# NON-CONCURRENCE PROCESS
# COVER PAGE

The U.S. Nuclear Regulatory Commission (NRC) strives to establish and maintain an environment that encourages all employees to promptly raise concerns and differing views without fear of reprisal and to promote methods for raising concerns that will enhance a strong safety culture and support the agency's mission.

Employees are expected to discuss their views and concerns with their immediate supervisors on a regular, ongoing basis. If informal discussions do not resolve concerns, employees have various mechanisms for expressing and having their concerns and differing views heard and considered by management.

Management Directive (MD) 10.158, "NRC Non-Concurrence Process," describes the Non-Concurrence Process (NCP).

The NCP allows employees to document their differing views and concerns early in the decision-making process, have them responded to (if requested), and include them with proposed documents moving through the management approval chain to support the decision-making process.

NRC Form 757, "Non-Concurrence Process," is used to document the process.

Section A of the form includes the personal opinions, views, and concerns of a non-concurring NRC employee.

Section B of the form includes the personal opinions and views of the non-concurring employee's immediate supervisor.

Section C of the form includes the agency's evaluation of the concerns and the agency's final position and outcome.

NOTE: Content in Sections A and B reflects personal opinions and views and does not represent the official agency's position of the issues, nor official rationale for the agency decision. Section C includes the agency's official position on the facts, issues, and rationale for the final decision.

1. Was this process discontinued? If so, please indicate the reason and skip questions 2 and 3:
   Process was not discontinued
2. At the completion of the process, the non-concurring employee(s):
   Continued to non-concur
3. For record keeping purposes:
   This record has been reviewed and approved for public dissemination

| NRC FORM 757<br>(06-2019)<br>NRC MD 10.158 | U.S. NUCLEAR REGULATORY COMMISSION<br><br>**NON-CONCURRENCE PROCESS (Continued)** | 1. NCP Tracking Number<br>NCP-2024-002<br>Date<br>2024-03-04 |
|---|---|---|

## Section A – To Be Completed by Non-Concurring Employee

| 2. Title of Subject Document | | 3. ADAMS Accession Number |
|---|---|---|
| Draft Safety Evaluation by the Office of Nuclear Reactor Regulation, Technical Specifications Task Force Traveler TSTF 576, Revision 3, "Revise Safety/Relief Valve Requirements." | | ML24053A102 |
| **4. Document Signer** | **5. Document Signer's Office** | **6. Document Signer's Email** |
| Shivani Mehta (She/Her/Hers) - BRANCH CHIEF | NRR | Shivani.Mehta@nrc.gov |
| **7. Name of Non-Concurring Employees** | **8. Non-Concurring Employee Offices** | **9. Employee Emails** |
| Robert Beaton - SENIOR NUCLEAR ENGINEER | NRR | Robert.Beaton@nrc.gov |
| **10. Non-Concurring Employee's Role for the Subject Document** | | |
| Document Contributor | | |
| **11. Name of Non-Concurring Employee Supervisors** | **12. Non-Concurring Employee Supervisor Offices** | **13. Supervisor Emails** |
| Lisa Regner (She/Her) - BRANCH CHIEF | NRR | Lisa.Regner@nrc.gov |
| **14.** | | |
| I would like my non-concurrence considered and would like a written evaluation in Sections B and C. | | |
| **15. When the process is complete, I would like management to determine whether public release of the NCP Form (with or without redactions) is appropriate (Select "No" if you would like the NCP Form to be non-public):** | | |
| Yes | | |
| **16. Reasons for the Non-Concurrence, Potential Impact on Mission, and the Proposed Alternatives** | | |
| Please see attached. | | |
| **17. Submitted By / Submitted On** | | 2024-03-04 |
| Robert Beaton - SENIOR NUCLEAR ENGINEER | | |

| NRC FORM 757<br>(06-2019)<br>NRC MD 10.158 | U.S. NUCLEAR REGULATORY COMMISSION<br><br>**NON-CONCURRENCE PROCESS (Continued)** | **1. NCP Tracking Number**<br>NCP-2024-002<br>**Date**<br>2024-03-18 |
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## Section B – To Be Completed by Non-Concurring Employee's Supervisor

| **2. Title of Subject Document** | | **3. ADAMS Accession Number** |
|---|---|---|
| Draft Safety Evaluation by the Office of Nuclear Reactor Regulation, Technical Specifications Task Force Traveler TSTF 576, Revision 3, "Revise Safety/Relief Valve Requirements." | | ML24053A102 |
| **4. Name of Non-Concurring Employee's Supervisor** | **5. Non-Concurring Employee's Supervisor Email** | **6. Office** |
| Lisa Regner (She/Her) - BRANCH CHIEF | Lisa.Regner@nrc.gov | NRR |

**7. Comments for the NCP Reviewer to Consider**

The NC staff have clearly described their issues of concern and I acknowledge and applaud their willingness to submit through the non-concurrence process. This is not my area of technical expertise, however, and I will not comment on the validity of these concerns.

| **8. Reviewed By / Reviewed On** | 2024-03-18 |
|---|---|
| Lisa Regner (She/Her) - BRANCH CHIEF | |

| NRC FORM 757<br>(06-2019)<br>NRC MD 10.158 | U.S. NUCLEAR REGULATORY COMMISSION | 1. NCP Tracking Number<br>NCP-2024-002 |
|---|---|---|
| | **NON-CONCURRENCE PROCESS (Continued)** | Date<br>2024-04-03 |

## Section C – To Be Completed by NCP Coordinator

| 2. Title of Subject Document | 3. ADAMS Accession Number |
|---|---|
| Draft Safety Evaluation by the Office of Nuclear Reactor Regulation, Technical Specifications Task Force Traveler TSTF 576, Revision 3, "Revise Safety/Relief Valve Requirements." | ML24053A102 |

| 4. Name of NCP Coordinator | 5. NCP Coordinator's Email | 6. Office |
|---|---|---|
| Scott Krepel - BRANCH CHIEF | Scott.Krepel@nrc.gov | NRR |

**7. Agreed Upon Summary of Issues**

The primary basis provided by the non-concurrer for his position is that 10 CFR 50.36(c)(2)(ii)(C), which establishes a requirement to place limiting conditions of operation in the Technical Specifications (TS) for any structure, system, or component (SSC) 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, is applicable to the safety/relief valves (S/RVs) for more reasons than the overpressure safety function, and that the proposed TSTF-576 traveler fails to address these additional items in a way consistent with regulatory requirements. An example used by the non-concurrer to illustrate his concern is the hydrodynamic loading on the S/RV discharge lines. As the lift pressure for a S/RV increases, the loading on the discharge lines increases, thereby reducing the margin to mechanical failure. The non-concurrer notes that this is not hypothetical, since at least one licensee has performed explicit evaluations and determined that there is no remaining margin to exceedance of the allowable stresses on at least one of their S/RV discharge lines. The non-concurrer points out that when the S/RVs were found to have difficulty meeting the original ±1% setpoint tolerances, GE Nuclear Energy developed a topical report (NEDC-31753P) which licensees could reference as part of a justification for increasing their S/RV setpoint tolerances defined in the TS to ±3% (which effectively increased the upper setpoint limit for the S/RVs to 3% above the nominal setpoint). As part of the approval for this topical report, the NRC staff stated that "each licensee choosing to implement these technical specification modifications must provide certain plant specific analyses," listing several items including the hydrodynamic loadings on the S/RV discharge lines. All licensees that subsequently obtained approval to increase their setpoint tolerances complied with this limitation by providing the plant specific analyses addressing these items for NRC review and approval. While precedence exists to relocate certain TS limits to a licensee-controlled document, such as the Core Operating Limits Report (COLR), the non-concurrer notes that part of the premise behind the NRC approval for doing so is that the licensee must reference a NRC approved methodology in their TS for use in performing their analyses, and would need to submit a license amendment request if they wish to deviate from this methodology. The TSTF-576 traveler, as it stands now, does not require licensees to do so for any analyses other than the overpressure analyses. Thus, the non-concurrer states that the proposed relocation of the S/RV as-found upper setpoint limits does not satisfy the functional framework of the COLR. The non-concurrer also expresses some concerns about the structure of the proposed as-found upper S/RV setpoint limits to be provided in the COLR. As noted above, factors such as the hydrodynamic loading on the S/RV discharge line may be more limiting than other analyses for specific valves, and the proposed COLR S/RV setpoint limits are defined on a system level basis, such that different combinations of different valves opening at different setpoints can meet the limit. The non-concurrer expresses concern that this structure lacks clarity regarding how the proposed setpoint limits would ensure that any valve-specific limits on hydrodynamic loading are met, should they be more limiting than the limits established by the overpressure analyses. Finally, the non-concurrer describes a scenario where an apparent inconsistency arises in whether the NRC would expect to explicitly review and approve analyses associated with the upper S/RV setpoint limits, in that a licensee requesting an increase in nominal setpoints by 2% while maintaining the same tolerance of ±3% would be required to submit a LAR that included all applicable analyses for NRC review, while the same licensee adopting this TSTF traveler would be able to increase their upper as-found setpoint limits to 5% above the nominal setpoint without having to submit the same analyses for NRC review, even though these analyses would use identical assumptions.

**8. Evaluation of Non-Concurrence and Rationale for Decision**

The non-concurrer's main contention is that secondary limitations on the S/RV opening setpoints such as allowable hydrodynamic loadings on the S/RV discharge line should be included within the S/RV LCO and controlled in a consistent manner. This contention is

also implicit in the non-concurrer's discussion regarding failure of the proposed TSTF-576 traveler to require licensees to include an NRC approved methodology for the secondary analyses in the COLR references list of the TS as one of the conditions for relocating the as-found setpoints to the COLR. The primary regulatory history cited for this position is that the NRC staff conditioned their approval of NEDC-31753P on providing plant specific analyses addressing the secondary limitations on the S/RV opening setpoints, and all licensees adopting this topical report have submitted these analyses as part of their license amendment request submittals. While regulatory precedents such as this are instructive in illustrating approaches that have been found to be an acceptable approach to meet regulatory requirements in the past, they do not, in themselves, establish a specific regulatory policy position. The current Standard Technical Specifications (STS) Bases for BWR/4 plants contains the following statement in the LCO discussion for the S/RV TS requirements (Section B 3.4.3): "[t]he requirements of this LCO are applicable *only* to the capability of the S/RVs to mechanically open to relieve excess pressure when the lift setpoint is exceeded (safety function)." [emphasis added] Likewise, the current Standard Technical Specifications Bases for BWR/6 plants contains the following statement in the corresponding section (Section B 3.4.4):"[t]he requirements of this LCO are applicable *only* to the capability of the S/RVs to mechanically open to relieve excess pressure." [emphasis added] Further discussion in both Bases sections supports a position that the S/RV LCOs associated with the setpoints were intended to ensure that ASME Code requirements on peak reactor vessel pressure are met during overpressurization transients and are silent about the secondary limitations that the non-concurrer discusses. Notwithstanding the fact that the STS Bases appear to support a position that the S/RV TS requirements are only applicable to the overpressurization safety function, for the sake of completeness, the secondary limitations are considered below within the context of how they would be controlled under the proposed TSTF-576 traveler and what types of comparable regulatory precedents exist which could inform an understanding of how the NRC has historically handled these types of cases. Most of the items identified as secondary limitations as part of the approval of NEDC-31753P concern verification of adequate performance of other SSCs when considering the impact of the S/RV opening setpoints on their expected operating conditions during relevant transients. For example, a higher RCS pressure would affect the ability of the high pressure injection systems (e.g., high pressure coolant injection or standby liquid control) to deliver the expected amount of flow. In most cases, these performance characteristics are captured via other TS requirements, in that the TS LCOs for these SSCs are derived from analyses which also make assumptions about the S/RV opening setpoints. As such, licensees would remain responsible for ensuring that the TS requirements are established appropriately for adequate performance of other SSCs that may be affected by the S/RV opening setpoints. The hydrodynamic loading analyses for the S/RV discharge lines do not fall into the same category, since the integrity of the S/RV discharge lines are not addressed, directly or indirectly, via any of the other requirements in the TS. The below discussion focuses specifically on evaluation of the secondary limitation imposed on the S/RV opening setpoints as a result of the hydrodynamic loading analyses. Other regulatory positions taken by the NRC indicate that the CFR 50.36(c)(2)(ii)(C) provisions for "…any 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…" do not automatically apply to anything that might conceivably affect the progression of an accident or transient. For example, the structural integrity analyses for spacer grids in fuel assemblies during seismic or LOCA loadings are arguably of vital importance to ensuring coolability of the core and ensuring that the control rods can insert into PWR fuel assemblies for safe shutdown. However, these analyses are controlled via the 10 CFR 50.59 change control process, in which NRC review and approval prior to the change in licensing basis is required when one of the 10 CFR 50.59 criteria are triggered. This is generally true for passive functions (as opposed to active functions). In fact, the other inputs for the hydrodynamic loading analyses for the S/RV discharge lines which are not currently in the TS can be revised, or the analyses themselves updated, via the 10 CFR 50.59 change control process if the S/RV setpoints do not change and the 10 CFR 50.59 criteria are satisfied. This is indicative that the hydrodynamic loading analyses for the S/RV discharge lines are not considered to be, in themselves, a primary basis for a TS LCO. As stated in the Summary of Issues above, the non-concurrer also expressed some concerns about the structure of the proposed addition to the COLR and how licensees would ensure that the as-found setpoints in the COLR satisfy all applicable requirements, including valve-specific requirements. The TSTF-576 traveler acknowledges that licensees are responsible for ensuring that the COLR as-found setpoints are consistent with the plant licensing basis, which includes the secondary requirements. The specific format for the COLR is generally provided for informational purposes only and is not prescribed by the NRC. For example, when the operating limit minimum critical power ratio (OLMCPR) limits were relocated to the COLR, licensees subsequently developed a variety of COLR tables describing OLMCPR limits based on different configurations of equipment being out of service. The NRC will have opportunities to review the COLR when submitted by licensees and follow up if

there is any confusion, and to verify how licensees are managing the S/RV setpoints in the COLR via inspections. The non-concurrer also presents a hypothetical scenario where two licensees end up with the same upper as-found limit on the S/RV setpoints, but one has to do so via a LAR because they increase the as-left setpoints while maintaining the same setpoint tolerance, while the other would be able to do so without a LAR (if they implement TSTF-576) by simply increasing the as-found setpoints (effectively increasing the setpoint tolerance). These two scenarios are not precisely analogous, because a licensee implementing TSTF-576 would still be required to set their S/RVs to within 1% of the as-left setpoints, and the magnitude of any setpoint drift would need to be trended and evaluated as per the ASME Code. TSTF-576 would allow for greater setpoint drift without triggering a LER, but it would not absolve the licensee from their responsibility to maintain the S/RVs and ensure that any degradation in performance is not likely to result in an unacceptable condition. The non-concurrer should be commended for a thorough and diligent write-up of his concerns and for exercising the non-concurrence process to formally document his professional disagreement with the final decision made in the safety evaluation for TSTF-576. For the reasons discussed in the evaluation above, my recommendation is that the TSTF-576 safety evaluation be issued as currently written. The TSTF-576 traveler, as currently written, indicates that licensees would be responsible for ensuring that the secondary limitations associated with the S/RV opening setpoints are met for any as-found setpoints placed into the COLR, and such changes to the licensing basis for the plant would be controlled via 10 CFR 50.59. Use of this process for the secondary limitations such as S/RV discharge line integrity is consistent with other relevant NRC regulatory positions as expressed in the STS or current licensing basis control processes other than use of the 10 CFR 50.90 license amendment process to implement the topical report referenced by the non-concurrer.

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| **9. Coordinated By / Coordinated On**<br>Scott Krepel | 2024-04-03 |
| **10. Approved By / Approved On**<br>MJ Ross-Lee (She/Her/Hers) - DEP. DIR., DIVISION OF SAFETY SYSTEMS | 2024-04-03 |

Non-concurrence for Draft Safety Evaluation by the Office of Nuclear Reactor Regulation, Technical Specifications Task Force Traveler TSTF-576, Revision 3, “Revise Safety/Relief Valve Requirements,” ADAMS Accession No. ML24053A102.

TSTF-576, Revision 3, “Revise Safety/Relief Valve Requirements,” dated September 13, 2023, (ADAMS Accession No. ML23256A266) proposes changes to both the way the safety/relief valve (S/RV) as-found setpoint tolerances are defined (valve specific values -vs- valve independent values) as well as moving the allowable as-found tolerance values from Technical Specifications (TS) to the Core Operating Limits Report (COLR). With the values in the COLR, licensees can change the values without first obtaining permission of NRC through the license amendment request (LAR) process. In addition, TSTF-576 is proposed under the Consolidated Line Item Improvement Process (CLIIP) and therefore, upon adoption, no technical staff review of the changes would typically be performed. The non-concurring staff (NC staff) have been involved with this review from the beginning and do not agree with the Safety Evaluation (SE) finding that TSTF-576 is acceptable.

10 CFR 50.36 (c)(2)(ii)(C) requires a TS Limiting Condition for Operation (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.

The final policy statement on TS (58 FR 39132) states “The purpose of Technical Specifications is to impose those conditions or limitations upon reactor operation necessary to obviate the possibility of an abnormal situation or event giving rise to an immediate threat to the public health and safety by identifying those features that are of controlling importance to safety and establishing on them certain conditions of operation ***which cannot be changed without prior Commission approval***.” (Emphasis added)

The S/RVs (including the valves, downstream piping, etc.) are credited in all BWR UFSAR Chapter 15 safety analysis and are part of the primary success path in mitigation of various transients and design basis accidents and therefore, should be included under 10 CFR 50.36 (c)(2)(ii)(C). While the existing S/RV TS LCO (3.4.3 for BWR/4 and 3.4.4 for BWR/6 in the Standard Technical Specifications) specifically addresses overpressure protection in order to protect the reactor coolant system pressure Safety Limit, it is the NC staff contention that the original allowable as-found tolerance of ±1%, and subsequent increase to ±3%, used by almost all licensees has previously been demonstrated to protect other items from failure, so that essentially, they are covered by the existing TS LCO. Specifically, one such item is the hydrodynamic loading on the S/RV discharge lines. These loads are dependent directly on the actual opening pressure of the S/RVs. As the opening pressure is increased, the dynamic loading on the downstream piping is increased. It is known that there is very little margin to failure in some of these lines at some plants. Therefore, under the proposed TSTF, it is possible to set the as-found tolerance so that the reactor coolant system pressure Safety Limit would not be exceeded, however, the S/RV downstream piping would fail due to dynamic loading. Under the proposed TSTF and its associated SE, there would be no opportunity provided for NRC technical staff to review the as-found tolerances to assure the S/RV downstream piping is maintained. The NC staff position is that this conflicts with 10 CFR 50.36 (c)(2)(ii)(C) and the final policy statement on TS.

It was initially seen that the S/RVs in service had difficulty meeting the original allowable ±1% as-found setpoint tolerance. So, in the late 1980s, GE Nuclear Energy developed Topical Report (TR) NEDC-31753P, “BWROG In-Service Pressure Relief Technical Specification Revision Licensing Topical Report,” dated February 1990 (ADAMS Accession No. ML19310C996, not publicly available), to support changes to the TS requirements for the spring safety and safety relief valves for General Electric BWRs. Specifically, the report supports the modification of the

in-service opening pressure setpoint tolerance from ±1% to ±3%. As part of the methodology to move from ±1% to ±3%, the TR defines plant-specific analyses that are required to be performed. The SE that approved the TR (ADAMS Accession No. ML20007F067, not publicly available) states “Each licensee choosing to implement these technical specification modifications ***must provide*** certain plant specific analysis,” (emphasis added) then lists six items including the design basis overpressurization event, certain AOOs, evaluation of the performance of high-pressure systems, and the hydrodynamic loads on the SRV discharge lines, among others. Subsequently, the majority of BWR plants applied for and were granted approval for a license amendment to increase their as-found setpoint tolerance from ±1% to ±3%. By providing the required plant specific analyses, the NRC staff was able to review all analyses and systems that are affected by the increased opening tolerance and make a finding that the change was, or was not, acceptable. This was found to meet the requirements and intent of 10 CFR 50.36 and the final policy statement on TS.

However, the proposal in TSTF-576 allows licensees to increase the allowable as-found setpoint tolerance without NRC staff review of the associated analyses, therefore, the NC staff find that the proposal does not meet the intent of 10 CFR 50.36 (c)(2)(ii)(C) and the final policy statement on TS.

In addition to not meeting the requirements of 10 CFR 50.36 and the final policy statement on TS, the NC staff have other concerns with proposed TSTF-576 and SE as described below.

The creation of the COLR (as defined in Generic Letter 88-16) was to remove unnecessary burden on both the licensee and NRC resources for review of cycle-specific parameters. The creation of the COLR allowed the NRC review of proposed changes to be limited to confirmation that the limits are calculated using an NRC-approved methodology.

In the proposed TSTF-576, the only methodology required to be listed in the COLR reference list is for the overpressure protection analysis. TSTF-576 states that other methodologies are not required, and a licensee may not even have such an NRC-approved methodology. As described above in the discussion on GE TR NEDC-31753P, there are many analyses that use the as-found setpoint opening tolerance other than the overpressure analyses. The TSTF states that the purpose of the LCO is overpressure protection and that it is the only item that needs a specific methodology. The SE for TSTF-576 states that the licensees can make changes to these other analyses under 10 CFR 50.59 which may or may not result in NRC staff review. The NC staff disagree with this finding as some of these other analyses are potentially limiting, and the NRC staff should have the ability to review the specific analyses that determines the actual allowable as-found setpoint tolerance values used.

The proposal in TSTF-576 changes the way the as-found setpoint tolerances work. In the existing TS SR, the requirements are valve specific where each valve must open within ±3% (or other plant specific approved range) of its setpoint. With adoption of TSTF-576, a system-based approach is used where some number of valves can open at a given pressure while others could open at a different pressure. The idea is that if the combined system of valves operates in such a way as to prevent the peak pressure from exceeding the reactor coolant system pressure Safety Limit, the action of any individual valve is not significant. While TSTF-576 provided a COLR template, there is no requirement that this be used by any licensee adopting the traveler. While it is likely licensees would use a format similar to that provided as an example, a licensee could provide something entirely different. The SE states that if a licensee does not follow the example COLR markup as provided, the submittal may not be reviewed

under the CLIIP. However, the NC staff do not find it acceptable or good practice to pre-approve something that isn’t clearly defined.

As stated in TSTF-576, the as-found lift pressure limits are no longer valve-specific. That is, the limits may be expressed as a single limit for all valves, or as one or more S/RVs opening within a prescribed limit, and one or more other groups of valves opening at different limits. TSTF-576 or its SE did not include any discussion as to how the new valve independent limits are consistent with the analyses other than for overpressure. In some cases, licensees have previously performed analyses to determine the allowable opening pressures on each specific S/RV. In one such analysis for Hope Creek Generating Station (HCGS) (ADAMS Accession No. ML20155J986), the analysis computed the maximum allowable percent increase above S/RV nominal setpoints for each individual S/RV. The results showed that the dynamic loading was limited to anywhere from +3% to +39.4% above the nominal setpoint depending on the individual line. One of the examples given in TSTF-576 for the new limits is that 10 S/RVs must open within 3% and one S/RV may open within 4%. Given that the new limits are valve independent, what happens if one S/RV opens 3.5% above its setpoint while the rest open at 3%? This would meet the new proposed SR, however, if the S/RV that opened 3.5% above its setpoint was in the line that is limited to +3%, then it would be above the limits for that specific line. In this case, the new valve independent limits would not be consistent with the dynamic loading analysis. TSTF-576 states that if there are limiting S/RVs, a licensee would need to determine how to address the limiting valves when setting the S/RV as-found pressure limit. This is inconsistent with the use of the COLR where approved methods that are used are known upfront. There is no discussion of this in the SE. Adoption of TSTF-576 as written would not allow NRC staff to review how a licensee determined the as-found limits (i.e., what methodology was used), therefore, the NC staff do not find this acceptable. Additional discussion of this is provided below for cases where the limiting as-found setpoint tolerances are not based on maintaining the reactor coolant system overpressure Safety Limit.

As described above, the actual opening pressures of the S/RVs impact items other than peak system pressure. One such item is the S/RV dynamic loading (thrust loads on S/RV discharge piping). The analysis performed for HCGS (ADAMS Accession No. ML20155J986) when they changed the allowable as-found tolerance from ±1% to ±3% showed that the system pressure remained below the Safety Limit with 13 of 14 S/RVs opening at 1,250 psig. The 1,250 psig opening pressure is anywhere from +11 to +13% above the staggered S/RV setpoints of 1,108 psig, 1,120 psig, and 1,130 psig, demonstrating there is significant margin to the overpressure Safety Limit using the current +3% allowable setpoint tolerance. However, for the containment evaluation, per the analyses, the results were determined on a valve specific basis as there is very little margin in select areas of the containment. The results show that S/RV line ‘A’ is limited to a +3% increase above its setpoint which is well below the +11% value determined from the overpressure analysis. There are five total S/RV lines (out of the 14 total) that are limited to values below the +11% allowable from the overpressure analysis. So, in this example, the S/RV as-found setpoint tolerances would not be based on system overpressure, rather they would be based on protecting the S/RV discharge lines. This was acknowledged in TR NEDC-31753P which states that an Upper Limit can be found where the peak vessel pressure is below the ASME code limits, however, the initial Upper Limit would then be reduced until acceptable results are obtained for the remainder of the evaluations.

Per the SE, adoption of TSTF-576 requires only the NRC-approved overpressure analysis methodology be listed in the COLR reference section. TSTF-576 states that the methodology used for items other than overpressure will not be specified and that licensees may not have

such an approved methodology for a given evaluation. As discussed above, TSTF-576 states that if there are limiting S/RVs, which is the case in the Hope Creek example, a licensee would need to determine how to address the limiting valves when setting the S/RV as-found pressure limits. Since TSTF-576 would be applicable to all BWRs, the NC staff find it inconsistent with the use of the COLR and do not find this acceptable. As noted above, the COLR was developed so the NRC review be limited to confirmation that the limits are calculated using an NRC-approved methodology. In this case, the as-found allowable opening pressures would not be determined with an NRC-approved methodology. The NC staff finds that NRC staff should have the opportunity to understand and review any analyses/methodologies used in determining the allowable as-found opening tolerances.

In any safety analysis, the important parameter is the actual opening pressures of the S/RVs. Changing either the setpoint itself, or the allowable tolerance can result in essentially the same analysis. As an example, assume that a licensee wants to increase the S/RV nominal setpoint from 1,100 psig to 1,121 psig and keep the current ±3% allowable tolerance. The analysis would assume the S/RVs open at +3% above their setpoint which would result in 1,121 psig * 1.03 = 1,155 psig. Since the setpoint is in TS (SR 3.4.3.1 for BWR/4 STS and SR 3.4.4.1 for BWR/6 STS), a LAR would currently be required, and it would be the expectation of the NRC staff that the licensee would make available for NRC staff review all of the calculations that were performed as part of the setpoint change analyses.

Now assume that the licensee has adopted TSTF-576 and wants to increase the allowable as-found tolerance in the COLR from +3% to +5%. In this case, the S/RV opening pressure considering the allowable 5% tolerance is 1,100 psig * 1.05 = 1,155 psig. As seen here, the assumed opening pressure of the S/RV for both cases is the same. However, under TSTF-576, the licensee would not be expected to make any calculations available for NRC staff review as the change would be made in the COLR. Given that both analyses are the same, there should not be a difference in how the two changes are seen by NRC. Note that in both cases, it would be expected that the licensee performs all the same calculations, however, in one case NRC staff gets to review and in the other they don’t.

In summary, the NC staff finds the proposed TSTF and SE approving the TSTF do not meet the intent of 10 CFR 50.36 (c)(2)(ii)(C), the final policy statement on TS, and use of the COLR.