Attachment 6 to W3F1-2015-0006

Proposed No Significant Hazards Consideration

(2 Pages Attached)

Attachment 6
Proposed No Significant Hazards Consideration

Description of Amendment Request:

This license amendment requests the adoption of an approved change to the standard technical specifications (STS) for Combustion Engineering Pressurized Water Reactors (NUREG-1432), to allow relocation of specific technical specification (TS) surveillance frequencies to a licensee-controlled program. The proposed change is described in Technical Specification Task Force (TSTF) Traveler, TSTF-425, Revision 3 (Rev. 3) (ADAMS Accession No. ML080280275), related to the Relocation of Surveillance Frequencies to Licensee Control - RITSTF Initiative 5b and is described in the Notice of Availability published in the Federal Register on July 6, 2009 (74 FR 31996).

The proposed change is consistent with NRC-approved Industry/TSTF Traveler, TSTF-425, Rev. 3, "Relocate Surveillance Frequencies to Licensee Control - RITSTF Initiative 5b." The proposed change relocates surveillance frequencies to a licensee-controlled program, the Surveillance Frequency Control Program, the SFCP. This change is applicable to licensees using probabilistic risk guidelines contained in NRC-approved NEI 04-10, "Risk-Informed Technical Specifications Initiative 5b, Risk-Informed Method for Control of Surveillance Frequencies," (ADAMS Accession No. 071360456).

Basis for proposed no significant hazards consideration: As required by 10 CFR 50.91(a), Entergy's analysis of the issue of no significant hazards consideration is presented below:

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

   Response: No.

   The proposed change relocates the specified frequencies for periodic surveillance requirements to licensee control under a new Surveillance Frequency Control Program. Surveillance frequencies are not an initiator to any accident previously evaluated. As a result, the probability of any accident previously evaluated is not significantly increased. The systems and components required by the technical specifications for which the surveillance frequencies are relocated are still required to be operable, meet the acceptance criteria for the surveillance requirements, and be capable of performing any mitigation function assumed in the accident analysis. As a result, the consequences of any accident previously evaluated are not significantly increased.

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

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

   Response: No.

   No new or different accidents result from utilizing the proposed change. The changes do not involve a physical alteration of the plant (i.e., no new or different type of equipment will be installed) or a change in the methods governing normal

plant operation. In addition, the changes do not impose any new or different requirements. The changes do not alter assumptions made in the safety analysis. The proposed changes are consistent with the safety analysis assumptions and current plant operating practice.

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

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

Response: No.

The design, operation, testing methods, and acceptance criteria for systems, structures, and components (SSCs), specified in applicable codes and standards (or alternatives approved for use by the NRC) will continue to be met as described in the plant licensing basis (including the final safety analysis report and bases to TS), since these are not affected by changes to the surveillance frequencies. Similarly, there is no impact to safety analysis acceptance criteria as described in the plant licensing basis. To evaluate a change in the relocated surveillance frequency, Entergy will perform a probabilistic risk evaluation using the guidance contained in NRC approved NEI 04-10, Rev. 1, in accordance with the TS SFCP. NEI 04-10, Rev. 1, methodology provides reasonable acceptance guidelines and methods for evaluating the risk increase of proposed changes to surveillance frequencies consistent with Regulatory Guide 1.177.

Therefore, the proposed changes do not involve a significant reduction in a margin of safety.

Based upon the reasoning presented above, Entergy concludes that the requested change does not involve a significant hazards consideration as set forth in 10 CFR 50.92(c), Issuance of Amendment.

Attachment 7 to W3F1-2015-0006

STS-WF3 CTS Cross Reference

(24 Pages Attached)

Attachment 7
STS-WF3 CTS Cross Reference

TS Section Title/Surveillance Description	TSTF-425	WF3
Shutdown Margin (SDM)	**3.1.1**	**3/4.1.1**
Verify SDM is within the limits specified in the COLR – MODES 3, 4, & 5.	3.1.1.1	4.1.1.2
With any CEA fully or partially withdrawn, the SHUTDOWN MARGIN shall be determined to be greater than or equal to that specified in the COLR: When in MODE 3, 4, or 5 with K_{eff} greater than or equal to 1.0, at least once per 12 hours by verifying that CEA group withdrawal is within the Transient Insertion Limits of Specification 3.1.3.6.	3.1.1.1	4.1.1.1.1.e
With any CEA fully or partially withdrawn, the SHUTDOWN MARGIN shall be determined to be greater than or equal to that specified in the COLR: When in MODE 1 or MODE 2 with K_{eff} greater than or equal to 1.0 by verifying that CEA group withdrawal is within the Transient Insertion Limits of Specification 3.1.3.6.	------	4.1.1.1.1.b
Reactivity Balance	**3.1.2**	**3/4.1.1**
Verify overall core reactivity balance is within ± 1.0% Δk/k of predicted values – MODES 1 & 2	3.1.2.1	4.1.1.1.2
Flow Paths - Shutdown	**------**	**3/4.1.2**
At least one of the above required flow paths shall be demonstrated OPERABLE by verifying that each valve (manual, power-operated, or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position.	------	4.1.2.1
Flow Paths - Operating	**------**	**3/4.1.2**
At least two of the above required flow paths shall be demonstrated OPERABLE: At least once per 31 days by verifying that each valve (manual, power-operated, or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position.	------	4.1.2.2.a
At least two of the above required flow paths shall be demonstrated OPERABLE: By verifying that each automatic valve in the flow path actuates to its correct position on an SIAS test signal.	------	4.1.2.2.b
At least two of the above required flow paths shall be demonstrated OPERABLE: By verifying that the flow path required by Specification 3.1.2.2a.1 and 3.1.2.2a.2 delivers at least 40 gpm to the Reactor Coolant System.	------	4.1.2.2.c
Charging Pumps - Operating	**------**	**3/4.1.2**
Each required charging pump shall be demonstrated OPERABLE by verifying that each charging pump starts in response to an SIAS test signal.	------	4.1.2.4

TS Section Title/Surveillance Description	TSTF-425	WF3
Boric Acid Makeup Pumps - Operating	------	3/4.1.2
Each required boric acid makeup pump shall be demonstrated OPERABLE by verifying that each boric acid makeup pump starts in response to an SIAS test signal.	------	4.1.2.6
Borated Water Sources – Shutdown	------	3/4.1.2
The above required borated water source shall be demonstrated OPERABLE: a. When the Reactor Auxiliary Building air temperature is less than 55°F by verifying the boric acid makeup tank solution is greater than or equal to 60°F (when it is the source of borated water).	------	4.1.2.7.a
The above required borated water source shall be demonstrated OPERABLE: Verifying the boron concentration of the water.	------	4.1.2.7.b.1
The above required borated water source shall be demonstrated OPERABLE: Verifying the contained borated water volume of the tank.	------	4.1.2.7.b.2
Borated Water Sources – Operating	------	3/4.1.2
Each borated water source shall be demonstrated OPERABLE: By verifying the boric acid makeup tank solution temperature is greater than or equal to 60°F when the Reactor Auxiliary Building air temperature is less than 55°F	------	4.1.2.8.a
Each borated water source shall be demonstrated OPERABLE: Verifying the boron concentration in the water.	------	4.1.2.8.b.1
Each borated water source shall be demonstrated OPERABLE: Verifying the contained borated water volume of the water source.	------	4.1.2.8.b.2
Boron Dilution	------	3/4.1.2
Each required boron dilution alarm shall be demonstrated OPERABLE by performing a channel check.	------	4.1.2.9.2
Each required boron dilution alarm shall be demonstrated OPERABLE by performing a channel functional test.	------	4.1.2.9.2
Each required boron dilution alarm shall be demonstrated OPERABLE by performing a channel calibration.	------	4.1.2.9.2
The requirements of Specification 3.1.2.9.a.2 or 3.1.2.9.b.2 shall be verified.	------	4.1.2.9.4
CEA Alignment	3.1.4	3/4.1.3
Verify the indicated position of each CEA to be within [7 inches] of all other CEAs in its group.	3.1.4.1	4.1.3.1.1
Verify that, for each CEA, its OPERABLE CEA position indicator channels indicate within [5 inches] of each other.	3.1.4.2	4.1.3.2
Verify CEA freedom of movement (trippability) by moving each individual CEA that is not fully inserted into the reactor core [5 inches] in either direction.	3.1.4.3	4.1.3.1.2
Perform a CHANNEL FUNCTIONAL TEST of the reed switch position transmitter channel.	3.1.4.4	4.1.3.3

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Shutdown CEA Insertion Limits	**3.1.5**	**3/4.1.3**
Verify each shutdown CEA is withdrawn ≥ [145] inches.	3.1.5.1	4.1.3.5.b
Regulating CEA Insertion Limits	**3.1.6**	**3/4.1.3**
Verify each regulating CEA group position is within its insertion limits.	3.1.6.1	4.1.3.6
Verify the accumulated times during which the regulating CEA groups are inserted beyond the steady state insertion limits but within the transient insertion limits.	3.1.6.2	4.1.3.6
Verify PDIL Alarm Circuit is OPERABLE.	3.1.6.3	4.1.3.6
Special Test Exceptions (STE) - SHUTDOWN MARGIN (SDM)	**3.1.7**	**3/4.10.1**
Verify that the position of each CEA not fully inserted is within the acceptance criteria for available negative reactivity addition.	3.1.7.1	4.10.1.1
Part Length CEA Insertion Limits	**3.1.7**	**------**
Verify part length CEA group position.	3.1.7.1	------[1]
Special Test Exceptions - Modes 1and 2	**3.1.8**	**3/4.10.2**
Verify THERMAL POWER is equal to or less than the test power plateau.	3.1.8.1	4.10.2.1
Special Test Exceptions (STE) - SHUTDOWN MARGIN (SDM)	**3.1.8**	**3/4.10.1**
Verify that the position of each CEA not fully inserted is within the acceptance criteria for available negative reactivity addition.	3.1.8.1	4.10.1.1
Special Test Exceptions - Modes 1and 2	**3.1.9**	**3/4.10.1**
Verify THERMAL POWER equal to or less than the test power plateau.	3.1.9.1	4.10.2.1
Linear Heat Rate (Digital)	**3.2.1**	**3/4.2.1**
Verify LHR, as indicated on each OPERABLE local power density channel, is within its limit.	3.2.1.1	4.2.1.2
Verify the COLSS margin alarm actuates at a THERMAL POWER equal to or less than the core power operating limit based on LHR.	3.2.1.2	4.2.1.3
Planar Radial Peaking Factor (Fxy)	**3.2.2**	**3/4.2.2**
Verify measured F^M_{xy} obtained using the Incore Detector System is equal to or less than the value of F^Cxy used in the COLSS and CPCs.	3.2.2.1	4.2.2.2.b
Azimuthal Power Tilt (Tq)	**3.2.3**	**3/4.2.3**
Calculate Tq and verify it is within the limit	3.2.3.1	4.2.3.2.b
Verify COLSS azimuthal tilt alarm is actuated at a Tq value less than the Tq value used in the CPCs.	3.2.3.2	4.2.3.2.c
Independently confirm the validity of the COLSS calculated Tq by use of the incore detectors.	3.2.3.3	4.2.3.2.d

[1] Waterford no longer has part length CEAs.

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DNBR	**3.2.4**	**3/4.2.4**
Verify DNBR, as indicated on all OPERABLE DNBR channels, is within the limit of Figure 3.2.4-1 or 3.2.4-2 of the COLR, as applicable.	3.2.4.1	4.2.4.2
Verify COLSS margin alarm actuates at a THERMAL POWER level equal to or less than the core power operating limit based on DNBR.	3.2.4.2	4.2.4.3
Axial Shape Index (ASI)	**3.2.5**	**3/4.2.7**
Verify ASI is Within Limits.	3.2.5.1	4.2.7
RPS Instrumentation – Operating	**3.3.1**	**3/4.3.1**
Each reactor protective instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST operations for the MODES and at the frequencies shown in Table 4.3-1. Manual Reactor Trip Channel Functional Test	------	4.3.1.1 Table 4.3-1 Functional Unit (FU) 1
Perform a CHANNEL CHECK of each RPS instrument channel except Loss of Load.	3.3.1.1	4.3.1.1 Table 4.3-1 FUs 2 through 10, and 14 through 16
Verify total Reactor Coolant System (RCS) flow rate as indicated by each CPC is less than or equal to the RCS total flow rate. If necessary, adjust the CPC addressable constant flow coefficients such that each CPC indicated flow is less than or equal to the RCS flow rate.	3.3.1.2	4.3.1.1 Table 4.3-1 FU 10
Check the CPC auto restart count.	3.3.1.3	4.3.1.5
Perform calibration (heat balance only) and adjust the linear power level signals and the CPC addressable constant multipliers to make the CPC ΔT power and CPC nuclear power calculations agree with the calorimetric, if the absolute difference is $\geq$ [2]%.	3.3.1.4	4.3.1.1 Table 4.3-1 FU 2, 9, 10, and 14
Verify total RCS flow rate indicated by each CPC is less than or equal to the RCS flow determined by calorimetric calculations.	3.3.1.5	4.3.1.1 Table 4.3-1 FU 10
Verify linear power subchannel gains of the excore detectors are consistent with the values used to establish the shape annealing matrix elements in the CPCs.	3.3.1.6	4.3.1.1 Table 4.3-1 FU 2
Perform CHANNEL FUNCTIONAL TEST on each channel except Loss of Load and power range neutron flux.	3.3.1.7	4.3.1.1, Table 4.3-1 FUs 2 through 10, 12, 13, 14, 15, 16
Perform CHANNEL CALIBRATION of the power range neutron flux channels.	3.3.1.8	4.3.1.1 Table 4.3-1 FU 2
Perform CHANNEL FUNCTIONAL TEST for Loss of Load Function.	3.3.1.9	------
Perform CHANNEL CALIBRATION on each channel, including bypass removal functions.	3.3.1.10	4.3.1.2 and 4.3.1.1, Table 4.3-1 FUs 3 through 10, 14, 15, 16
Perform a CHANNEL FUNCTIONAL TEST on each CPC channel.	3.3.1.11	4.3.1.2 and 4.3.1.1, Table 4.3-1 FU 14

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Verify RPS RESPONSE TIME is within limits.	3.3.1.14	4.3.1.3
RPS Instrumentation – Shutdown	**3.3.2**	**3/4.3.1**
Perform a CHANNEL CHECK of each logarithmic power channel.	3.3.2.1	4.3.1.1, Table 4.3-1 FU 3
Perform a CHANNEL FUNCTIONAL TEST on each logarithmic power channel.	3.3.2.2	4.3.1.1, Table 4.3-1 FU 3
Perform a CHANNEL CALIBRATION on each logarithmic power channel, including bypass removal function with Allowable Value for trip channels ≤ [.93]%.	3.3.2.4	4.3.1.1, Table 4.3-1 FU 3; 4.3.1.2
Verify RPS RESPONSE TIME is within limits.	3.3.2.5	4.3.1.3
CEA Calculators	**3.3.3**	**3/4.3.1**
Perform a CHANNEL CHECK.	3.3.3.1	4.3.1.1 Table 4.3-1 FU 15
Check the CEAC auto restart count.	3.3.3.2	4.3.1.5
Perform a CHANNEL FUNCTIONAL TEST.	3.3.3.3	4.3.1.1 Table 4.3-1 FU 15
Perform a CHANNEL CALIBRATION.	3.3.3.4	4.3.1.1 Table 4.3-1 FU 15
Perform a CHANNEL FUNCTIONAL TEST.	3.3.3.5	4.3.1.1 Table 4.3-1 FU 15
Verify the isolation characteristics of each CEAC isolation amplifier and each optical isolator for CEAC to CPC data transfer.	3.3.3.6	4.3.1.4.a & b
RPS Logic and Trip Initiation	**3.3.3**	**3/4.3.1**
Perform Channel Functional Test of Each RTCB Channel.	3.3.3.1	Table 4.3-1 FU 13
Perform Channel Functional Test of Each RPS Logic Channel.	3.3.3.2	Table 4.3-1 FUs 12
Perform Channel Functional Test, Including Verification of UV and Shunt Trips of Each RTCB Channel.	3.3.3.4	Table 4.3-1 FU 13
ESFAS Instrumentation	**3.3.5**	**3/4.3.2**
Perform a Channel Check of each ESFAS instrument channel.	3.3.5.1	4.3.2.1, Table 4.3-2 FUs 1b & c, 2.b, 3.b & c, 4.b & c, 5.b, 7.b, c & e.
Perform Channel Functional Test of each ESFAS instrument channel.	3.3.5.2	4.3.2.1, Table 4.3-2 FUs 1.b,c, 2.b, 3.b, c & d, 4.b & c, 5.b & c, 7b, & c
Perform a CHANNEL CALIBRATION of each ESFAS instrument channel, including bypass removal functions.	3.3.5.3	4.3.2.1, Table 4.3-2 FUs 1.b & c, 2.b, 3.b & c, 4.b & c, 5.b, 6.a, b & c, 7.b, c & e; 4.3.2.2

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Verify ESF RESPONSE TIME is within limits.	3.3.5.4	4.3.2.3
ESFAS Logic and Manual Trip	**3.3.6**	**3/4.3.2**
Perform a CHANNEL FUNCTIONAL TEST on each ESFAS logic channel.	3.3.6.1	4.3.2.1, Table 4.3-2 FUs 1.d, 2.c, 3.d, 4.d, 5.c, 7.d
Perform a subgroup relay test of each Actuation Logic channel, which includes the de-energization of each subgroup relay and verification of the OPERABILITY of each subgroup relay.	3.3.6.2	4.3.2.1 Table 4.3-2 FUs 1.d, 2.c, 3.d, 4.d, 5.c, 7.d
Perform a CHANNEL FUNCTIONAL TEST on each ESFAS Manual Trip channel.	3.3.6.3	4.3.2.1, Table 4.3-2 FUs 1.a, 2.a, 3.a, 4.a, 5.a, 7a
Radiation Monitoring Instrumentation		**3/4.3.3**
Each radiation monitoring instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST operations for the MODES and at the frequencies shown in Table 4.3-3.	------	4.3.3.1, Table 4.3-3 Instrument 2.c, d, & e; 3.a, b, c, d, & e
Diesel Generator (DG) – Loss of Voltage Start (LOVS)	**3.3.6**	**3/4.3.2**
Perform Channel Check.	3.3.6.1	-------
Perform Channel Functional Test.	3.3.6.2	4.3.2.1, Table 4.3-2 FUs 6.a, b & c[2]
Perform CHANNEL CALIBRATION with setpoint Allowable Values as follows: a. Degraded Voltage Function ≥[3180] V and ≤[3220] V Time delay: ≥[ ] seconds and ≤[ ] seconds at [ ] V and b. Loss of Voltage Function ≥[3180] V and ≤[3220] V Time delay: ≥[ ] seconds and ≤[ ] seconds at [ ] V.	3.3.6.3	4.3.2.1, Table 4.3-2 Channel Calibration Column - FUs 6.a,b & c
Chlorine Detection System	**------**	**3/4.3.3.7.1**
Each chlorine detection system shall be demonstrated OPERABLE by performance of a CHANNEL CHECK and a CHANNEL 'CALIBRATION.	------	4.3.3.7.1
Broad Range Gas Detection	**------**	**3/4.3.3.7.3**
Each broad range gas detection system shall be demonstrated OPERABLE by performance of a CHANNEL CHECK, and a CHANNEL FUNCTIONAL TEST. The CHANNEL FUNCTIONAL TEST will include the introduction of a standard gas.	------	4.3.3.7.3
Containment Purge Isolation Signal (CPIS)	**3.3.7**	**3/4.3.3**
Perform Channel Check on each containment radiation monitor channel.	3.3.7.1	4.3.3.1, Table 4.3-3, Instrument 1.b
Perform Channel Functional Test on each containment radiation monitor channel. Verify CPIS high radiation setpoint is less than or equal to the Allowable Value of [220 mR/hr].	3.3.7.2	4.3.3.1, Table 4.3-3, Instrument 1.b
Perform Channel Functional Test on each CPIS Actuation logic Channel.	3.3.7.3	------

[2] Waterford LOV CFT is done at least once per 24 hours rather than quarterly as NUREG 1432 requires.

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Perform Channel Calibration on each containment radiation monitor channel.	3.3.7.4	4.3.3.1, Table 4.3-3, Instrument 1.b
Perform Channel Functional Test on each CPIS Manual Trip channel.	3.3.7.5	------
Verify CPIS response time of each containment radiation channel is within limits.	3.3.7.6	------
Control Room Isolation System (CRIS)	**3.3.8**	**3/4.3.3**
Perform a CHANNEL CHECK on the required control room radiation monitor channel.	3.3.8.1	4.3.3.1, Table 4.3-3 FU 2.b
Perform a CHANNEL FUNCTIONAL TEST on the required CRIS radiation monitor channel. Verify CRIS high radiation setpoint is less than or equal to the Allowable Value of [6E4] cpm above normal background.	3.3.8.2	Table 4.3-3 FU 2.b
Perform a CHANNEL FUNCTIONAL TEST on the required CRIS Actuation Logic channel.	3.3.8.3	------
Perform a CHANNEL CALIBRATION on the required CRIS radiation monitor channel.	3.3.8.4	Table 4.3-3 FU 2.b
Perform a CHANNEL FUNCTIONAL TEST on the required CRIS Manual Trip channel.	3.3.85	------
Verify response time of required CRIS channel is within limits.	3.3.8.6	-------
Chemical and Volume Control System Isolation Signal	**3.3.9**	**------**
Perform Channel Check	3.3.9.1	------
Perform a CHANNEL FUNCTIONAL TEST on each CVCS isolation channel with setpoints in accordance with the following Allowable Values: West Penetration Room Pressure - High ≤ .5 psig Letdown Heat Exchanger Room Pressure - High ≤ .5 psig	3.3.9.2	------
Perform a CHANNEL CALIBRATION on each CVCS isolation pressure indicating channel.	3.3.9.3	------
Shield Building Filtration Actuation Signal	**3.3.10**	**------**
Perform a CHANNEL FUNCTIONAL TEST on each SBFAS automatic actuation channel.	3.3.10.1	------
Perform Channel Functional Test - SBFAS Manual Trip Channel.	3.3.10.2	------
Fuel Handling Isolation Signal (FHIS)	**3.3.10**	**3/4.3.3**
Perform a CHANNEL CHECK on required FHIS radiation monitor channel.	3.3.10.1	4.3.3.1, Table 4.3-3, Instrument 1.b
Perform a CHANNEL FUNCTIONAL TEST on required FHIS radiation monitor channel. Verify radiation monitor setpoint [Allowable Values]: [Airborne Particulate/ Iodine: ≤[6E4] cpm above background]. Airborne Gaseous: ≤[6E4] cpm above background.	3.3.10.2	4.3.3.1, Table 4.3-3, Instrument 1.b
Perform a CHANNEL FUNCTIONAL TEST on required FHIS Actuation Logic channel.	3.3.10.3	------

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Perform a CHANNEL FUNCTIONAL TEST on required FHIS Manual Trip logic.	3.3.10.4	------
Perform a CHANNEL CALIBRATION on required FHIS radiation monitor channel.	3.3.10.5	4.3.3.1, Table 4.3-3, Instrument 1.b
Verify response time of required FHIS channel is within limits.	3.3.10.6	------
PAM Instrumentation	**3.3.11**	**3/4.3.3**
Perform Channel Check for each required instrumentation channel that is normally energized.	3.3.11.1	4.3.3.6, Table 4.3-7
Perform Channel Calibration.	3.3.11.2	4.3.3.6, Table 4.3-7
Explosive Gas Monitoring Instrumentation	**------**	**3/4.3.3.11**
Each explosive gas monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK, CHANNEL CALIBRATION, and CHANNEL FUNCTIONAL TEST operations at the frequencies shown in Table 4.3-9.	------	4.3.3.11, Table 4.3-9 Instrument 1a&b
Remote Shutdown System	**3.3.12**	**3/4.3.3**
Perform Channel Check.	3.3.12.1	4.3.3.5, Table 4.3-6
Verify Each Control Circuit and Transfer Switch Can Perform its Intended function.	3.3.12.2	------
Perform Channel Calibration Each Instrument Channel.	3.3.12.3	4.3.3.5, Table 4.3-6
Perform Channel Functional Test Rx Trip Circuit Breaker Open/Close Indication.	3.3.12.4	------
Power Monitor Channels	**3.3.13**	**3/4.3.1**
Perform Channel Check.	3.3.13.1	4.3.1.1, Table 4.3-1 FU 3
Perform Channel Functional Test.	3.3.13.2	4.3.1.1, Table 4.3-1 FU 3
Perform Channel Calibration.	3.3.13.3	4.3.1.1, Table 4.3-1 FU 3
RCS Pressure, Temperature, and Flow (DNB) Limits	**3.4.1**	**3/4.2.5,6,8**
Verify Pressurizer Pressure is within the limits specified in the COLR.	3.4.1.1	4.2.8
Verify RCS Cold Leg Temperature is within the limits specified in the COLR.	3.4.1.2	4.2.6
Verify RCS total flow rate is greater than or equal to the limits specified in the COLR.	3.4.1.3	4.2.5
Verify by precision heat balance that RCS total flow rate is within the limits specified in the COLR.	3.4.1.4	------
RCS Minimum Temperature for Criticality	**3.4.2**	**3/4.1.1**
Verify RCS Tavg in Each Loop ≥[520]°F.	3.4.2.1	------
The Reactor Coolant System temperature (Tcold) shall be determined to be greater than or equal to 533°F.	------	4.1.1.4
RCS P/T Limits	**3.4.3**	**3/4.4.8**
Verify RCS Pressure, Temperature, and H/U and *C/D* Rates within	3.4.3.1	4.4.8.1.1

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limits specified in the PTLR.		
RCS Loops Modes 1 and 2	**3.4.4**	**3/4.4.1**
Verify Each RCS Loop in Operation.	3.4.4.1	4.4.1.1
RCS Loops Mode 3	**3.4.5**	**3/4.4.1**
Verify One RCS Loop in Operation.	3.4.5.1	4.4.1.2.2
Verify Secondary Side Water Level in Each SIG ≥[25]%.	3.4.5.2	4.4.1.2.3
Verify Correct Breaker Alignment and Indicated Power Available to Each Required Pump.	3.4.5.3	4.4.1.2.1
RCS Loops Mode 4	**3.4.6**	**3/4.4.1**
Verify required RCS loop or SDC train is in operation.	3.4.6.1	4.4.1.3.3
Verify secondary side water level in required SG(s) is ≥[25]%.	3.4.6.2	4.4.1.3.2
Verify correct breaker alignment and indicated power available to each required pump.	3.4.6.3	4.4.1.3.1
RCS Loops Mode 5, Loops Filled	**3.4.7**	**3/4.4.1**
Verify Required SDC Train in Operation.	3.4.7.1	4.4.1.4.3
Verify Secondary Side Water Level in Each SG ≥[25]%.	3.4.7.2	4.4.1.4.2
Verify Correct Breaker alignment and Indicated Power Available to Each Required SDC Pump.	3.4.7.3	4.4.1.4.1
RCS Loops Mode 5, Loops Not Filled	**3.4.8**	**3/4.4.1**
Verify Required SDC Train in Operation.	3.4.8.1	4.4.1.5
Verify Correct Breaker Alignment and Indicated Power Available to Each Required SDC Pump.	3.4.8.2	---------
Pressurizer	**3.4.9**	**3/4.4.3**
Verify Water Level is < [60%].	3.4.9.1	4.4.3.1.1
Verify Capacity of Required Pressurizer Heaters ≥[150] kW.	3.4.9.2	4.4.3.1.2
Verify Required Pressurizer Heaters Capable of Being Powered from Emergency Bus.	3.4.9.3	4.4.3.1.3
Auxiliary Spray	**------**	**3/4.4.3**
The auxiliary spray shall be verified to have power available to each valve.	------	4.4.3.2.1
The auxiliary spray valves shall be cycled.	------	4.4.3.2.2
Pressurizer PORV	**3.4.11**	**------**
Perform a Complete Cycle of Each Block valve.	3.4.11.1	------
Perform a Complete Cycle of Each PORV.	3.4.11.2	------
Perform a Complete Cycle of Each Solenoid Air Control Valve and Check Valve on the Accumulators.	3.4.11.3	------
Verify PORVs and Block Valves are Capable of Being Powered from Emergency Power.	3.4.11.4	------
LTOP System	**3.4.12**	**3/4.4.8**
Verify in the control room at least once per 12 hours that each valve in the suction path between the RCS and the SDC relief	------	4.4.8.3.1.a

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valve is open.		
Verify a Maximum of One HPSI Pump is Capable of Injecting into the RCS	3.4.12.1	------
Verify a Maximum of One Charging Pump is Capable of injecting into the RCS	3.4.12.2	------
Verify Each SIT is Isolated	3.4.12.3	------
Verify Required RCS Vent ≥ [1.3] Square Inches Open	3.4.12.4	4.4.8.3.2
Verify PORV Block Valve is Open for Each Required PORV	3.4.12.5	------
Perform Channel Functional Test on PORV	3.4.12.6	------
Perform Channel Calibration on Each Required PORV Actuation Channel	3.4.12.7	------
RCS Operational Leakage	**3.4.13**	**3/4.4.5**
Verify RCS operational LEAKAGE is within limits by performance of RCS water inventory balance.	3.4.13.1	4.4.5.2.1
Verify primary to secondary LEAKAGE is ≤150 gallons per day through any one SG.	3.4.13.2	4.4.5.2.2
RCS PIV Leakage	**3.4.14**	**3/4.4.5**
Verify leakage from each RCS PIV is equivalent to ≤0.5 gpm per nominal inch of valve size up to a maximum of 5 gpm at an RCS pressure ≥[2215] psia and ≤[2255] psia.	3.4.14.1	4.4.5.2.3.a, 4.4.5.2.4.a
Verify SDC System autoclosure interlock prevents the valves from being opened with a simulated or actual RCS pressure signal ≥[425] psig.	3.4.14.2	4.5.2.d.1
Verify SDC System autoclosure interlock causes the valves to close automatically with a simulated or actual RCS pressure signal ≥[600] psig.	3.4.14.3	---
RCS Leakage Detection Instrumentation	**3.4.15**	**3/4.4.5**
Perform Channel Check Containment Atmosphere Radiation Monitor.	3.4.15.1	4.4.5.1.a
Perform Channel Functional Test Containment Atmosphere Rad Monitor.	3.4.15.2	4.4.5.1.a
Perform Channel Calibration Containment Sump Monitor.	3.4.15.3	4.4.5.1.b
Perform Channel Calibration Containment Atmosphere Radioactivity Monitor.	3.4.15.4	4.4.5.1.a
Perform Channel Calibration Containment Air Cooler condensate flow rate monitor.	3.4.15.5	------
Containment sump level and flow monitors - performance of a CHANNEL CHECK (containment sump level monitor only).	-----	4.4.5.1.b
RCS Specific Activity	**3.4.16**	**3/4.4.7**
Verify RCS Gross Specific Activity ≤ 100/Ē µCi/gm.	3.4.16.1	4.4.7, Table 4.4-4, #1
Verify RCS Dose Equivalent 1-131 specific activity ≤ 1.0 µCi/gm.	3.4.16.2	4.4.7, Table 4.4-4, #2
Determine E Bar from a sample taken in MODE 1 after a minimum of 2 EFPD and 20 days of MODE 1 operation have elapsed since the reactor was last subcritical for ≥ 48 hours.	3.4.16.3	4.4.7, Table 4.4-4, #3

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Reactor Coolant System Vents	**------**	**3/4.4.10**
Each Reactor Coolant System vent path shall be demonstrated OPERABLE by: a. Verifying all manual isolation valves in each vent path are locked in the open position. b. Cycling each vent valve through at least one complete cycle of full travel from the control room during COLD SHUTDOWN or REFUELING. c. Verifying flow through the Reactor Coolant System vent paths during venting during COLD SHUTDOWN or REFUELING.	------	4.4.10
Special Test Exception - RCS Loops	**3.4.17**	**3/4.10.3**
Verify Thermal Power < 5%.	3.4.17.1	4.10.3.1
Safety Injection Tanks	**3.5.1**	**3/4.5.1**
Verify SIT Isolation Valve fully Open.	3.5.1.1	4.5.1.a.2
Verify borated water volume in each SIT is ≥ [28% narrow range (1802 cubic feet) and ≤ 72% narrow range (1914 cubic feet)].	3.5.1.2	4.5.1.a.1
Verify nitrogen cover pressure in each SIT is ≥[615] psig and ≤[655] psig.	3.5.1.3	4.5.1.a.1
Verify boron concentration in each SIT is ≥[1500] ppm and ≤[2800] ppm.	3.5.1.4	4.5.1.b
Verify power is removed from each SIT isolation valve operator when pressurizer pressure is ≥[2000] psia.	3.5.1.5	4.5.1.d
Verifying that each safety injection tank isolation valve opens automatically under each of the following conditions: 1. When an actual or simulated RCS pressure signal exceeds 535 psia, and 2. Upon receipt of a safety injection test signal.	------	4.5.1.e
ECCS - Operating	**3.5.2**	**3/4.5.2**
Verify Valve are in Position and Power Removed [and key locked in position].	3.5.2.1	4.5.2.a
Verify each ECCS manual, power operated, and automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position.	3.5.2.2	4.5.2.b.1
Verify ECCS Piping Full of Water.	3.5.2.3	4.5.2.b.2
Verify each ECCS automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	3.5.2.6	4.5.2.e.1
Verify each ECCS pump starts automatically on an actual or simulated actuation signal.	3.5.2.7	4.5.2.e.2
Verify each LPSI pump stops on an actual or simulated actuation signal.	3.5.2.8	4.5.2.e.3
Verify, for each ECCS throttle valve listed below, each position stop is in the correct position.	3.5.2.9	4.5.2.g[3]

[3] Waterford TS SR 4.5.2.g is an event driven SR that meets the TSTF-425 criteria for exclusion, so it is not included in the TS change.

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Verify, by visual inspection, each ECCS train containment sump suction inlet is not restricted by debris and the suction inlet trash racks and screens show no evidence of structural distress or abnormal corrosion.	3.5.2.10	4.5.2.d.2
RWT	**3.5.4**	**3/4.5.4**
Verify RWT borated water temperature is ≥[40]F and ≤[100]F.	3.5.4.1	4.5.4.b
Verify RWT borated water volume is ≥[362,800 gallons, (88)%] [above the ECCS suction connection].	3.5.4.2	4.5.4.a.1
Verify RWT boron concentration is ≥[1720] ppm and ≤[2500] ppm.	3.5.4.3	4.5.4.a.2
Trisodium Phosphate	**3.5.5**	**3/4.5.2**
Verify TSP Baskets Contain > 291 $ft.^3$.	3.5.5.1	4.5.2.d.3
Verify that a sample from the TSP baskets provides adequate pH adjustment of RWT water.	3.5.5.2	4.5.2.d.4
Containment Air Locks	**3.6.2**	**3/4.6.1**
Verify Only One Door Can be Opened at a Time	3.6.2.2	4.6.1.3.c
Containment Isolation Valves	**3.6.3**	
Verify each [42] inch purge valve is sealed closed except for one purge valve in a penetration flow path while in Condition E of this LCO.	3.6.3.1	------
Verify each [8] inch purge valve is closed except when the [8] inch purge valves are open for pressure control, ALARA or air quality considerations for personnel entry, or for Surveillances that require the valves to be open.	3.6.3.2	------
Verify each containment isolation manual valve and blind flange that is located outside containment and not locked, sealed, or otherwise secured and is required to be closed during accident conditions is closed, except for containment isolation valves that are open under administrative controls.	3.6.3.3	4.6.1.1.a
The cumulative time that the purge supply or exhaust isolation valves are open during the past 365 days shall be determined.	------	4.6.1.7.1
Perform Leak Rate Test of Purge Valves.	3.6.3.6	------
Verify Automatic Valves Actuate to Correct Position.	3.6.3.7	4.6.3.2
Verify each [ ] inch containment purge valve is blocked to restrict the valve from opening > [50]%.	3.6.3.8	4.6.1.7.3
Containment Pressure	**3.6.4**	**3/4.6.1**
Verify containment pressure is within limits.	3.6.4.1	4.6.1.4
Containment Air Temperature	**3.6.5**	**3/4.6.1**
Verify Average Air Temperature is within limits.	3.6.5.1	4.6.1.5
Containment Spray and Cooling Systems	**3.6.6A**	**3/4.6.2**
Verify each containment spray manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position.	3.6.6A.1	4.6.2.1.b
Operate each containment cooling train fan unit for ≥15 minutes.	3.6.6A.2	4.6.2.2.a.1

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Verify Each Cooling Train Cooling Water Flow Rate ≥ [2000] GPM to Each Fan.	SR 3.6.6A.3	4.6.2.2.a.2
Verify the containment spray piping is full of water to the [100] ft. level in the containment spray header.	SR 3.6.6A.4	4.6.2.1.a
Verify each automatic containment spray valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	3.6.6A.6	4.6.2.1.d.1
Verifying that upon a recirculation actuation test signal, the safety injection system sump isolation valves open and that a recirculation mode flow path via an OPERABLE shutdown cooling heat exchanger is established.	------	4.6.2.1.d.2
Verify each containment spray pump starts automatically on an actual or simulated actuation signal.	3.6.6A.7	4.6.2.1.d.3
Verify each containment cooling train starts automatically on an actual or simulated actuation signal.	3.6.6A.8	4.6.2.2.b
Verify Spray Nozzle is unobstructed.	3.6.6.A.9	4.6.2.1.e
Spray Additive System	**3.6.7**	**------**
Verify each spray additive manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position.	3.6.7.1	------
Verify spray additive tank solution volume is ≥[816] gal [90%] and ≤[896] gal [100%].	3.6.7.2	------
Verify spray additive tank [N2H4] solution concentration is ≥[33]% and ≤[35]% by weight.	3.6.7.3	------
Verify each spray additive automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	3.6.7.5	------
Verify spray additive flow [rate] from each solution's flow path.	3.6.7.6	------
Shield Building Exhaust Air Cleanup System (SBEACS)	**3.6.8**	**3/4.6.6**
Operate each SBEACS train for [≥10 continuous hours with the heaters operating or (for systems without heaters) ≥15 minutes.	3.6.8.1	4.6.6.1.a
Verify each SBEACS train actuates on an actual or simulated actuation signal.	3.6.8.3	4.6.6.1.d.2
Verify each SBEACS filter bypass damper can be opened.	3.6.8.4	------
Verifying that the filter cooling bypass valves can be manually cycled.	------	4.6.6.1.d.3
Verify each SBEACS train flow rate is ≥ [ ] cfm.	3.6.8.5	4.6.6.1.b.3
1. Verifying that the ventilation system satisfies the in-place testing acceptance criteria and uses the test procedures of Regulatory Positions C.5.a, C.5.c, and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, and the system flow rate is 10,000 cfm +/-10%. 2. Verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, shows the methyl iodide penetration less than 0.5% when tested in accordance with ASTM D3803-1989 at a temperature of 30CC and a relative	------	4.6.6.1.b.1 & b.2

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humidity of 70%.		
1. Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 7.8 inches water gauge while operating the system at a flow rate of 10,000 cfm ± 10%. 4. Verifying that each system produces a negative pressure of greater than or equal to 0.25 inch water gauge in the annulus within 1 minute after a start signal. 5. Verifying that the heaters dissipate 60 + 6.0, -6.0 kW when tested in accordance with ANSI N510-1975.	-----	4.6.6.1.d.1, d.4, & d.5
Hydrogen Mixing System (HMS) (Atmospheric and Dual)	**3.6.9**	**------**
Operate each HMS train for ≥15 minutes.	3.6.9.1	------
Verify each HMS train flow rate on slow speed is ≥[37,000] cfm.	3.6.9.2	------
Verify each HMS train starts on an actual or simulated actuation signal.	3.6.9.3	------
Iodine Cleanup System (ICS) (Atmospheric and Dual)	**3.6.10**	**------**
Operate each ICS train for [≥10 continuous hours with heaters operating or (for systems without heaters) ≥15 minutes].	3.6.10.1	------
Verify each ICS train actuates on an actual or simulated actuation signal.	3.6.10.3	------
Verify each ICS filter bypass damper can be opened.	3.6.10.4	------
Shield Building (Dual)	**3.6.11**	**3/4.6.6**
Verify annulus negative pressure is > [5] inches water gauge.	3.6.11.1	4.6.6.2.a
Verify one shield building access door in each access opening is closed.	3.6.11.2	4.6.6.2.b
Verify the shield building can be maintained at a pressure equal to or more negative than [-0.25] inch water gauge in the annulus by one Shield Building Exhaust Air Cleanup System train with a final flow rate ≤[ ] cfm within [1] minute after a start signal.	3.6.11.4	-----
Main Steam Isolation Valves (MSSVs)	**3.7.2**	**3/4.7.1**
Verify each MSIV actuates to the isolation position on an actual or simulated actuation signal.	3.7.2.2	4.7.1.5.b
Main Feedwater Isolation Valves (MFIVs) [and [MFIV] Bypass Valves]	**3.7.3**	**3/4.7.1**
Verify each MFIV [and [MFIV] bypass valve] actuates to the isolation position on an actual or simulated actuation signal.	3.7.3.2	4.7.1.6.b
Atmospheric Dump Valves (ADVs)	**3.7.4**	**3/4.7.1**
By performing a CHANNEL CHECK when the automatic actuation channels are required to be OPERABLE.	-----	4.7.1.7.a
By verifying each ADV automatic actuation channel is in automatic with a setpoint of less than or equal to 1040 psia when the automatic actuation channels are required to be OPERABLE.	-----	4.7.1.7.b
By performing a CHANNEL CALIBRATION of each ADV automatic actuation channel.	-----	4.7.1.7.d
By verifying actuation of each ADV to the open position on an actual or simulated automatic actuation signal.	-----	4.7.1.7.e

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Verify one complete cycle of each ADV.	3.7.4.1	4.7.1.7.c[4]
Verify one complete cycle of each ADV block valve.	3.7.4.2	------
Auxiliary Feedwater (AFW) System	**3.7.5**	**3/4.7.1**
Verify each AFW manual, power operated, and automatic valve in each water flow path and in both steam supply flow paths to the steam turbine driven pump, that is not locked, sealed, or otherwise secured in position, is in the correct position.	3.7.5.1	4.7.1.2.a
Verify each AFW automatic valve that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	3.7.5.3	4.7.1.2.c.1
Verify each AFW pump starts automatically on an actual or simulated actuation signal when in MODE 1, 2, or 3.	3.7.5.4	4.7.1.2.c.2
Condensate Storage Tank (CST)	**3.7.6**	**3/4.7.1**
Verify CST level is ≥[350,000] gal.	3.7.6.1	4.7.1.3.1.a
By verifying CSP temperature when the RAB air temperature is less than 55°F or greater than 100°F.	------	4.7.1.3.1.b
Component Cooling Water System	**3.7.7**	**3/4.7.3**
Verify each CCW manual, power operated, and automatic valve in the flow path servicing safety related equipment, that is not locked, sealed, or otherwise secured in position, is in the correct position.	3.7.7.1	4.7.3.a
Verify each CCW automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	3.7.7.2	4.7.3.b
Verify each CCW pump starts automatically on an actual or simulated actuation signal.	3.7.7.3	4.7.3.c
Service Water System (SWS)	**3.7.8**	**3/4.7.3**
Verify each SWS manual, power operated, and automatic valve in the flow path servicing safety related equipment, that is not locked, sealed, or otherwise secured in position, is in the correct position.	3.7.8.1	4.7.3.a
Verify each SWS automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	3.7.8.2	4.7.3.b
Verify each SWS pump starts automatically on an actual or simulated actuation signal.	3.7.8.3	4.7.3.c
Ultimate Heat Sink (UHS)	**3.7.9**	**3/4.7.4**
Verify water level of UHS is ≥[562] ft. [mean sea level].	3.7.9.1	4.7.4.a
Verify average water temperature of UHS is ≤[90]°F.	3.7.9.2	4.7.4.a
Operate each cooling tower fan for ≥[15] minutes.	3.7.9.3	4.7.4.b
Essential Chilled Water (ECW)	**3.7.10**	**3/4.7.12**
Verify each ECW manual, power operated, and automatic valve in the flow path, that is not locked, sealed, or otherwise secured	3.7.10.1	4.7.12.1.a

[4] Waterford TS 4.7.1.7.c is included in the IST program so it meets the criteria for TSTF-425 exclusion and is not included in the TS Change.

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in position, is in the correct position.		
At least once per 31 days by verifying that the water outlet temperature is < 420F at a flow rate of > 500 gpm.	-------	4.7.12.1.b
Verify the proper actuation of each ECW System component on an actual or simulated actuation signal.	3.7.10.2	4.7.12.1.d
Control Room Emergency Air Cleanup System (CREACS)	**3.7.11**	**3/4.7.6**
Operate each CREACS train for [≥10 continuous hours with heaters operating or (for systems without heaters) ≥15 minutes].	3.7.11.1	4.7.6.1.a
Verify each CREACS train actuates on an actual or simulated actuation signal.	3.7.11.3	4.7.6.1.d.2
Each control room air filtration train (S-8) shall be demonstrated OPERABLE by: 1. Verifying that the filtration train satisfies the in-place testing acceptance criteria and uses the test procedures of Regulatory Positions C.5.a, C.5.c, and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, and the system flow rate is 4225 cfm ±10%. 2. Verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, shows the methyl iodide penetration less than 0.5% when tested in accordance with ASTM 03803-1989 at a temperature of 30°C and a relative humidity of 70%. 3. Verifying a system flow rate of 4225 cfm ±10% during train operation when tested in accordance with ANSI N510-1975.	-------	4.7.6.1.b
Each control room air filtration train (S-8) shall be demonstrated OPERABLE by: 1. Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 7.8 inches water gauge while operating the train at a flow rate of 4225 cfm ±10%. 2. See above. 3. Verifying that heaters dissipate 10 +1.0, -1.0 kW when tested in accordance with ANSI N510-1975. 4. Verifying that on a toxic gas detection signal, the system automatically switches to the isolation mode of operation.	------	4.7.6.1.d.1, 3, & 4
Control Room Emergency Air Temperature Control System (CREATCS)	**3.7.12**	**3/4.7.6**
Verify each CREATCS train has the capability to remove the assumed heat load.	3.7.12.1	------
Each control room air conditioning unit shall be demonstrated OPERABLE: a. By verifying that the operating control room air conditioning unit is maintaining average control room air temperature less than or equal to 80°F.	------	4.7.6.3.a
Each control room air conditioning unit shall be demonstrated OPERABLE: If not performed within the last quarter, by verifying that each control room air conditioning unit starts and operates for at least 15 minutes.	------	4.7.6.3.b

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Emergency Core Cooling System (ECCS) Pump Room Exhaust Air Cleanup System (PREACS)	**3.7.13**	**3/4.7.7**
Operate each ECCS PREACS train for [≥10 continuous hours with the heater operating or (for systems without heaters) ≥15 minutes].	3.7.13.1	4.7.7.a
Verify each ECCS PREACS train actuates on an actual or simulated actuation signal.	3.7.13.3	4.7.7.d.2
Verify one ECCS PREACS train can maintain a negative pressure ≥[ ] inches water gauge relative to atmospheric pressure during the [post-accident] mode of operation at a flow rate of ≤[20,000] cfm.	3.7.13.4	4.7.7.d.1 and 2
Verify each ECCS PREACS filter bypass damper can be opened.	3.7.13.5	4.7.7.d.3
Each controlled ventilation area system shall be demonstrated OPERABLE by: 1. Verifying that the filtration train satisfies the in-place testing acceptance criteria and uses the test procedures of Regulatory Positions C.5.a, C.5.c, and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, and the system flow rate is 4225 cfm ±1 0%. 2. Verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, shows the methyl iodide penetration less than 0.5% when tested in accordance with ASTM 03803-1989 at a temperature of 30°C and a relative humidity of 70%. 3. Verifying a system flow rate of 4225 cfm ±10% during train operation when tested in accordance with ANSI N510-1975.	-----	4.7.7.b
Verifying that the heaters dissipate 20 + 2.0, -2.0 kW when tested in accordance with ANSI N510-1975.	-----	4.7.7.d.4
Fuel Building Air Cleanup System (FBACS)	**3.7.14**	**------**
Operate each FBACS train for [≥10 continuous hours with the heaters operating or (for systems without heaters) ≥15 minutes].	3.7.14.1	------
Verify each FBACS train actuates on an actual or simulated actuation signal.	3.7.14.3	------
Verify one FBACS train can maintain a negative pressure ≥[ ] inches water gauge with respect to atmospheric pressure, during the [post-accident] mode of operation at a flow rate ≤[3000] cfm.	3.7.14.4	------
Verify each FBACS filter bypass damper can be opened.	3.7.14.5	------
Penetration Room Exhaust Air Cleanup System (PREACS)	**3.7.15**	**3/4.7.7**
Operate each PREACS train for [≥10 continuous hours with the heater operating or (for systems without heaters) ≥15 minutes].	3.7.15.1	4.7.7.a
Verify each PREACS train actuates on an actual or simulated actuation signal.	3.7.15.3	4.7.7.d.2
Verify one PREACS train can maintain a negative pressure ≥[ ] inches water gauge with respect to atmospheric pressure during the [post-accident] mode of operation at a flow rate of ≤[3000] cfm.	3.7.15.4	4.7.7.d.1 and 2
Verify each PREACS filter bypass damper can be opened.	3.7.15.5	4.7.7.d.3

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At least once per 18 months or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire or chemical release in any ventilation zone communicating with the system by: 1. Verifying that the filtration train satisfies the in-place testing acceptance criteria and uses the test procedures of Regulatory Positions C.5.a, C.5.c, and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, and the system flow rate is 4225 cfm ±1 0%. 2. Verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, shows the methyl iodide penetration less than 0.5% when tested in accordance with ASTM 03803-1989 at a temperature of 30°C and a relative humidity of 70%. 3. Verifying a system flow rate of 4225 cfm ±10% during train operation when tested in accordance with ANSI N510-1975.	-----	4.7.7.b
Verifying that the heaters dissipate 20 + 2.0, -2.0 kW when tested in accordance with ANSI N510-1975.	------	4.7.7.d.4
Fuel Storage Pool Water Level	**3.7.16**	**3/4.9.11**
Verify the fuel storage pool water level is ≥23 ft. above the top of irradiated fuel assemblies seated in the storage racks.	3.7.16.1	4.9.11
Fuel Storage Pool Boron Concentration	**3.7.17**	**3/4.9.12**
Verify the fuel storage pool boron concentration is within limit.	3.7.17.1	4.9.12
Secondary Specific Activity	**3.7.19**	**3/4.7.1**
Verify the specific activity of the secondary coolant is within limit.	3.7.19.1	4.7.1.4, Table 4.7-1
AC Sources - Operating	**3.8.1**	**3/4.8.1**
Verify correct breaker alignment and indicated power availability for each [required] offsite circuit.	3.8.1.1	4.8.1.1.1.a
Verify each DG starts from standby conditions and achieves steady state voltage ≥[3740] V and ≤[4580] V, and frequency ≥[58.8] Hz and ≤[61.2] Hz.	3.8.1.2	4.8.1.1.2.a.4
Verify each DG is synchronized and loaded, and operates for ≥60 minutes at a load ≥[4500] kW and ≤[5000] kW.	3.8.1.3	4.8.1.1.2.a.5
Verifying the diesel generator is aligned to provide standby power to the associated emergency busses.	----	4.8.1.1.2.a.6
Verify each day tank [and engine mounted tank] contains ≥[220] gal of fuel oil.	3.8.1.4	4.8.1.1.2.a.1
Check for and remove accumulated water from each day tank [and engine mounted tank].	3.8.1.5	4.8.1.1.2.b
Verify the fuel oil transfer system operates to [automatically] transfer fuel oil from storage tank[s] to the day tank [and engine mounted tank].	3.8.1.6	4.8.1.1.2.a.3
Verify each DG starts from standby condition and achieves: a. In ≤[10] seconds, voltage ≥[3740] V and frequency ≥[58.8] Hz and b. Steady state voltage ≥[3740] V and ≤[4580] V, and frequency ≥[58.8] Hz and ≤[61.2] Hz.	3.8.1.7	4.8.1.1.2.d

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Verify [automatic [and] manual] transfer of AC power sources from the normal offsite circuit to each alternate [required] offsite circuit.	3.8.1.8	4.8.1.1.1.b
Verify each DG rejects a load greater than or equal to its associated single largest post-accident load and: a. Following load rejection, the frequency is ≤[63] Hz, b. Within [3] seconds following load rejection, the voltage is ≥[3740] V and ≤[4580] V, and c. Within [3] seconds following load rejection, the frequency is ≥[58.8] Hz and ≤[61.2] Hz.	3.8.1.9	4.8.1.1.2.e.1
Verify each DG does not trip, and voltage is maintained ≤[5000] V during and following a load rejection of ≥[4500] kW and ≤[5000] kW.	3.8.1.10	4.8.1.1.2.e.2
Verify on an actual or simulated loss of offsite power signal: a. De-energization of emergency buses, b. Load shedding from emergency buses, c. DG auto-starts from standby condition and: 1. Energizes permanently connected loads in ≤[10] seconds, 2. Energizes auto-connected shutdown loads through [automatic load sequencer], 3. Maintains steady state voltage ≥[3740] V and ≤[4580] V, 4. Maintains steady state frequency ≥[58.8] Hz and ≤[61.2] Hz, and 5. Supplies permanently connected [and auto-connected] shutdown loads for ≥5 minutes.	3.8.1.11	4.8.1.1.2.e.3.a&b,
Verify on an actual or simulated Engineered Safety Feature (ESF) actuation signal each DG auto-starts from standby condition and: a. In ≤[10] seconds after auto-start and during tests, achieves voltage ≥[3740] V and frequency ≤[58.8] Hz, b. Achieves steady state voltage ≥[3740] V and ≤[4580] V and frequency ≥[58.8] Hz and ≤[61.2] Hz, c. Operates for ≥5 minutes, d. Permanently connected loads remain energized from the offsite power system, and e. Emergency loads are energized [or autoconnected through the automatic load sequencer] from the offsite power system.	3.8.1.12	4.8.1.1.2.e.4[5]
During shutdown, simulating a loss-of-offsite power in conjunction with an SIAS actuation test signal, and a) Verifying deenergization of the emergency busses and load shedding from the emergency busses.	------	4.8.1.1.2.e.5.a
During shutdown, simulating a loss-of-offsite power in conjunction with an SIAS actuation test signal, and b) Verifying the diesel starts on the auto-start signal, energizes the emergency busses and the permanently connected loads within 10 seconds after the auto-start signal, energizes the autoconnected emergency loads through the load sequencer and operates for greater than or equal to 5 minutes. After energization, the steady-state voltage and frequency of the emergency busses shall be maintained at 4160 +420, -240	------	4.8.1.1.2.e.5.b

[5] Waterford 3's SR does not include STS 3.8.1.12 parts d and e.

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volts and 60 +1.2, -0.3 Hz during this test.		
Verify each DG's noncritical automatic trips are bypassed on [actual or simulated loss of voltage signal on the emergency bus concurrent with an actual or simulated ESF actuation signal].	3.8.1.13	4.8.1.1.2.e.5.c
Verify each DG operates for ≥24 hours: a. For ≥[2] hours loaded ≥[5250] kW and ≤[5500] kW and b. For the remaining hours of the test loaded ≥[4500] kW and ≤[5000] kW.	3.8.1.14	4.8.1.1.2.e.6
Verify each DG starts and achieves: a. In ≤[10] seconds, voltage ≥[3740] V and frequency ≥[58.8] Hz and b. Steady state voltage ≥[3740] V and ≤[4580] V, and frequency ≥[58.8] Hz and ≤[61.2] Hz.	3.8.1.15	4.8.1.1.2.e.4
During shutdown, verifying that the auto-connected loads and permanently connected loads to each diesel generator do not exceed the 2000-hour rating of 4400 kW.	------	4.8.1.1.2.e.7
Verify each DG: a. Synchronizes with offsite power source while loaded with emergency loads upon a simulated restoration of offsite power, b. Transfers loads to offsite power source, and c. Returns to ready-to-load operation.	3.8.1.16	4.8.1.1.2.e.8
Verify, with a DG operating in test mode and connected to its bus, an actual or simulated ESF actuation signal overrides the test mode by: a. Returning DG to ready-to-load operation and [b. Automatically energizing the emergency load from offsite power.]	3.8.1.17	4.8.1.1.2.e.9
Verifying that each fuel transfer pump transfers fuel to its associated diesel oil feed tank by taking suction from the opposite train fuel oil storage tank via the installed cross connect.	------	4.8.1.1.2.e.10
Verify interval between each sequenced load block is within ± [10% of design interval] for each emergency [and shutdown] load sequencer. [[18] months mode 5,6	3.8.1.18	4.8.1.1.2.e.11
Verifying that the following diesel generator lockout features prevent diesel generator starting only when required: a) turning gear engaged b) emergency stop c) loss of D.C. control power d) governor fuel oil linkage tripped	------	4.8.1.1.2.e.12
Verify on an actual or simulated loss of offsite power signal in conjunction with an actual or simulated ESF actuation signal: a. De-energization of emergency buses, b. Load shedding from emergency buses, c. DG auto-starts from standby condition and: 1. energizes permanently connected loads in ≤[10] seconds, 2. energizes auto-connected emergency loads through [load sequencer],	3.8.1.19	4.8.1.1.2.e.5a&b

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3. achieves steady state voltage ≥[3740] V and ≤[4580] V, 4. achieves steady state frequency ≥[58.8] Hz and ≤[61.2] Hz, and 5. supplies permanently connected [and auto-connected] emergency loads for ≥[5] minutes.		
Verify, when started simultaneously from standby condition, each DG achieves: a. In ≤[10] seconds, voltage ≥[3740] V and frequency ≥[58.8] Hz and b. Steady state voltage ≥[3740] V and ≤[4580] V, and frequency ≥[58.8] Hz and ≤[61.2] Hz.	3.8.1.20	4.8.1.1.2.g
Diesel Fuel Oil, Lube Oil, and Starting Air	**3.8.3**	**3/4.8.1**
Verify each fuel oil storage tank contains ≥ a [7] day supply of fuel.	3.8.3.1	4.8.1.3.1
Verify lubricating oil inventory is ≥ a [7] day supply.	3.8.3.2	-------
Verify each DG air start receiver pressure is ≥ [225] psig.	3.8.3.4	-------
Check for and remove accumulated water from each fuel oil storage tank.	3.8.3.5	-------
Sources - Operating	**3.8.4**	**3/4.8.2**
Verify battery terminal voltage is greater than or equal to the minimum established float voltage.	3.8.4.1	4.8.2.1.a.2
Verify each battery charger supplies ≥ [400] amps at greater than or equal to the minimum established float voltage for ≥ [8] hours. OR Verify each battery charger can recharge the battery to the fully charged state within [24] hours while supplying the largest combined demands of the various continuous steady state loads, after a battery discharge to the bounding design basis event discharge state.	3.8.4.2	4.8.2.1.c.4
Verify battery capacity is adequate to supply, and maintain in OPERABLE status, the required emergency loads for the design duty cycle when subjected to a battery service test.	3.8.4.3	4.8.2.1.d
Battery Parameters	**3.8.6**	
Verify each battery float current is ≤ [2] amps.	3.8.6.1	4.8.2.1.a.1, Note b
Verify each battery pilot cell float voltage is ≥ 2.13 volts.	------	4.8.2.1.a.1
Electrolyte level > Minimum level indication mark and ≤ 1/4" above and not maximum level indication mark.	------	4.8.2.1.a.1
Specific Gravity ≥ 1.200.	------	4.8.2.1.a.1
Verify each battery pilot cell float voltage is ≥[2.07] V.	3.8.6.2	------------
Verify each battery connected cell electrolyte level is greater than or equal to minimum established design limits.	3.8.6.3	----------
Verify each battery pilot cell temperature is greater than or equal to minimum established design limits.	3.8.6.4	------------
Verify each battery connected cell float voltage is ≥ [2.07] V.	3.8.6.5	----------
Verify each battery pilot cell float voltage is ≥ 2.13 volts.	-----	4.8.2.1.b.1
Electrolyte level > Minimum level indication mark and ≤ 1/4" above and not maximum level indication mark.	-----	4.8.2.1.b.1

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Specific Gravity ≥ 1.195. Average of all connected cells > 1.205.	------	4.8.2.1.b.1
There is no visible corrosion at either terminals or connectors, or the connection resistance of these items is less than 150 x 10^{-6} ohms.	------	4.8.2.1.b.2
3. The average electrolyte temperature of a random sample of at least ten of the connected cells is above 70°F.	-------	4.8.2.1.b.3
The cells, cell plates, and battery racks show no visual indication of physical damage or abnormal deterioration.	-------	4.8.2.1.c.1
2. The cell-to-cell and terminal connections are clean, tight, and coated with anticorrosion material.	-------	4.8.2.1.c.2
3. The resistance of each cell-to-cell and terminal connection is less than or equal to 150 x 10^{-6} ohms.	-------	4.8.2.1.c.3
Verify battery capacity is ≥ [80%] of the manufacturer's rating when subjected to a performance discharge test or a modified performance discharge test.	3.8.6.6	4.8.2.1.e
Inverters - Operating	**3.8.7**	**3/4.8.3**
Verify correct inverter voltage, [frequency,] and alignment to required AC vital buses.	3.8.7.1	4.8.3.1
Inverters - Shutdown	**3.8.8**	**3/4.8.3**
Verify correct inverter voltage, [frequency,] and alignments to required AC vital buses.	3.8.8.1	4.8.3.2
Distribution Systems - Operating	**3.8.9**	**3/4.8.3**
Verify correct breaker alignments and voltage to [required] AC, DC, and AC vital bus electrical power distribution subsystems.	3.8.9.1	4.8.3.1
Distribution Systems - Shutdown	**3.8.10**	**3/4.8.3**
Verify correct breaker alignments and voltage to required AC, DC, and AC vital bus electrical power distribution subsystems.	3.8.10.1	4.8.3.2
Containment Penetration Conductor Overcurrent Protective Devices	**------**	**3/4.8.4**
The above noted primary and backup containment penetration conductor overcurrent protective devices shall be demonstrated OPERABLE: 1. By verifying that the medium voltage (4-15 kV) circuit breakers are OPERABLE by selecting, on a rotating basis, at least 10% of the circuit breakers of each voltage level, and performing the following: (a) A CHANNEL CALIBRATION of the associated protective relays, and (b) An integrated system functional test which includes simulated automatic actuation of the system and verifying that each relay and associated circuit breakers and control circuits function as designed. (c) For each circuit breaker found inoperable during these functional tests, an additional representative sample of at least 10% of all the circuit breakers of the inoperable type shall also be functionally tested until no more failures are found or all circuit breakers of that type have been functionally tested.	------	4.8.4.1.a.1
The above noted primary and backup containment penetration conductor overcurrent protective devices shall be demonstrated	------	4.8.4.1.a.2

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OPERABLE: a. By selecting and functionally testing a representative sample of at least 10% of each type of lower voltage circuit breakers. Circuit breakers selected for functional testing shall be selected on a rotating basis. Testing of these circuit breakers, except for those breakers with external trip devices,* shall consist of injecting a current in excess of the breakers' nominal setpoint and measuring the response time. The measured response time will be compared to the manufacturer's data to ensure that it is less than or equal to a value specified by the manufacturer. Circuit breakers found inoperable during functional testing shall be restored to OPERABLE status prior to resuming operation. For each circuit breaker found inoperable during these functional tests, an additional representative sample of at least 10% of all the circuit breakers of the inoperable type shall also be functionally tested until no more failures are found or all circuit breakers of that type have been functionally tested.		
The above noted primary and backup containment penetration conductor overcurrent protective devices shall be demonstrated OPERABLE: By subjecting each circuit breaker to an inspection and preventive maintenance in accordance with procedures prepared in conjunction with its manufacturer's recommendations.	------	4.8.4.1.b
Motor-Operated Valves Thermal Overload Protection and Bypass Devices	**------**	**3/4.8.4**
The above required thermal overload protection and bypass devices shall be demonstrated OPERABLE. a. At least once per 18 months, by the performance of a CHANNEL FUNCTIONAL TEST of the bypass circuitry for those thermal overload devices which are either: 1. Continuously bypassed and temporarily placed in force only when the valve motors are undergoing periodic or maintenance testing, or 2. Normally in force during plant operation and bypassed under accident conditions.	------	4.8.4.2.a
The above required thermal overload protection and bypass devices shall be demonstrated OPERABLE: At least once per 18 months by the performance of a CHANNEL CALIBRATION of a representative sample of at least 25% of: 1. All thermal overload devices which are not bypassed, such that each non-bypassed device is calibrated at least once per 6 years. 2. All thermal overload devices which are continuously bypassed and temporarily placed in force only when the valve motors are undergoing periodic or maintenance testing, and thermal overload devices normally in force and bypassed under accident conditions such that each thermal overload is calibrated and each valve is cycled through at least one complete cycle of full travel with the motor-operator when the thermal overload is OPERABLE and not bypassed, at least once per 6 years.	------	4.8.4.2.b
Refueling Operations Boron Concentration	**3.9.1**	**3/4.9.1**
Verify boron concentration is within the limit specified in the COLR.	3.9.1.1	4.9.1.2

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Refueling Operations Nuclear Instrumentation	**3.9.2**	**3/4.9.2**
Perform CHANNEL CHECK.	3.9.2.1	4.9.2.a
CHANNEL FUNCTIONAL TEST.	------	4.9.2.c
Perform CHANNEL CALIBRATION.	3.9.2.2	------
Refueling Operations Containment Penetrations	**3.9.3**	**3/4.9.4**
Verify each required containment penetration is in the required status.	3.9.3.1	4.9.4.1
Verify each required containment purge and exhaust valve actuates to the isolation position on an actual or simulated actuation signal.	3.9.3.2	4.9.4.2
Refueling Operations Shutdown Cooling (SDC) and Coolant Circulation - High Water Level	**3.9.4**	**3/4.9.8**
Verify one SDC loop is in operation and circulating reactor coolant at a flow rate of ≥ [2200] gpm.	3.9.4.1	4.9.8.1
Refueling Operations Shutdown Cooling (SDC) and Coolant Circulation - Low Water Level	3.9.5	3/4.9.8
Verify required SDC loops are OPERABLE and one SDC loop is in operation.	3.9.5.1	---
Verify correct breaker alignment and indicated power available to the required SDC pump that is not in operation.	3.9.5.2	---
At least one shutdown cooling train shall be verified to be in operation and circulating reactor coolant at a flow rate of greater than or equal to 4000 gpm.	---	4.9.8.2
Refueling Water Level	**3.9.6**	**3/4.9.10**
Verify refueling water level is ≥ 23 ft. above the top of reactor vessel flange.	3.9.6.1	4.9.10.1
CEAs	**------**	**3/4.9.10**
The water level shall be determined to be at least its minimum required depth within 2 hours prior to the start of and at least once per thereafter during movement of CEAs.	------	4.9.10.2
STE – Natural Circulation Testing	**-----**	**3/4.10.5**
The saturation margin shall be determined to be within the above limits by continuous monitoring with the saturation margin monitors required by Table 3.3-10 or, by calculating the saturation margin.	------	4.10.5.1
Gas Storage Tanks	**------**	**3/4.11.2**
The quantity of radioactive material contained in each gas storage tank on-service shall be determined to be within the above limit until the quantity exceeds 4.25 x 104 curies noble gases (50% of allowed limit) and then at least once per 24 hours when radioactive materials are being added to the tank. Tanks isolated for decay will be sampled to verify above limit is met within 24 hours following removal from service.	------	4.11.2.6