

February 25, 2016

Technical Specifications Task Force
11921 Rockville Pike, Suite 100
Rockville, MD 20852

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION RE: TRAVELER TSTF-541,
REVISION 0, "ADD EXCEPTIONS TO SURVEILLANCE REQUIREMENTS
WHEN THE SAFETY FUNCTION IS BEING PERFORMED" (TAC NOS. MF2723
AND MF2724)

Dear Members of the Technical Specifications Task Force:

By letter dated September 10, 2013 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML13253A390), you submitted to the U.S. Nuclear Regulatory Commission (NRC) for review and approval Traveler TSTF-541, Revision 0, "Add Exceptions to Surveillance Requirements When the Safety Function is Being Performed." By letter dated August 13, 2015 (ADAMS Accession No. ML15208A287), the NRC staff provided request for additional information (RAI) questions. You responded to the RAI questions by letter dated November 11, 2015 (ADAMS Accession No. ML15316A007).

Upon review of the information provided, the NRC staff has determined that additional information is needed to complete the review. On February 18, 2016, Brian Mann, Vice President of Industry Programs, EXCEL Services Corporation, and I agreed that a meeting will be held to discuss the enclosed RAI questions. A response time and review schedule will be determined at or following the meeting.

The review schedule provided in the acceptance letter dated August 13, 2015 (ADAMS Accession No. ML15197A480), was:

MILESTONE	SCHEDULE DATE
Issue Draft Safety Evaluation	June 30, 2016
Issue Final Safety Evaluation	September 30, 2016

TSTF

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If you have any questions regarding the enclosed RAI questions, please contact me at 301-415-1774 or via e-mail at Michelle.Honcharik@nrc.gov.

Sincerely,

/RA/

Michelle C. Honcharik, Senior Project Manager
Licensing Processes Branch
Division of Policy and Rulemaking
Office of Nuclear Reactor Regulation

Project No. 753

Enclosure:
As stated

cc: See next page

TSTF

- 2 -

If you have any questions regarding the enclosed RAI questions, please contact me at 301-415-1774 or via e-mail at Michelle.Honcharik@nrc.gov.

Sincerely,

/RA/

Michelle C. Honcharik, Senior Project Manager
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Project No. 753

Enclosure:
As stated

cc: See next page

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ADAMS Accession No.: ML16012A427

***concurred via e-mail**

****concurred via internal memo (ML16029A278 and ML16007A418) NRR-106**

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Technical Specifications Task Force

Project No. 753

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REQUEST FOR ADDITIONAL INFORMATION

TSTF-541, REVISION 0, "ADD EXCEPTIONS TO SURVEILLANCE REQUIREMENTS WHEN

THE SAFETY FUNCTION IS BEING PERFORMED"

TAC NOS. MF2723 AND MF2724

By letter dated September 10, 2013 (Agencywide Documents Access and Management System Accession No. ML13253A390), the Technical Specifications (TS) Tack Force submitted Traveler TSTF-541, Revision 0, "Add Exceptions to Surveillance Requirements When the Safety Function is Being Performed." By letter dated August 13, 2015 (ADAMS Accession No. ML15208A287), the NRC staff provided request for additional information (RAI) questions. You responded to the RAI questions by letter dated November 11, 2015 (ADAMS Accession No. ML15316A007).

The proposed changes would provide exceptions to certain Surveillance Requirements (SRs) for dampers and valves that are in certain positions. It revises the current TS for the standby gas treatment system and the control room environmental control system in Standard TS (STS) NUREG-1430 through NUREG-1434.

Questions #1 through #6 are from the Reactor Systems Branch (SRXB). Questions #7 through #14 are from the Containment and Ventilation Branch (SCVB). Question #15 is from the Radiation Protection and Consequences Branch (ARCB). Questions #16 through #20 are from the Technical Specifications Branch (STSB).

RAI #1

The regulation at Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," Criterion XI, "Test Control," states:

A test program shall be established to assure that all testing required to demonstrate that structures, systems, and components [(SSCs)] will perform satisfactorily in service is identified and performed in accordance with written test procedures which incorporate the requirements and acceptance limits contained in applicable design documents.

The regulation at 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," states:

Measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected. In the case of significant conditions adverse to quality, the measures shall assure that the

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cause of the condition is determined and corrective action taken to preclude repetition.

The regulation at 10 CFR 50.36(c)(3) states (underline added for emphasis):

Surveillance requirements 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 [(LCOs)] will be met.

The technical basis provided for the proposed changes to the STS contains a discussion of why it would be acceptable to not perform certain SRs for certain equipment when the subject SSC is capable of performing its specified safety function. This justification focused on the third reason for SRs, namely to assure that the LCOs will be met. However, no technical basis was provided to demonstrate that the proposed changes to the respective SRs would continue to provide assurance that facility operation will be within safety limits and provide assurance that the necessary quality of systems and components will be maintained. Please provide a complete discussion regarding how the SRs will continue to meet 10 CFR 50.36(c)(3).

RAI #2

Contrary to 10 CFR Part 50, Appendix B, Criterion XI, the proposed changes could allow components that are designed to be operated periodically to degrade in a manner not accounted for in the component's design while secured in a given position for a prolonged period. Likewise, the proposed changes could introduce potential latent degradation of components, which is contrary to 10 CFR Part 50, Appendix B, Criterion XVI. Please provide a discussion regarding how the SRs will be consistent with 10 CFR Part 50, Appendix B, Criterion XI and Criterion XVI.

RAI #3

Please provide a discussion (i.e., detailed description and technical evaluation) regarding how or when particular SSCs would be identified for the requested exemption and when the exemption would no longer apply. In addition, the proposed change appears to be circumventing the requirements of SR 3.0.1, fundamentally altering the purpose of SRs. It is not clear from the submittal why this change is necessary.

RAI #4

Please provide a discussion (i.e., detailed description and technical evaluation) regarding why new conditions were not proposed that would contain a required action to place the SSC in its accident/actuated position. In addition, new conditions could provide appropriate Completion Times (CTs) for restoration.

RAI #5

Please provide a discussion regarding whether or not a safety benefit would be achieved by the proposed changes or if there is any operating experience that led the industry to propose these changes.

RAI #6

The justification for the proposed changes focuses on the actuation function and not the potential unintended consequences of operating the system in an “off-normal” condition for an undefined time. For example, many of the SRs, where the additional language is proposed to be added, involve engineered safety function heating ventilation and air conditioning systems that may contain both high-efficiency particulate air (HEPA) and activated charcoal filters that degrade with use (HEPA filters clog and the efficiency of activated charcoal can decrease). No justification is provided to address the impacts of allowing the filtration systems to be operated continuously for an undetermined time. Please justify how the filtration systems, if allowed to operate for an undefined amount of time, would continue to meet their design requirements and the efficiencies and flows assumed in design basis accident analyses.

RAI #7

Many SRs verify that there is an actuation when provided with an actual or simulated actuation signal. With the proposed changes, the SR would be allowed to be considered met if the valve/train is locked, sealed, or otherwise secured in the actuated position. How is it verified that actuation will occur upon an actual or simulated actuation signal?

Explain for the following SRs in NUREG-1430:

SR 3.6.7.4
SR 3.7.10.3
SR 3.7.12.3
SR 3.7.13.3

Explain for the following SRs in NUREG-1431:

SR 3.6.11.3
SR 3.6.13.3
SR 3.7.10.3
SR 3.7.12.3
SR 3.7.13.3
SR 3.7.14.3

Explain for the following SRs in NUREG-1432:

SR 3.6.8.3
SR 3.6.10.3
SR 3.7.11.3
SR 3.7.13.3
SR 3.7.14.3
SR 3.7.15.3

RAI #8

Additional system tests are required for the systems with a request to change one or more SR. Explain if any of the component alignments are changed from their safety operation alignments during the completion of the SRs. If so, how is the correct position verified after the SR is completed?:

This request applies to the following SRs in NUREG-1430:

SR 3.6.7.4 with performance of SR 3.6.7.5
SR 3.7.10.3 with performance of SR 3.7.10.1, SR 3.7.10.2, SR 3.7.10.4, and SR 3.7.10.5
SR 3.7.12.3 with performance of SR 3.7.12.1, SR 3.7.12.2, and SR 3.7.12.4
SR 3.7.13.3 with performance of SR 3.7.13.1, SR 3.7.13.2, SR 3.7.13.4, and SR 3.7.13.5

This request applies to the following SRs in NUREG-1431:

SR 3.6.11.3 with performance of SR 3.6.11.1, SR 3.6.11.2, and SR 3.6.11.4
SR 3.6.13.3 with performance of SR 3.6.13.1, SR 3.6.13.2, SR 3.6.13.4, and SR 3.6.13.5
SR 3.7.10.3 with performance of SR 3.7.10.1, SR 3.7.10.2 and SR 3.7.10.4
SR 3.7.12.3 with performance of SR 3.7.12.1, SR 3.7.12.2, SR 3.7.12.4, and SR 3.7.12.5
SR 3.7.13.3 with performance of SR 3.7.13.1, SR 3.7.13.2, SR 3.7.13.4, and SR 3.7.13.5
SR 3.7.14.3 with performance of SR 3.7.14.1, SR 3.7.14.2, SR 3.7.14.4, and SR 3.7.14.5

This request applies to the following SRs in NUREG-1432:

SR 3.6.8.3 with performance of SR 3.6.8.1, SR 3.6.8.2, SR 3.6.8.4, and SR 3.6.8.5
SR 3.6.10.3 with performance of SR 3.6.10.1, SR 3.6.10.2, and SR 3.6.10.4
SR 3.7.11.3 with performance of SR 3.7.11.1, SR 3.7.11.2, and SR 3.7.11.4
SR 3.7.13.3 with performance of SR 3.7.13.1, SR 3.7.13.2, SR 3.7.13.4, and SR 3.7.13.5
SR 3.7.14.3 with performance of SR 3.7.14.1, SR 3.7.14.2, SR 3.7.14.4, and SR 3.7.14.5
SR 3.7.15.3 with performance of SR 3.7.15.1, SR 3.7.15.2, SR 3.7.15.4, and SR 3.7.15.5

RAI #9

The changes requested in TSTF-541 open the potential for plant-specific requests to remove SRs in which the safety operation position is considered permanent during operation. If an SR is removed and a position change occurs during another surveillance, how will it be verified that the correct position required for safety operation is restored and how will it be verified that the position indication in the control room matches with the correct position of the component?

RAI #10

In NUREG-1430, "Standard Technical Specifications – Babcock and Wilcox Plants," the Bases for SR 3.7.12.5, it states, "The OPERABILITY of the Emergency Ventilation System (EVS) filter bypass damper is verified if it can be closed." The requested change of the SR to, "Verify each EVS filter cooling bypass damper [not locked, sealed, or otherwise secured in the open position] can be opened," is contrary to the operability statement. How is operability justified and verified with the inclusion of this SR change?

RAI #11

In NUREG-1431, "Standard Technical Specifications – Westinghouse Plants," the Bases for SR 3.7.12.5 define operability as, "The OPERABILITY of the Emergency Core Cooling System (ECCS) Penetration Room Exhaust Air Cleanup System (PREACS) bypass damper is verified if it can be specified in Reference 4." Reference 4 is listed as Regulatory Guide 1.52, "Design, Inspection, and Testing Criteria for Air Filtration and Adsorption Units of Post-Accident Engineered-Safety-Feature Atmosphere Cleanup Systems in Light-Water-Cooled Nuclear Power Plants." Compare how operability is verified with this SR currently and with the requested change. Explain and justify any changes.

RAI #12

The following questions are in reference to the NUREG-1432, "Standard Technical Specifications – Combustion Engineering Plants."

- a. In the Bases for SR 3.7.13.5, it states, "The OPERABILITY of the bypass damper is verified if it can be closed." The requested change of the SR to, "Verify each ECCS PREACS filter bypass damper [not locked, sealed, or otherwise secured in the open position] can be opened," is contrary to the operability statement. How is operability justified and verified with the inclusion of this SR change?
- b. In the Bases for SR 3.7.14.5, it states, "The OPERABILITY of the FBACS filter bypass damper is verified if it can be closed." The requested change of the SR to, "Verify each FBACS filter bypass damper [not locked, sealed, or otherwise secured in the open position] can be opened," is contrary to the operability statement. How is operability justified and verified with the inclusion of this SR change?
- c. In the Bases for SR 3.7.15.5, it states, "The OPERABILITY of the PREACS filter bypass damper is verified if it can be closed." The requested change of the SR to, "Verify each PREACS filter bypass damper [not locked, sealed, or otherwise secured in the open position] can be opened," is contrary to the operability statement. How is operability justified and verified with the inclusion of this SR change?

position] can be opened.,” is contrary to the operability statement. How is operability justified and verified with the inclusion of this SR change?

RAI #13

The following questions are in reference to NUREG-1433, “Standard Technical Specifications – General Electric BWR/4 Plants”

- a. With the proposed change to SR 3.6.4.3.4, if the Standby Gas Treatment System filter cooler bypass damper is in a locked, sealed, or otherwise secured in the opened position, and the surveillance is not performed, how is it ensured that the ventilation mode of SGT system operation is available? Explain how it is ensured that the fan starts.
- b. In a case where the SGT system damper position during normal plant operation is not in the correct actuated safety position during normal operation and the SR is deleted, (a) how will it be verified that the damper automatically actuates when needed, or it can be manually operated, and (b) the damper alignment during normal operation matches control room indication?
- c. For the main control room environmental control system, additional system tests are required by the SRs for this system. Explain if any of the component alignments are changed from their safety operation alignments during the completion of the SRs. If so, how is the correct position verified after the SR is completed?

RAI #14

The following questions are in reference to NUREG-1434, “Standard Technical Specifications – General Electric BWR/6 Plants”

- a. SR 3.6.1.7.3 verifies each residual heat removal (RHR) containment spray subsystem automatic valve in the flow path actuates to its correct position on an actual or simulated automatic initiation signal. In a case where the RHR containment spray subsystem valve position during normal plant operation is not in the correct actuated safety position during normal operation and this SR is deleted, (a) how will it be verified that the valve automatically actuates when needed, or it can be manually operated from the control room, and (b) the valve alignment during normal operation matches with the control room indication.
- b. With the proposed change to SR 3.6.4.3.4, if the standby gas treatment system filter cooler bypass damper is in a locked, sealed, or otherwise secured in the opened position, and the surveillance is not performed, how is it ensured that the ventilation mode of SGT system operation is available? Explain how it is ensured that the fan starts.
- c. In a case where the SGT system damper position during normal plant operation is not in the correct actuated safety position during normal operation and the SR is deleted, (a) how will it be verified that the damper automatically actuates when needed, or it can

be manually operated, and (b) the damper alignment during normal operation matches control room indication?

- d. For the control room fresh air system, additional system tests are required by the SRs for this system. Explain if any of the component alignments are changed from their safety operation alignments during the completion of the SRs. If so, how is the correct position verified after the SR is completed?

RAI #15

The proposed traveler states:

A review of the ISTS [Improved Standard Technical Specifications] identified SRs that do not have exceptions but for which exceptions would be appropriate to avoid unnecessary entry into Conditions and Required Actions. Many system SRs require verification that an SSC actuates on an actual or simulated actuation signal or that it actuates within a specified time. If the SSC is locked in the "actuated," post-accident position, it cannot "actuate" (i.e., move or start working) and the SR is not met. However, if the SSC is not assumed to move following actuation, the SSC is capable of performing its specified safety function with the valve locked in the actuated position. In these cases, the SR should not be required to be met if the SSC is locked in the actuated, post-accident position.

And,

Valves and dampers affected by the incorporation of this allowance may be locked, sealed or otherwise secured in the actuated position provided that the safety analysis does not assume movement from the actuated position following an accident. While in the actuated position, verification of automatic actuation or valve isolation time is not necessary as the specified safety function is assured. It should be noted that the SR must still be met prior to removing the valve or damper from the locked, sealed or otherwise secured status. To provide additional assurance that the specified safety function is met, the associated Bases are revised to include a Reviewer's Note to ensure that the licensee confirms that the safety analysis does not assume that the valves and dampers affected by incorporation of this SR allowance are assumed to move following an accident.

The proposed traveler assumes that if a valve or damper is in the actuated position and the safety analysis does not assume that the valve or damper are assumed to move following an accident that the safety function of the value is assured without any further detailed analysis.

The Final Policy Statement on Technical Specifications Improvements for Nuclear Power Reactors (Volume 58 of the *Federal Register*, page 39132) states:

A safety sequence analysis is a systematic examination of the actions required to mitigate the consequences of events considered in the plant's Design Basis Accident [(DBA)] and Transient analyses [Anticipated Operational Occurrences (AOOs)] as presented in Chapters 6 and 15 of the plant's FSAR [Final Safety Analysis Report] (or equivalent chapters). Such a safety sequence analysis considers all applicable events, whether explicitly or implicitly presented. The primary success path of a safety sequence analysis consist of the combination and sequences of equipment needed to operate (including consideration of the single failure criteria), so that the plant response to Design Basis Accidents and Transients limit the consequences of these events to within the appropriate acceptance criteria.

Meeting the regulations and assuring safety may be more complicated than the criteria proposed above. An SSC may have multiple modes of operation that mitigate more than one DBA or AOO and the final position of the valve may vary. DBAs and AOOs may also credit the initial design position or time for the valve or damper to move (rather than only the final position). For example, closed valves that actuate open during an accident may create a barrier to contain radioactivity before the SSC operates. Given the many different plant designs and modes of operation of SSCs please explain and justify how the ability to meet the regulations can be determined using only the final position of the damper and whether it is required to move following the accident.

Please state whether it is expected that every plant-specific license amendment request to adopt the proposed traveler will provide the following information: A detailed review of every DBA and AOO to verify that the option to operate with the valve or damper locked in the actuated, post-accident position is consistent with their licensing basis analyses.

Given that the safety analyses are bounding analyses which act as surrogates for other possible plant evolutions, please state any impacts that this traveler may have on the reliability of the components to perform their function during other plant evolutions.

RAI Questions #16 through #20:

The NRC staff has reviewed the RAI responses dated November 11, 2015, and concluded that they are not completely responsive to the original set of RAI questions. In particular, the responses to the following RAI questions require additional information. The NRC staff is concerned that the proposed change would create a situation where STS usage would not provide continued assurance that the regulatory requirements of 10 CFR 50.36 would continue to be met.

RAI #16 - Response to Original RAI #2

The response failed to provide a discussion regarding how the SRs will be consistent with 10 CFR Part 50, Appendix B, Criterion XI and Criterion XVI. The staff believes the proposed changes could introduce the potential for a new mechanism for latent degradation of components, which is contrary to 10 CFR Part 50, Appendix B, Criterion XVI. Given this

potential, the proposed changes to STS may not represent a net safety benefit. Rather, the changes may represent an as yet unquantified reduction in safety. Therefore, the NRC staff believes that the RAI response needs to be supplemented to provide an adequate technical basis (i.e., to demonstrate consistency with Appendix B and that a new degradation mechanism is not being created).

RAI #17 - Response to Original RAI #3

The response stated: "The proposed change does not allow an automatic valve to be permanently locked in the actuated position unless the change is evaluated in accordance with 10 CFR 50.59." The NRC staff does not agree. If the TS allow the licensee to avoid the surveillance by placing the SSC in a position where it is performing its specified safety function, then 10 CFR 50.59 would not apply. The proposed change appears to create a process whereby a licensee could implement a design change, driven by component degradation, without NRC staff review or approval. Plant-specific TS do not allow licensees to change the design or operation of the plant without prior NRC staff review and approval. Please discuss how the described process prevents implementation of a de facto design change, driven by component degradation, without NRC staff review or approval. Discuss why such a TS structure is preferable to creation of specific TS Conditions with associated Required Actions and CTs (i.e., to place the SSC in its accident mitigation position with continued operation allowed for a specified time).

RAI #18 - Response to original RAI #3

The response stated: "This change is needed to prevent a plant declaring an LCO not met in accordance with SR 3.0.1 and declaring the subject components inoperable when the components meet the definition of operability." This undermines a basic rule of usage for TS. The NRC staff does not believe it is appropriate to change TS to "prevent a plant declaring an LCO not met." The regulation at 10 CFR 50.36 specifically states that SRs demonstrate that the necessary quality of the system is being maintained, in addition to verifying that the LCO is met. By avoiding declaring the LCO not met when an SR cannot be met could have the detrimental effect of the licensee failing to acknowledge that the inoperable SSC is degraded (and possibly continuing to degrade). This, in turn, could lead to the licensee not taking timely corrective action. Therefore, please supplement your response to demonstrate why it is necessary to "avoid declaring the LCO not met," as well as, to explain how the SRs modified by TSTF-541 will continue to meet 10 CFR 50.36 requirements for surveillances.

RAI #19 - Response to original RAI #5

The response described the proposed STS change as providing a safety benefit. The RAI response does not address the fact that the proposed changes could introduce the potential for a previously unconsidered mechanism for latent degradation of components, which is contrary to 10 CFR Part 50, Appendix B, Criterion XVI. Given this potential, please explain how the TSTF concludes that the proposed changes to STS represent a net safety benefit, rather, that the changes representing an as yet unquantified reduction in safety?

RAI #20 - Response to original RAI #5

RAI #5 requested that the TSTF provide any operating experience that led the industry to propose these changes. The response was vague and did not provide specific instances where licensees were required to declare LCOs not met and entered Actions which caused a plant shutdown or the need to request enforcement discretion. Accordingly, please provide specific examples of such occurrences. In addition, please explain why providing appropriate compensatory measures through required actions would not be a more appropriate approach to addressing the technical problem.