable. | B.1 Be in MODE 3. <u>AND</u> B.2 Be in MODE 4 with any RCS cold leg temperature $\leq 275^\circ\text{F}$. | 6 hours 24 hours |

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.11 Pressurizer Power Operated Relief Valves (PORVs)

LCO 3.4.11 Each PORV and associated block valve shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

----- NOTE -----
Separate Condition entry is allowed for each PORV and each block valve.

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|---|-----------------|
| A. One or more PORVs inoperable solely due to excessive seat leakage. | A.1 Close and maintain power to associated block valve. | 1 hour |
| B. One PORV inoperable for reasons other than excessive seat leakage. | B.1 Close associated block valve. | 1 hour |
| | <u>AND</u> | |
| | B.2 Remove power from associated block valve. | 1 hour |
| | <u>AND</u> | |
| | B.3 Restore PORV to OPERABLE status. | 72 hours |

(continued)

ACTIONS (continued)

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|--|----------------------------------|
| <p>F. More than one block valve inoperable.</p> | <p>----- NOTE ----- Required Action F.1 does not apply when block valve is inoperable solely as a result of complying with Required Action B.2 or E.2. -----</p> <p>F.1 Restore one block valve to OPERABLE status.</p> | <p>2 hours</p> |
| <p>G. Required Action and associated Completion Time of Condition F not met.</p> | <p>G.1 Be in MODE 3. <u>AND</u> G.2 Be in MODE 4.</p> | <p>6 hours 12 hours</p> |

ACTIONS (continued)

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|---|---------------------------------|
| <p>D. Required Action and associated Completion Time of Condition C not met.</p> | <p>D.1 Increase all RCS cold leg temperatures to > 275°F.</p> <p><u>OR</u></p> <p>D.2 Depressurize affected accumulator to less than the maximum RCS pressure for existing cold leg temperature allowed in the PTLR.</p> | <p>12 hours</p> <p>12 hours</p> |
| <p>E. One required RCS relief valve inoperable in MODE 4.</p> | <p>E.1 Restore required RCS relief valve to OPERABLE status.</p> | <p>7 days</p> |
| <p>F. One required RCS relief valve inoperable in MODE 5 or 6.</p> | <p>F.1 Restore required RCS relief valve to OPERABLE status.</p> | <p>24 hours</p> |
| <p>G. Two required RCS relief valves inoperable.</p> <p><u>OR</u></p> <p>Required Action and associated Completion Time of Condition A, B, D, E, or F not met.</p> <p><u>OR</u></p> <p>COMS inoperable for any reason other than Condition A, B, C, D, E, or F.</p> | <p>G.1 Depressurize RCS and establish RCS vent of ≥ 2.0 square inches.</p> | <p>12 hours</p> |

ATTACHMENT 4

PROPOSED TECHNICAL SPECIFICATION BASES CHANGES
(for information only)

BASES

ACTIONS
(continued)

B.1 and B.2

If the Required Action of A.1 cannot be met within the required Completion Time or if two or more pressurizer safety valves are inoperable, the plant must be brought to a MODE in which the requirement does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 4 with any RCS cold leg temperature $\leq 275^{\circ}\text{F}$ within 42 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems. With any RCS cold leg temperatures at or below 275°F , overpressure protection is provided by the COMS. The change from MODE 1, 2, or 3 to MODE 4 reduces the RCS energy (core power and pressure), lowers the potential for large pressurizer insurges, and thereby removes the need for overpressure protection by three pressurizer safety valves.

24

SURVEILLANCE
REQUIREMENTS

SR 3.4.10.1

SRs are specified in the Inservice Testing Program. Pressurizer safety valves are to be tested in accordance with the requirements of Section XI of the ASME Code (Ref. 4), which provides the activities and Frequencies necessary to satisfy the SRs. No additional requirements are specified.

The pressurizer safety valve setpoint is $\pm 2\%$ for OPERABILITY; however, the valves are reset to $\pm 1\%$ during the Surveillance to allow for drift.

REFERENCES

1. ASME, Boiler and Pressure Vessel Code, Section III.
 2. FSAR, Chapter 15.
 3. WCAP-7769, Rev. 1, June 1972.
 4. ASME, Boiler and Pressure Vessel Code, Section XI.
-
-

BASES (Continued)

APPLICABILITY In MODES 1, 2, and 3, the PORV and its block valve are required to be OPERABLE to limit the potential for a small break LOCA through the flow path. The most likely cause for a PORV small break LOCA is a result of a pressure increase transient that causes the PORV to open. Imbalances in the energy output of the core and heat removal by the secondary system can cause the RCS pressure to increase to the PORV opening setpoint. The most rapid increases will occur at the higher operating power and pressure conditions of MODES 1 and 2. The PORVs are required to be OPERABLE in MODES 1, 2, and 3 for automatic pressure relief to fulfill the required function of minimizing challenges to the pressurizer safety valves during an inadvertent ECCS actuation event. The PORVs are also required to be OPERABLE in MODES 1, 2, and 3 for manual actuation to mitigate a steam generator tube rupture event.

Pressure increases are less prominent in MODE 3 because the core input energy is reduced, but the RCS pressure is high. Therefore, the LCO is applicable in MODES 1, 2, and 3. The LCO is not applicable in MODE 4 when both pressure and core energy are decreased and the pressure surges become much less significant. The PORV setpoint is reduced for COMS in MODES 4 (with any RCS cold leg temperature $\leq 275^{\circ}\text{F}$), 5, and 6 with the reactor vessel head in place. LCO 3.4.12 addresses the PORV requirements in these MODES.

ACTIONS

A Note has been added to clarify that all pressurizer PORVs are treated as separate entities, each with separate Completion Times (i.e., the Completion Time is on a component basis).

and block valves

A.1

The PORVs may be inoperable because of excessive seat leakage yet capable of automatic pressure relief and capable of being manually cycled. In this condition, either the PORVs must be restored or the flow path isolated within 1 hour. The associated block valves must be closed, but power must be maintained to the associated block valves, since removal of power would render the block valve inoperable. Credit for automatic PORV operation is taken in the Reference 1 safety analysis. However, the PORVs are considered OPERABLE in either the manual or automatic mode, as long as the automatic actuation circuitry is OPERABLE and the PORV can be made available for automatic pressure relief by timely operator actions (Ref. 1). Although a PORV may be designated inoperable, it may be available for automatic pressure relief and capable of being manually opened and closed and, therefore, able to perform its required safety functions.

(continued)

BASES

ACTIONS
(continued)

E.1, E.2, E.3, and E.4

If more than one PORV is inoperable for reasons other than excessive seat leakage, it is necessary to either restore at least one valve within the Completion Time of 1 hour or isolate the flow path by closing and removing the power to the associated block valves. The Completion Time of 1 hour is reasonable, based on the small potential for challenges to the system during this time and provides the operator time to correct the situation. If one PORV is restored and one PORV remains inoperable, then the plant will be in Condition B with the time clock started at the time the remaining PORV was discovered to be inoperable. If no PORVs are restored within the Completion Time, the plant must be brought to at least MODE 3 within 6 hours and to MODE 4 within 12 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems. In MODES 1, 2, 3, and 4 (with any RCS cold leg temperature $\leq 275^{\circ}\text{F}$), 5, and 6 (with the reactor vessel head on), automatic PORV OPERABILITY is required. See LCO 3.4.12 for requirements in MODES 4, 5, and 6.

remain

(separate Condition entry for the PORVs).

F.1 and F.2

If more than one block valve is inoperable, it is necessary to either restore the block valves within the Completion Time of 1 hour, or place the associated PORVs in manual control and restore at least one block valve within 2 hours. The Completion Time ~~is~~ is reasonable, based on the small potential for challenges to the system during this time and provide the operator time to correct the situation.

*INSERT
B1* →

F.1 does is

The Required Actions ~~are~~ modified by a Note stating that the Required Actions do not apply if the sole reason for the block valve being declared inoperable is as a result of power being removed to comply with other Required Actions. In this event, the Required Actions for inoperable PORV(s) (which require the block valve power to be removed once it is closed) are adequate to address the condition. While it may be desirable to also place the PORV(s) in manual control, this may not be possible for all causes of Condition B or E entry with PORV(s) inoperable and not capable of automatic pressure relief or not capable of being manually cycled (e.g., as a result of failed control power fuse(s) or control switch malfunction(s)).

(continued)

INSERT B1

If one block valve is restored within 2 hours and one block valve remains inoperable, then the plant will remain in Condition C with the time clock started at the time the remaining block valve was discovered to be inoperable (separate Condition entry for the block valves).

BASES

ACTIONS

F.1 (continued)

period with only one OPERABLE RCS relief valve to protect against overpressure events.

G.1

The RCS must be depressurized and a vent must be established within ~~1/2~~ ^{1/2} hours when:

- a. Both required RCS relief valves are inoperable; or
- b. A Required Action and associated Completion Time of Condition A, B, D, E, or F is not met; or
- c. The COMS is inoperable for any reason other than Condition A, B, C, D, E, or F.

The vent must be sized ≥ 2.0 square inches to ensure that the flow capacity is greater than that required for the worst case mass input transient reasonable during the applicable MODES. This action is needed to protect the RCPB from a low temperature overpressure event and a possible brittle failure of the reactor vessel.

The Completion Time considers the time required to place the plant in this Condition and the relatively low probability of an overpressure event during this time period due to increased operator awareness of administrative control requirements.

SURVEILLANCE
REQUIREMENTS

SR 3.4.12.1, SR 3.4.12.2, and SR 3.4.12.3

To minimize the potential for a low temperature overpressure event by limiting the mass input capability, a maximum of zero safety injection pumps and a maximum of one centrifugal charging pump are verified to be capable of injecting into the RCS and the accumulator discharge isolation valves are verified closed with power removed from the valve operators (Refs. 10 and 11). Verification that each accumulator is isolated is only required when accumulator isolation is required as stated in Note 3 to the LCO.

The safety injection pumps and one centrifugal charging pump are rendered incapable of injecting into the RCS through removing the power from the pumps by racking the breakers out under administrative control. An alternate method of cold overpressure protection control may be employed using at least two independent means to render a pump

(continued)

ATTACHMENT 5

COPIES OF APPROVED TRAVELERS
TSTF-247-A AND TSTF-352-A
WITH NUREG-1431 STS CHANGE MARKUPS

Technical Specification Task Force Improved Standard Technical Specifications Change Traveler

Provide separate condition entry for each PORV and block valve

NUREGs Affected: 1430 1431 1432 1433 1434

Classification: 3) Improve Specifications

Recommended for CLIP?: (Unassigned)

Correction or Improvement: (Unassigned)

Industry Contact: Steve Wideman, (620) 364-4037, stwidem@wcnoc.com

This change provides separate condition entry for each PORV and block valve. It also adds bracketed information to NUREG-1431 to accommodate plants with three PORVs and associated block valves. A Reviewer's Note is added to explain the bracketed information.

The existing LCO 3.4.11 Conditions allow separate condition entry for each PORV. The Conditions and Required Actions provide appropriate compensatory measures for separate condition entry. The Conditions and Required Actions also provide appropriate compensatory actions for separate condition entry for each block valve. Therefore, the Actions Note is modified to allow separate condition entry for each block valve.

The proposed Condition F is modified to apply when all block valves are inoperable. The existing actions are modified to not require that the PORVs be placed in manual control because if the block valves are not restored within 2 hours a plant shutdown is required and the PORVs will be needed for Low Temperature OverPressure protection. Therefore, the PORVs should not be placed in manual control. In NUREG-1431, The bracketed Action F.3 is eliminated (Restore remaining block valve(s) to OPERABLE status) as with separate condition entry for each block valve it is not needed.

An editorial change is made to NUREG-1432 which moved the discussion of the Action Notes above the first action.

The applicability of this changes is based on Combustion Engineering reactors not having three PORVs and block valves and B&W plants having only one PORV and block valve.

Revision History

OG Revision 0

Revision Status: Active

Revision Proposed by: Byron/Braidwood

Revision Description:

Original Issue

Owners Group Review Information

Date Originated by OG: 14-Jan-97

Owners Group Comments:

(No Comments)

Owners Group Resolution: Approved Date: 14-Jan-97

TSTF Review Information

TSTF Received Date: 20-Jan-97

Date Distributed for Review: 06-Jan-98

OG Review Completed: BWO WOG CEOG BWROG

TSTF Comments:

Originally distributed on 4/8/97

CEOG Comments from 4/24/97: Applicable, accepts.

31-Jul-03

OG Revision 0**Revision Status: Active**

B&W - NA, accepts

Note 1 of Actions and F.I are applicable to CEOG. Other changes apply only to WOG.

TSTF Resolution: Approved

Date: 05-Feb-98

NRC Review Information

NRC Received Date: 10-Mar-98

NRC Comments:

9/24/98 - NRC stated that they had approved.

Final Resolution: NRC Approves

Final Resolution Date: 24-Sep-98

Affected Technical Specifications

| | | |
|-----------------------|---------------------|---------------------|
| Action 3.4.11 | Pressurizer PORVs | |
| | Change Description: | Action Note 1 |
| Action 3.4.11 Bases | Pressurizer PORVs | |
| | Change Description: | Action Notes |
| Action 3.4.11.F | Pressurizer PORVs | |
| Action 3.4.11.F Bases | Pressurizer PORVs | |
| Action 3.4.11.C | Pressurizer PORVs | NUREG(s)- 1431 Only |
| Action 3.4.11.C Bases | Pressurizer PORVs | NUREG(s)- 1431 Only |
| Action 3.4.11.A Bases | Pressurizer PORVs | NUREG(s)- 1432 Only |

31-Jul-03

TSTF-247

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.11 Pressurizer Power Operated Relief Valves (PORVs)

LCO 3.4.11 Each PORV and associated block valve shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

and each block valve

-----NOTES-----

1. Separate Condition entry is allowed for each PORV.
 2. LCO 3.0.4 is not applicable.
-

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|---|-----------------|
| A. One or more PORVs inoperable and capable of being manually cycled. | A.1 Close and maintain power to associated block valve. | 1 hour |
| B. One [or two] PORV[s] inoperable and not capable of being manually cycled. | B.1 Close associated block valve[s]. | 1 hour |
| | <u>AND</u> | |
| | B.2 Remove power from associated block valve[s]. | 1 hour |
| | <u>AND</u> | |
| | B.3 Restore PORV[s] to OPERABLE status. | 72 hours |

(continued)

TSTF-247

ACTIONS (continued)

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|---|--|
| <p>C. One block valve^(S) inoperable. [or two]</p> | <p>C.1 Place associated PORV in manual control. <u>AND</u> C.2 Restore block valve^(S) to OPERABLE status.</p> | <p>1 hour 72 hours</p> |
| <p>D. Required Action and associated Completion Time of Condition A, B, or C not met.</p> | <p>D.1 Be in MODE 3. <u>AND</u> D.2 Be in MODE 4.</p> | <p>6 hours 12 hours</p> |
| <p>E. Two [or three] PORVs inoperable and not capable of being manually cycled.</p> | <p>E.1 Close associated block valves. <u>AND</u> E.2 Remove power from associated block valves. <u>AND</u> E.3 Be in MODE 3. <u>AND</u> E.4 Be in MODE 4.</p> | <p>1 hour 1 hour 6 hours 12 hours</p> |
| <p>F. More than one block valve^(S) inoperable. Two [or three]</p> | <p>F.1 Place associated PORVs in manual control. <u>AND</u></p> | <p>1 hour (continued)</p> |

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ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---|---|---------------------|
| F. (continued) | F.2 ^① Restore one block valve to OPERABLE status [if three block valves are inoperable]. | 2 hours |
| | AND F.3 Restore remaining block valve(s) to OPERABLE status. | 72 hours |
| G. Required Action and associated Completion Time of Condition F not met. | G.1 Be in MODE 3. | 6 hours |
| | AND G.2 Be in MODE 4. | 12 hours |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|-------------|
| SR 3.4.11.1 -----NOTE----- Not required to be met with block valve closed in accordance with the Required Action of Condition B or E. ----- Perform a complete cycle of each block valve. | 92 days |
| SR 3.4.11.2 Perform a complete cycle of each PORV. | [18] months |

(continued)

TSTF-247

BASES (continued)

APPLICABILITY

In MODES 1, 2, and 3, the PORV and its block valve are required to be OPERABLE to limit the potential for a small break LOCA through the flow path. The most likely cause for a PORV small break LOCA is a result of a pressure increase transient that causes the PORV to open. Imbalances in the energy output of the core and heat removal by the secondary system can cause the RCS pressure to increase to the PORV opening setpoint. The most rapid increases will occur at the higher operating power and pressure conditions of MODES 1 and 2. The PORVs are also required to be OPERABLE in MODES 1, 2, and 3 to minimize challenges to the pressurizer safety valves.

Pressure increases are less prominent in MODE 3 because the core input energy is reduced, but the RCS pressure is high. Therefore, the LCO is applicable in MODES 1, 2, and 3. The LCO is not applicable in MODE 4 when both pressure and core energy are decreased and the pressure surges become much less significant. The PORV setpoint is reduced for LTOP in MODES 4, 5, and 6 with the reactor vessel head in place. LCO 3.4.12 addresses the PORV requirements in these MODES.

ACTIONS

Note 1 has been added to clarify that all pressurizer PORVs are treated as separate entities, each with separate Completion Times (i.e., the Completion Time is on a component basis). The exception for LCO 3.0.4, Note 2, permits entry into MODES 1, 2, and 3 to perform cycling of the PORVs or block valves to verify their OPERABLE status. Testing is not performed in lower MODES.

Insert 1

A.1

With the PORVs inoperable and capable of being manually cycled, either the PORVs must be restored or the flow path isolated within 1 hour. The block valves should be closed but power must be maintained to the associated block valves, since removal of power would render the block valve inoperable. Although a PORV may be designated inoperable, it may be able to be manually opened and closed, and therefore, able to perform its function. PORV inoperability may be due to seat leakage, instrumentation problems, automatic control problems, or other causes that do not prevent manual use and do not create a possibility for a

and block valves

(continued)

Insert 1

----- Reviewer's Note -----

The bracketed options in Conditions B, C, E, and F are to accommodate plants with three PORVS and associated block valves.

TSTF-247

BASES

ACTIONS

A.1 (continued)

small break LOCA. For these reasons, the block valve may be closed but the Action requires power be maintained to the valve. This Condition is only intended to permit operation of the plant for a limited period of time not to exceed the next refueling outage (MODE 6) so that maintenance can be performed on the PORVs to eliminate the problem condition. Normally, the PORVs should be available for automatic mitigation of overpressure events and should be returned to OPERABLE status prior to entering startup (MODE 2).

Quick access to the PORV for pressure control can be made when power remains on the closed block valve. The Completion Time of 1 hour is based on plant operating experience that has shown that minor problems can be corrected or closure accomplished in this time period.

B.1, B.2, and B.3

If one [or two] PORV[s] is inoperable and not capable of being manually cycled, it must be either restored or isolated by closing the associated block valve and removing the power to the associated block valve. The Completion Times of 1 hour are reasonable, based on challenges to the PORVs during this time period, and provide the operator adequate time to correct the situation. If the inoperable valve cannot be restored to OPERABLE status, it must be isolated within the specified time. Because there is at least one PORV that remains OPERABLE, an additional 72 hours is provided to restore the inoperable PORV to OPERABLE status. If the PORV cannot be restored within this additional time, the plant must be brought to a MODE in which the LCO does not apply, as required by Condition D.

C.1 and C.2

[or two] (S) are (S)

If one block valve ~~is~~ inoperable, then it is necessary to either restore the block valve to OPERABLE status within the Completion Time of 1 hour or place the associated PORV in manual control. The prime importance for the capability to close the block valve is to isolate a stuck open PORV. Therefore, if the block valve cannot be restored to OPERABLE

(S)

(continued)

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BASES

ACTIONS

C.1 and C.2 (continued)

status within 1 hour, the Required Action is to place the PORV in manual control to preclude its automatic opening for an overpressure event and to avoid the potential for a stuck open PORV at a time that the block valve ^(S) is inoperable. The ^(S) Completion Time of 1 hour is reasonable, based on the small potential for challenges to the system during this time period, and provides the operator time to correct the situation. Because at least one PORV remains OPERABLE, the operator is permitted a Completion Time of 72 hours to restore the inoperable block valve to OPERABLE status. The time allowed to restore the block valve ^(S) is based upon the Completion Time for restoring an inoperable PORV in Condition B, since the PORVs are not capable of mitigating an overpressure event when placed in manual control. If the block valve ^(S) are restored within the Completion Time of 72 hours, the power will be restored and the PORV restored to OPERABLE status. If it cannot be restored within this additional time, the plant must be brought to a MODE in which the LCO does not apply, as required by Condition D.

D.1 and D.2

If the Required Action of Condition A, B, or C is not met, then the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 4 within 12 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems. In MODES 4 and 5, maintaining PORV OPERABILITY may be required. See LCO 3.4.12.

E.1, E.2, E.3, and E.4

If more than one PORV is inoperable and not capable of being manually cycled, it is necessary to either restore at least one valve within the Completion Time of 1 hour or isolate the flow path by closing and removing the power to the associated block valves. The Completion Time of 1 hour is reasonable, based on the small potential for challenges to the system during this time and provides the operator time

(continued)

TSTF-247

BASES

ACTIONS

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

to correct the situation. If one PORV is restored and one PORV remains inoperable, then the plant will be in Condition B with the time clock started at the original declaration of having two [or three] PORVs inoperable. If no PORVs are restored within the Completion Time, then the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 4 within 12 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems. In MODES 4 and 5, maintaining PORV OPERABILITY may be required. See LCO 3.4.12.

F.1, F.2, and F.3

two [or three]

If ~~more than one~~ block valve ~~is~~ inoperable, it is necessary to either restore the block valves within the Completion Time of 1 hour, or place the associated PORVs in manual control and restore at least one block valve within 2 hours ~~and restore the remaining block valve within 12 hours~~. The Completion Times ~~are~~ reasonable, based on the small potential for challenges to the system during this time and provide the operator time to correct the situation.

is

G.1 and G.2

If the Required Actions of Condition F are not met, then the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 4 within 12 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems. In MODES 4 and 5, maintaining PORV OPERABILITY may be required. See LCO 3.4.12.

(continued)

Technical Specification Task Force

Improved Standard Technical Specifications Change Traveler

Provide Consistent Completion Time to Reach MODE 4NUREGs Affected: 1430 1431 1432 1433 1434

Classification: 2) Consistency/Standardization

Recommended for CLIP?: (Unassigned)

Correction or Improvement: (Unassigned)

Industry Contact: Patricia Furio, (410) 495-4374, patricia.s.furio@ccnppi.com

Revise the Completion Times for Required Actions which direct entry into conditions below MODE 4 to allow sufficient time to safely perform the actions. The Specifications affected are Pressurizer Safety Valves, Atmospheric Dump Valves, and Condensate Storage Tank. In a different, but related, change, the time to go from LTOP conditions to having the RCS vented is revised to be consistent between NUREGs and to allow sufficient time to complete the activity.

04-Aug-03

The following presents the allowed times for attaining various shutdown conditions from MODE 1 normal operating pressure and temperature (and assuming the required equipment is available):

| MODE | Completion Time |
|------|-----------------|
| 1 | ... |
| 3 | 6 hours |
| 4 | 12 hours |
| 5 | 36 hours |

However, many Required Actions specify entry into conditions which take longer to achieve than MODE 4, but only allow the normal 12 hours to enter those conditions from MODE 3. This leaves insufficient time to enter MODE 4 and the required condition in a controlled manner. Some other specifications allow 18 hours for similar circumstances. Therefore, for those conditions, the Completion Time is revised to 24 hours (half way between the MODE 4 and MODE 5 Completion Times) to provide a consistent, adequate Completion Time. The affected Conditions are discussed individually below.

1. Specification 3.4.10, Pressurizer Safety Valves, Condition B, requires the plant to be in MODE 4 and cooled down to the LTOP enable temperature within [12] hours. Assuming the LTOP enable temperature is below the MODE 4 entry conditions, additional time should be provided beyond the normal 12 hours allowed to reach MODE 4.

2. Specification 3.7.4, Atmospheric Dump Valves, Condition C, requires the plant to be in MODE 4 without reliance on the SG for heat removal within [12] hours. This requires cooling to shutdown cooling entry conditions, which for many designs is below the MODE 4 entry temperature. In order to meet this Completion Time, many plants would have to start shutdown before the restoration period, allowed by conditions A or B, was up. Therefore, using the logic presented above, the Completion Time is revised to 24 hours for going from MODE 1 to MODE 4 without reliance on SG for heat removal. The additional time is needed for the cooldown and depressurization of the RCS to SDC entry conditions.

3. Specification 3.7.6, Condensate Storage Tank, Condition B, requires the plant to be in MODE 4 without reliance on the SG for heat removal within [18] hours. (Note that 3.7.4 allows 12 hours for the same Required Action.) In order to do this, many plants would have to start shutdown before the restoration period, allowed by Condition A, was expired. Based on the logic given above, the Completion Time is revised to [24] hours for going from MODE 1 to MODE 4 without reliance on SG for heat removal. The additional time is needed for the cooldown and depressurization of the RCS to SDC entry conditions.

4. NUREG-1431 and NUREG-1432, Specification 3.4.10, LTOP, Condition G, requires the plant to depressurize the RCS and establish a vent of [] inches within 8 hours. NUREG-1430 allows 12 hours for this same condition. The proposed change is to extend the 8 hours Completion Time in NUREGs 1431 and 1432 to 12 hours. Eight hours is insufficient time to plan a MODE change, cool down (following the plant cooldown rate limits), plan and execute the maintenance activity of opening a vent, and cool the RCS sufficiently to safely open a vent. The 12 hours allowed by NUREG-1430 is more appropriate.

5. (NUREG-1430 only) Specification 3.4.9, Pressurizer, Condition B, requires the plant to be in MODE 4 with RCS temperature \leq [275] F within 12 hours. This is below the MODE 4 entry temperature of [350]F, but only 12 hours is allowed, the same Completion Time allowed to enter MODE 4. In order to do this, many plants would have to start shutdown before the restoration period, allowed by Condition A, was expired. Based on the logic given above, the Completion Time is revised to [24] hours for going from MODE 1 to MODE 4 with RCS temperature \leq [275] F. The additional time is needed for the cooldown of the RCS to the specified temperature.

Revision History

OG Revision 0

Revision Status: Closed

Revision Proposed by: Palo Verde

Revision Description:
Original Issue

04-Aug-03

OG Revision 0**Revision Status: Closed****Owners Group Review Information**

Date Originated by OG: 08-Mar-99

Owners Group Comments:
(No Comments)

Owners Group Resolution: Approved Date: 16-Mar-99

TSTF Review Information

TSTF Received Date: 02-Jun-99 Date Distributed for Review: 17-Jun-99

OG Review Completed: BWOG WOG CEOG BWROG

TSTF Comments:

Applicable to PWR OGs.

TSTF Resolution: Approved

Date: 07-Jul-99

NRC Review Information

NRC Received Date: 04-Aug-99

NRC Comments:

Date of NRC Letter: 16-Mar-00

1/10/00 - forwarded to PRA branch of NRC.

2/10/00 - NRC provided comments. Change to 3.4.12 requires PRA evaluation.

Final Resolution: Superseded by Revision

Final Resolution Date: 16-Feb-00

TSTF Revision 1**Revision Status: Active**

Revision Proposed by: TSTF

Revision Description:

The revision 0 change to extend the LCO 3.4.12, LTOP, Completion Time from 8 and 12 hours to [24] hours is eliminated and a change to NUREG-1431 and NUREG-1432 to extend the 8 hour Completion Time to 12 hours is proposed. Item 4 in the Justification is revised to describe the change.

TSTF Review Information

TSTF Received Date: 08-Mar-00 Date Distributed for Review: 08-Mar-00

OG Review Completed: BWOG WOG CEOG BWROG

TSTF Comments:

(No Comments)

TSTF Resolution: Approved

Date: 08-Mar-00

NRC Review Information

NRC Received Date: 13-Mar-00

04-Aug-03

TSTF Revision 1**Revision Status: Active**

Final Resolution: NRC Approves

Final Resolution Date: 13-Apr-00

Affected Technical Specifications

| | | |
|-----------------------|---------------------------|--------------------------|
| Action 3.4.10.B | Pressurizer Safety Valves | |
| Action 3.4.10.B Bases | Pressurizer Safety Valves | |
| Action 3.7.6.B | CST | |
| Action 3.7.6.B Bases | CST | |
| Action 3.4.9.B | Pressurizer | NUREG(s)- 1430 Only |
| Action 3.4.9.B Bases | Pressurizer | NUREG(s)- 1430 Only |
| Action 3.7.4.C | AVVs | NUREG(s)- 1430 Only |
| Action 3.7.4.C Bases | AVVs | NUREG(s)- 1430 Only |
| Action 3.4.12.G | LTOP System | NUREG(s)- 1431 1432 Only |
| Action 3.4.12.G Bases | LTOP System | NUREG(s)- 1431 1432 Only |
| Action 3.7.4.C | ADVs | NUREG(s)- 1431 1432 Only |
| Action 3.7.4.C Bases | ADVs | NUREG(s)- 1431 1432 Only |

04-Aug-03

TSTF352, Rev. 1

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.10 Pressurizer Safety Valves

LCO 3.4.10 [Three] pressurizer safety valves shall be OPERABLE with lift settings \geq [2460] psig and \leq [2510] psig.

APPLICABILITY: MODES 1, 2, and 3,
MODE 4 with all RCS cold leg temperatures $>$ [275] $^{\circ}$ F.

-----NOTE-----

The lift settings are not required to be within the LCO limits during MODES 3 and 4 for the purpose of setting the pressurizer safety valves under ambient (hot) conditions. This exception is allowed for [54] hours following entry into MODE 3 provided a preliminary cold setting was made prior to heatup.

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|---|--|
| A. One pressurizer safety valve inoperable. | A.1 Restore valve to OPERABLE status. | 15 minutes |
| B. Required Action and associated Completion Time not met. <u>OR</u> Two or more pressurizer safety valves inoperable. | B.1 Be in MODE 3. <u>AND</u> B.2 Be in MODE 4 with any RCS cold leg temperatures \leq [275] $^{\circ}$ F. | 6 hours 12 hours [24] |

BASES

ACTIONS

A.1 (continued)

coincident with an RCS overpressure event could challenge the integrity of the pressure boundary.

B.1 and B.2

If the Required Action of A.1 cannot be met within the required Completion Time or if two or more pressurizer safety valves are inoperable, the plant must be brought to a MODE in which the requirement does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 4 with any RCS cold leg temperatures $\leq [275]^{\circ}\text{F}$ within ~~12~~ hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems. With any RCS cold leg temperatures at or below $[275]^{\circ}\text{F}$, overpressure protection is provided by the LTOP System. The change from MODE 1, 2, or 3 to MODE 4 reduces the RCS energy (core power and pressure), lowers the potential for large pressurizer insurges, and thereby removes the need for overpressure protection by [three] pressurizer safety valves.

[24]

SURVEILLANCE
REQUIREMENTS

SR 3.4.10.1

SRs are specified in the Inservice Testing Program. Pressurizer safety valves are to be tested in accordance with the requirements of Section XI of the ASME Code (Ref. 4), which provides the activities and Frequencies necessary to satisfy the SRs. No additional requirements are specified.

The pressurizer safety valve setpoint is $\pm [3]\%$ for OPERABILITY; however, the valves are reset to $\pm 1\%$ during the Surveillance to allow for drift.

REFERENCES

1. ASME, Boiler and Pressure Vessel Code, Section III.
2. FSAR, Chapter [15].

(continued)

ACTIONS (continued)

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|---|-----------------------------|
| <p>G. Two required RCS relief valves inoperable.</p> <p><u>OR</u></p> <p>Required Action and associated Completion Time of Condition A, [B.] D, E, or F not met.</p> <p><u>OR</u></p> <p>LTOP System inoperable for any reason other than Condition A, [B.] C, D, E, or F.</p> | <p>G.1 Depressurize RCS and establish RCS vent of \geq [2.07] square inches.</p> | <p>8 hours ↑ 12</p> |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|--|-------------------|
| <p>SR 3.4.12.1 Verify a maximum of [one] [HPI] pump is capable of injecting into the RCS.</p> | <p>12 hours</p> |
| <p>[SR 3.4.12.2 Verify a maximum of one charging pump is capable of injecting into the RCS.]</p> | <p>12 hours]</p> |
| <p>SR 3.4.12.3 Verify each accumulator is isolated.</p> | <p>12 hours</p> |

(continued)

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BASES

ACTIONS

E.1 (continued)

The Completion Time considers the facts that only one of the RCS relief valves is required to mitigate an overpressure transient and that the likelihood of an active failure of the remaining valve path during this time period is very low.

F.1

The consequences of operational events that will overpressurize the RCS are more severe at lower temperature (Ref. 7). Thus, with one of the two RCS relief valves inoperable in MODE 5 or in MODE 6 with the head on, the Completion Time to restore two valves to OPERABLE status is 24 hours.

The Completion Time represents a reasonable time to investigate and repair several types of relief valve failures without exposure to a lengthy period with only one OPERABLE RCS relief valve to protect against overpressure events.

G.1

The RCS must be depressurized and a vent must be established within 8 hours when:

12

- a. Both required RCS relief valves are inoperable; or
- b. A Required Action and associated Completion Time of Condition A, [B.] D, E, or F is not met; or
- c. The LTOP System is inoperable for any reason other than Condition A, [B.] C, D, E, or F.

The vent must be sized $\geq [2.07]$ square inches to ensure that the flow capacity is greater than that required for the worst case mass input transient reasonable during the applicable MODES. This action is needed to protect the RCPB from a low temperature overpressure event and a possible brittle failure of the reactor vessel.

(continued)

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3.7 PLANT SYSTEMS

3.7.4 Atmospheric Dump Valves (ADVs)

LCO 3.7.4 [Three] ADV lines shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,
MODE 4 when steam generator is relied upon for heat removal.

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|--|-------------------------------|
| A. One required ADV line inoperable. | A.1 -----NOTE----- LCO 3.0.4 is not applicable. ----- Restore required ADV line to OPERABLE status. | 7 days |
| B. Two or more required ADV lines inoperable. | B.1 Restore one ADV line to OPERABLE status. | 24 hours |
| C. Required Action and associated Completion Time not met. | C.1 Be in MODE 3. <u>AND</u> C.2 Be in MODE 4 without reliance upon steam generator for heat removal. | 6 hours [18] hours [24] |

BASES

ACTIONS

C.1 and C.2 (continued)

[24]

MODE 3 within 6 hours, and in MODE 4, without reliance upon steam generator for heat removal, within [18] hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

SURVEILLANCE
REQUIREMENTS

SR 3.7.4.1

To perform a controlled cooldown of the RCS, the ADVs must be able to be opened either remotely or locally and throttled through their full range. This SR ensures that the ADVs are tested through a full control cycle at least once per fuel cycle. Performance of inservice testing or use of an ADV during a unit cooldown may satisfy this requirement. Operating experience has shown that these components usually pass the Surveillance when performed at the [18] month Frequency. The Frequency is acceptable from a reliability standpoint.

SR 3.7.4.2

The function of the block valve is to isolate a failed open ADV. Cycling the block valve both closed and open demonstrates its capability to perform this function. Performance of inservice testing or use of the block valve during unit cooldown may satisfy this requirement. Operating experience has shown that these components usually pass the Surveillance when performed at the [18] month Frequency. The Frequency is acceptable from a reliability standpoint.

REFERENCES

1. FSAR, Section [10.3].
-
-

3.7 PLANT SYSTEMS

3.7.6 Condensate Storage Tank (CST)

LCO 3.7.6 The CST level shall be \geq [110,000 gal].

APPLICABILITY: MODES 1, 2, and 3,
MODE 4 when steam generator is relied upon for heat removal.

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--|---|---|
| A. CST level not within limit. | A.1 Verify by administrative means OPERABILITY of backup water supply. | 4 hours <u>AND</u> Once per 12 hours thereafter |
| | <u>AND</u> A.2 Restore CST level to within limit. | 7 days |
| B. Required Action and associated Completion Time not met. | B.1 ✓ Be in MODE 3. | 6 hours |
| | <u>AND</u> B.2 Be in MODE 4; without reliance on steam generator for heat removal. | [18] hours [24] |

BASES

LCO
(continued) The OPERABILITY of the CST is determined by maintaining the tank level at or above the minimum required level.

APPLICABILITY In MODES 1, 2, and 3, and in MODE 4, when steam generator is being relied upon for heat removal, the CST is required to be OPERABLE.

In MODE 5 or 6, the CST is not required because the AFW System is not required.

ACTIONS

A.1 and A.2

If the CST level is not within limits, the OPERABILITY of the backup supply should be verified by administrative means within 4 hours and once every 12 hours thereafter. OPERABILITY of the backup feedwater supply must include verification that the flow paths from the backup water supply to the AFW pumps are OPERABLE, and that the backup supply has the required volume of water available. The CST must be restored to OPERABLE status within 7 days, because the backup supply may be performing this function in addition to its normal functions. The 4 hour Completion Time is reasonable, based on operating experience, to verify the OPERABILITY of the backup water supply. The 7 day Completion Time is reasonable, based on an OPERABLE backup water supply being available, and the low probability of an event occurring during this time period requiring the CST.

B.1 and B.2

If the CST cannot be restored to OPERABLE status within the associated Completion Time, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 4, without reliance on the steam generator for heat removal, within ~~18~~ hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

[24]

(continued)