

1. SUMMARY DESCRIPTION

Technical Specification (TS) 3.7.11, "Control Room Emergency Air Temperature Control System (CREATCS)," for Babcock & Wilcox (B&W) and Westinghouse Pressurized Water Reactors (PWRs), is revised to modify the TS Actions for two inoperable CREATCS trains. The revised Action provides 24 hours to restore a CREATCS train to operable status provided the control room area temperature is maintained below a plant-specific limit. The Action is modified by a Note which makes the Action not applicable if the condition is entered intentionally.

2. DETAILED DESCRIPTION

2.1. CREATCS Design and Operation

The control room must be kept habitable for the operators stationed there during normal operation, anticipated transients, and design basis accidents (DBAs). The control room function is supported by two systems:

- The control room temperature is maintained by the CREATCS to support habitability for the operators and operability of the control room equipment. The system name CREATCS is used in the B&W and Westinghouse ISTS, but licensees may have a plant-specific name for the system. The CREATCS consists of two independent and redundant trains that provide cooling of recirculated control room air. A single CREATCS train can provide the required temperature control. Depending on the plant design, the CREATCS may operate during normal plant conditions, may be a standby system that shares components (ducting, etc.) with an air conditioning system used during normal operation, or may be only a standby system used only in response to an accident or transient. The CREATCS is not started automatically. The CREATCS is not explicitly credited in the accident analysis, but the analyses assume that the control room temperature supports control room habitability and that equipment located in the control room is maintained at a temperature that supports its operability. The CREATCS is required to be operable by TS 3.7.11 in Modes 1, 2, 3 and 4. Depending on the plant-specific TS, the CREATCS may also be required to be operable in Modes 5 and 6 and during movement of [recently] irradiated fuel assemblies.
- The control room filtration system, which is called the Control Room Emergency Ventilation System (CREVS) in the B&W plant Improved Standard Technical Specifications (ISTS) (Reference 1), and the Control Room Emergency Filtration System (CREFS) in the Westinghouse plant ISTS (Reference 2), removes radioactive materials, hazardous chemicals, and smoke from the control room air. The CREVS and CREFS are standby systems that consist of two independent, redundant trains that recirculate and filter the air in the control room envelope (CRE) following an accident or transient. The system has filters, absorbers, ductwork, dampers, doors and a fan. The CREVS and CREFS are explicitly credited in the accident analysis for airborne radiological protection for the control room occupants. Depending on a plant's TS, the CREVS and CREFS may also be credited for operator protection from smoke and hazardous chemicals. The CREVS and CREFS are required to be operable by TS 3.7.10 in Modes 1, 2, 3 and 4. Depending on the plant-specific licensing basis, these systems may also be required to be operable in Modes 5 and 6 and during

movement of [recently] irradiated fuel assemblies. The proposed change does not alter the requirements on the CREVS or CREFS.

The proposed change does not alter the TS for the CREVS or CREFS; only the TS for the CREATCS are proposed to be revised. Depending on the plant design, the CREATCS and the CREVS or CREFS may share components, such as ductwork, dampers, or doors. Inoperability of the CREATCS would not affect the operability of the CREVS or CREFS unless a shared component, such as ductwork, is affected.

2.2. Current Technical Specifications Requirements

The current B&W and Westinghouse CREATCS TS provides an action which allows 30 days to restore an inoperable train. The 30 day Completion Time is based on the ability of the remaining operable CREATCS train to maintain the control room temperature within limits, the low probability of an event requiring control room isolation, and alternate cooling means that may be available. If the inoperable train is not restored within the 30 day Completion Time and the plant is in Modes 1, 2, 3, or 4, a plant shutdown is required. If the inoperable train is not restored within 30 days while in Modes 5 or 6, or during movement of [recently] irradiated fuel, movement of [recently] irradiated fuel assemblies must be suspended immediately.

The current B&W and Westinghouse CREATCS TS action for two inoperable CREATCS trains in Modes 1, 2, 3, and 4, Action E, requires entering LCO 3.0.3 immediately. If two CREATCS trains are inoperable in Modes 5 or 6, or during movement of [recently] irradiated fuel assemblies, Action D requires movement of [recently] irradiated fuel assemblies to be suspended immediately.

2.3. Reason for the Proposed Change

The TS requirement to enter LCO 3.0.3 and shutdown the unit immediately when two CREATCS trains are inoperable is not commensurate with the safety function provided by the system and is inconsistent with similar TS requirements.

The Current TS Action is Not Commensurate with the Safety Function

The CREATCS is not directly credited with preventing or mitigating an accident in the safety analysis. Unavailability of the CREATCS will not directly impact plant safety provided actions are in place to ensure operator habitability and equipment operability. Plant staff can monitor control room temperature to ensure it remains habitable and that electrical cabinets are not exposed to excessive temperatures. This could include actions such as use of normal (i.e., non-safety) ventilation systems, opening cabinet doors, use of fans or ice vests, and opening control room doors or ventilation paths. Therefore, requiring an immediate plant shutdown (a plant transient) is not commensurate with the level of degradation associated with two inoperable CREATCS trains.

The Requirements are not Consistent with Other Technical Specifications

There are a number TS which provide a 30 day Completion Time for an inoperable train and also provide an extended Completion Time for two inoperable trains. Systems are provided with a 30 day Completion Time to restore an inoperable train because the system is of low safety significance or is only relied on for low probability events.

- LCO 3.0.9 permits one or more required barriers to be unable to perform their related support function(s) for up to 30 days without declaring the supported systems inoperable. Should a required redundant system be rendered inoperable, LCO 3.0.9 provides 24 hours to restore it to operable status.
- B&W ISTS 3.3.17 and Westinghouse ISTS 3.3.3, "Post Accident Monitoring," provide 30 days to restore one or more functions with one required channel inoperable and 7 days to restore one or more functions with two required channels inoperable.
- B&W ISTS and Westinghouse ISTS 3.4.15, "RCS Leakage Detection Instrumentation," provides 30 days to restore one inoperable leakage monitor and either 30 days or 7 days to restore one of two inoperable leakage monitors.
- Westinghouse ISTS 3.6.9, "Hydrogen Mixing System (HMS)," provides 30 days to restore one inoperable HMS train and 7 days to restore one of two inoperable HMS trains.

In all TS except CREATCS in which a 30 day Completion Time is provided for one inoperable train, time is also provided to restore one train when both trains are inoperable.

The Requirements are not Consistent with the Requirements for Other Plant Designs

The NRC's ISTS for all plant designs provides a 30 day Completion Time to restore one inoperable control room cooling train. However, instead of an LCO 3.0.3 entry, the NRC ISTS for all other plant designs provides a Completion Time to restore one inoperable control room cooling train to operable status when both trains are inoperable:

- NUREG-1432, the ISTS for Combustion Engineering plants, TS 3.7.12, provides 24 hours to restore one of two inoperable control room cooling trains. This allowance was approved by the NRC on May 30, 2013 as TSTF-426, Revision 5, "Revise or Add Actions to Preclude Entry into LCO 3.0.3 - RITSTF Initiatives 6b & 6c" (Reference 3) To date, this traveler has been adopted by four of the eight Combustion Engineering plants.
- NUREG-1433, the ISTS for Boiling Water Reactor (BWR)/4 plants, TS 3.7.5, provides 72 hours to restore one of two inoperable control room cooling subsystems provided control room area temperature is verified to be below a plant-specific limit every 4 hours. This specification was used as a model for the proposed change. This allowance was approved by the NRC on March 26, 2007 as TSTF-477, Revision 3, "Add Action for Two Inoperable Control Room AC Subsystems" (Reference 4). To date, this traveler has been adopted by ten of the thirteen applicable plants.
- NUREG-1434, the ISTS for BWR/6 plants, TS 3.7.4, provides 7 days to restore one of two inoperable control room cooling subsystems provided control room area temperature is verified to be below a plant-specific limit every 4 hours. This allowance was included in the ISTS as part of TSTF-477, but has existed in the TS for all BWR/6 plants since their conversion to the ISTS.

There is no design, licensing, or analysis difference that would justify the significantly more restrictive TS applied to the B&W and Westinghouse plants.

In addition to the reasons described above, situations have occurred in which both CREATCS trains were inoperable. A review of operating history for the last 10 years discovered the following events:

- In 2014, Fort Calhoun Unit 1 began a shutdown required by the TS when one train of the control room temperature control system failed while the redundant train was inoperable for maintenance. One train of control room temperature control was restored in approximately six hours, by which time the reactor power had been reduced to 33%. The proposed change would have prevented the power reduction.
- In 2011, Catawba Units 1 and 2 entered LCO 3.0.3 and shut down when one train of the control room temperature control system failed while the redundant train was inoperable for maintenance. The Catawba units share a common control room. The NRC granted a Notice of Enforcement Discretion (NOED) (ADAMS Accession No. ML113560359) to allow the units to remain in Mode 3 while a train was restored. The NOED was based a qualitative risk assessment and the compensatory measures put in place during the enforcement discretion period. One train of control room temperature control was restored in approximately 15 hours. The proposed change would have prevented the dual unit shutdown and the need for an NOED.
- In 2010, McGuire Units 1 and 2 received an NOED (ADAMS Accession No. ML100201023) to terminate a plant shutdown required by LCO 3.0.3 when one train of the control room temperature control system failed while the redundant train was inoperable for scheduled maintenance. McGuire Units 1 and 2 share a common control room. The NOED was based on a qualitative risk assessment which considered that the risk was bounded by the risk associated with shutting down both units and the compensatory measures put in place during the enforcement discretion period. One train of control room temperature control was restored in approximately 23 hours. The proposed change would have prevented the dual unit power reduction and the need for an NOED.
- In 2008, Sequoyah received an NOED (ADAMS Accession No. ML082760667) when a component in one control room air conditioning train failed while the diesel generator supporting the redundant train was inoperable for maintenance. Sequoyah Units 1 and 2 share a common control room and, absent the issuance of the NOED, a dual-unit shutdown would have been required. The NOED was based on a qualitative risk assessment which considered that the risk was bounded by the risk associated with shutting down the unit and the compensatory measures put in place during the enforcement discretion period. The two control room air conditioning trains were inoperable for approximately 7 hours. The proposed change would have eliminated the need for the NOED.

In each of these cases, a 24 hour Completion Time to restore one train of CREATCS to operable status could have prevented a single- or dual-unit power reduction or shutdown, or eliminated the need for an NOED.

2.4. Description of the Proposed Change

The proposed change revises the Actions applicable when two CREATCS trains are inoperable. The proposed Required Actions require verification that control room temperature is less than a plant-specific limit every hour and restoration of one CREATCS train to operable status within 24 hours. The determination of the plant-specific limit is discussed in Section 3.0. At the end of this 24 hour Completion Time or if the control room temperature is not maintained below the plant-specific limit, a plant shutdown is required if in Mode 1, 2, 3, or 4. In Mode 5 or 6 or during movement of [recently] irradiated fuel assemblies, immediate suspension of movement of [recently] irradiated fuel assemblies is required.

There are three approved travelers that affect TS 3.7.11 in the ISTS.

- Revision 4 of the B&W ISTS incorporates approved traveler TSTF-431, "Change in Technical Specifications End States (BAW-2441)" (Reference 5). TSTF-431 that allows being in Mode 4 in 12 hours instead of Mode 5 in 36 hours when an inoperable CREATCS train is not restored within 30 days.
- The equivalent traveler for Westinghouse plants, TSTF-432, "Change in Technical Specifications End States (WCAP-16294)" (Reference 6), made the same change to TS 3.7.11 as TSTF-431, but TSTF-432 was approved after issuance of Revision 4 of the ISTS. In order to provide consistent guidance to licensees, the Condition B changes approved with TSTF-432 are shown in the Westinghouse TS and Bases and are not indicated as being part of this traveler (i.e., are not shown as in the mark-up as changes).
- TSTF-505, Revision 1, "Provide Risk-Informed Extended Completion Times - RITSTF Initiative 4b," (Reference 7), was approved by the NRC in 2012 and has not yet been incorporated into the ISTS. TSTF-505 provided an optional Condition B which is applicable when two CREATCS trains are inoperable in Modes 1-4 and allows the use of a risk-informed Completion Time. Should a plant have previously adopted TSTF-505 and have a risk-informed Completion Time program in the Administrative Controls section of their TS, the option to calculate a risk-informed Completion Time may be proposed and a plant-specific justification, consistent with the justification provided when adopting TSTF-505, must be provided in the license amendment request. This is discussed further in the model application.

Addressing these approved travelers clarifies adoption of the proposed change by licensees that have adopted the travelers. Licensees that have not adopted TSTF-431 or TSTF-432 would keep their existing Condition B, which is not affected by the proposed change. Licensees that have not adopted TSTF-505 would not include the bracketed risk-informed Completion Time option. The model application makes clear that TSTF-431, TSTF-432, and TSTF-505 may not be adopted by a licensee as part of this traveler.

Describing each change:

- A new Action C is added. The Condition states "Two CREATCS trains inoperable." Required Action C.1 requires verification of control room temperature < [90]°F once per

hour. Required Action C.2 requires restoring one CREATCS train to operable status within 24 hours.

- New Condition C is modified by a Note which states, "Not applicable when second CREATCS train intentionally made inoperable." If the second CREATCS train is intentionally made inoperable, there is no applicable Condition and immediate entry into LCO 3.0.3 is required.
- A new Action D is added. It is applicable when the Required Actions and associated Completion Times of the new Condition C is not met in Mode 1, 2, 3, or 4. It requires being in Mode 3 in 6 hours and Mode 5 in 36 hours.
- The existing Action C is renamed Action E. In the B&W plant ISTS, NUREG-1430, existing Condition C (now E), is corrected by adding the bracketed phrase "[in MODE 5 or 6]" to be consistent with the Applicability which states, "MODES 1, 2, 3, and 4, [5, and 6]." This change also makes the B&W plant ISTS condition consistent with the Westinghouse plant ISTS.
- The existing Action D is renamed Action F. The Condition is revised from "Two CREATCS trains inoperable during movement of [recently] irradiated fuel assemblies" to "Required Action and associated Completion Time of Condition C not met [in Mode 5 or 6, or] during movement of [recently] irradiated fuel assemblies." This revises the condition to be consistent with the added Action C. Note that the NUREG-1430 existing Condition D is missing the opening bracket indicating that the Action is optional depending on the plant-specific Applicability. The missing bracket has been added.
- The existing Action E, which is applicable when two CREATCS trains are inoperable in Modes 1, 2, 3, or 4, is deleted.

The proposed change is supported by changes to the TS Bases. In addition to reflecting the proposed changes to the TS, the TS 3.7.11 Bases are revised for clarity and consistency. This includes revising the reviewer's note in the Applicability section of the Westinghouse plant Bases and adding the revised reviewer's note to the B&W plant Applicability Bases. 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." A licensee may make changes to the TS Bases without prior NRC staff review and approval in accordance with the Technical Specifications Bases Control Program. 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 in the proposed change as Enclosure 1. The model may be used by licensees desiring to adopt the traveler following NRC approval.

3. TECHNICAL EVALUATION

The proposed change provides two Required Actions to be followed when two CREATCS trains are inoperable. The first Required Action states that control room area temperature will be verified to be below a plant-specific limit once per hour. The ISTS will contain a bracketed value of < [90]°F, but licensees must provide and justify a plant-specific limit.

The model application contains an attachment in which the licensee must provide a plant-specific justification for the control room area temperature limit to be included in Required Action C.1. The purpose of the limit is to support control room operator habitability and the operability of equipment in the control room. The limit must be justified with evaluations that demonstrate that operator habitability will be maintained and that equipment cooled by the CREATCS will remain operable during the 24 hour Completion Time. This evaluation may credit compensatory actions, such as, but not limited to, use of normal ventilation systems, opening of cabinet doors, use of fans or ice vests, and opening control room doors or ventilation paths. If the control room envelope boundary is breached in order to provide cooling, the Actions of TS 3.7.10 (CREVS/CREFS) would also apply. This evaluation is performed for normal operating conditions including the availability of normal electrical power based on the small likelihood of an event requiring the CREATCS during the 24 hour Completion Time.

The TS for some plants contain a Surveillance Requirement (SR) that verifies the control room temperature is below a limit specified in the SR instead of the improved Standard Technical Specifications SR 3.7.11.1 which requires verification of heat removal capability. For those plants, the SR limit on control room temperature presented in the may be used as the temperature in Required Action C.1 without further justification in Attachment 2.

The proposed change requires verification that the control room area temperature is less than the plant-specific limit once per hour. The verification frequency of 1 hour does not allow temperature to exceed the limit between performances. As stated in the LCO 3.0.2 Bases, "An ACTIONS Condition remains in effect and the Required Actions apply until the Condition no longer exists or the unit is not within the LCO Applicability." There are many Required Actions in the ISTS that verify a condition is met with Completion Times stated as "Once per...". For example, TS 3.6.3, "Containment Isolation Valves," requires isolation of a penetration flow path when a containment valve in the flow path is inoperable. There are Required Actions to verify the penetration flow path is isolated once per 31 days. These Required Actions state a condition that must be maintained at all times while in the condition, not only once per 31 days.

The one-hour monitoring frequency of control room area temperature is adequate given the indications available in the control room and the time required for a significant increase in control room air temperature. When a plant is in a Required Action that can result in a plant shutdown, operator and plant management attention is on resolving the condition and satisfying the Required Actions to prevent a shutdown. Control room area temperature data is available from the control room. Attachment 2 includes a description of the control room area temperature monitoring instruments and how an operator would be aware that control room temperature is approaching the plant-specific limit. Requiring the temperature to be recorded to document performance of the Required Action more frequently than once per hour would unnecessarily distract the operator from more safety significant activities.

The second Required Action requires at least one CREATCS train to be restored to operable status within 24 hours. As demonstrated in the cited examples, 24 hours is sufficient time in most circumstances to restore at least one CREATCS train to operable status while minimizing the length of time in which the CREATCS is inoperable. The small likelihood of an event requiring the CREATCS during the 24 hour Completion Time, combined with mitigating actions which can be taken to maintain control room temperature, support providing a limited time to restore an inoperable CREATCS train and potentially avoiding a transient associated with a plant shutdown.

There are TS in the B&W and Westinghouse ISTS which provide a 24 hour Completion Time for two inoperable filtration systems due to an inoperable building boundary. These are:

B&W ISTS (NUREG-1430)

TS 3.7.10, "Control Room Emergency Ventilation System,"
 TS 3.7.12, "Emergency Ventilation System," and
 TS 3.7.13, "Fuel Storage Pool Ventilation System."

Westinghouse ISTS (NUREG-1431)

TS 3.7.10, "Control Room Emergency Filtration System,"
 TS 3.7.12, "Emergency Core Cooling System Pump Room Exhaust Air Cleanup System," and
 TS 3.7.13, "Fuel Building Air Cleanup System."

The 24 Completion Time was found to be acceptable for these specifications based on the low probability of an event and the use of compensatory measures. The proposed change also represents a loss of function (albeit for inoperability of both trains versus inoperability of the boundary supporting both trains). The same justification of the low probability of an event and the use of compensatory measures is applicable to the proposed change.

Should a component required by the CREATCS and the CREVS/CREFS be unable to perform its required function, both LCO 3.7.10 and LCO 3.7.11 would be declared not met and all applicable Actions would be followed. If the inoperability affected both trains of CREATCS and both trains of CREVS/CREFS, then proposed TS 3.7.11 Condition C would apply, as well as TS 3.7.10 Condition B, E, or F. TS 3.7.10, Condition F requires immediately entering LCO 3.0.3.

Should the control room area temperature not be maintained below the plant-specific limit or if a CREATCS train is not restored to operable status within 24 hours while in Modes 1, 2, 3, or 4, the plant must be in Mode 3 in 6 hours and Mode 5 in 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging plant systems.

Should the control room area temperature not be maintained below the plant-specific limit or if a CREATCS train is not restored to operable status within 24 hours while in Modes 5 or 6, or during movement of [recently] irradiated fuel assemblies, movement of [recently] irradiated fuel assemblies must be suspended immediately. The Required Action minimizes the potential for a radioactive release which might require control room isolation and subsequent cooling.

The Condition for two inoperable CREATCS trains is not intended to be used for planned maintenance or for intentional entry. It is modified by a Note which states, "Not applicable when second CREATCS train intentionally made inoperable." As stated in the associated Bases:

The Condition is modified by a Note stating it is not applicable when the second CREATCS train is intentionally made inoperable. This Required Action is not intended for voluntary removal of redundant systems or components from service. The Required Action is only applicable if one CREATCS train is inoperable for any reason and a second CREATCS train is found to be inoperable, or if two CREATCS trains are found to be inoperable at the same time.

Similar notes were added to Conditions in which all trains of a system are inoperable by TSTF-505 (Reference 7), and TSTF-426 (Reference 3).

Condition F, now Condition D, is revised to state, "Required Action and associated Completion Time of Condition C not met [in MODE 5 or 6, or] during movement of [recently] irradiated fuel assemblies," instead of "Two CREATCS trains inoperable during movement of [recently] irradiated fuel assemblies." This change provides 24 hours to restore one CREATCS train to operable status, if control room area temperature is maintained below the plant-specific limit, before suspending movement of [recently] irradiated fuel assemblies. This change is acceptable because of the small likelihood of a fuel handling accident requiring control room isolation and use of the CREATCS during the proposed 24 hour Completion Time, combined with mitigating actions which can be taken to maintain control room temperature. The analysis of a fuel handling accident does not require consideration of a loss of offsite power or an additional failure. Therefore, the mitigating actions being taken to maintain control room temperature below the limit in Required Action C.1 will continue to be available should a fuel handling accident occur. The small safety impact associated with the proposed allowance is offset by avoiding the potential safety consequences (such as the increased risk of a human performance error) that could result from the disruption of a carefully planned refueling outage schedule due to suspending movement of [recently] irradiated fuel assemblies.

4. REGULATORY EVALUATION

The following NRC requirements and guidance documents are applicable to the proposed change.

The regulations at Title 10 of the Code of Federal Regulations (10 CFR) Part 50.36 "Technical specifications," establish the requirements related to the content of the TS. Section 50.36(c)(2) states:

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

The regulatory requirements in 10 CFR 50.36 are not specific regarding the actions to be followed when TS requirements are not met other than a plant shut down. The proposed change

provides remedial actions in the Technical Specifications to be followed when the Limiting Condition for Operation is not met. Therefore, the proposed change is consistent with the requirements of 10 CFR 50.36.

Appendix A of 10 CFR 50 provides General Design Criteria (GDC) for nuclear power plants. Plant-specific design criteria are described in the plant's Updated Final Safety Analysis Report (UFSAR). Criterion 19 states:

Criterion 19—Control room. A control room shall be provided from which actions can be taken to operate the nuclear power unit safely under normal conditions and to maintain it in a safe condition under accident conditions, including loss-of-coolant accidents. Adequate radiation protection shall be provided to permit access and occupancy of the control room under accident conditions without personnel receiving radiation exposures in excess of 5 rem whole body, or its equivalent to any part of the body, for the duration of the accident. Equipment at appropriate locations outside the control room shall be provided (1) with a design capability for prompt hot shutdown of the reactor, including necessary instrumentation and controls to maintain the unit in a safe condition during hot shutdown, and (2) with a potential capability for subsequent cold shutdown of the reactor through the use of suitable procedures.

Applicants for and holders of construction permits and operating licenses under this part who apply on or after January 10, 1997, applicants for design approvals or certifications under part 52 of this chapter who apply on or after January 10, 1997, applicants for and holders of combined licenses or manufacturing licenses under part 52 of this chapter who do not reference a standard design approval or certification, or holders of operating licenses using an alternative source term under § 50.67, shall meet the requirements of this criterion, except that with regard to control room access and occupancy, adequate radiation protection shall be provided to ensure that radiation exposures shall not exceed 0.05 Sv (5 rem) total effective dose equivalent (TEDE) as defined in § 50.2 for the duration of the accident.

Most plants have a plant-specific design criterion similar to GDC 19. The proposed change has no effect on the design of the control room or on operator radiation dose, as that protection is provided by other systems required by the Technical Specifications. The proposed change also has no effect on alternate control locations outside of the control room. Therefore, the only aspect of GDC 19 applicable to the proposed change is the criterion to design the control room from which actions can be taken to operate the nuclear power unit safely under normal conditions and to maintain it in a safe condition under accident conditions, including loss-of-coolant accidents. The proposed change has no effect on the design of the control room and the proposed actions will ensure that the control room temperature is maintained such that the plant may be operated safely from the control room.

Regulatory Guide 1.196, "Control Room Habitability at Light-Water Nuclear Power Reactors," Revision 1, provides guidance and criteria that the NRC staff considers acceptable for implementing the agency's regulations as they relate to control room habitability. The Regulatory Guide addresses radiological, hazardous chemical, or smoke challenges that could result in the inability of the operators to control the reactor from the control room. It does not

address the performance of the reactor controls and instrumentation systems that are affected by environmental conditions, nor does it address human engineering (i.e., temperature, vibration, sound, or lighting). Therefore, the proposed change has no effect on the application of the Regulatory Guide.

The proposed change does not affect plant compliance with these regulations or guidance and will ensure that the lowest functional capabilities or performance levels of equipment required for safe operation are met.

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 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

1. NUREG-1430, "Standard Technical Specifications for Babcock & Wilcox Plants," Revision 4, dated April 2012. (NRC Agencywide Documents Access and Management System (ADAMS) Accession No. ML12100A177)
2. NUREG-1431, "Standard Technical Specifications for Westinghouse Plants," Revision 4, dated April 2012. (NRC ADAMS Accession No. ML12100A222)
3. TSTF-426, Revision 5, "Revise or Add Actions to Preclude Entry into LCO 3.0.3 - RITSTF Initiatives 6b & 6c," approved on May 30, 2013 (Federal Register 78 FR 32476).
4. TSTF-477, Revision 3, "Add Action for Two Inoperable Control Room AC Subsystems," approved on March 26, 2007 (Federal Register 72 FR 14143).
5. TSTF-431, "Change in Technical Specifications End States (BAW-2441)," approved on December 6, 2010 (Federal Register 75 FR 75705).
6. TSTF-432, "Change in Technical Specifications End States (WCAP-16294)," approved on May 11, 2012 (Federal Register 77 FR 27814).
7. TSTF-505, Revision 1, "Provide Risk-Informed Extended Completion Times - RITSTF Initiative 4b," approved on March 25, 2012 (Federal Register 77 FR 15399).

Enclosure 1
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-553, "Add Action for Two Inoperable
 CREATCS Trains"

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-553, "Add Action for Two Inoperable CREATCS Trains," which is an approved change to the Improved Standard Technical Specifications (ISTS), into the [PLANT NAME, UNIT NOS] Technical Specifications (TS). The proposed amendment revises Technical Specification (TS) 3.7.11, "Control Room Emergency Air Temperature Control System (CREATCS)," to modify the TS Actions for two inoperable CREATCS trains. The Action provides 24 hours to restore a CREATCS train to operable status provided the control room area temperature is maintained below [90]°F. If the control room area temperature is not maintained below [90]°F or a CREATCS train is not restored within 24 hours, a plant shutdown or suspension of movement of [recently] irradiated fuel assemblies is required.

Attachment 1 provides a description and assessment of the proposed changes. Attachment[s] 2 [and 3] contain additional technical justification. Attachment [4] provides the existing TS pages marked to show the proposed changes. Attachment [5] provides revised (clean) TS pages. Attachment [6] provides existing TS Bases pages marked to show the proposed changes for information only.

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

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. Description and Assessment
 2. Justification of the Control Room Area Temperature Limit
 - [3. Justification of Risk-Informed Completion Time]
 4. Proposed Technical Specification Changes (Mark-Up)
 5. Revised Technical Specification Pages
 6. Proposed Technical Specification Bases Changes (Mark-Up) for Information Only

{Attachments 4, 5, and 6 are not included in the model application and are to be provided by the licensee.}

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-553, "Add Action for Two Inoperable CREATCS Trains," which is an approved change to the Improved Standard Technical Specifications (ISTS), into the [PLANT NAME, UNIT NOS] Technical Specifications (TS). The proposed amendment revises Technical Specification (TS) 3.7.11, "Control Room Emergency Air Temperature Control System (CREATCS)," to modify the TS Actions for two inoperable CREATCS trains. The Action provides 24 hours to restore a CREATCS train to operable status provided the control room area temperature is maintained below [90]°F. If the control room area temperature is not maintained below [90]°F or a CREATCS train is not restored within the Completion Time, a plant shutdown or suspension of movement of [recently] irradiated fuel assemblies is required.

2.0 ASSESSMENT

2.1 Applicability of Published Safety Evaluation

[LICENSEE] has reviewed the model safety evaluation dated [DATE] as part of the Federal Register Notice of Availability. This review included a review of the NRC staff's evaluation, as well as the information provided in TSTF-553. [LICENSEE] has concluded that the justifications presented in TSTF-553 and the model 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 when supplemented by the engineering evaluation in Attachment 2.

2.2 Optional Changes and Variations

[For B&W Plants, include one of the following:

- The NRC approved adoption of TSTF-431, "Change in Technical Specifications End States (BAW-2441)," into the [PLANT] TS on [DATE]. (See NRC ADAMS Accession No. XXXXXX). Therefore, the existing TS 3.7.11, Required Action B.2, requires being in Mode 4 in 12 hours and is modified by a Note which states, "LCO 3.0.4.a is not applicable when entering MODE 4."
- [LICENSEE] has not implemented TSTF-431, "Change in Technical Specifications End States (BAW-2441)," in the [PLANT] TS. Therefore, the existing TS 3.7.11, Required Action B.2, requires being in Mode 5 in 36 hours.]

[For Westinghouse plants, include one of the following:

- The NRC approved adoption of TSTF-432, "Change in Technical Specifications End States (WCAP-16294)," into the [PLANT] TS on [DATE]. (See NRC ADAMS Accession No. XXXXXX). Therefore, the existing TS 3.7.11, Required Action B.2, requires being in Mode 4 in 12 hours and is modified by a Note which states, "LCO 3.0.4.a is not applicable when entering MODE 4."

- [LICENSEE] has not implemented TSTF-432, "Change in Technical Specifications End States (WCAP-16294)," in the [PLANT] Technical Specifications. Therefore, the existing TS 3.7.11, Required Action B.2, requires being in Mode 5 in 36 hours.]

[Include one of the following:

- [The NRC approved adoption of TSTF-505, "Provide Risk-Informed Extended Completion Times - RITSTF Initiative 4b," and a Risk Informed Completion Time program into the [PLANT] TS on [DATE]. (See NRC ADAMS Accession No. XXXXXX). LICENSEE] is [not] requesting that proposed LCO 3.7.11, Required Action B.2, have an alternative Completion Time of "In accordance with the Risk Informed Completion Time Program." [Attachment 3 provides the justification for a risk-informed Completion Time for Required Action B.2.]]
- [LICENSEE] has not implemented TSTF-505, "Provide Risk-Informed Extended Completion Times - RITSTF Initiative 4b," in the [PLANT] Technical Specifications. Therefore, the proposed TS 3.7.11, Required Action B.2, does not include the option for a risk-informed Completion Time.

[Surveillance Requirement [3.7.11.1] in [PLANT] Technical Specifications contains a control room area temperature limit. This existing Technical Specifications limit is used in proposed Required Action C.1. Therefore, justification of the Required Action C.1 temperature limit is unnecessary and is not included in Attachment 2.]

[LICENSEE is not proposing any variations from the TS changes described in the TSTF-553 or the applicable parts of the NRC staff's model safety evaluation dated [DATE].] [LICENSEE is proposing the following variations from the TS changes described in the TSTF-553 or the applicable parts of the NRC staff's model safety evaluation: [describe the variations]

[The [PLANT] TS utilize different [numbering][and][titles] than the Standard Technical Specifications on which TSTF-553 was based. Specifically, [describe differences between the plant-specific TS numbering and/or titles and the TSTF-553 numbering and titles.] These differences are administrative and do not affect the applicability of TSTF-553 to the [PLANT] TS.]

[The [PLANT] TS contain requirements that differ from the Standard Technical Specifications on which TSTF-553 was based, but are encompassed in the TSTF-553 justification. [Describe differences and why TSTF-553 is still applicable.]

[The traveler and model Safety Evaluation discuss the applicable regulatory requirements and guidance, including the 10 CFR 50, Appendix A, General Design Criteria (GDC). [PLANT] was not licensed to the 10 CFR 50, Appendix A, GDC. The [PLANT] equivalents of the referenced GDC are [reference including UFSAR location, if applicable]. [Discuss the equivalence of the referenced plant-specific requirements to the Appendix A GDC as related to the proposed change.] This difference does not alter the conclusion that the proposed change is applicable to [PLANT].]

3.0 REGULATORY ANALYSIS

3.1 No Significant Hazards Consideration Analysis

[LICENSEE] requests adoption of TSTF-553, "Add Action for Two Inoperable CREATCS Trains," that is an approved change to the Improved Standard Technical Specifications (ISTS), into the [PLANT NAME, UNIT NOS] Technical Specifications (TS). The proposed change revises Technical Specification (TS) 3.7.11, "Control Room Emergency Air Temperature Control System (CREATCS)," to modify the TS Actions for two inoperable CREATCS trains. The Action provides 24 hours to restore a CREATCS train to operable status provided the control room area temperature is maintained below a plant-specific limit. If the control room area temperature is not maintained below the limit or a CREATCS train is not restored within the Completion Time, a plant shutdown [or suspension of movement of irradiated fuel assemblies, depending on the operation condition (i.e., Mode)], is required.

[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 the CREATCS TS to modify the Actions for two inoperable CREATCS trains and provides 24 hours to restore a CREATCS train to operable status provided the control room area temperature is maintained below a plant-specific limit. The CREATCS is not an initiator of any accident previously evaluated. As a result, the probability of an accident previously evaluated is not increased. The consequences of an accident during the proposed 24 hour Completion Time are no different than the consequences of an accident in Modes 1, 2, 3, and 4 during the existing 1 hour Completion Time provided in LCO 3.0.3 to prepare for a shutdown. The only accident previously evaluated in Modes 5 or 6 is a fuel handling accident. The accident evaluation does not assume a loss of offsite electrical power or additional failures, and the measures taken to maintain control room temperature within the limit will still be available should a fuel handling accident occur. As a result, providing 24 hours to restore one train of control room cooling does not significantly increase the consequences of a fuel handling accident over the current requirement.

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 the CREATCS TS to modify the Actions for two inoperable CREATCS trains and provides 24 hours to restore a CREATCS train to operable status provided the control room area temperature is maintained below a plant-specific limit. The proposed change will not alter the design or function of the control room or the CREATCS. Should the new Actions not be met, the existing and proposed Actions require a plant shutdown.

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 the CREATCS TS to modify the Actions for two inoperable CREATCS trains and provides 24 hours to restore a CREATCS train to operable status provided the control room area temperature is maintained below a plant-specific limit. The change provides a limited period of time to restore an inoperable CREATCS train instead of requiring an immediate plant shutdown or suspension of movement of irradiated fuel assemblies. A plant shutdown is a transient which may be avoided by providing a limited time to make repairs. In addition, the control room area temperature must be maintained less than a limit set to ensure habitability of the control room and the operability of the equipment cooled by the CREATCS. The potential to avoid a plant transient in conjunction with maintaining the control room temperature offsets any risk associated with the limited Completion Time. Any small impact on the safety margin associated with immediately suspending movement of irradiated fuel assemblies is offset by avoiding the potential safety consequences (such as the increased risk of a human performance error) that could result from the disruption of a carefully planned refueling outage schedule due to suspending fuel movement.

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.

5.1. 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.

4.0 ENVIRONMENTAL EVALUATION

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.

ATTACHMENT 2 - JUSTIFICATION OF THE CONTROL ROOM AREA TEMPERATURE LIMIT

----- REVIEWER'S NOTE -----

Proposed Required Action C.1 states that control room area temperature will be verified to be below a plant-specific limit once per hour. The licensees must provide and justify a plant-specific temperature limit.

This attachment must contain a plant-specific justification for the control room area temperature limit to be included in Required Action C.1. The purpose of the limit is to support control room operator habitability and the operability of equipment in the control room. The limit must be justified with evaluations that demonstrate that operator habitability will be maintained and that equipment cooled by the CREATCS will remain operable with the control room temperature at or below the limit. The justification should reference any industry standards or guidance (for example, EPRI TR 109445, "Heat Stress Management Program for Power Plants"), or other data used in determining the control room temperature limit and any limitations on operator stay times based on the control room temperature limit and assumed humidity levels.

This evaluation may credit compensatory actions, such as use of normal ventilation systems, opening of cabinet doors, use of fans or ice vests, and opening control room doors or ventilation paths.

This evaluation is performed for normal operating conditions including the availability of normal electrical power based on the small likelihood of an event requiring the CREATCS during the 24 hour Completion Time.

The TS for some plants contain a maximum control room temperature limit in lieu of the improved Standard Technical Specifications SR 3.7.1.1. An existing limit on control room temperature in the Surveillance is an adequate justification for using the same temperature in Required Action C.1.

In addition to justifying the proposed temperature limit, describe how control room area temperature is monitored and how operators would be aware of temperature approaching the limit.

[ATTACHMENT 3 - JUSTIFICATION OF RISK-INFORMED COMPLETION TIME

----- REVIEWER'S NOTE -----

Licensees that have previously adopted TSTF-505, "Provide Risk-Informed Extended Completion Times - RITSTF Initiative 4b," (Reference 7) may request an additional Completion Time for Required Action C.2 which states, "OR In accordance with the Risk Informed Completion Time."

Licensees requesting the risk-informed Completion Time must include a justification for the allowance that is similar in scope and detail to the evaluation provided for individual Required Actions in their TSTF-505 submittal. For additional guidance, see TSTF-505.

-----]

Enclosure 2

Technical Specifications Proposed Changes