General Directions: This model safety evaluation (SE) provides the format and content to be used when preparing the plant-specific SE of a license amendment request to adopt TSTF-541, Revision 2. The ***bolded*** *bracketed information shows text that should be filled in for the specific amendment; individual licensees would furnish site-specific nomenclature or values for these bracketed items. The italicized wording provides guidance on what should be included in each section. The italicized wording should not be included in the SE.*

DRAFT MODEL SAFETY EVALUATION

BY THE OFFICE OF NUCLEAR REACTOR REGULATION

TECHNICAL SPECIFICATIONS TASK FORCE TRAVELER

TSTF-541, REVISION 2

"ADD EXCEPTIONS TO SURVEILLANCE REQUIREMENTS FOR VALVES AND DAMPERS LOCKED IN THE ACTUATED POSITION"

USING THE CONSOLIDATED LINE ITEM IMPROVEMENT PROCESS

(EPID L-20XX-LLA-XXXX)

1.0 INTRODUCTION

By application dated **[enter date]** (Agencywide Documents Access and Management System (ADAMS) Accession No. **[MLXXXXXXXXX]**), **[as supplemented by letter(s) dated [enter date(s)]], [name of licensee]** (the licensee) submitted a license amendment request (LAR) for **[name of facility or facilities (abbreviated name(s)), applicable unit(s)]**.

The amendment would revise certain Surveillance Requirements (SRs) in the Technical Specifications (TSs) by adding an exception to the SR for automatic valves or dampers that are locked, sealed, or otherwise secured in the actuated position.

The proposed amendment is based on Technical Specifications Task Force (TSTF) traveler TSTF-541, Revision 2, "Add Exceptions to Surveillance Requirements for Valves and Dampers Locked in the Actuated Position," dated August 28, 2019 (ADAMS Accession No. ML19240A315). The U.S. Nuclear Regulatory Commission (NRC or the Commission) approved TSTF-541, Revision 2, by letter dated **[enter date (ADAMS Accession No. ML19XXXXXXX)]**. The NRC staff's safety evaluation (SE) of the traveler is included with the NRC staff's approval letter.

[The licensee has proposed variations from the TS changes described in traveler TSTF-541, Revision 2. The variations are described in Section [2.2.1] of this SE and evaluated in Section [3.1].]

[The supplemental letter(s) dated [enter date(s)], provided additional information that clarified the application, did not expand the scope of the application as originally

noticed, and did not change the NRC staff's original proposed no significant hazards consideration determination as published in the *Federal Register* on [enter date] (cite FR reference).]

2.0 REGULATORY EVALUATION

2.1 System Descriptions

{NOTE: For B&W plant designs, use these paragraphs.}

The **[spray additive system]** 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]** 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 **[emergency ventilation system (EVS)]** filters air from the area of the active emergency core cooling system (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 high-efficiency particulate air (HEPA) filters and charcoal adsorbers. The purpose of SR **[3.7.12.3]** 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 **[fuel storage pool ventilation system (FSPVS)]** 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]** 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 **[control room emergency ventilation system (CREVS)]** provides 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]** is to verify that each train/subsystem starts and operates on an actual or simulated actuation signal.

{NOTE: For Westinghouse plant designs, use these paragraphs.}

The **[control room emergency filtration system (CREFS)]** provides 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]** is to verify that each train/subsystem starts and operates on an actual or simulated actuation signal.

The **[shield building air cleanup system (SBACS)]** is required to ensure that radioactive materials that leak from the primary containment into the shield building (secondary containment) following a design-basis accident (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 loss-of-coolant accident (LOCA). The **[SBACS]** establishes 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]** consists of two separate and redundant trains. Each train includes a heater, cooling coils, a prefilter, moisture separators, 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 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 signal. The purpose of SR **[3.6.13.3]** 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]** is to ensure that the system is functioning properly by operating the filter bypass damper.

The **[iodine cleanup system (ICS)]** 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-percent capacity, separate, independent, and redundant trains. Each train includes a heater, cooling coils, a prefilter, a demister, 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 filtered recirculation of the containment atmosphere following receipt of a safety injection signal. The purpose of SR **[3.6.11.3]** 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]** is to ensure that the system is functioning properly by operating the **[ICS]** filter bypass damper.

The **[emergency core cooling system pump room exhaust air cleanup system (ECCS PREACS)]**, in conjunction with other normally operating systems, also provides 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 **[engineered safety feature actuation system (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]** 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 **[ECCS PREACS]** filter bypass damper.

The **[fuel building air cleanup system (FBACS)]** filters 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. The **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]** 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 **[FBACS]** filter bypass damper.

The **[penetration room exhaust air cleanup system (PREACS)]** filters 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]** 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]** is to ensure that the system is functioning properly by operating the **[PREACS]** filter bypass damper.

{NOTE: For CE plant designs, use these paragraphs.}

The **[control room emergency air cleanup system (CREACS)]** provides a protected environment from which occupants can control the unit following an uncontrolled release of radioactivity, hazardous chemicals, or smoke. The purpose of SR **[3.7.11.3]** is to verify that each train/subsystem starts and operates on an actual or simulated actuation signal.

The **[shield building exhaust air cleanup system (SBEACS)]** is required to ensure that radioactive materials that leak from the primary containment into the shield building (secondary containment) following a design-basis accident (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 loss-of-coolant accident (LOCA). The **[SBEACS]** establishes 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 **[SBEACS]** consists of two separate and redundant trains. Each train includes a heater, cooling coils, a prefilter, moisture separators, 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 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 signal. The purpose of SR **[3.6.8.3]** is to verify proper actuation of all train components, including dampers, on an actual or simulated actuation signal. The purpose of SR **[3.6.8.4]** is to ensure that the system is functioning properly by operating the filter bypass damper.

The **[iodine cleanup system (ICS)]** 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-percent capacity, separate, independent, and redundant trains. Each train includes a heater, cooling coils, a prefilter, a demister, 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 filtered recirculation of the containment atmosphere following receipt of a containment isolation actuation signal. The purpose of SR **[3.6.10.3]** is to verify proper actuation of all train components, including dampers, on an actual or simulated actuation signal. The purpose of SR **[3.6.10.4]** is to ensure that the system is functioning properly by operating the **[ICS]** filter bypass damper.

The **[emergency core cooling system pump room exhaust air cleanup system (ECCS PREACS)]**, in conjunction with other normally operating systems, also provides 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 engineered safety features actuation system (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 **[3.7.13.3]** 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 **[ECCS PREACS]** filter bypass damper.

The **[fuel building air cleanup system (FBACS)]** filters 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 **[3.7.14.3]** 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]** is to ensure that the system is functioning properly by operating the **[FBACS]** filter bypass damper.

The **[penetration room exhaust air cleanup system (PREACS)]** filters 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 **[3.7.15.3]** is to verify proper actuation of all train components, including dampers, on an actual or simulated actuation signal. The purpose of SR **[3.7.15.5]** is to ensure that the system is functioning properly by operating the **[PREACS]** filter bypass damper.

The **[essential chilled water (ECW)]** system 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-percent capacity train includes a heat exchanger, surge tank, pump, chemical addition tank, piping, valves, controls, and instrumentation. An independent 100-percent 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** equipment areas (e.g., the main control room, electrical equipment room, and safety injection pump area). The purpose of SR **[3.7.10.2]** 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]**.

{NOTE: For GE BWR/4 plant designs, use these paragraphs.}

The **[main control room environmental control (MCREC)]** provides a protected environment from which occupants can control the unit following an uncontrolled release of radioactivity, hazardous chemicals, or smoke. The purpose of SR **[3.7.4.3]** is to verify that each train/subsystem starts and operates on an actual or simulated actuation signal.

The emergency core cooling system (ECCS) 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 system, the core spray system, the low pressure coolant injection mode of the residual heat removal (RHR) system, and the automatic depressurization system. The purpose of SR **[3.5.1.10]** is to verify the automatic initiation logic of high pressure coolant injection, core spray, and low pressure coolant injection 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 reactor core isolation cooling (RCIC) system is to respond to transient events by providing makeup coolant to the reactor. The purpose of SR **[3.5.3.5]** 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 (PSW) system]** and ultimate heat sink 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 ECCS equipment, required for a safe reactor shutdown following a design-basis accident (DBA) or transient. The **[PSW]** system also provides 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]** is to verify the systems will automatically switch to the position to provide cooling water exclusively to safety-related equipment during an accident.

The function of the standby gas treatment (SGT) system 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]** 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]** is to verify 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.

{NOTE: For GE BWR/6 plant designs, use these paragraphs.}

The **[control room fresh air (CRFA)]** system provides a protected environment from which occupants can control the unit following an uncontrolled release of radioactivity, hazardous chemicals, or smoke. The purpose of SR **[3.7.3.3]** is to verify that each train/subsystem starts and operates on an actual or simulated actuation signal.

The emergency core cooling system (ECCS) 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 core spray (HPCS) system, the low pressure core spray (LPCS) system, the low pressure coolant injection (LPCI) mode of the residual heat removal (RHR) system, and the automatic depressurization system. The purpose of SR **[3.5.1.5]** is to verify the automatic initiation logic of HPCS, 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 reactor core isolation cooling (RCIC) system is to respond to transient events by providing makeup coolant to the reactor. The purpose of SR **[3.5.3.5]** 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 **[standby service water (SSW) system]** and ultimate heat sink 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 ECCS equipment, required for a safe reactor shutdown following a design-basis accident (DBA) or transient. The **[SSW]** system also provides 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 **[3.7.1.6]** 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 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 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]** 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]** is to verify 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 **[high pressure core spray service water system (HPCS SWS)]** provides cooling water for the removal of heat from components of the **[Division 3]** HPCS system. The purpose of SR **[3.7.2.3]** 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 Description of Proposed Changes

The licensee proposed to revise certain SRs by adding exceptions to the SR for automatic valves or dampers that are locked, sealed, or otherwise secured in the actuated position, consistent with the changes described in TSTF-541, Revision 2. The following list denotes the proposed changes to the SRs. The proposed new text containing the exception is shown in *italics*.

{NOTE: For B&W plant designs, use this list.}

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] [or 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*."

{NOTE: For Westinghouse plant designs, use this list.}

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*."

{NOTE: For CE plant designs, use this list.}

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 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*."

{NOTE: For GE BWR/4 plant designs, use this list.}

SR **[3.5.1.10]** "Verify each ECCS injection/spray subsystem actuates on an actual or simulated automatic initiation signal*, except for 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 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 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 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*."

{NOTE: For GE BWR/6 plant designs, use this list.}

SR **[3.5.1.5]** "Verify each ECCS injection/spray subsystem actuates on an actual or simulated automatic initiation signal*, except for 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 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 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 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 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 licensee also provided changes to the TS Bases for information only in **[Enclosure 3]**. Where the reason for each particular SR is described, the following text would be added:

The SR excludes automatic dampers and valves that are locked, sealed, or otherwise secured in the actuated position. The SR does not apply to dampers or valves that are locked, sealed, or otherwise secured in the actuated position since the affected dampers or valves were verified to be in the actuated position prior to being locked, sealed, or otherwise secured. Placing an automatic valve or damper in a locked, sealed, or otherwise secured position requires an assessment of the operability of the system or any supported systems, 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 has been met within its required Frequency.

[The licensee also proposed changes to the TS Bases that would correct errors in the descriptions of the reasons for SR [[3.7.12.5], SR [3.7.13.5], SR [3.7.14.5], and SR 3.7.15.5]]. The descriptions erroneously state that operability is verified if the damper can be closed. The description should state operability is verified if the damper can be opened.]

2.2.1 Variations from TSTF-541, Revision 2

{NOTE: Technical reviewers and/or the project manager are to assess the adequacy of any variations from or exceptions to the approved traveler and document their acceptability. Use the paragraph below if applicable.}

The licensee proposed the following variations from the TS changes described in TSTF-541, Revision 2, or the applicable parts of the NRC staff's SE of TSTF-541, Revision 2. The licensee stated that these variations do not affect the applicability of TSTF-541, Revision 2, or the NRC staff's SE to the proposed LAR. **[Describe variations.]**

2.3 <u>Applicable Regulatory Requirements and Guidance</u>

Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.90, "Application for amendment of license, construction permit, or early site permit," requires that whenever a licensee 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.

Under 10 CFR 50.92(a), determinations on whether to grant an applied-for license amendment are guided by the considerations that govern the issuance of initial licenses or construction permits to the extent applicable and appropriate. Both the common standards for licenses and construction permits in 10 CFR 50.40(a), and those specifically for issuance of operating licenses in 10 CFR 50.57(a)(3), provide that there must be "reasonable assurance" that the activities at issue will not endanger the health and safety of the public.

The regulation under 10 CFR 50.36, "Technical specifications," establishes the regulatory requirements related to the content of TSs. Section 50.36(a)(1) requires an application for an operating license to include proposed TSs. A summary statement of the bases or reasons for such specifications, other than those covering administrative controls, must also be included in the application, but shall not become part of the TSs.

The regulation under 10 CFR 50.36(b) requires that:

> 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 TS are listed in 10 CFR 50.36(c). In accordance with 10 CFR 50.36(c)(2), limiting conditions for operation (LCOs) are the lowest functional capability or performance levels of equipment required for safe operation of the facility. When LCOs are not met, the licensee must shut down the reactor or follow any remedial action permitted by the TSs until the condition can be met.

SRs are defined in 10 CFR 50.36(c)(3) as "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."

The regulation under 10 CFR 50.36(c)(5) requires TS to include administrative controls, which "are the provisions relating to organization and management, procedures, recordkeeping, review and audit, and reporting necessary to assure operation of the facility in a safe manner."

Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," to 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," establishes quality assurance requirements for the operation of nuclear power plant safety-related structures, systems, and components (SSCs).

NRC Regulatory Guide (RG) 1.33, Revision 2, "Quality Assurance Program Requirements (Operation)," with Appendix A, "Typical Procedures for Pressurized Water Reactors and Boiling Water Reactors," dated February 1978 (ADAMS Accession No. ML003739995), describes a method acceptable to the NRC staff for complying with the Commission's regulations with regard to overall quality assurance program requirements for the operation phase of nuclear power plants. Section 8.b of RG 1.33, Appendix A, states that "implementing procedures are required for each surveillance test, inspection, or calibration listed in the technical specifications." Section 9.e of RG 1.33, Appendix A, states that "General procedures for the control of maintenance, repair, replacement, and modification work should be prepared before reactor operation is begun." Section 9.e.1 states that the procedures should include information such as methods for obtaining permission and clearance for operation personnel to work and for logging such work.

TS **[5.4.1.a]** in the Administrative Controls section of the **[PLANT]** TS requires that written procedures shall be established, implemented, and maintained covering the applicable procedures recommended in RG 1.33, Revision 2, Appendix A, February 1978.

TS **[5.5.11/5.5.8]**, "Ventilation Filter Testing Program" in the Administrative Controls section of the **[PLANT]** TS contains requirements to identify any filter degradation and ensures the ability of the filters to perform in a manner consistent with the licensing basis for the facility.

The NRC staff's guidance for the review of TS is in Chapter 16.0, Revision 3, "Technical Specifications," dated March 2010 (ADAMS Accession No. ML100351425) of NUREG-0800, Revision 3, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR [Light-Water Reactor] Edition" (SRP). As described therein, as part of the regulatory standardization effort, the NRC staff has prepared Standard Technical Specifications (STS) for each of the LWR nuclear designs. Accordingly, the NRC staff's review includes consideration of whether the proposed changes are consistent with the applicable reference STS (i.e., the current STS), as modified by NRC-approved travelers. In addition, the guidance states that comparing the change to previous STS can help clarify the TS intent.

Section 10 CFR 50.65, "Requirements for monitoring the effectiveness of maintenance at nuclear power plants," requires licensees to monitor the performance or condition of SSCs, against licensee-established goals, in a manner sufficient to provide reasonable assurance that these SSCs, as defined in paragraph (b) of this section, are capable of fulfilling their intended functions.

The regulation under 10 CFR 50.65(a)(4) states:

> Before performing maintenance activities (including but not limited to surveillance, post-maintenance testing, and corrective and preventive maintenance), the licensee shall assess and manage the increase in risk that may result from the proposed maintenance activities. The scope of the assessment may be limited to structures, systems, and components that a risk-informed evaluation process has shown to be significant to public health and safety.

The regulation under 10 CFR 50.65(b) states:

> The scope of the monitoring program specified in paragraph (a)(1) of this section shall include safety related and nonsafety related structures, systems, and components, as follows:
>
> (1) Safety-related structures, systems and components that are relied upon to remain functional during and following design basis events to ensure the integrity

> of the reactor coolant pressure boundary, the capability to shut down the reactor and maintain it in a safe shutdown condition, or the capability to prevent or mitigate the consequences of accidents that could result in potential offsite exposure comparable to the guidelines in [10 CFR] 50.34(a)(1), [10 CFR] 50.67(b)(2), or [10 CFR] 100.11 of this chapter, as applicable.
>
> (2) Nonsafety related structures, systems, or components:
>
> (i) That are relied upon to mitigate accidents or transients or are used in plant emergency operating procedures (EOPs); or
>
> (ii) Whose failure could prevent safety-related structures, systems, and components from fulfilling their safety-related function; or
>
> (iii) Whose failure could cause a reactor scram or actuation of a safety-related system.

The most recent revision of NRC staff guidance for the format and content of the **[PLANT]** TS is in
{NOTE: Choose applicable STS}
[U.S. Nuclear Regulatory Commission, "Standard Technical Specifications, Babcock and Wilcox Plants," NUREG-1430, Volume 1, "Specifications," and Volume 2, "Bases," Revision 4.0, dated April 2012 (ADAMS Accession Nos. ML12100A177 and ML12100A178, respectively).

U.S. Nuclear Regulatory Commission, "Standard Technical Specifications, Westinghouse Plants," NUREG-1431, Volume 1, "Specifications," and Volume 2, "Bases," Revision 4.0, dated April 2012 (ADAMS Accession Nos. ML12100A222 and ML12100A228, respectively).

U.S. Nuclear Regulatory Commission, "Standard Technical Specifications, Combustion Engineering Plants," NUREG-1432, Volume 1, "Specifications," and Volume 2, "Bases," Revision 4.0, dated April 2012 (ADAMS Accession Nos. ML12102A165 and ML12102A169, respectively).

U.S. Nuclear Regulatory Commission, "Standard Technical Specifications, General Electric BWR/4 Plants" NUREG-1433, Volume 1, "Specifications," and Volume 2, "Bases," Revision 4.0, dated April 2012 (ADAMS Accession Nos. ML12104A192 and ML12104A193, respectively).

U.S. Nuclear Regulatory Commission, "Standard Technical Specifications, General Electric BWR/6 Plants" NUREG-1434, Volume 1, "Specifications," and Volume 2, "Bases," Revision 4.0, dated April 2012 (ADAMS Accession Nos. ML12104A195 and ML12104A196, respectively).]

3.0 TECHNICAL EVALUATION

The proposed amendment is based on the NRC-approved TSTF-541, Revision 2. The NRC staff's evaluation of the proposed amendment relies upon the NRC staff's previous approval of TSTF-541, Revision 2. The regulatory framework the NRC staff used to determine the acceptability of the proposed changes consist of the requirements and guidance listed in

Section 2.3 of this SE. The NRC staff reviewed the proposed TS changes to determine whether they meet the standards in 10 CFR 50.36. The NRC staff also used the SRP to determine whether the proposed TS changes would clarify the intent of the TS.

The NRC staff determined that when the exception is used the radiological consequences for the accidents previously evaluated are not changed since the system is still capable of performing the specified safety function assumed in the accident analyses and the associated TS actions are followed if the system cannot perform its specified safety function. Additionally, the licensee is required to perform filter testing in accordance with the Ventilation Filter Testing Program as stated in the accompanying TSs SRs, as these SRs are not affected by this proposed change. The Ventilation Filter Testing Program in TS **[5.5.11/5.5.8]** would identify any filter degradation and it ensures the ability of the filters to perform in a manner consistent with the licensing basis for the facility.

In the **[PLANT]** TS, SRs generally follow a format in which text states that certain SSCs or systems (subsystems, trains, etc.) of components must be verified to be able to actuate or function. Each verification must be performed at a given frequency. The rules governing SRs are explicitly stated in the TS in SR 3.0.1 through SR 3.0.4.

For SRs lacking an explicit exception, the sentence “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,” in SR 3.0.1 requires that when an SR is not met, the LCO is not met. Per the **[PLANT]** TS usage rules, when an LCO is not met, Required Actions must be met within specified Completion Times. Traveler TSTF-541, Revision 2, was approved to provide an acceptable method in the STS to avoid unnecessary entry into Conditions and Required Actions.

While SR 3.0.1 through SR 3.0.4 are explicit with respect to when SRs are to be met and performed, the text of the individual SRs does not contain more detail than a system name or component name. Details of how the licensee will implement SRs are contained in licensee-controlled procedures.

The procedures for how the licensee will implement SRs are discussed in Section 8.b of Appendix A to RG 1.33, Revision 2, which is a requirement of TS **[5.4]**. The procedures for general maintenance and equipment work clearances and logging discussed in Section 9.e of Appendix A to RG 1.33, Revision 2, are also requirements of TS **[5.4]**. Since SR procedures along with maintenance, equipment work clearance, and logging procedures are licensee-controlled documents, changes to the procedure details must be done in accordance with 10 CFR 50.59. If the change would require NRC approval, 10 CFR 50.59 would require the licensee to submit an amendment request to the NRC per 10 CFR 50.90. SSCs with SRs are scoped into the requirements of 10 CFR 50.65 and 10 CFR 50.65(a)(4) contains the requirement to assess and manage the risk of maintenance. Therefore, the licensee must further evaluate the effect of any maintenance on SSCs for which the exception is employed. Given the requirements of 10 CFR 50.59 and 10 CFR 50.65, the NRC staff has reasonable assurance that the licensee will assess the impact of using the exception in the SR for the SSCs and systems involved. If the licensee fails to make the proper assessments, enforcement actions related to the stated regulations could be taken.

Since 10 CFR 50.59 and 10 CFR 50.65 require a licensee to evaluate and document a change, the exception is acceptable because there is reasonable assurance that placing the component in a given position will not inadvertently impact the operability of required SSCs. The NRC staff determined that there is reasonable assurance that the change will not have inadvertent effects on system OPERABILITY or SSC quality.

The licensee's LAR contains the following statements:

> While the proposed exceptions permit automatic valves and dampers that are locked, sealed, or otherwise secured in the actuated position to be excluded from the SR in order to consider the SR met, the proposed changes will not permit a system that is made inoperable by locking, sealing, or otherwise securing an automatic valve or damper in the actuated position 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."
>
> **[LICENSEE]** acknowledges that under the proposed change, the affected valves and dampers may be excluded from the SR when locked, sealed or otherwise secured in the actuated position. However, if the safety analysis assumes movement from the actuated position following an event, or the system is rendered inoperable by locking, sealing, or otherwise securing the valve or damper in the actuated position, then the system cannot perform its specified safety function and is inoperable regardless of whether the SR is met.
>
> **[LICENSEE]** acknowledges for components for which the SR allowance can be utilized, the SR must be verified to have been met within its required Frequency after removing the valve or damper from the locked, sealed or otherwise secured status. 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.

Given the statements provided on the docket to adopt TSTF-541, Revision 2, the NRC staff determined that there is reasonable assurance that the change will not inadvertently affect the clarity of **[PLANT'S]** licensing basis.

The NRC staff determined that the **[PLANT]** TS changes, as amended by TSTF-541, Revision 2, will continue to provide an acceptable way to meet 10 CFR 50.36(c)(3) because the revised SRs will continue to provide assurance that the necessary quality of systems and components is maintained and that the LCOs will be met.

[3.1 <u>Variations]</u>

{Note: If the licensee identifies variations in Section 2.2 of the LAR, other than differences in the numbering, titles, and nomenclature in the TS, they should be evaluated in this section. More extensive differences may exceed the scope of what is allowable in CLIIP applications. If the variations are related to different numbering, titles, or nomenclature, use the paragraph below.}

As discussed in Section 2.2.1 of this SE, the licensee proposed variations from TSTF-541, Revision 2, related to the use of different numbering, titles, and nomenclature. For example,

[insert example here]. The NRC staff reviewed these variations and finds them acceptable as the differences do not affect the applicability of traveler TSTF-541 to the **[PLANT]** TSs.

4.0 STATE CONSULTATION

{This section is to be prepared by the plant project manager.}

In accordance with the Commission's regulations, the **[Name of State]** State official was notified of the proposed issuance of the amendment(s) on **[date]**. The State official had **[no]** comments. **[If comments were provided, they should be addressed here.]**

5.0 ENVIRONMENTAL CONSIDERATION

{This section is to be prepared by the plant project manager in accordance with current procedures.}

6.0 CONCLUSION

{This section is to be prepared by the plant project manager.}

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

7.0 REFERENCES

{Optional section to be prepared by the plant project manager and primary reviewers. If document is publicly available, the ADAMS Accession No. should be listed.}

{NOTE: These are the principal contributors for the model SE of the traveler. Replace these names with those who prepared the plant-specific SE. Since this is a CLIIP traveler, typically only the STSB reviewer, Matthew Hamm, would be a contributor to the plant-specific SE.}

Principal Contributors: Matthew Hamm, NRR/DSS/STSB
Kristy Bucholtz, NRR/DSS
Robert Beaton, NRR/DSS

Date: