TSTF-541 Background

- TSTF-541, Rev. 0, "Add Exceptions to Surveillance Requirements When the Safety Function is Being Performed"
- Added 4 to 8 exceptions per ISTS NUREG similar to:

  Verify each ECCS automatic valve in the flow path ***that is not locked, sealed, or otherwise secured in position***, actuates to the correct position on an actual or simulated actuation signal.

TSTF-541 Status

- TSTF developed a draft revision to address NRC concerns:
  - Revised the exception:
    - "Verify each CREFS train actuates on an actual or simulated actuation signal*, except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position*."
  - Added to the SR Bases a requirement to perform a contemporaneous assessment instead of NRC approval of the configuration:
    - "*Excluding a locked, sealed, or otherwise secured automatic valve or damper requires an assessment of system operability, including whether it is necessary for the valve or damper to be repositioned to the non-actuated position to support the accident analysis. Restoration of an automatic valve or damper to the non-actuated position requires verification that the SR is met."*

TSTF-541 Status

- The revised justification, showing all of the proposed TS changes, is attached.
  - Revised information starts on page 8, "Description of the Proposed Change."
- Next Steps:
  1. Meet with NRC in 2019 to discuss approach
  2. After considering NRC comments, submit a revision

1. SUMMARY DESCRIPTION

The proposed change will revise Surveillance Requirements (SRs) in the following Technical Specifications (TS) by adding exceptions for valves or dampers that are locked, sealed or otherwise secured in the actuated position, in order to consider the SR met. The associated Limiting Condition for Operation (LCO) is met if the subject structure, system or component (SSC) remains operable (i.e., capable of performing its specified safety function):

NUREG-1430, "Standard Technical Specifications Babcock and Wilcox Plants"

- TS 3.6.7, "Spray Additive System,"
- TS 3.7.10, "Control Room Emergency Ventilation System (CREVS),"
- TS 3.7.12, "Emergency Ventilation System (EVS),"
- TS 3.7.13, "Fuel Storage Pool Ventilation System (FSPVS),"

NUREG-1431, "Standard Technical Specifications Westinghouse Plants"

- TS 3.6.11, "Iodine Cleanup System (ICS) (Atmospheric and Subatmospheric),"
- TS 3.6.13, "Shield Building Air Cleanup System (SBACS) (Dual and Ice Condenser),"
- TS 3.7.10, "Control Room Emergency Filtration System (CREFS),"
- TS 3.7.12, "Emergency Core Cooling System (ECCS) Pump Room Exhaust Air Cleanup System (PREACS),"
- TS 3.7.13, "Fuel Building Air Cleanup System (FBACS),"
- TS 3.7.14, "Penetration Room Exhaust Air Cleanup System (PREACS),"

NUREG-1432, "Standard Technical Specifications Combustion Engineering Plants"

- TS 3.6.8, "Shield Building Exhaust Air Cleanup System (SBEACS) (Dual),"
- TS 3.6.10, "Iodine Cleanup System (ICS) (Atmospheric and Dual),"
- TS 3.7.10, "Essential Chilled Water (ECW),"
- TS 3.7.11, "Control Room Emergency Air Cleanup System (CREACS),"
- TS 3.7.13, "Emergency Core Cooling System (ECCS) Pump Room Exhaust Air Cleanup System (PREACS),"
- TS 3.7.14, "Fuel Building Air Cleanup System (FBACS)," and
- TS 3.7.15, "Penetration Room Exhaust Air Cleanup System (PREACS)."

NUREG-1433, "Standard Technical Specifications General Electric BWR/4 Plants"

- TS 3.5.1, "Emergency Core Cooling Systems (ECCS) Operating,"
- TS 3.5.2, "Emergency Core Cooling Systems (ECCS) Shutdown,"
- TS 3.5.3, "Reactor Core Isolation Cooling System (RCIC),"
- TS 3.6.4.3, "Standby Gas Treatment (SGT) System,"
- TS 3.7.2,"[Plant Service Water (PSW)] System and [Ultimate Heat Sink (UHS)]," and
- TS 3.7.4 "[Main Control Room Environmental Control (MCREC)] System."

NUREG-1434, "Standard Technical Specifications General Electric BWR/6 Plants"

- TS 3.5.1, "Emergency Core Cooling Systems (ECCS) Operating,"
- TS 3.5.2, "Emergency Core Cooling Systems (ECCS) Shutdown,"
- TS 3.5.3, "Reactor Core Isolation Cooling System (RCIC),"
- TS 3.6.1.7, "Residual Heat Removal (RHR) Containment Spray System,"
- TS 3.6.4.3, "Standby Gas Treatment (SGT) System,"

TS 3.7.1, "[Standby Service Water (SSW)] System and [Ultimate Heat Sink (UHS)],"
TS 3.7.2, "High Pressure Core Spray (HPCS) Service Water System (SWS)," and
TS 3.7.3, "[Control Room Fresh Air (CRFA)] System."

2. DETAILED DESCRIPTION

2.1 System Design and Operation

The Spray Additive System (NUREG-1430) is a subsystem of the Containment Spray System that assists in reducing the iodine fission product inventory in the containment atmosphere resulting from a Design Basis Accident (DBA). In the event of an accident such as a loss of coolant accident (LOCA), the Spray Additive System will be automatically actuated upon a high containment pressure signal by the Engineered Safety Features Actuation System (ESFAS). The purpose of SR 3.6.7.4 (NUREG-1430) is to verify that each automatic valve in the Spray Additive System flow path actuates to its correct position upon receipt of an actual or simulated actuation signal.

The EVS (NUREG-1430) filters air from the area of the active ECCS components during the recirculation phase of a LOCA. Ductwork, valves or dampers, and instrumentation also form part of the system. During emergency operations, the EVS dampers are realigned, and fans are started to begin filtration. Upon receipt of the actuation signal(s), normal air discharges from the negative pressure area are isolated, and the stream of ventilation air discharges through the system filter trains. The prefilters remove any large particles in the air, and any entrained water droplets present, to prevent excessive loading of the HEPA filters and charcoal adsorbers. The purpose of SR 3.7.12.3 (NUREG-1430) is to verify proper actuation of all train components, including dampers, on an actual or simulated actuation signal. The purpose of SR 3.7.12.5 is to ensure that the system is functioning properly by operating the EVS filter bypass damper.

The FSPVS (NUREG-1430) provides negative pressure in the fuel storage area, and filters airborne radioactive particulates from the area of the fuel pool following a fuel handling accident. The FSPVS consists of portions of the normal Fuel Handling Area Ventilation System (FHAVS), the station EVS, ductwork bypasses, and dampers. The portion of the normal FHAVS used by the FSPVS consists of ducting between the spent fuel pool and the normal FHAVS exhaust fans or dampers, and redundant radiation detectors installed close to the suction end of the FHAVS exhaust fan ducting. The purpose of SR 3.7.13.3 (NUREG-1430) is to verify proper actuation of all train components, including dampers, on an actual or simulated actuation signal. The purpose of SR 3.7.13.5 is to ensure that the system is functioning properly by operating the FSPVS filter bypass damper.

The CREVS (NUREG-1430), CREFS (NUREG-1431), CREACS (NUREG-1432), [MREC] (NUREG-1433), and [CRFA] (NUREG-1434) provide a protected environment from which occupants can control the unit following an uncontrolled release of radioactivity, hazardous chemicals, or smoke. The purpose of SR 3.7.10.3 (NUREG-1430 and NUREG-1431), SR 3.7.11.3 (NUREG-1432), SR 3.7.4.3 (NUREG-1433), and SR 3.7.3.3 (NUREG-1434) is to verify that each train / subsystem starts and operates on an actual or simulated actuation signal.

The SBACS (NUREG-1431) and SBEACS (NUREG-1432) are required to ensure that radioactive materials that leak from the primary containment into the shield building (secondary containment) following a DBA are filtered and adsorbed prior to exhausting to the environment. The containment has a secondary containment called the shield building, which is a concrete structure that surrounds the steel primary containment vessel. Between the containment vessel and the shield building inner wall is an annular space that collects any containment leakage that may occur following a LOCA. The SBACS and SBEACS establish a negative pressure in the annulus between the shield building and the steel containment vessel. Filters in the system then control the release of radioactive contaminants to the environment. The SBACS and SBEACS each consist of two separate and redundant trains. Each train includes a heater, [cooling coils,] a prefilter, moisture separators, a HEPA filter, an activated charcoal adsorber section for removal of radioiodines, and a fan. Ductwork, valves and/or dampers, and instrumentation also form part of the system. The system initiates and maintains a negative air pressure in the shield building by means of filtered exhaust ventilation of the shield building following receipt of a safety injection (SI) signal. The purpose of SR 3.6.13.3 (NUREG-1431) and SR 3.6.8.3 (NUREG-1432) is to verify proper actuation of all train components, including dampers, on an actual or simulated actuation signal. The purpose of SR 3.6.13.4 (NUREG-1431) and SR 3.6.8.4 (NUREG-1432) is to ensure that the system is functioning properly by operating the filter bypass damper.

The ICS (NUREG-1431 and NUREG-1432) is provided to reduce the concentration of fission products released to the containment atmosphere following a postulated accident. The ICS would function together with the Containment Spray and Cooling Systems following a DBA to reduce the potential release of radioactive material, principally iodine, from the containment to the environment. The ICS consists of two 100% capacity, separate, independent, and redundant trains. Each train includes a heater, [cooling coils,] a prefilter, a demister, a high efficiency particulate air (HEPA) filter, an activated charcoal adsorber section for removal of radioiodines, and a fan. Ductwork, valves and/or dampers, and instrumentation also form part of the system. The system initiates filtered recirculation of the containment atmosphere following receipt of a safety injection signal. The purpose of SR 3.6.11.3 (NUREG-1431) and SR 3.6.10.3 (NUREG-1432) is to verify proper actuation of all train components, including dampers, on an actual or simulated actuation signal. The purpose of SR 3.6.11.4 (NUREG-1431) and SR 3.6.10.4 (NUREG-1432) is to ensure that the system is functioning properly by operating the ICS filter bypass damper.

The ECCS PREACS (NUREG-1431 and NUREG-1432), in conjunction with other normally operating systems, also provide environmental control of temperature and humidity in the ECCS pump room area and the lower reaches of the Auxiliary Building. Ductwork, valves or dampers, and instrumentation also form part of the system, as well as demisters functioning to reduce the relative humidity of the air stream. During emergency operations, the ECCS PREACS dampers are realigned, and fans are started to begin filtration. Upon receipt of the actuating ESFAS signal(s), normal air discharges from the ECCS pump room isolate, and the stream of ventilation air discharges through the system filter trains. The prefilters or demisters remove any large particles in the air, and any entrained water droplets present, to prevent excessive loading of the HEPA filters and charcoal adsorbers. The purpose of SR 3.7.12.3 (NUREG-1431) and SR 3.7.13.3 (NUREG-1432) is to verify proper actuation of all train components, including

dampers, on an actual or simulated actuation signal. The purpose of SR 3.7.12.5 (NUREG-1431) and SR 3.7.13.5 (NUREG-1432) is to ensure that the system is functioning properly by operating the ECCS PREACS filter bypass damper.

The FBACS (NUREG-1431 and NUREG-1432) filter airborne radioactive particulates from the area of the fuel pool following a fuel handling accident or LOCA. The FBACS, in conjunction with other normally operating systems, also provides environmental control of temperature and humidity in the fuel pool area. FBACS consists of two independent and redundant trains. Each train consists of a heater, a prefilter or demister, a HEPA filter, an activated charcoal adsorber section for removal of gaseous activity (principally iodines), and a fan. Ductwork, valves or dampers, and instrumentation also form part of the system, as well as demisters, functioning to reduce the relative humidity of the airstream. The system initiates filtered ventilation of the fuel handling building following receipt of a high radiation signal. The FBACS is a standby system, parts of which may also be operated during normal plant operations. Upon receipt of the actuating signal, normal air discharges from the building, the fuel handling building is isolated, and the stream of ventilation air discharges through the system filter trains. The purpose of SR 3.7.13.3 (NUREG-1431) and SR 3.7.14.3 (NUREG-1432) is to verify proper actuation of all train components, including dampers, on an actual or simulated actuation signal. The purpose of SR 3.7.13.5 (NUREG-1431) and SR 3.7.14.5 (NUREG-1432) is to ensure that the system is functioning properly by operating the FBACS filter bypass damper.

The PREACS (NUREG-1431 and NUREG-1432) filter air from the penetration area between containment and the Auxiliary Building. The PREACS consists of two independent and redundant trains. Each train consists of a heater, a prefilter or demister, a HEPA filter, an activated charcoal adsorber section for removal of gaseous activity (principally iodines), and a fan. Ductwork, valves or dampers, and instrumentation, as well as demisters, functioning to reduce the relative humidity of the air stream, also form part of the system. The PREACS is a standby system, parts of which may also operate during normal unit operations. Upon receipt of the actuating signal(s), the PREACS dampers are realigned and fans are started to initiate filtration. The purpose of SR 3.7.14.3 (NUREG-1431) and SR 3.7.15.3 (NUREG-1432) is to verify proper actuation of all train components, including dampers, on an actual or simulated actuation signal. The purpose of SR 3.7.14.5 (NUREG-1431) and SR 3.7.15.5 (NUREG-1432) is to ensure that the system is functioning properly by operating the PREACS filter bypass damper.

The ECW System (NUREG-1432) provides a heat sink for the removal of process and operating heat from selected safety related air handling systems during a DBA or transient. The ECW System is a closed loop system consisting of two independent trains. Each 100% capacity train includes a heat exchanger, surge tank, pump, chemical addition tank, piping, valves, controls, and instrumentation. An independent 100% capacity chilled water refrigeration unit cools each train. The ECW System is actuated on a Safety Injection Actuation Signal (SIAS) and supplies chilled water to the heating, ventilation, and air conditioning units in Engineered Safety Feature (ESF) equipment areas (e.g., the main control room, electrical equipment room, and safety injection pump area). The purpose of SR 3.7.10.2 (NUREG-1432) is to verify proper automatic operation of the ECW System components and that the ECW pumps will start in the event of any

accident or transient that generates an SIAS. This SR also ensures that each automatic valve in the flow paths actuates to its correct position on an actual or simulated SIAS.

The ECCS (NUREG-1433 and NUREG-1434) is designed to limit the release of radioactive materials to the environment following a loss of coolant accident (LOCA) and consists of the High Pressure Coolant Injection (HPCI) System (High Pressure Core Spray (HPCS) System in NUREG-1434), the Core Spray (CS) System (Low Pressure Core Spray (LPCS) System in NUREG-1434), the low pressure coolant injection (LPCI) mode of the Residual Heat Removal (RHR) System, and the Automatic Depressurization System (ADS). The purpose of SR 3.5.1.10 and SR 3.5.2.6 (NUREG-1433) and SR 3.5.1.5 and SR 3.5.2.6 (NUREG-1434) is to verify the automatic initiation logic of HPCI (or HPCS), CS (or LPCS), and LPCI will cause the systems or subsystems to operate as designed, including actuation of the system throughout its emergency operating sequence, automatic pump startup and actuation of all automatic valves to their required positions on receipt of an actual or simulated actuation signal.

The function of the RCIC (NUREG-1433 and NUREG-1434) is to respond to transient events by providing makeup coolant to the reactor. The purpose of SR 3.5.3.5 (NUREG-1433 and NUREG-1434) is to verify the system operates as designed, including actuation of the system throughout its emergency operating sequence; that is, automatic pump startup and actuation of all automatic valves to their required positions on receipt of an actual or simulated actuation signal.

The Plant Service Water System (PSW) and Ultimate Heat Sink (NUREG-1433) and the Standby Service Water (SSW) and Ultimate Heat Sink (NUREG-1434) are designed to provide cooling water for the removal of heat from equipment, such as the diesel generators, RHR pump coolers and heat exchangers, and room coolers for Emergency Core Cooling System equipment, required for a safe reactor shutdown following a DBA or transient. The PSW and SSW systems also provide cooling to unit components, as required, during normal shutdown and reactor isolation modes. During a DBA, the equipment required only for normal operation is isolated and cooling is directed to only safety related equipment. The purpose of SR 3.7.2.6 (NUREG-1433) and SR 3.7.1.6 (NUREG-1434) is to verify the systems will automatically switch to the position to provide cooling water exclusively to safety related equipment during an accident.

The RHR Containment Spray System (NUREG-1434) is designed to mitigate the effects of primary containment bypass leakage and low energy line breaks. The purpose of SR 3.6.1.7.3 is to verify that each RHR containment spray subsystem automatic valve actuates to its correct position upon receipt of an actual or simulated automatic actuation signal.

The function of the Standby Gas Treatment (SGT) System (NUREG-1433 and NUREG-1434) is to ensure that radioactive materials that leak from the primary containment into the secondary containment following a DBA are filtered and adsorbed prior to exhausting to the environment. The purpose of SR 3.6.4.3.3 (NUREG-1433 and NUREG-1434) is to verify that each SGT subsystem starts on receipt of an actual or simulated initiation signal. The purpose of SR 3.6.4.3.4 (NUREG-1433 and NUREG-1434) is to verify verifies that the filter cooler bypass damper can be opened and the fan started. This ensures that the ventilation mode of SGT System operation is available.

The HPCS SWS (NUREG-1434) provides cooling water for the removal of heat from components of the Division 3 HPCS system. The purpose of SR 3.7.2.3 (NUREG-1434) is to verify that the automatic valves of the HPCS SWS will automatically switch to the safety or emergency position to provide cooling water exclusively to the safety related equipment on an actual or simulated initiation signal.

2.2 Current Technical Specifications Requirements

The current TS SRs affected by the proposed change are similar to one of the following examples:

- Verify each [system train or subsystem] automatic valve in the flow path actuates to the correct position on an actual or simulated actuation signal.
- Verify each [system train or subsystem] actuates on an actual or simulated actuation signal.
- Verify [area isolates] on an actual or simulated actuation signal.
- Verify each [system name] bypass damper can be [opened][closed].
- Verify each automatic [system name] isolation valve actuates to the isolation position on an actual or simulated isolation signal.

2.3 Reason for the Proposed Change

Surveillance Requirement 3.0.1 states:

> SRs shall be met during the MODES or other specified conditions in the Applicability for individual LCOs, unless otherwise stated in the SR. Failure to meet a Surveillance, whether such failure is experienced during the performance of the Surveillance or between performances of the Surveillance, shall be failure to meet the LCO. Failure to perform a Surveillance within the specified Frequency shall be failure to meet the LCO except as provided in SR 3.0.3. Surveillances do not have to be performed on inoperable equipment or variables outside specified limits. (Emphasis added.)

This requirement makes clear that when a SR is not met, the LCO is not met. In most cases, failure to meet the SR also results in the inoperability of the subject SSC (i.e., the inability to perform the specified safety function). However, there are instances in which an SSC is not capable of meeting a SR but is still capable of performing its specified safety function(s). Automatic valves or dampers may be locked in position for maintenance or repair, to support plant operation, or to support maintenance or repair of other components. If the supported system can still perform its specified safety function with the valve or damper in the locked position, the system should not be considered inoperable and risk a plant shutdown (a higher risk evolution).

To avoid unnecessarily declaring the LCO not met and following the Conditions and Required Actions, the Standard Technical Specifications (STS) address several of these instances through exceptions in the SR.

For example:

- NUREG-1431, SR 3.5.2.5, states, "Verify each ECCS automatic valve in the flow path t*hat is not locked, sealed, or otherwise secured in position*, actuates to the correct position on an actual or simulated actuation signal."

- NUREG-1432, SR 3.7.5.3, states, "Verify each AFW automatic valve t*hat is not locked, sealed, or otherwise secured in position*, actuates to the correct position on an actual or simulated actuation signal."

- NUREG-1433, SR 3.5.3.2, states, "Verify each RCIC System manual, power operated, and automatic valve in the flow path, *that is not locked, sealed, or otherwise secured in position*, is in the correct position."

There are SRs in the STS that are not required to be met in all circumstances for the SSC to perform its specified safety function(s), but that do not contain exceptions in the SR text. As a result, in some cases the SRs are declared not met and the Conditions and Required Actions entered even though the subject SSC is still capable of performing its specified safety function(s).

For example, SR 3.6.11.4 states, "Verify each ICS filter bypass damper can be opened." The active phrase "can be opened" means that the SR would not be met if the filter bypass damper is locked open. The purpose of the damper is to conserve the operating life of the filter by bypassing air flow around it unless the damper is opened by a signal. There is no assumption that the damper is able to close following an accident. When the damper is locked opened, the filter is performing its specified safety function (albeit at the cost of more frequent replacement of the filter materials). Nevertheless, in this case the LCO would be declared not met per SR 3.0.1 since the SR is not met, even though the ICS is operable. This circumstance is averse to plant safety as it may lead to an unnecessary plant shutdown (a transient) when the system is operable.

A review of the STS identified other 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 valve or damper actuates on an actual or simulated actuation signal. If the valve or damper 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 valve or damper is not assumed to move following actuation and the system is otherwise capable of performing its specified safety function, it should be considered operable. In these cases, an exception in the SR is needed.

2.4 Description of the Proposed Change

The proposed change revises the affected SRs by adding the exception, "not locked, sealed, or otherwise secured in the [open][closed][actuated] position,".

The proposed revisions are shown below in italics.

NUREG-1430 (Babcock and Wilcox (B&W))

- SR 3.6.7.4 "Verify each spray additive automatic valve in the flow path actuates to the correct position on an actual or simulated actuation signal, *except for valves that are locked, sealed, or otherwise secured in the actuated position*."
- SR 3.7.10.3 "Verify each CREVS train actuates on an actual or simulated actuation signal*, except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position,* " or "Verify the control room isolates on an actual or simulated actuation signal*, except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position*."
- SR 3.7.12.3,"Verify each EVS train actuates on an actual or simulated actuation signal*, except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position*."
- SR 3.7.12.5 "Verify each EVS filter cooling bypass damper can be opened*, except for dampers that are locked, sealed, or otherwise secured in the open position*."
- SR 3.7.13.3 "Verify each FSPVS train actuates on an actual or simulated actuation signal*, except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position*."
- SR 3.7.13.5 "Verify each FSPVS filter bypass damper can be opened*, except for dampers that are locked, sealed, or otherwise secured in the open position*."

NUREG-1431 (Westinghouse)

- SR 3.6.11.3 "Verify each ICS train actuates on an actual or simulated actuation signal*, except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position*."
- SR 3.6.11.4 "Verify each ICS filter bypass damper can be opened*, except for dampers that are locked, sealed, or otherwise secured in the open position*."
- SR 3.6.13.3 "Verify each SBACS train actuates on an actual or simulated actuation signal*, except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position*."
- SR 3.6.13.4 "Verify each SBACS filter bypass damper can be opened*, except for dampers that are locked, sealed, or otherwise secured in the open position*."
- SR 3.7.10.3 "Verify each CREFS train actuates on an actual or simulated actuation signal*, except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position*."

- SR 3.7.12.3 "Verify each ECCS PREACS train actuates on an actual or simulated actuation signal*, except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position*."
- SR 3.7.12.5 "Verify each ECCS PREACS filter bypass damper can be closed*, except for dampers that are locked, sealed, or otherwise secured in the closed position*."
- SR 3.7.13.3 "Verify each FBACS train actuates on an actual or simulated actuation signal*, except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position*."
- SR 3.7.13.5 "Verify each FBACS filter bypass damper can be closed*, except for dampers that are locked, sealed, or otherwise secured in the closed position*."
- SR 3.7.14.3 "Verify each PREACS train actuates on an actual or simulated actuation signal*, except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position*."
- SR 3.7.14.5 "Verify each PREACS filter bypass damper can be closed*, except for dampers that are locked, sealed, or otherwise secured in the closed position*."

NUREG-1432 (Combustion Engineering (CE))

- SR 3.6.8.3 "Verify each SBEACS train actuates on an actual or simulated actuation signal*, except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position*."
- SR 3.6.8.4 "Verify each SBEACS filter bypass damper can be opened*, except for dampers that are locked, sealed, or otherwise secured in the open position*."
- SR 3.6.10.3 "Verify each ICS train actuates on an actual or simulated actuation signal*, except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position*.
- SR 3.6.10.4 "Verify each ICS filter bypass damper can be opened*, except for dampers that are locked, sealed, or otherwise secured in the open position*."
- SR 3.7.10.2 "Verify the proper actuation of each ECW System component on an actual or simulated actuation signal*, except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position*."
- SR 3.7.11.3 "Verify each CREACS train actuates on an actual or simulated actuation signal*, except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position*."
- SR 3.7.13.3 "Verify each ECCS PREACS train actuates on an actual or simulated actuation signal*, except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position*."
- SR 3.7.13.5 "Verify each ECCS PREACS filter bypass damper can be opened*, except for dampers that are locked, sealed, or otherwise secured in the open position*."

- SR 3.7.14.3 "Verify each FBACS train actuates on an actual or simulated actuation signal*, except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position*."
- SR 3.7.14.5 "Verify each FBACS filter bypass damper can be opened*, except for dampers that are locked, sealed, or otherwise secured in the open position*."
- SR 3.7.15.3 "Verify each PREACS train actuates on an actual or simulated actuation signal*, except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position."*
- SR 3.7.15.5 "Verify each PREACS filter bypass damper can be opened*, except for dampers that are locked, sealed, or otherwise secured in the open position*."

NUREG-1433 (General Electric (GE) BWR/4)

- SR 3.5.1.10 "Verify each ECCS injection/spray subsystem actuates on an actual or simulated automatic initiation signal*, except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position*."
- SR 3.5.2.6 "Verify each required ECCS injection/spray subsystem actuates on an actual or simulated automatic initiation signal*, except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position*."
- SR 3.5.3.5 "Verify the RCIC System actuates on an actual or simulated automatic initiation signal*, except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position*."
- SR 3.6.4.3.3 "Verify each SGT subsystem actuates on an actual or simulated initiation signal*, except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position*."
- SR 3.6.4.3.4 "Verify each SGT filter cooler bypass damper can be opened and the fan started*, except for dampers that are locked, sealed, or otherwise secured in the open position*."
- SR 3.7.2.6 "Verify each PSW subsystem actuates on an actual or simulated initiation signal*, except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position*."
- SR 3.7.4.3 "Verify each MCREC subsystem actuates on an actual or simulated initiation signal*, except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position*."

NUREG-1434 (General Electric (GE) BWR/6)

- SR 3.5.1.5 "Verify each ECCS injection/spray subsystem actuates on an actual or simulated automatic initiation signal*, except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position*."
- SR 3.5.2.6 "Verify each required ECCS injection/spray subsystem actuates on an actual or simulated automatic initiation signal*, except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position*."

- SR 3.5.3.5 "Verify the RCIC System actuates on an actual or simulated automatic initiation signal*, except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position*."
- SR 3.6.1.7.3 Verify each RHR containment spray subsystem automatic valve in the flow path actuates to its correct position on an actual or simulated automatic initiation signal*, except for valves that are locked, sealed, or otherwise secured in the actuated position*."
- SR 3.6.4.3.3 "Verify each SGT subsystem actuates on an actual or simulated initiation signal*, except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position*."
- SR 3.6.4.3.4 "Verify each SGT filter cooler bypass damper can be opened and the fan started*, except for dampers that are locked, sealed, or otherwise secured in the open position*."
- SR 3.7.1.6 "Verify each SSW subsystem actuates on an actual or simulated initiation signal*, except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position*."
- SR 3.7.2.3 "Verify the HPCS SWS actuates on an actual or simulated initiation signal*, except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position*."
- SR 3.7.3.3 "Verify each CRFA subsystem actuates on an actual or simulated initiation signal*, except for dampers and valves that are locked, sealed, or otherwise secured in the actuated position*."

The proposed change is supported by changes to the TS Bases. For example (the revisions are shown in italics):

> This SR verifies that each [standby gas treatment] SGT subsystem actuates on receipt of an actual or simulated initiation signal. *The SR excludes automatic dampers and valves that are locked, sealed, or otherwise secured in the actuated position. It is not necessary to test the actuation of dampers or valves that are locked, sealed, or otherwise secured in the actuated position because the affected dampers or valves were verified to be in the actuated position prior to being locked, sealed, or otherwise secured. Excluding a locked, sealed, or otherwise secured automatic valve or damper requires an assessment of system operability, including whether it is necessary for the valve or damper to be repositioned to the non-actuated position to support the accident analysis. Restoration of an automatic valve or damper to the non-actuated position requires verification that the SR is met.* [While this Surveillance can be performed with the reactor at power, operating experience has shown that these components usually pass the Surveillance when performed at the [18] month Frequency. …

The regulation at Title 10 of the Code of Federal Regulations (10 CFR), Part 50.36, states, "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." Changes to the TS Bases will be made in accordance with the

Technical Specifications Bases Control Program following approval of the requested amendment. The proposed TS Bases changes are consistent with the proposed TS changes and provide the purpose for each requirement in the specification consistent with the Commission's Final Policy Statement on Technical Specifications Improvements for Nuclear Power Reactors, dated July 2, 1993 (58 FR 39132). Therefore, the Bases changes are provided for information and approval of the Bases is not requested.

A model application is included. The model may be used by licensees desiring to adopt the proposed change following NRC approval.

3. TECHNICAL EVALUATION

The definition of operable - Operability states:

> A system, subsystem, train, component, or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified safety function(s) and when all necessary attendant instrumentation, controls, normal or emergency electrical power, cooling and seal water, lubrication, and other auxiliary equipment that are required for the system, subsystem, train, component, or device to perform its specified safety function(s) are also capable of performing their related support function(s). (Emphasis added.)

The proposed change revises SRs that verify the ability to actuate on an actual or simulated actuation signal by incorporating an allowance excluding valves and dampers that are locked, sealed or otherwise secured in the actuated position.

These allowances permit components that are fulfilling their safety function to be exempted from testing under the SR. However, the proposed change does not permit a system that is inoperable to be considered operable. As stated in the SR 3.0.1 Bases, "Nothing in this Specification, however, is to be construed as implying that systems or components are OPERABLE when: a. The systems or components are known to be inoperable, although still meeting the SRs."

Placing a component in a condition not consistent with the design requires consideration of the effect on the associated system's operability under the licensees operability determination process. The model application requires licensees to verify that their administrative processes require assessing system operability when utilizing the SR allowances. The operability assessment will consider whether movement of the affected valves or dampers following an accident is assumed in the safety analysis.

As stated in the TS Bases, the component is verified to be in the correct position prior to locking, sealing, or securing it in position. Valves that are locked, sealed, or otherwise secured are entered into the licensee's tagging program, which is routinely inspected by the NRC under various 71111 procedures in the NRC Inspection Manual. While in the actuated position, verification of automatic actuation or valve isolation time is not necessary as the specified safety function is assured. However, as with the existing similar SR allowances, the SR must be verified to be met after removing the valve or damper from the locked, sealed or otherwise secured status.

These allowances and the proposed change do not permit changing the plant design, which must be evaluated under 10 CFR 50.59, and the Final Safety Analysis Report (FSAR) must be updated per 10 CFR 50.71(e). If the valve or damper is locked, sealed, or otherwise secured to support plant operation (such as changing modes, or removing or placing systems in operation), restoration to the design condition is controlled by plant procedures, changes to which are also governed by 10 CFR 50.59. If the valve or damper is locked, sealed, or otherwise secured to facilitate maintenance, restoration is governed by 10 CFR 50, Appendix B, Criterion XVI and 10 CFR 50.65. If the SR exception is utilized to not test the actuation of a valve or damper and the specified Frequency of the SR is exceeded without testing the component, the SR must be performed on the component when it is returned to service in order to meet the SR.

Under the proposed change, the affected valves and dampers may be excluded from testing when 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. Otherwise, the system cannot perform its specified safety function and is inoperable regardless of whether the SR is met. Therefore, the proposed allowance has no effect on the ability to satisfy the safety analysis assumptions.

4. REGULATORY EVALUATION

Section IV, "The Commission Policy," of the "Final Policy Statement on Technical Specifications Improvements for Nuclear Power Reactors" (58 Federal Register 39132), dated July 22, 1993, states in part:

> 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.
>
> …[T]he Commission will also entertain requests to adopt portions of the improved STS, even if the licensee does not adopt all STS improvements.
>
> …The Commission encourages all licensees who submit Technical Specification related submittals based on this Policy Statement to emphasize human factors principles.
>
> …In accordance with this Policy Statement, improved STS have been developed and will be maintained for [BWR designs]. The Commission encourages licensees to use the improved STS as the basis for plant-specific Technical Specifications.
>
> …[I]t is the Commission intent that the wording and Bases of the improved STS be used … to the extent practicable.

As described in the Commission's "Final Policy Statement on Technical Specifications Improvements for Nuclear Power Reactors," recommendations were made by NRC and industry task groups for new STS that include greater emphasis on human factors principles in order to add clarity and understanding to the text of the STS, and provide improvements to the Bases of

STS, which provides the purpose for each requirement in the specification. Improved vendor-specific STS were developed and issued by the NRC in September 1992.

Additionally, 10 CFR 50.36(b) requires:

> Each license authorizing operation of a … 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.

The categories of items required to be in the TSs are provided in 10 CFR 50.36(c). As required by 10 CFR 50.36(c)(3), the TSs will include SRs, which 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.

Per 10 CFR 50.90, whenever a holder of a license desires to amend the license, application for an amendment must be filed with the Commission, fully describing the changes desired, and following as far as applicable, the form prescribed for original applications.

Per 10 CFR 50.92(a), in determining whether an amendment to a license will be issued to the applicant, the Commission will be guided by the considerations which govern the issuance of initial licenses to the extent applicable and appropriate.

The NRC staff's guidance for the review of TSs is in Chapter 16, "Technical Specifications," of NUREG-0800, Revision 3, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants" (SRP), dated March 2010 (ADAMS Accession No. ML100351425). As described therein, as part of the regulatory standardization effort, the NRC staff has prepared STS for each of the light-water reactor nuclear designs.

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

5. REFERENCES

None

Model Application

[DATE] 10 CFR 50.90

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

DOCKET NO. PLANT NAME
50-[xxx]
SUBJECT: APPLICATION TO REVISE TECHNICAL SPECIFICATIONS TO ADOPT TSTF-541, "ADD EXCEPTIONS TO SURVEILLANCE REQUIREMENTS WHEN THE SAFETY FUNCTION IS BEING PERFORMED"

Pursuant to 10 CFR 50.90, [LICENSEE] is submitting a request for an amendment to the Technical Specifications (TS) for [PLANT NAME, UNIT NOS.].

[LICENSEE] requests adoption of TSTF-541, "Add Exceptions to Surveillance Requirements when the Safety Function is Being Performed," which is an approved change to the Improved Standard Technical Specifications (ISTS), into the [PLANT NAME, UNIT NOS] Technical Specifications (TS). The proposed change revises TS Surveillance Requirements (SRs) by adding exceptions excluding from actuation those valves and dampers that are locked, sealed or otherwise secured in the actuated position.

The enclosure provides a description and assessment of the proposed changes. Attachment 1 provides the existing TS pages marked up to show the proposed changes. Attachment 2 provides revised (clean) TS pages. Attachment 3 provides existing TS Bases pages marked to show the proposed changes for information only. {Note: the attachments are not included in the model application.}

Approval of the proposed amendment is requested by [date]. Once approved, the amendment shall be implemented within [ ] days.

There are [no] regulatory commitments made in this submittal.

In accordance with 10 CFR 50.91, a copy of this application, with attachments, is being provided to the designated [STATE] Official.

[In accordance with 10 CFR 50.30(b), a license amendment request must be executed in a signed original under oath or affirmation. This can be accomplished by attaching a notarized affidavit confirming the signature authority of the signatory, or by including the following statement in the cover letter: "I declare under penalty of perjury that the foregoing is true and correct. Executed on (date)." The alternative statement is pursuant to 28 USC 1746. It does not require notarization.]

If you should have any questions regarding this submittal, please contact [NAME, TELEPHONE NUMBER].

Sincerely,

[Name, Title]

Attachments:
1. Proposed Technical Specification Changes (Mark-Up)
2. Revised Technical Specification Pages
3. Proposed Technical Specification Bases Changes (Mark-Up) for Information Only

[The attachments are to be provided by the licensee and are not included in the model application.]

cc: NRC Project Manager
NRC Regional Office
NRC Resident Inspector
State Contact

ATTACHMENT 1 - DESCRIPTION AND ASSESSMENT

1.0 DESCRIPTION

[LICENSEE] requests adoption of TSTF-541, "Add Exceptions to Surveillance Requirements when the Safety Function is Being Performed," which is an approved change to the Improved Standard Technical Specifications (ISTS), into the [PLANT NAME, UNIT NOS] Technical Specifications (TS). The proposed change revises TS Surveillance Requirements (SRs) by adding exceptions excluding from actuation those valves and dampers that are locked, sealed or otherwise secured in the actuated position.

[NUREG-1430, "Standard Technical Specifications Babcock and Wilcox Plants"
- TS 3.6.7, "Spray Additive System,"
- TS 3.7.10, "Control Room Emergency Ventilation System (CREVS),"
- TS 3.7.12, "Emergency Ventilation System (EVS),"
- TS 3.7.13, "Fuel Storage Pool Ventilation System (FSPVS),"]

[NUREG-1431, "Standard Technical Specifications Westinghouse Plants"
- TS 3.6.11, "Iodine Cleanup System (ICS) (Atmospheric and Subatmospheric),"
- TS 3.6.13, "Shield Building Air Cleanup System (SBACS) (Dual and Ice Condenser),"
- TS 3.7.10, "Control Room Emergency Filtration System (CREFS),"
- TS 3.7.12, "Emergency Core Cooling System (ECCS) Pump Room Exhaust Air Cleanup System (PREACS),"
- TS 3.7.13, "Fuel Building Air Cleanup System (FBACS),"
- TS 3.7.14, "Penetration Room Exhaust Air Cleanup System (PREACS),"]

[NUREG-1432, "Standard Technical Specifications Combustion Engineering Plants"
- TS 3.6.8, "Shield Building Exhaust Air Cleanup System (SBEACS) (Dual),"
- TS 3.6.10, "Iodine Cleanup System (ICS) (Atmospheric and Dual),"
- TS 3.7.10, "Essential Chilled Water (ECW),"
- TS 3.7.11, "Control Room Emergency Air Cleanup System (CREACS),"
- TS 3.7.13, "Emergency Core Cooling System (ECCS) Pump Room Exhaust Air Cleanup System (PREACS),"
- TS 3.7.14, "Fuel Building Air Cleanup System (FBACS)," and
- TS 3.7.15, "Penetration Room Exhaust Air Cleanup System (PREACS)."]

[NUREG-1433, "Standard Technical Specifications General Electric BWR/4 Plants"
- TS 3.5.1, "Emergency Core Cooling Systems (ECCS) Operating,"
- TS 3.5.2, "Emergency Core Cooling Systems (ECCS) Shutdown,"
- TS 3.5.3, "Reactor Core Isolation Cooling System (RCIC),"
- TS 3.6.4.3, "Standby Gas Treatment (SGT) System,"
- TS 3.7.2,"[Plant Service Water (PSW)] System and [Ultimate Heat Sink (UHS)]," and
- TS 3.7.4 "[Main Control Room Environmental Control (MCREC)] System."]

[NUREG-1434, "Standard Technical Specifications General Electric BWR/6 Plants"
- TS 3.5.1, "Emergency Core Cooling Systems (ECCS) Operating,"
- TS 3.5.2, "Emergency Core Cooling Systems (ECCS) Shutdown,"

TS 3.5.3, "Reactor Core Isolation Cooling System (RCIC),"
TS 3.6.1.7, "Residual Heat Removal (RHR) Containment Spray System,"
TS 3.6.4.3, "Standby Gas Treatment (SGT) System,"
TS 3.7.1, "[Standby Service Water (SSW)] System and [Ultimate Heat Sink (UHS)],"
TS 3.7.2, "High Pressure Core Spray (HPCS) Service Water System (SWS)," and
TS 3.7.3, "[Control Room Fresh Air (CRFA)] System."]]

2.0 ASSESSMENT

2.1 Applicability of Safety Evaluation

[LICENSEE] has reviewed the safety evaluation for TSTF-541 provided to the Technical Specifications Task Force in a letter dated [DATE]. This review included a review of the NRC staff's evaluation, as well as the information provided in TSTF-541. [As described herein,] [LICENSEE] has concluded that the justifications presented in TSTF-541 and the safety evaluation prepared by the NRC staff are applicable to [PLANT, UNIT NOS.] and justify this amendment for the incorporation of the changes to the [PLANT] TS.

2.2 Variations

[LICENSEE is not proposing any variations from the TS changes described in TSTF-541 or the applicable parts of the NRC staff's safety evaluation dated [DATE].] [LICENSEE is proposing the following variations from the TS changes described in TSTF-541 or the applicable parts of the NRC staff's safety evaluation: describe the variations.]

[The [PLANT] TS utilize different [numbering][and][titles] than the Standard Technical Specifications on which TSTF-541 was based. Specifically, [describe differences between the plant-specific TS numbering and/or titles and TSTF-541 numbering and titles.] These differences are administrative and do not affect the applicability of TSTF-541 to the [PLANT] TS.]

[The [PLANT] TS contain requirements that differ from the Standard Technical Specifications on which TSTF-541 was based, but these differences do not affect the applicability of the TSTF-541 justification. [Describe differences and why TSTF-541 is still applicable.]

2.3 Licensee Verifications or Commitments

[[LICENSEE] confirms that their existing administrative processes require assessing system operability when utilizing the SR allowances, which includes consideration of whether movement of the affected valves or dampers following an accident is assumed in the safety analysis.]

[[LICENSEE] commits to revising their administrative processes require assessing system operability when utilizing the SR allowances before implementation of the amendment, which will include consideration of whether movement of the affected valves or dampers following an accident is assumed in the safety analysis.]

.

3.0 REGULATORY ANALYSIS

3.1 No Significant Hazards Consideration Determination

[LICENSEE] requests adoption of TSTF-541, "Add Exceptions to Surveillance Requirements When the Safety Function is being Performed," which is an approved change to the Standard Technical Specifications (STS), into the [PLANT NAME, UNIT NOS] Technical Specifications (TS). The proposed amendment modifies the TS Surveillance Requirements (SRs) by adding exceptions to consider the SR met when valves or dampers are locked, sealed, or otherwise secured in the actuated position. However, the subject structure, system or component (SSC) is still must be capable of performing its specified safety function.

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

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

   Response: No

   The proposed change revises SRs by adding exceptions excluding from actuation and isolation time testing those valves and dampers that are locked, sealed or otherwise secured in the actuated position. The performance or exclusion of performance of SRs is not an initiator of any accident previously evaluated. As a result, the proposed change has no effect on the probability of any accident previously evaluated. The proposed change excludes performance of certain SRs when the SR is not required to demonstrate that the SSC can perform the safety functions assumed in the accident analysis. As a result, the SSCs continue to perform their mitigating functions and the consequences of any accident previously evaluated are not affected.

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

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

   Response: No

   The proposed change revises SRs by adding exceptions excluding from actuation and isolation time testing those valves and dampers that are locked, sealed or otherwise secured in the actuated position. The change does not involve a physical alteration of the plant (i.e., no new or different type of equipment will be installed) or a change in the methods governing normal plant operations. The change does not alter assumptions

made in the safety analysis for pump or train operability or actuated valve or damper position.

Therefore, the proposed change does not create the possibility of a new or different kind of accident from any previously evaluated.

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

Response: No

The proposed change revises SRs by adding exceptions excluding from actuation and isolation time testing those valves and dampers that are locked, sealed or otherwise secured in the actuated position. The proposed change does not alter the manner in which safety limits, limiting safety system settings or limiting conditions for operation are determined. The safety analysis assumptions and acceptance criteria are not affected by this change.

Therefore, the proposed change does not involve a significant reduction in a margin of safety.

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

3.2 Conclusion

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

4. ENVIRONMENTAL CONSIDERATION

The proposed change would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. However, the proposed change does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluents that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed change meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed change.

Technical Specifications and Bases Proposed Changes