

FINAL SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

TECHNICAL SPECIFICATIONS TASK FORCE TRAVELER

TSTF-576, REVISION 3

“REVISE SAFETY/RELIEF VALVE REQUIREMENTS”

(EPID L-2019-PMP-0207)

1.0 INTRODUCTION

By letter dated September 13, 2023 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML23256A266), the Technical Specifications Task Force (TSTF) submitted Traveler TSTF-576, Revision 3, “Revise Safety/Relief Valve Requirements” (TSTF-576), to the U.S. Nuclear Regulatory Commission (NRC). TSTF-576 proposed changes to the Standard Technical Specifications (STSs) for boiling-water reactor (BWR) designs under the consolidated line item improvement process (CLIP). Upon approval, these changes would be incorporated into future revisions of:

- U.S. Nuclear Regulatory Commission, “Standard Technical Specifications, General Electric BWR/4 Plants,” NUREG-1433, Volume 1, “Specifications,” and Volume 2, “Bases,” Revision 5, September 2021 (ML21272A357 and ML21272A358, respectively)<sup>1</sup>.
- U.S. Nuclear Regulatory Commission, “Standard Technical Specifications, General Electric BWR/6 Plants,” NUREG-1434, Volume 1, “Specifications,” and Volume 2, “Bases,” Revision 5, September 2021 (ML21271A582 and ML21271A596, respectively).

The proposed changes would revise the STSs and STS Bases related to the Safety/Relief Valves (S/RVs). The approach to S/RV requirements would change from being based on individual S/RVs to being based on the S/RVs being treated in STS as a single system called the “Overpressure Protection System” (OPS). The STSs related to the S/RVs would be rewritten to focus on the performance of the system instead of focusing on the performance of individual valves. Instead of having the STS specify a minimum number of S/RVs capable of performing their safety function, the capability of performing the safety function would be assessed from the collective capability of the S/RVs. A single valve or even multiple valves lifting outside the limits currently defined in STS would not necessarily result in the OPS being inoperable. The as-left setting tolerances are not changing and continue to require each required valve to be set to within one percent of its setpoint. The as-found upper limits would be moved to the Core Operating Limits Report (COLR) and placed under licensee control. The as-found lower limits are being removed from the TS. While the NRC staff has approved license amendments for increases to tolerances from  $\pm 1\%$  to  $\pm 3\%$ , TSTF-576 would allow larger tolerances to be implemented.

STS surveillance requirements (SR) 3.4.3.2 (NUREG-1433) and 3.4.4.3 (NUREG-1434) would be met as long as the as-found opening pressures of the S/RVs are within the COLR criteria

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<sup>1</sup> NUREG-1433 is based on the BWR/4 plant design, but is also representative of the BWR/2, BWR/3, and, in this traveler, BWR/5 designs.

that ensure that the overpressure analysis remains valid considering the performance of the total population of S/RVs. Although the COLR STS requires the licensees to perform setpoint limit calculations using the methods specified in the COLR, the COLR STS does not directly control the need to seek prior NRC approval of changes to associated calculations and analyses that use the S/RV settings and limits as inputs; the existing requirements in Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.59 control when a licensee is required to seek prior NRC approval via a license amendment request (LAR) of those associated calculations. Licensees would use 10 CFR 50.59 to evaluate their authority to make changes to those other analyses without seeking prior NRC approval.

Additional background on the topic of S/RVs and recommendations for licensees has been documented by staff in ADAMS at ML24204A271. The proposed TSTF included several statements that while immaterial to the safety evaluation warranted written discussion by the NRC staff. Licensees adopting the traveler should review the information in the referenced document to ensure an efficient change to the proposed TS and help to prevent future regulatory action.

## 1.1 Background

NUREG-1433 and NUREG-1434 STS Bases for B 2.1.2 "Reactor Coolant System (RCS) Pressure Safety Limit (SL)" explain that the RCS S/RVs and the Reactor Protection System Reactor Vessel Steam Dome Pressure - High Function have settings established to ensure that the RCS pressure SL will not be exceeded. NUREG-1433 Bases STS B 3.4.3 and NUREG-1434 Bases STS 3.4.4 "Safety/Relief Valves (S/RVs)" explains that the S/RV setpoints are established to ensure the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (BPV Code) limit on peak reactor pressure is satisfied. Further the STS Bases explain that the ASME BPV Code specifications require the lowest safety valve be set at or below vessel design pressure and the highest safety valve be set so the total accumulated pressure does not exceed 110% of the design pressure for conditions, and that the transient evaluations in the relevant Section of the Final Safety Analysis Report (FSAR) are based on these setpoints, but also include the additional uncertainties of  $\pm 1\%$  of the nominal setpoint to account for potential setpoint drift to provide an added degree of conservatism. NUREG-1433 Bases B 3.4.3 "Safety/Relief Valves (S/RVs)" likewise explains that the S/RV setpoints are established to ensure that the ASME BPV Code limit on peak reactor pressure is satisfied, and likewise notes that the transient evaluations in the FSAR are based on these setpoints, but also include the additional uncertainties of  $\pm 1\%$  of the nominal setpoint drift to provide an added degree of conservatism.

S/RVs installed in BWRs have, at times, lifted outside the allowable as-found technical specification (TS) limits. Industry has made design modifications to the S/RVs to correct the issue, but valves continue to experience this issue. Most plants have increased the as-found tolerances for the valves from  $\pm 1$  percent to  $\pm 3$  percent. Even with the increased allowable tolerances, some valves continue to lift outside the TS limits. The issue resulted in many Licensee Event Reports (LERs) submitted pursuant to 10 CFR 50.73, wherein the licensee's conclusion was that the RCS SL for pressure would not have been challenged during design basis events. The system-oriented OPS approach in TSTF-576 would eliminate the situation where an S/RV being outside of the existing as-found setting limits would always result in an inoperability and an LER. For the reasons explained below, the OPS approach provides the requisite reasonable assurance of public health and safety and reasonable assurance of meeting the Commission's regulations, and therefore TSTF-576 is approved for incorporation into the future versions of the STS and associated Bases.

## 2.0 REGULATORY EVALUATION

### 2.1 Safety/Relief Valve Description

The S/RVs function to protect the reactor coolant pressure boundary (RCPB) and its associated SL from overpressure. In addition, some S/RVs are also used to provide the Low-Low Set relief function and the Automatic Depressurization System (ADS) function. The LLS relief function is specified in limiting condition for operation (LCO) 3.6.1.6 “Low-Low Set (LLS) Valves” and the ADS function is specified in LCO 3.5.1 “ECCS [emergency core cooling system]-Operating.” The associated ADS and LLS LCOs are not affected by the proposed changes.

STS Section 2.0 specifies the SL requirements for each reactor design. STS 2.1.2, “Reactor Coolant System Pressure SL,” for both the NUREG-1433 and NUREG-1434 STS requires reactor steam dome pressure to remain less than or equal to 1325 pounds per square inch gauge (psig). The SL pressure may be different for different plants. The SL is consistent with the ASME BPV Code, Section III limit of 110 percent of design pressure. Per 10 CFR 50.54, the applicable requirements of 10 CFR 50.55a, are conditions in every nuclear power reactor operating license issued under 10 CFR Part 50, and, as specified in 10 CFR 50.55a(b), systems and components of boiling and pressurized water-cooled nuclear power reactors must meet the requirements of the ASME BPV Code and the ASME Operation and Maintenance (OM) Code. The ASME BPV Code provides overpressure protection requirements for the RCPB components to assure that they will not be damaged during possible transients.

Some plants rely only on the safety mode of operation to protect the SL while other plants rely on both the safety and relief modes of operation. In the safety mode (or spring mode of operation), the spring-loaded disk or pilot valve opens when steam pressure overcomes the spring force holding the valve or pilot valve closed. In the relief mode of operation, pneumatic pressure is used to open the valve, initiated by switches located in the control room or by pressure-sensing instrumentation.

### 2.2 Proposed Changes to the Standard Technical Specifications

Proposed changes applicable to both NUREG-1433 (BWR/4 plants) and NUREG-1434 (BWR/6 plants) for STS 3.4.3 and 3.4.4, respectively:

- The name of the STS Section would be renamed from “Safety/Relief Valves (S/RVs)” to “Overpressure Protection System (OPS).”
- The LCO would be revised from requiring a specified number of S/RVs to be operable to “The OPS shall be OPERABLE.” For NUREG-1434, the requirement for the relief function of a specific number of S/RVs to have their relief function operable is also deleted.
- Conditions A, B, and C under Actions would be deleted. A new Condition A would state “OPS inoperable.” The Required Action for entering proposed Condition A would be: “be in MODE 3 in 12 hours and MODE 4 in 36 hours.” The Action and Completion Time for the proposed Condition A are the same as those in the existing Condition C.
- SRs 3.4.3.1 (NUREG-1433) and 3.4.4.1 (NUREG-1434) would be revised to delete a note that allows up to two S/RVs to be changed to a lower setpoint group. The as-found

relief limits would be deleted from the SR resulting in the SR simply requiring that the as-left S/RV settings be within one percent of the valves' nominal setpoints. For the frequency of this SR, the option for a calendar frequency or use of the Surveillance Frequency Control Program (SFCP) would be deleted. The frequency is proposed as "In accordance with the INSERVICE TESTING PROGRAM."

For NUREG-1433 for BWR/4 plants:

- SR 3.4.3.2 is proposed to be revised to state, "Verify the as-found OPS lift pressures of the [required] S/RVs are within the limits specified in the COLR." In addition to moving the limits to the COLR, the traveler removes the lower as-found tolerance. The frequency for the SR would be "In accordance with the INSERVICE TESTING PROGRAM." The existing SR 3.4.3.2 that required each S/RV be verified to be capable of opening when manually actuated would be deleted. The note that allows the SR to be performed up to 12 hours after reactor steam pressure and flow are adequate to perform the test would also be deleted. The existing frequency based on calendar time or the SFCP would be deleted.

For NUREG-1434 for BWR/6 plants:

- SR 3.4.4.2 would be revised to state, "Verify each S/RV [required] to act in the relief mode actuates on an actual or simulated automatic initiation signal." This would be a change in nomenclature with no real effect on the requirement. The frequency remains at [18] months or per the SFCP.
- SR 3.4.4.3 is proposed to be replaced in its entirety. The requirement to verify that each S/RV opens when manually actuated would be deleted and would be replaced with, "Verify the as-found OPS lift pressures of the [required] S/RVs are within the limits specified in the COLR." In addition to moving the limits to the COLR, the traveler removes the lower as-found tolerance. The proposed frequency for the SR is "In accordance with the INSERVICE TESTING PROGRAM." The existing frequency based on calendar time or the SFCP would be deleted.

Last, the COLR STS 5.6.3 in both NUREGs would not be changed.

### 2.3 Applicable Regulatory Requirements and Guidance

As described in the Commission's "Final Policy Statement on Technical Specifications Improvements for Nuclear Power Reactors" (Final Policy Statement) (58 FR 39132, dated July 22, 1993), the NRC and industry task groups for new STSs recommended that improvements include greater emphasis on human factors principles in order to add clarity and understanding to the text of the STSs, and provide improvements to the STS Bases, which provide the purpose for each requirement in the STSs. The improved vendor-specific STSs were developed and issued by the NRC in September 1992.

Both the common standards for licenses in 10 CFR 50.40(a) (regarding, among other things, consideration of the operating procedures, the facility and equipment, the use of the facility, and other technical specifications, or the proposals) and those specifically for issuance of operating licenses in 10 CFR 50.57(a)(3), provide that there must be reasonable assurance that the activities at issue will not endanger the health and safety of the public and that the applicant will

comply with the Commission's regulations. The regulations in paragraph 50.36(a)(1) require that:

Each applicant for a license authorizing operation of a production or utilization facility shall include in his application proposed technical specifications in accordance with the requirements of this Section. A summary statement of the bases or reasons for such specifications, other than those covering administrative controls, shall also be included in the application, but shall not become part of the technical specifications.

The Commission's Final Policy Statement at 58 FR 39138 states that each LCO, action, and SR should have supporting Bases, and the Bases should at a minimum address certain questions and cite references to appropriate licensing documentation (e.g., FSAR, Topical Report) to support the Bases. Those questions are listed in the relevant sections below.

The regulations in 10 CFR 50.36(b) require that:

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

Per 10 CFR 50.36(c)(1), (2), (3), and (5), TS will include items in, among other things, the categories of SLs, limiting conditions for operation, SRs, and administrative controls, respectively. Details about these categories are discussed below.

Safety limits are addressed by 10 CFR 50.36(c)(1)(i)(A), which states in part:

Safety limits for nuclear reactors are limits upon important process variables that are found to be necessary to reasonably protect the integrity of certain physical barriers that guard against the uncontrolled release of radioactivity. If any safety limit is exceeded, the reactor must be shut down.

Limiting conditions for operation are addressed by 10 CFR 50.36(c)(2), and 10 CFR 50.36(c)(2)(i) states:

Limiting conditions for operation are the lowest functional capability or performance levels of equipment required for safe operation of the facility. When a limiting condition for operation of a nuclear reactor is not met, the licensee shall shut down the reactor or follow any remedial action permitted by the technical specifications until the condition can be met.

The remedial actions permitted by the TS must provide the requisite reasonable assurance required by 10 CFR 50.40(a) and 50.57(a)(3). In its Final Policy Statement at 58 FR 39138, the Commission stated that the Bases for each LCO, should explain why the LCO was determined to be the lowest functional capability or performance level for the system or component in question necessary for safe operation of the facility and, what are the reasons for the Applicability of the LCO.

The regulations in 10 CFR 50.36(c)(2)(ii)(A)-(D) list the criteria for determining when an LCO of a nuclear reactor must be established. Note that per 10 CFR 50.36(c)(2)(iii), a licensee is not required to propose to modify technical specifications that are included in any license issued before August 18, 1995, to satisfy the criteria in 10 CFR 50.36(c)(2)(ii). In its Final Policy Statement at 58 FR 39138, the Commission stated that the Bases should provide the justification for the technical specification, i.e., which Policy Statement criterion requires it to be in the technical specifications.

Criterion 3 from 10 CFR 50.36(c)(2)(ii)(C) requires the establishment of an LCO for a “structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a design basis accident or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.”

SRs are addressed by 10 CFR 50.36(c)(3), and are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met. In its Final Policy Statement at 58 FR 39138, the Commission stated that the Bases should explain the Bases for each Surveillance Requirement and Surveillance Frequency; i.e., the specific functional requirement is the surveillance designed to verify, and the reason the surveillance necessary at the specified frequency to assure that the system or component function is maintained, that facility operation will be within the safety limits, and that the LCO will be met.

Administrative controls are addressed by 10 CFR 50.36(c)(5) and “are the provisions relating to organization and management, procedures, recordkeeping, review and audit, and reporting necessary to assure operation of the facility in a safe manner.”

As defined in STS 1.1, the COLR is the unit-specific document that provides cycle-specific parameter limits for the current reload cycle. These cycle-specific limits shall be determined for each reload cycle in accordance with STS 5.6.3. “Core Operating Limits Report.” Plant operation within these limits is addressed in individual TSs. STS 5.6.3.a. requires that core operating limits shall be established prior to each reload cycle, or prior to any remaining portion of a reload cycle, and shall be documented in the COLR for individual specifications that address core operating limits listed STS 5.6.3.a. All current BWR licenses have in their TS an analogous requirement.

The regulations in 10 CFR 50.55a(c)(1) specify that components which are part of the RCPB must meet the requirements for Class 1 components in Section III of the ASME BPV Code, except as provided in 10 CFR 50.55a(c)(2), (3), and (4). 10 CFR 50.55a(f)(4) further requires, in part, that throughout the service life of BWR facilities, valves that are within the scope of the ASME OM Code must meet the inservice test requirements (except design and access provisions) set forth in the ASME OM Code to the extent practical, within the limitations of design, geometry, and materials of construction of the components.

The NRC staff’s guidance for the review of TSs is in NUREG-0800, “Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR [light-water reactor] Edition” (SRP), Chapter 16.0, “Technical Specifications,” Revision 3, dated March 2010 (ML100351425).

### 3.0 TECHNICAL EVALUATION

The NRC staff reviewed TSTF-576, Revision 3, which proposes changes to NUREG-1433 and NUREG-1434. The NRC staff considered the requirements and guidance listed in Section 2.3 of this safety evaluation (SE) in its review to determine the acceptability of the proposed changes. The NRC staff reviewed the changes to determine whether the proposed revisions to the STS meet the standards for TS in 10 CFR 50.36, as well as maintain consistency with the Final Policy Statement. The NRC staff evaluation focused on the ability of the proposed STS changes to ensure that the SL for RCS pressure would not be exceeded. The NRC staff also considered whether the proposed changes could challenge the assumptions used in other plant analyses.

The NRC staff concludes that the requested changes in the traveler are acceptable for the reasons discussed in this SE. The NRC staff provides the following discussion of its evaluation as well as other important information related to its review of the traveler.

#### 3.0.1 The Usage of “Align” in TSTF-576 Should Not Be Read as Implying That the STS Are Incongruent with the Regulations and Commission Policy Statement

TSTF-576 uses language that could be read as suggesting that the current STS and current issued operating licenses are not “aligned” with the regulations and that the current STS do not meet the Commission’s Policy Statement. However, the NRC staff does not read those statements in that fashion. Instead, the NRC staff reads such “align” statements as recognitions that a different approach can “align” with the regulations in 10 CFR 50.40, 50.57, 50.54, and 50.55a; acceptance of a proposed revision to the STS should not result in an inference that the existing STS fail to meet regulations and fail to provide reasonable assurance. The model STS on S/RVs is fully aligned with the Commission’s regulations including, for example, 10 CFR 50.40(a) (consideration of, among other things, how the operating procedures, the facility and equipment, the use of the facility, and other technical specifications, collectively provide reasonable assurance that the applicant will comply with the Commission’s regulations and that the health and safety of the public will not be endangered). As documented in numerous licensing actions, the NRC has found that proposed plant-specific TS that include LCOs, actions to be taken when the LCOs cannot be met, and SRs provide the requisite reasonable assurance of public health and safety and compliance with the Commission’s regulations needed to support issuing or amending an operating license.

#### 3.0.2 Using a System-based LCO Instead of a Component-Based LCO is Acceptable Under 10 CFR 50.36(c)

The NRC staff considered how TSTF-576 changed the approach for the LCO from a component-based determination to a system-based determination. The regulation at 10 CFR 50.36(c)(2)(i) requires that TS include items in the category of limiting conditions for operation that are the lowest functional capability or performance levels of equipment required for safe operation of the facility. Further, 10 CFR 50.36(c)(2)(ii)(A)-(D) sets forth four criteria to be used to determine if a TS LCO must be established. Criterion 3 in 10 CFR 50.36(c)(2)(ii)(C) and Criterion 4 in 10 CFR 50.36(c)(2)(ii)(D) treat “a structure, system, or component” equally when considering the need to establish an LCO. Thus, the staff concludes that there is no prohibition that would preclude changing a TS LCO from component-based to system-based. The NRC staff notes that a review of LCOs in the STS clearly show that the lowest functional capability may be equally well represented by component (e.g., LCOs for containment isolation valves) or system (e.g., LCOs for systems like STS 3.2.1 for Average Planar Linear Heat Generation Rate) level criteria, or a combination of these. Thus TSTF-576, which would make such a component-

based to systems-based change for an LCO, is not contrary to the regulations in 10 CFR 50.36(c)(2).

### 3.0.3 10 CFR 50.59 Addresses When Prior NRC Approval Must Be Obtained Prior to Implementing Changes to Analyses That Use S/RV settings.

The scope of a licensing action to adopt TSTF-576 would be defined by a LAR. An issue that the staff considered during this review is the fact that if the S/RV as-found upper tolerances are changed via the processes set forth in TSTF-576, then a licensee would also need to change the corresponding inputs, criteria, or other considerations associated with the S/RV as-found upper tolerances. Whether such changes must first be approved by the NRC via a license amendment is controlled by the Commission's regulations in 10 CFR 50.59.

The traveler indicates that methods used to perform other analyses of record, such as containment or S/RV piping integrity, or high-pressure injection system capability, might also be affected. Licensees adopting changes to as-found S/RV limits controlled by the COLR are required to evaluate the effects of changes on other analyses by 10 CFR 50.59. Analyses that are directly affected by changing the allowable as-found lift pressures might include, but are not limited to, S/RV tailpipe mechanical loading, containment integrity, high pressure ECCS performance, and standby liquid control performance. This is not an all-inclusive list of affected analyses because plants may have other analyses that use the S/RV settings as inputs, criteria, or considerations. However, the licensee's compliance with 10 CFR 50.59, and licensee's resulting to seek, or to decline to seek, prior approval via a LAR of changes to those associated analyses are beyond the scope of this SE.

### 3.0.4 Removal of the Lower As-found Tolerance

The proposed change in TSTF-576 removes the as-found low tolerance pressure limit from the STS. The low tolerance is not an assumption in the overpressure analysis and is not needed to protect the overpressure SL. One purpose of the lower as-found setpoint tolerance is to ensure sufficient margin exists between the normal operating pressure of the system and the point at which the S/RVs actuate in the safety mode. The difference between normal operating pressure and the lowest opening pressure of relief valves is referred to as the simmer margin. If the opening pressure of an S/RV drifts too low, it could open during normal operation or a minor transient, thus initiating a transient or increasing the consequences of a transient.

Some plants make use of the LLS function. This function is to open an S/RV earlier (i.e., at a lower pressure) and stay open longer to avoid excessive short duration S/RV cycling. If the opening pressure of an S/RV drifts down, that S/RV could open before reaching the LLS setpoint and could then open/close repeatedly, defeating the LLS function.

The existing S/RV TS and proposed OPS TS protect the RCS from damage due to overpressure. Other programs ensure that the as-found low setpoints are acceptable. For example, the Inservice Testing (IST) Program will continue to confirm that the tested S/RVs open between an established lower and upper tolerance about the setpoint. In addition, the traveler states that the S/RVs fall under the Maintenance Rule, 10 CFR 50.65, and that licensee Maintenance Rule programs require establishing performance criteria, monitoring and trending performance, determining the cause of failures, and taking corrective action. Accordingly, licensees are required to implement 10 CFR 50.65 considering the requirements of the rule as they apply to the S/RVs, including the potential for causing unanticipated transients through inadvertent S/RV opening. The IST Program assures the operational readiness of components



within its purview. The Maintenance Rule requires all plants to trend the performance of components and systems important to safety to assure that they maintain adequate levels of quality. Therefore, NRC staff concludes that these requirements are adequate to identify, assess, and take corrective actions for the potential effects of low S/RV as-found setpoints on plant operation.

### 3.0.5 Using the COLR for Controlling S/RV As-Found Limits

TSTF-576 references the COLR STS program as follows:

The COLR Specification, paragraph c, states, "The core operating limits shall be determined such that all applicable limits (e.g., fuel thermal mechanical limits, core thermal hydraulic limits, Emergency Core Cooling Systems (ECCS) limits, nuclear limits such as SDM, transient analysis limits, and accident analysis limits) of the safety analysis are met." This paragraph will also apply to the S/RV as-found pressure limits. If a licensee should specify S/RV as-found lift pressure limits that will result in an increase in the peak reactor pressure in an overpressure event or a nonconservative change in the S/RV analysis-of-record (e.g., thrust load), the licensee must also consider other effects resulting from the new limits as required by paragraph c.

The proposed change includes removing the as-found acceptance criteria for the S/RVs from the STS and moving them to the COLR. Once relocated to the COLR, the settings would be controlled by the licensee and changes would no longer require a TS change, LAR, or prior review and approval by the NRC. The traveler requires each licensee to reference an NRC-approved method for the RCS overpressure analysis in the COLR. The COLR TS 5.6.3 specifies a list of NRC-approved methods from which a method must be used. The licensee would use that approved method to assure that the as-found limits would adequately protect RCS pressure and assure that the SL is not exceeded. Although the relocation of the S/RV as-found limits to the COLR is different from previous items in the COLR (i.e., it is not a cycle-specific core physics parameter), the NRC staff determined that under the proposed controls, relocation is acceptable for the overpressure analysis because the use of an NRC-approved methodology is required, as discussed in Section 3.1 of this SE.

Under the existing STS, all calculations used to develop values in the COLR are performed using NRC-approved methods that are specified in the COLR. If a licensee desires to use a different method than the one listed in the COLR, a change to the TS is required and the licensee must submit a LAR to change the COLR in Section 5 of their TS.

The peak reactor pressure in an overpressure event must be determined in accordance with an NRC-approved methodology that is specified in the COLR TS. Note that this SE does not address a licensee's request for approval, via a license amendment, of a method to be specified in the COLR TS.

In addition to relocating the as-found allowable tolerances, TSTF-576 changes the way the tolerances are applied. The existing STS SR requires each valve to open within  $\pm 3\%$  of its setpoint. TSTF-576 does not define the formatting of the new limits or how the setpoints will be specified in the COLR. However, the traveler provides examples of how the COLR limits could be presented in plant-specific COLRs. As stated in TSTF-576 and shown in the examples, the as-found lift pressure limits are not valve-specific. That is, the limits may be expressed as a single limit for all valves, or as one or more S/RVs opening below a prescribed pressure and

one or more other groups of valves opening at different limits. Various combinations of as-found limits may be used.

Per 10 CFR 50.73(a)(2)(i)(B), the holder of an operating license issued under 10 CFR Part 50 or a combined license issued under 10 CFR Part 52 shall submit an LER within 60 days after the discovery of any operation or condition that was prohibited by the plant's technical specifications (with certain exceptions). Accordingly, if during testing, a licensee determines that the OPS as-found condition exceeds the limits established in the COLR, then the licensee would document the findings in an LER that meets 10 CFR 50.73(b). The required contents of an LER are provided in 10 CFR 50.73(b).

### 3.0.6 Testing and ASME OM Code Requirements

For as-found testing, the traveler would require that the population of S/RVs to be tested and the frequency of the testing be per the ASME OM Code. The traveler states that the testing is performed during a plant shutdown and verifies that each S/RV opens within the required as-found tolerance around the setpoint. However, the ASME OM Code does not require every S/RV to be tested each plant shutdown. ASME OM Code Mandatory Appendix I, paragraph I-1320, "Test Frequencies, Class 1 Pressure Relief Valves," requires a minimum of 20% of the valves from each valve group to be tested within any 24-month interval. Mandatory Appendix I, subparagraph I-1320(c), "Requirements for Testing Additional Valves," gives the process for testing additional valves when a valve test acceptance criterion is not met. Specifically, it states that:

...additional valves shall be tested in accordance with the following requirements:  
(1) For each valve tested for which the as-found set-pressure (first test actuation) exceeds the greater of either the plus/ minus tolerance limit of the Owner-established set-pressure acceptance criteria of I-1310(e) or  $\pm 3\%$  of valve nameplate set-pressure, two additional valves shall be tested from the same valve group. (2) If the as-found set-pressure of any of the additional valves tested in accordance with (1) exceeds the criteria noted therein, then all remaining valves of that same valve group shall be tested.

The ASME OM Code does not require each S/RV be tested at each plant shutdown, but rather a minimum of 20% of the valves from each valve group within any 24-month interval, with additional testing if the valve as-found setpoints are not within the required tolerance. Mandatory Appendix I, subparagraph I-1310(e) "Acceptance Criteria," allows the Owner to establish and document acceptance criteria for tests required by Mandatory Appendix I. That is, the ASME OM Code would require the values included in the COLR (or a more conservative value) be used for determination of acceptable performance and whether the valve population being tested needs to be expanded.

Some licensees test the valves during each refueling outage and expand the population of valves to be tested during the outage, if required, based on the test results. Other licensees remove the full population of valves, replace them with spares that have been set to within the required as-left tolerance, and test the removed S/RVs (within a year of removal from the system) after the plant is returned to service.

The traveler would allow different S/RVs to have different setpoint tolerances. If the valve testing and population expansion is based on a single tolerance, then the ASME OM Code criteria for requiring additional valves to be tested can be applied. If there are different tolerances for

different S/RVs, ASME OM Code requirements can no longer be applied. The traveler states on page 15 of Section 3, that if a licensee adopts more than one IST acceptance criteria, the licensee will have to request guidance, relief, or an alternative because this situation is not addressed in the current ASME OM Code requirements. The Commission's regulations in 10 CFR 50.55a provide Required Actions for cases where IST Code requirements conflict with technical specifications.

### 3.0.7 Usage of System-Based OPS LCO Provides Reasonable Assurance

The NRC staff evaluated the philosophical change from an S/RV (component) based TS to an OPS (system) based LCO. The methods required to determine the acceptability of the as-found acceptance criteria would be specified in the COLR. The as-found criteria for upper limits would be moved to the COLR and could be changed by the licensee without NRC staff review. This is a change from the current method which requires prior NRC approval via a license amendment of S/RV as-found tolerances on a component-by-component basis. The lower tolerances are controlled by the ASME OM Code as required by 10 CFR 50.55a. This allows the licensee to establish limits other than the  $\pm 3$  percent specified in the ASME OM Code. Second, the upper as-found setting acceptance criteria are proposed to be system-based (OPS) instead of based on individual valve settings. The use of NRC staff-approved methods provides adequate assurance that the values in the COLR will be acceptable.

In addition to moving the upper as-found tolerances to the COLR TS, the requirements for specific numbers of valves to be operable would be deleted. The valves are reset, before installation, to within  $\pm 1$  percent of the nameplate setpoints as required by the ASME OM Code and the TS. The ASME OM Code requires all valves to be reset to meet the acceptance criteria of the ASME OM Code and the TS specifies the required S/RVs be reset to the  $\pm 1$  percent tolerance. Resetting the valves to within  $\pm 1$  percent of the nameplate setpoints and operating experience provides assurance that even if the S/RVs drift, the drift will not result in a condition that would result in a challenge to the RCS pressure SL during a design basis accident (DBA). Operating experience shows that it is unlikely for an S/RV to become inoperable for reasons other than setpoint drift, or to be discovered to be inoperable except during as-found testing. The NRC staff also notes that if an S/RV was determined to be inoperable while the plant is in operation, the licensee would have to perform an evaluation to show that the remaining valves meet TS requirements and protect the SL, or the plant would have to be taken out of the applicability for the LCO. Therefore, the NRC staff concludes that it is acceptable to replace the LCO requirement for a specific number of valves to be operable with a requirement for the collective ability of the S/RVs (the OPS) to be operable.

The changes to the Actions would also delete the Conditions that require action if a specific number of S/RVs are inoperable. As discussed above, the ASME OM Code requires that all S/RVs be operable when they are installed following maintenance. The traveler noted that the Actions for a specific number of S/RVs to be inoperable, currently contained in the STS, are included in a relatively small number of BWR plant TS. Based on operating experience and the ASME OM Code requirements to reset all valves to the required tolerance prior to placing them in service, the NRC staff concludes that it is reasonable to assume that the S/RVs are capable of preventing an overpressure condition in the RCS as long as the OPS is operable as required by the proposed LCO. The COLR TS will contain the required NRC-approved methods that must be used to determine the specific requirements for OPS operability.

### 3.1 Standard Technical Specification 5.6.3, "Core Operating Limits Report"

The COLR was established to provide licensees the ability to control cycle-specific parameters outside the TS. The COLR establishes requirements for analyses used to develop values included in the COLR. Per STS 5.6.3.b, "The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC, specifically those described in the following documents [listed in TS 5.6.3.b]."

The traveler states that the S/RV as-found tolerance limits will be removed from the S/RV TS and the upper limits will be added to the COLR. The lower limits will be removed from TS and will be established per the ASME OM Code which allows the licensee to establish limits other than the  $\pm 3$  percent specified in the ASME OM Code. Refer to the discussions above in Section 3.0.5, "Using the COLR for Controlling S/RV As-Found Limits," for background on this issue and the NRC staff's evaluation.

The NRC staff evaluated the relocation of the as-found S/RV limits to the COLR and found it acceptable because:

- The LCO requires the OPS to be operable.
- All as-found limits, with greater tolerance than those approved in the licensee's existing TS, must be evaluated to assure that all analyses applicable to the plant remain valid for the greater tolerance.
- The licensee will perform the overpressure analysis using an NRC-approved methodology which will be specified in the COLR specification.
- Evaluations of other potentially affected analyses are required by the COLR TS. Licensees will determine when prior NRC approval is required using the 10 CFR 50.59 regulation. Licensees are required to verify that methods used to evaluate these analyses are consistent with those in the plant licensing basis.<sup>2</sup>

### 3.2 NUREG-1433 Standard Technical Specification 3.4.3, "Safety/Relief Valves (S/RVs)"

#### 3.2.1 Change to the Name of STS 3.4.3

The name of STS 3.4.3 is proposed to be changed from "Safety/Relief Valves (S/RVs)" to "Overpressure Protection System (OPS)." This change is proposed to clarify that the S/RVs are governed by several STS, not just STS 3.4.3. The proposed STS 3.4.3 only relates to the cumulative behavior of the S/RVs acting in the safety mode, and relief mode at some BWR/4 plants, to protect the RCS from overpressure, and is therefore proposed to be renamed to OPS. The name change does not affect STS requirements, SRs, or other Required Actions, and will add clarity to the proposed STS as it aligns with the OPS function. Therefore, the NRC staff concludes that the proposed name change is acceptable.

#### 3.2.2 Change to LCO 3.4.3

LCO 3.4.3 currently states, "The safety function of [11] S/RVs shall be OPERABLE." The LCO is proposed to be changed to, "The OPS shall be OPERABLE." The controls contained in the COLR specification will assure that the RCS pressure SL will not be exceeded because the

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<sup>2</sup> In the past, evaluations for expanding S/RV as-found tolerances were conducted using guidance from General Electric TR NEDC-31753P, "BWROG In-Service Pressure Relief Technical Specification Revision Licensing Topical Report," February 1990.

OPS LCO is equivalent to the existing requirement to have a specific number of S/RVs operable. Individual S/RVs may have different as-left tolerances established in the COLR, but the OPS will prevent the SL from being exceeded. The COLR specification requires the overpressure, and other analyses that could be affected by individual valve inoperability or changes to COLR values, to be evaluated by the licensee. The NRC staff's evaluation of this change is discussed in Section 3.0.5 of this SE. The NRC staff finds that the change is acceptable because the requirements within the revised STS 3.4.3 will ensure that the S/RVs are capable of providing the overpressure protection required for the RCS.

### 3.2.3 Changes to Conditions and Required Actions in LCO 3.4.3

The existing action associated with Condition A of LCO 3.4.3 requires if one or two required S/RVs are inoperable that they be restored to OPERABLE status in 14 days or per the Risk Informed Completion Time (RICT) Program. Existing Condition B requires if the Required Action of Condition A is not met, that the plant be in Mode 3 in 12 hours. Existing Condition C requires that if three or more required S/RVs are inoperable that the plant be in Mode 3 in 12 hours and Mode 4 in 36 hours. Conditions A, B, and C of this Action would be deleted.

The note associated with Required Action B.1, which states that LCO 3.0.4.a is not applicable when entering Mode 3, would be deleted as part of the elimination of the Action. The note is no longer required because the new Condition A, described below, has a terminal action to be in Mode 4, which is outside the applicability of the LCO.

A new Condition A is proposed that reads, "OPS inoperable." In this condition, the Required Actions are to be in Mode 3 in 12 hours and Mode 4 in 36 hours. The traveler contains no further Conditions or Actions.

While the overall reliability of the system is reduced when S/RVs are inoperable, individual valves being inoperable may not prevent the ability of the system to perform its safety function. If a licensee determines that one or more S/RVs is inoperable it would have to determine if the individual valve inoperability results in an OPS inoperability. In addition, the action requirements and completion times for an inoperable OPS are the same as those currently in place for conditions where S/RVs might be incapable of adequately limiting RCS pressure during postulated events.

### 3.2.4 Changes to Surveillance Requirements 3.4.3.1 and 3.4.3.2

SR 3.4.3.1 is proposed to be revised to read, "Verify the as-left OPS lift pressures of the [required] safety/relief valves (S/RVs) are within  $\pm 1\%$  of the nominal setpoint." The proposed frequency would be in accordance with the IST Program. The proposed SR also lists the number of S/RVs in each setpoint group and the nominal setpoints for each group. The traveler removes the requirement to verify the as-found setpoints from SR 3.4.3.1 and relocates it to the revised SR 3.4.3.2. The as-found upper limits are moved to the COLR, and the as-found lower limits are established per the ASME OM Code. The traveler deletes an optional note that allows up to two S/RVs to be moved to a lower group. The elimination of the note is acceptable because only one plant in the BWR fleet has this note in its TS so it should not be included in the STS. The note also provided additional flexibility, so removing it is conservative. The proposed change would also delete the alternate frequencies of [18] months and in accordance with the SFCP. The proposed change simplifies the SR by using the requirements of the ASME OM Code for the as-left setting frequencies and eliminates unnecessary language. The requirement of the proposed SR 3.4.3.1 to set the S/RVs to within  $\pm 1\%$  of the nominal setpoint

helps to provide an expectation of operability for the valves throughout the operating cycle considering the historical drift associated with as-found testing. The SR is reworded in terms of the OPS. The elimination of the alternative frequencies is acceptable because the IST Program frequency requirements are adequate to assure that the valves have as-left settings that maintain adequate safety. The frequencies for testing specified in the OM Code provide adequate assurance that the S/RV testing assure operational readiness.

The existing SR 3.4.3.2<sup>3</sup>, which requires verification that each [required] S/RV opens when manually actuated, would be deleted. The traveler states that the TS of only seven of the 30 units include an equivalent SR. The traveler also states that plant safety analyses do not assume that the S/RVs will open manually to limit overpressure and, as a result, the ability to open manually is not required to demonstrate that the valve can perform its specified safety function. The NRC staff concludes that it is not necessary to test the manual actuation function if this function is not credited in the plant safety analyses. The NRC staff also concludes that it is not necessary to test the relief function at plants where it is not credited in the safety analyses as part of the RCS overpressure protection. Therefore, it is acceptable to delete the existing SR 3.4.3.2 requirements.

A new SR 3.4.3.2 is proposed that states, "Verify the as-found OPS lift pressures of the [required] S/RVs are within the limits specified in the COLR." The frequency is proposed to be in accordance with the IST Program. This SR provides verification of the upper as-found lift setting requirements that were relocated from SR 3.4.3.1 to the COLR. The lower as-found settings are established per the ASME OM Code. Elimination of the lower as-found setpoint from the STS is acceptable because it does not affect any accident analyses, and does not contribute to the protection of the RCS overpressure SL. Therefore, it is not required by 10 CFR 50.36 to be included in TS.

As discussed, in Sections 3.0.5 "Using the COLR for Controlling S/RV As-Found Limits," and 3.1 of this SE, the NRC staff has determined that the methodology that would be documented in the COLR specification is acceptable for determining the allowable as-found upper tolerance(s) for the S/RVs. The SR appropriately uses the allowable as-found upper tolerance(s), located in the COLR, when verifying the ability of the S/RVs to perform their required functions.

The NRC staff concludes that the S/RVs credited for satisfying the proposed SR 3.4.3.2 must have also met the proposed SR 3.4.3.1 when they were last installed. This is because SR 3.0.1 requires that the S/RVs be capable of meeting all applicable SRs at all times while operating in the modes of applicability. So, 10 CFR 50.36(c)(3) will continue to be met because the SRs will continue to ensure that the necessary quality of systems and components is being maintained.

### 3.3 NUREG-1434 Standard Technical Specification 3.4.4, "Safety/Relief Valves (S/RVs)"

#### 3.3.1 Change to the Name of STS 3.4.4

The name of STS 3.4.4 is proposed to be changed from "Safety/Relief Valves (S/RVs)" to "Overpressure Protection System (OPS)." This change is proposed to clarify that the S/RVs are governed by several STS, not just STS 3.4.4. The proposed STS 3.4.4 only relates to the

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<sup>3</sup> There are two BWR/4 plants that require S/RVs operating in the relief mode to assure that the OPS can adequately control RCS pressure during postulated events. The traveler states that these two plants will retain SRs that verify that the relief mode valves credited for overpressure protection are functioning as needed.

cumulative behavior of the S/RVs acting in the safety mode, and relief mode to protect the RCS from overpressure and is therefore proposed to be renamed to OPS. The name change does not affect STS requirements, SRs, or other Required Actions, and will add clarity to the proposed STS as it aligns with the OPS function. Therefore, the NRC staff concludes that the proposed name change is acceptable.

### 3.3.2 Change to LCO 3.4.4

LCO 3.4.4 currently states, "The safety function of [seven] S/RVs shall be OPERABLE, AND The relief function of [seven] additional S/RVs shall be OPERABLE." The LCO is proposed to be changed to, "The OPS shall be OPERABLE." The controls contained in the COLR specification will assure that the RCS pressure SL will not be exceeded because the OPS LCO is equivalent to the existing requirement to have a specific number of S/RVs operable. The COLR specification requires the overpressure, and other analyses that could be affected by individual valve inoperability or changes to COLR values, to be evaluated by the licensee. The NRC staff's evaluation of this change is provided in Section 3.0.5 of this SE. The NRC staff finds that the change is acceptable because the requirements within the revised STS 3.4.4 will ensure that the S/RVs are capable of providing the overpressure protection required for the RCS.

### 3.3.3 Changes to Conditions and Required Actions in LCO 3.4.4

The existing Condition A of LCO 3.4.4 requires that if one required S/RV is inoperable that it be restored to OPERABLE status in 14 days or per the RICT Program. Existing Condition B requires if the Required Action of Condition A is not met, that the plant be in Mode 3 in 12 hours. Existing Condition C requires that if two or more required S/RVs are inoperable that the plant be in Mode 3 in 12 hours and Mode 4 in 36 hours. Conditions A, B, and C of this Action would be deleted.

The note associated with Required Action B.1, which states that LCO 3.0.4.a is not applicable when entering Mode 3, would be deleted as part of the elimination of the Action. The note is no longer required because the new Condition A, described below, has a terminal action to be in Mode 4, which is outside the applicability of the LCO.

A new Condition A is proposed that reads, "OPS inoperable." In this condition, the Required Actions are to be in Mode 3 in 12 hours and Mode 4 in 36 hours. The traveler contains no further Conditions or Actions.

While the overall reliability of the system is reduced when S/RVs are inoperable, individual valves being inoperable may not impact the ability of the system to perform its function provided the remaining valves required to assure OPS operability are functioning properly. If a licensee determines that one or more S/RVs is inoperable it would have to determine if the individual valve inoperability results in an OPS inoperability. In addition, the action requirements and completion times for an inoperable OPS are the same as those currently in place for conditions where S/RVs might be incapable of adequately limiting RCS pressure during postulated events. The NRC staff finds that the requirements for the OPS to be operable provide adequate assurance that the SL will be protected as evaluated in Section 3.0.7 of this SE, and therefore, the proposed Condition and Required Actions are acceptable.

### 3.3.4 Changes to Surveillance Requirements 3.4.4.1 and 3.4.4.2

SR 3.4.4.1 is proposed to be revised to read, "Verify the as-left OPS lift pressures of the [required] safety/relief valves (S/RVs) are within  $\pm 1\%$  of the nominal setpoint." The proposed frequency would be in accordance with the IST Program. The proposed SR also lists the number of S/RVs in each setpoint group and the nominal setpoints for each group. The traveler relocates the requirements for verification of the as-found setpoints from SR 3.4.4.1 to the revised SR 3.4.4.3. The as-found upper limits are moved to the COLR, and the as-found lower limits are established per the ASME OM Code. The traveler would delete an optional note that allows up to two S/RVs to be moved to a lower group. The elimination of the note is acceptable because only one plant in the BWR fleet includes this note in its TS so it should not be included in the STS. The note also provided additional flexibility, so removing it is conservative. The proposed change would also delete the alternate frequencies of [18] months and in accordance with the SFCP. The proposed change simplifies the SR by using the requirements of the ASME OM Code for the as-left setting frequencies and eliminating unnecessary language. The requirement of the proposed SR 3.4.4.1 to set the S/RVs to within  $\pm 1\%$  of the nominal setpoint helps to provide an expectation of operability for the valves throughout the operating cycle considering the historical drift associated with as-found testing. The as-found limits are discussed below under SR 3.4.4.3. The SR is reworded in terms of the OPS. The elimination of the alternative frequencies is acceptable because the IST Program frequency requirements are adequate to assure that the valves have as-left settings that maintain adequate safety. The IST Program establishes test frequencies to assess operational readiness and identify degradation since the previous test conducted under the ASME OM Code. The updated SR 3.4.4.1, the reworded SR 3.4.4.2, and the revised SR 3.4.4.3 provide adequate requirements to protect the RCS overpressure SL. Therefore, the NRC staff concludes that the proposed change is acceptable. The acceptability of the three SRs to provide adequate protection of the SL are discussed throughout this Section (3.3.4).

The existing SR 3.4.4.2 would be reworded to state, "Verify each S/RV required to act in the relief mode actuates on an actual or simulated automatic initiation signal." The rewording is intended to clarify that the relief mode is a feature required for overpressure protection. All BWR/6 plants credit some valves acting in the relief mode for RCS overpressure protection. The NRC staff concludes that the change is acceptable since the requirement for the SR does not change and it remains clear which S/RVs are required to be tested to assure that the relief mode is functioning acceptably to provide overpressure protection.

The existing SR 3.4.4.3 that requires verification that each S/RV opens when manually actuated would be deleted. As discussed in Section 3.2.4 of this SE, the NRC staff finds this deletion to be acceptable for BWR/6 plants for the same reasons it was found acceptable for BWR/4 plants.

The traveler would replace the existing SR 3.4.4.3 with an SR that states, "Verify the as-found OPS lift pressures of the [required] S/RVs are within the limits specified in the COLR." The frequency is proposed to be in accordance with the IST Program. This SR provides the upper as-found lift setting requirements that were deleted from SR 3.4.4.1. The lower as-found settings are established per the ASME OM Code. Elimination of the lower as-found setpoint from the STS is acceptable because it does not affect any accident analyses, and does not contribute to the protection of the RCS overpressure SL. Therefore, it is not required by regulations to be in TS. See the discussion in Section 3.0.4 above titled "Removal of the Lower As-found Tolerance." The NRC staff has found that the frequencies for testing specified in the OM Code provide adequate assurance that the S/RV testing assure operational readiness.



As discussed above in Section 3.2.4 for BWR/4 plants, and as discussed in Sections 3.0.5, "Using the COLR for Controlling S/RV As-Found Limits," and 3.1 of this SE, the NRC staff has determined that the methodology that would be documented in the COLR specification is acceptable for determining the as-found tolerances for the S/RVs and provides assurance that the RCS pressure SL will not be exceeded because the COLR specification requires that an NRC-approved method be used to determine the allowable as-found upper tolerance(s). This provides reasonable assurance that the allowable as-found upper tolerance(s) will be protective of the SL. Therefore, the NRC staff finds that the proposed SR is acceptable.

The NRC staff concludes that the S/RVs credited for satisfying the proposed SR 3.4.4.3 must have also met the proposed SR 3.4.4.1 when they were last installed. In other words, the licensee cannot use one subset of valves for SR 3.4.4.3 requirements and a different subset of valves to meet the SR 3.4.4.1 requirements. This is necessary to satisfy 10 CFR 50.36(c)(3) and SR 3.0.1 which assure that the necessary quality of systems and components is maintained by requiring that the S/RVs meet the SRs at all times during the modes of applicability.

### 3.4 Evaluation of Proposed STS Bases Changes

This traveler will become part of the next major revision of the NRC's STS Bases NUREG documents. As such, the staff assessed the Bases included in TSTF-576 to determine if the Bases addressed the items in the Commission's Final Policy Statement described in Section 2.3 above. For the reasons below, the NRC staff found that the Bases sufficiently met the Final Policy Statement.

The Final Policy Statement says that Bases should provide the justification for the TS, i.e., discuss which Policy Statement criterion requires it to be in the TS. This standard is met because the STS Bases markup states that the OPS satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii) because the OPS protects the RCS, a fission product barrier. Criterion 3 requires, "...structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a DBA or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier," have an LCO included in the STS. Since the OPS protects the RCS pressure boundary the NRC staff concludes that use of Criterion 3 is correct.

The Final Policy Statement says that Bases should explain why an LCO was determined to be the lowest functional capability or performance level for the system or component in question necessary for safe operation of the facility and, what are the reasons for the Applicability of the LCO. These standards are met because the STS Bases markup states that the OPS operability will ensure that the SL 2.1.2 is protected. An inoperable OPS could result in the SL 2.1.2 being exceeded. The Bases markup states that the LCO is applicable in Modes 1, 2, and 3 since there may be considerable energy in the reactor in these Modes of applicability and the limiting design basis transients are assumed to occur in these modes. In lower modes the SL would not be challenged. The NRC staff concludes that the LCO and Applicability in the STS Bases are acceptable because the description explains why the LCO is the lowest functional capability and the reason for the Applicability of the LCO.

The Final Policy Statement says that the Bases for each Action should explain why the remedial action should be taken if the associated LCO cannot be met, how the Action relates to other Actions associated with the LCO, and what justifies continued operation of the system or component at the reduced state from the state specified in the LCO for the allowed time period.

These standards are met for the following reasons. The Action for an inoperable OPS requires that the plant be taken out of the applicability of the LCO if it is not met. The Action requires the plant to be in Mode 3 in 12 hours and Mode 4 in 36 hours. The STS Bases state that this is acceptable because it allows adequate time to exit the applicability without challenging plant systems. The Action takes the plant out of the Applicability as rapidly as is possible without excess risk of causing a transient during the evolution. The NRC staff concludes that the Action STS Bases are acceptable because the description supports understanding of the LCO and provides a justification for the completion time.

The Final Policy Statement says that the Bases for each SR should address the specific functional requirement that the surveillance is designed to verify, explain why the surveillance is necessary at the specified frequency to assure that the system or component function is maintained, that facility operation will be within the safety limits, and that the LCO will be met. These standards are met for the following reasons. The proposed STS Bases explain that the SR for as-left testing is required to meet the IST Program, including the required frequency. The as-left SR also specifies that the S/RVs be set within one percent of the nominal setpoint. The SR for the as-found testing is stated to ensure that the assumptions of the overpressure analysis are met. This testing is also described as being performed per the IST Program and states that the OPS S/RV lift pressures are specified in the COLR.

#### 4.0 CONCLUSION

The NRC staff concludes that the proposed changes to STS 3.4.3 (NUREG-1433) and STS 3.4.4 (NUREG-1434) are acceptable because, as discussed above, the revisions described in TSTF-576 will provide appropriate limiting conditions for operation, actions to be taken if the limiting conditions for operation are not met, appropriate SRs that assure that the OPS is maintained such that the limiting condition for operation will be met, and provide the necessary administrative controls (i.e., provisions related to procedures) to assure operation of the facility in a safe manner. The settings for S/RVs acting in the safety mode at all plants and the S/RVs acting in the relief mode at the plants that use relief mode for the OPS will continue to provide adequate overpressure protection that assures plant operation will be within the relevant safety analyses. Therefore, the NRC staff finds that the proposed changes to the existing S/RV STS are acceptable because the proposed changes meet the requirements of 10 CFR 50.36(c)(2)(i) (limiting conditions for operation and action statements) and 10 CFR 50.36(c)(3) (SRs), and 10 CFR 50.36(c)(5) (administrative controls). Last, the staff finds that the Bases proposed to be incorporated into the STS Bases NUREG-1433 Vol. 2 and NUREG-1434 Vol. 2 address the questions that the Commission stated should be addressed in its Final Policy Statement on Technical Specifications Improvements for Nuclear Power Reactors and provide references to appropriate licensing documentation (e.g., FSAR, Topical Report) to support the Bases.

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