



Tennessee Valley Authority, 1101 Market Street, Chattanooga, Tennessee 37402

CNL-21-018

December 9, 2021

10 CFR 50.90

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

Watts Bar Nuclear Plant, Units 1 and 2
Facility Operating License Nos. NPF-90 and NPF-96
NRC Docket Nos. 50-390 and 50-391

Subject: **Watts Bar Nuclear Plant, Units 1 and 2, Application to Adopt TSTF-205-A, "Revision of Channel Calibration, Channel Functional Test, and Related Definitions," and TSTF-563-A, "Revise Instrument Testing Definitions to Incorporate the Surveillance Frequency Control Program" (WBN-TS-20-21)**

In accordance with the provisions of Title 10 of the *Code of Federal Regulations* (10 CFR) 50.90, Tennessee Valley Authority (TVA) is submitting for Nuclear Regulatory Commission (NRC) approval, a request for an amendment to Facility Operating License Nos. NPF-90 and NPF-96 for the Watts Bar Plant (WBN), Units 1 and 2.

TVA requests adoption of Technical Specification Task Force Traveler (TSTF)-205-A, Revision 3, "Revision of Channel Calibration, Channel Functional Test, and Related Definitions," and TSTF-563-A, "Revise Instrument Testing Definitions to Incorporate the Surveillance Frequency Control Program." TSTF-205-A revises the technical specification (TS) definitions for Actuation Logic Test, Channel Calibration, Channel Operational Test (COT), Master Relay Test, Slave Relay Test, and Trip Actuating Device Operational Test (TADOT). TSTF-563-A further revises the definitions of Channel Calibration, COT, and TADOT (which with TSTF-205-A incorporated, permits performance by means of any series of sequential, overlapping, or total channel steps) to allow the required frequency for testing the components or devices in each step to be determined in accordance with the TS Surveillance Frequency Control Program.

The Enclosure to this letter provides a description and assessment of the proposed change. Attachment 1 provides the existing WBN Unit 1 and Unit 2 TS pages marked to show the proposed changes, respectively. Attachment 2 provides revised (re-typed) TS pages. Attachment 3 provides the revised WBN Unit 1 TS Bases changes associated with TSTF-205-A, for information only (for purposes of this traveler, the WBN Unit 1 and 2 TS Bases are nearly identical).

CNL-21-018

E1 of 4

TVA has determined that there are no significant hazards consideration associated with the proposed change and that the license amendment qualifies for a categorical exclusion from environmental review pursuant to the provisions of 10 CFR 51.22(c)(9). Additionally, in accordance with 10 CFR 50.91(b)(1), TVA is sending a copy of this letter and enclosures to the Tennessee Department of Environment and Conservation.

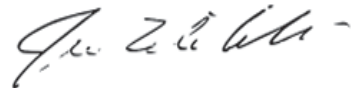
TVA requests approval of the proposed license amendment within 12 months of the date of this letter with implementation within 30 days following NRC approval.

There are no new regulatory commitments made in this letter.

Please address any questions regarding this submittal to Kimberly Hulvey, Senior Manager, Fleet Licensing, at 423-751-3275.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 9th day of December 2021.

Respectfully,



James T. Polickoski
Director, Nuclear Regulatory Affairs

Enclosure

Description and Assessment of the Proposed Change

cc: NRC Regional Administrator - Region II
NRC Senior Resident Inspector - Watts Bar Nuclear Plant
NRC Project Manager - Watts Bar Nuclear Plant
Division of Radiological Health - Tennessee State Department of Environment and Conservation

Enclosure

Description and Assessment of the Proposed Change

Enclosure

Description and Assessment of the Proposed Change

Subject: **Watts Bar Nuclear Plant, Units 1 and 2, Application to Adopt TSTF-205-A, “Revision of Channel Calibration, Channel Functional Test, and Related Definitions,” and TSTF-563-A, “Revise Instrument Testing Definitions to Incorporate the Surveillance Frequency Control Program” (WBN-TS-20-21)**

CONTENTS

1.0 DESCRIPTION	2
2.0 ASSESSMENT	2
2.1 Applicability of Safety Evaluation.....	2
2.2 Optional Changes and Variations.....	2
3.0 REGULATORY ANALYSIS	3
3.2 Conclusion.....	4
4.0 ENVIRONMENTAL EVALUATION	5

Attachments

1. Proposed TS Pages (Markups) for WBN Units 1 and 2
2. Proposed TS Pages (Final Typed) for WBN Units 1 and 2
3. Proposed TS Bases Changes (For information only) for WBN Unit 1

Description and Assessment of the Proposed Change

1.0 DESCRIPTION

Tennessee Valley Authority (TVA) requests adoption of Technical Specification Task Force Traveler (TSTF)-205-A, Revision 3, "Revision of Channel Calibration, Channel Functional Test, and Related Definitions," and TSTF-563-A, "Revise Instrument Testing Definitions to Incorporate the Surveillance Frequency Control Program." TSTF-205-A revises the technical specification (TS) definitions for Actuation Logic Test, Channel Calibration, Channel Operational Test (COT), Master Relay Test, Slave Relay Test, and Trip Actuating Device Operational Test (TADOT). TSTF-563-A further revises the definitions of Channel Calibration, COT, and TADOT (which with TSTF-205-A incorporated, permits performance by means of any series of sequential, overlapping, or total channel steps) to allow the required frequency for testing the components or devices in each step to be determined in accordance with the TS Surveillance Frequency Control Program.

2.0 ASSESSMENT

2.1 Applicability of Safety Evaluation

TVA has reviewed the safety evaluation for TSTF-563 provided to the Technical Specifications Task Force in a letter dated December 4, 2018. This review included a review of the Nuclear Regulatory Commission (NRC) staff's evaluation, as well as the information provided in TSTF-563. As described herein, TVA has concluded that the justifications presented in TSTF-563 and the safety evaluation prepared by the NRC staff are applicable to Watts Bar Nuclear Plant (WBN), Units 1 and 2, and justify this amendment for the incorporation of the changes to the WBN Unit 1 and 2 TS. TSTF-205-A does not have an associated NRC staff evaluation. However, TVA has reviewed the technical justification contained in the traveler and has concluded that it is applicable to WBN.

A Surveillance Frequency Control Program was incorporated into the WBN Units 1 and 2 TS in a license amendment dated February 28, 2020 (ML20028F733).

2.2 Optional Changes and Variations

TVA is not proposing any variations from the TS changes described in the TSTF-563-A or the applicable parts of the NRC staff's safety evaluation dated December 4, 2018. Similarly, TVA is not proposing any variations from the TS changes described in TSTF-205-A. However, TSTF-205-A provides clarifying TS Bases language for all Standard Technical Specification (STS) COT and TADOT surveillance requirements (SR) that only a single contact change of state is required to provide relay verification. The following Bases differences are noted below.

- WBN has several different COT and TADOT SR numbers from the analogous STS SR numbers.
- STS has several COT and TADOT SRs that either WBN does not have, or pertain to instrument functions that are not applicable to WBN.
- WBN has several COT and TADOT SRs that apply to instrument functions not required by the STS.

These are considered to be administrative variations.

Description and Assessment of the Proposed Change

3.0 REGULATORY ANALYSIS

3.1 No Significant Hazards Consideration Analysis

TVA requests adoption of TSTF-205-A, "Revision of Channel Calibration, Channel Functional Test, and Related Definitions," and TSTF-563-A, "Revise Instrument Testing Definitions to Incorporate the Surveillance Frequency Control Program," into the TS of WBN Units 1 and 2. TSTF-205-A revises the TS definitions for Actuation Logic Test, Channel Calibration, COT, Master Relay Test, Slave Relay Test, and TADOT. TSTF-563-A further revises the definitions of Channel Calibration, COT, and TADOT (which with TSTF-205-A incorporated, permits performance by means of any series of sequential, overlapping, or total channel steps) to allow the required frequency for testing the components or devices in each step to be determined in accordance with the TS Surveillance Frequency Control Program.

TVA has evaluated whether or not a significant hazards consideration is involved with the proposed amendments by focusing on the three standards set forth in Title 10 of the *Code of Federal Regulations* (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

Regarding TSTF-205-A, the definitions of Actuation Logic Test, Channel Calibration, COT, Master Relay Test, Slave Relay Test, and TADOT specified in the TS provide basic information regarding what the test involves, the components involved in the test, and general information regarding how the test is to be performed. Regarding TSTF-563-A, the proposed change revises the TS definitions of Channel Calibration, COT, and TADOT to allow the frequency for testing the components or devices in each step to be determined in accordance with the TS Surveillance Frequency Control Program. All components in the channel continue to be tested. The frequency at which a channel test is performed is not an initiator of any accident previously evaluated, so the probability of an accident is not affected by the proposed change. The channels surveilled in accordance with the affected definitions continue to be required to be operable and the acceptance criteria of the surveillances are unchanged. As a result, any mitigating functions assumed in the accident analysis will continue to be performed.

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

Regarding TSTF-205, the proposed revisions of the definitions do not involve a change to the design or operation of any plant structure, system, or component (SSC). As a result, the plant will continue to be operated in the same manner. Regarding TSTF-563-A, the proposed change revises the TS definitions of Channel Calibration, COT, and TADOT to allow the frequency for testing the components or devices in each

Enclosure

Description and Assessment of the Proposed Change

step to be determined in accordance with the TS Surveillance Frequency Control Program. The design function or operation of the components involved are not affected and there is no physical alteration of the plant (i.e., no new or different type of equipment will be installed). No credible new failure mechanisms, malfunctions, or accident initiators not considered in the design and licensing bases are introduced. The changes do not alter assumptions made in the safety analysis. The proposed changes are consistent with the safety analysis assumptions.

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

Regarding TSTF-205-A, the affected definitions involve testing of instrumentation used in the mitigation of accidents to ensure that the instrumentation will perform as assumed in the safety analyses. The proposed revisions of these definitions will not change their meaning or intent. Regarding TSTF-563-A, the proposed change revises the TS definitions of Channel Calibration, COT, and TADOT to allow the frequency for testing the components or devices in each step to be determined in accordance with the TS Surveillance Frequency Control Program. The Surveillance Frequency Control Program assures sufficient safety margins are maintained, and that design, operation, surveillance methods, and acceptance criteria specified in applicable codes and standards (or alternatives approved for use by the NRC) will continue to be met as described in the plants' licensing basis. The proposed change does not adversely affect existing plant safety margins, or the reliability of the equipment assumed to operate in the safety analysis. As such, there are no changes being made to safety analysis assumptions, safety limits, or limiting safety system settings that would adversely affect plant safety as a result of the proposed change. Margins of safety are unaffected by the method of determining surveillance test intervals under an NRC-approved licensee-controlled program.

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

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

3.2 Conclusion

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with NRC 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.

Description and Assessment of the Proposed Change

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 1

**Proposed TS Pages (Markups) for WBN Units 1 and 2
(9 total pages)**

Note - The red inserts/strikeouts pertain to TSTF-205.

The green inserts pertain to TSTF-563.

1.0 USE AND APPLICATION

1.1 Definitions

-----NOTE-----

The defined terms of this section appear in capitalized type and are applicable throughout these Technical Specifications and Bases.

<u>Term</u>	<u>Definition</u>
ACTIONS	ACTIONS shall be that part of a Specification that prescribes Required Actions to be taken under designated Conditions within specified Completion Times.
ACTUATION LOGIC TEST	An ACTUATION LOGIC TEST shall be the application of various simulated or actual input combinations in conjunction with each possible interlock logic state and the verification of the required logic output. The ACTUATION LOGIC TEST, as a minimum, shall include a continuity check of output devices. <div>required for OPERABILITY of a logic circuit</div>
AXIAL FLUX DIFFERENCE (AFD)	AFD shall be the difference in normalized flux signals between the top and bottom halves of a two section excore neutron detector. <div>necessary</div> <div>output such</div>
CHANNEL CALIBRATION	A CHANNEL CALIBRATION shall be the adjustment, as necessary, of the channel so that it responds within the required range and accuracy to known input. The CHANNEL CALIBRATION shall encompass the entire channel, including the required sensor, alarm, interlock, display, and trip functions. Calibration of instrument channels with resistance temperature detector (RTD) or thermocouple sensors may consist of an inplace qualitative assessment of sensor behavior and normal calibration of the remaining adjustable devices in the channel. Whenever a sensing element is replaced, the next required CHANNEL CALIBRATION shall include an inplace cross calibration that compares the other sensing elements with the recently installed sensing element. The CHANNEL CALIBRATION may be performed by means of any series of sequential, overlapping calibrations or total channel steps so that the entire channel is calibrated. <div>values of the parameter that the channel monitors</div> <div>all devices in the channel required for channel OPERABILITY</div> <div>and each step must be performed within the Frequency in the Surveillance Frequency Control Program for the devices included in the step</div>

(continued)

1.1 Definitions (continued)

The COT may be performed by means of any series of sequential, overlapping, or total channel steps

CHANNEL CHECK

A CHANNEL CHECK shall be the qualitative assessment, by observation, of channel behavior during operation. This determination shall include, where possible, comparison of the channel indication and status to other indications or status derived from independent instrument channels measuring the same parameter.

CHANNEL OPERATIONAL TEST (COT)

all devices in the channel required for channel OPERABILITY

A COT shall be the injection of a simulated or actual signal into the channel as close to the sensor as practicable to verify the OPERABILITY of ~~required alarm, interlock, display, and trip functions.~~ The COT shall include adjustments, as necessary, of the required alarm, interlock, and trip setpoints so that the setpoints are within the required range and accuracy.

CORE ALTERATION

necessary

required for channel OPERABILITY such

CORE ALTERATION shall be the movement of any fuel, sources, or other reactivity control components, within the reactor vessel with the vessel head removed and fuel in the vessel. Suspension of CORE ALTERATIONS shall not preclude completion of movement of a component to a safe position.

CORE OPERATING LIMITS REPORT (COLR)

The COLR is the unit specific document that provides cycle specific parameter limits for the initial and current reload cycle. These cycle specific parameter limits shall be determined for the initial and each reload cycle in accordance with Specification 5.9.5. Plant operation within these limits is addressed in individual Specifications.

DOSE EQUIVALENT I-131

DOSE EQUIVALENT I-131 shall be that concentration of I-131 (microcuries/gram) that alone would produce the same thyroid dose as the quantity and isotopic mixture of I-131, I-132, I-133, I-134, and I-135 actually present. The thyroid dose conversion factors used for this calculation shall be those listed in Table E-7 of Regulatory Guide 1.109, Rev. 1, NRC, 1977.

, and each step must be performed within the Frequency in the Surveillance Frequency Control Program for the devices included in the step.

(continued)

1.1 Definitions

LEAKAGE
(continued)

3. Reactor Coolant System (RCS)
LEAKAGE through a steam generator to the
Secondary System (primary-to-secondary
LEAKAGE);

b. Unidentified LEAKAGE

All LEAKAGE (except RCP seal water injection or
leakoff) that is not identified LEAKAGE;

c. Pressure Boundary LEAKAGE

LEAKAGE (except primary-to-secondary LEAKAGE)
through a nonisolable fault in an RCS component body,
pipe wall, or vessel wall.

all master relays in the
channel required for
channel OPERABILITY

MASTER RELAY TEST

A MASTER RELAY TEST shall consist of energizing ~~each~~
~~master relay~~ and verifying the OPERABILITY of each relay. The
MASTER RELAY TEST shall include a continuity check of each
associated slave relay.

required master

MODE

required

A MODE shall correspond to any one inclusive combination of
core reactivity condition, power level, average reactor coolant
temperature, and reactor vessel head closure bolt tensioning
specified in Table 1.1-1 with fuel in the reactor vessel.

OPERABLE-OPERABILITY

The MASTER RELAY TEST
may be performed by means
of any series of sequential,
overlapping, or total steps.

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

PDMS

The Power Distribution Monitoring System (PDMS) is a real-time
three dimensional core monitoring system. The system utilizes
existing core instrumentation data and an on-line neutronics code
to provide surveillance of core thermal limits.

PHYSICS TESTS

PHYSICS TESTS shall be those tests performed to measure the
fundamental nuclear characteristics of the reactor core and
related instrumentation. These tests are:

(continued)

1.1 Definitions

SHUTDOWN MARGIN (SDM) (continued)

would be subcritical from its present condition assuming:

- a. All rod cluster control assemblies (RCCAs) are fully inserted except for the single RCCA of highest reactivity worth, which is assumed to be fully withdrawn. With any RCCA not capable of being fully inserted, the reactivity worth of the RCCA must be accounted for in the determination of SDM; and
- b. In MODES 1 and 2, the fuel and moderator temperatures are changed to the nominal zero power design level.

all slave relays in the channel required for channel OPERABILITY

SLAVE RELAY TEST

A SLAVE RELAY TEST shall consist of energizing ~~each slave relay~~ and verifying the OPERABILITY of ~~each slave relay~~. The SLAVE RELAY TEST shall include, ~~as a minimum~~, a continuity check of ~~associated~~ testable actuation devices.

required

STAGGERED TEST BASIS

A STAGGERED TEST BASIS shall consist of the testing of one of the systems, subsystems, channels, or other designated components during the interval specified by the Surveillance Frequency, so that all systems, subsystems, channels, or other designated components are tested during n Surveillance Frequency intervals, where n is the total number of systems, subsystems, channels, or other designated components in the associated function.

The SLAVE RELAY TEST may be performed by means of any series of sequential, overlapping, or total steps.

THERMAL POWER

THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant.

TRIP ACTUATING DEVICE OPERATIONAL TEST (TADOT)

A TADOT shall consist of operating the trip actuating device and verifying the OPERABILITY of ~~required alarm, interlock, display, and trip functions~~. The TADOT shall include adjustment, as necessary, of the trip actuating device so that it actuates at the required setpoint within the ~~required~~ accuracy.

all devices in the channel required for trip actuating device OPERABILITY

necessary

, and each step must be performed within the Frequency in the Surveillance Frequency Control Program for the devices included in the step.

The TADOT may be performed by means of any series of sequential, overlapping, or total channel steps

1.0 USE AND APPLICATION

1.1 Definitions

NOTE

The defined terms of this section appear in capitalized type and are applicable throughout these Technical Specifications and Bases.

<u>Term</u>	<u>Definition</u>
ACTIONS	ACTIONS shall be that part of a Specification that prescribes Required Actions to be taken under designated Conditions within specified Completion Times.
ACTUATION LOGIC TEST	An ACTUATION LOGIC TEST shall be the application of various simulated or actual input combinations in conjunction with each possible interlock logic state and the verification of the required logic output. The ACTUATION LOGIC TEST, as a minimum, shall include a continuity check of output devices.
AXIAL FLUX DIFFERENCE (AFD)	AFD shall be the difference in normalized flux signals between the top and bottom halves of a two section excor neutron detector.
CHANNEL CALIBRATION	<p>A CHANNEL CALIBRATION shall be the adjustment, as necessary, of the channel so that it responds within the required range and accuracy to known input. The CHANNEL CALIBRATION shall encompass the entire channel, including the required sensor, alarm, interlock, display, and trip functions. Calibration of instrument channels with resistance temperature detector (RTD) or thermocouple sensors may consist of an inplace qualitative assessment of sensor behavior and normal calibration of the remaining adjustable devices in the channel. Whenever a sensing element is replaced, the next required CHANNEL CALIBRATION shall include an inplace cross calibration that compares the other sensing elements with the recently installed sensing element. The CHANNEL CALIBRATION may be performed by means of any series of sequential, overlapping calibrations or total channel steps so that the entire channel is calibrated.</p> <p>, and each step must be performed within the Frequency in the Surveillance Frequency Control Program for the devices included in the step.</p>

required for OPERABILITY of a logic circuit

output such

values of the parameter that the channel monitors

necessary

all devices in the channel required for channel OPERABILITY

(continued)

1.1 Definitions (continued)

CHANNEL CHECK	A CHANNEL CHECK shall be the qualitative assessment, by observation, of channel behavior during operation. This determination shall include, where possible, comparison of the channel indication and status to other indications or status derived from independent instrument channels measuring the same parameter.
CHANNEL OPERATIONAL TEST (COT)	A COT shall be the injection of a simulated or actual signal into the channel as close to the sensor as practicable to verify the OPERABILITY of required alarm, interlock, display, and trip functions. The COT shall include adjustments, as necessary, of the required alarm, interlock, and trip setpoints so that the setpoints are within the required range and accuracy.
CORE ALTERATION	CORE ALTERATION shall be the movement of any fuel, sources, or other reactivity control components, within the reactor vessel with the vessel head removed and fuel in the vessel. Suspension of CORE ALTERATIONS shall not preclude completion of movement of a component to a safe position.
CORE OPERATING LIMITS REPORT (COLR)	The COLR is the unit specific document that provides cycle specific parameter limits for the initial and current reload cycle. These cycle specific parameter limits shall be determined for the initial and each reload cycle in accordance with Specification 5.9.5. Plant operation within these limits is addressed in individual Specifications.
DOSE EQUIVALENT I-131	DOSE EQUIVALENT I-131 shall be that concentration of I-131 (microcuries/gram) that alone would produce the same thyroid dose as the quantity and isotopic mixture of I-131, I-132, I-133, I-134, and I-135 actually present. The thyroid dose conversion factors used for this calculation shall be those listed in Table E-7 of Regulatory Guide 1.109, Rev. 1, NRC, 1977.

The COT may be performed by means of any series of sequential, overlapping, or total channel steps

all devices in the channel required for channel OPERABILITY

required for channel OPERABILITY such

necessary

, and each step must be performed within the Frequency in the Surveillance Frequency Control Program for the devices included in the step.

(continued)

1.1 Definitions (continued)

LEAKAGE

LEAKAGE shall be:

a. Identified LEAKAGE

1. LEAKAGE, such as that from pump seals or valve packing (except reactor coolant pump (RCP) seal water injection or leakoff), that is captured and conducted to collection systems or a sump or collecting tank;
2. LEAKAGE into the containment atmosphere from sources that are both specifically located and known either not to interfere with the operation of leakage detection systems or not to be pressure boundary LEAKAGE; or
3. Reactor Coolant System (RCS) LEAKAGE through a steam generator to the Secondary System (primary-to-secondary LEAKAGE);

b. Unidentified LEAKAGE

All LEAKAGE (except RCP seal water injection or leakoff) that is not identified LEAKAGE;

c. Pressure Boundary LEAKAGE

LEAKAGE (except primary-to-secondary LEAKAGE) through a nonisolable fault in an RCS component body, pipe wall, or vessel wall.

all master relays in the channel required for channel OPERABILITY

MASTER RELAY TEST

A MASTER RELAY TEST shall consist of energizing ~~each master relay~~ and verifying the OPERABILITY of each relay. The MASTER RELAY TEST shall include a continuity check of each associated slave relay.

required master

MODE

required

A MODE shall correspond to any one inclusive combination of core reactivity condition, power level, average reactor coolant temperature, and reactor vessel head closure bolt tensioning specified in Table 1.1-1 with fuel in the reactor vessel.

The MASTER RELAY TEST may be performed by means of any series of sequential, overlapping, or total steps.

(continued)

1.1 Definitions (continued)

QUADRANT POWER TILT
RATIO (QPTR)

QPTR shall be the ratio of the maximum upper excore detector calibrated output to the average of the upper excore detector calibrated outputs, or the ratio of the maximum lower excore detector calibrated output to the average of the lower excore detector calibrated outputs, whichever is greater.

RATED THERMAL POWER
(RTP)

RTP shall be a total reactor core heat transfer rate to the reactor coolant of 3459 MWt.

REACTOR TRIP SYSTEM
(RTS) RESPONSE TIME

The RTS RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its RTS trip setpoint at the channel sensor until loss of stationary gripper coil voltage. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured. In lieu of measurement, response time may be verified for selected components provided that the components and the methodology for verification have been previously reviewed and approved by the NRC.

SHUTDOWN MARGIN (SDM)

SDM shall be the instantaneous amount of reactivity by which the reactor is subcritical or would be subcritical from its present condition assuming:

- a. All rod cluster control assemblies (RCCAs) are fully inserted except for the single RCCA of highest reactivity worth, which is assumed to be fully withdrawn. With any RCCA not capable of being fully inserted, the reactivity worth of the RCCA must be accounted for in the determination of SDM; and
- b. In MODES 1 and 2, the fuel and moderator temperatures are changed to the nominal zero power design level.

SLAVE RELAY TEST

A SLAVE RELAY TEST shall consist of energizing ~~each slave relay~~ and verifying the OPERABILITY of each slave relay. The SLAVE RELAY TEST shall include, ~~as a minimum~~, a continuity check of associated ~~testable~~ actuation devices.

all slave relays in the
channel required for
channel OPERABILITY

required

The SLAVE RELAY TEST
may be performed by means
of any series of sequential,
overlapping, or total steps.

(continued)

1.1 Definitions (continued)

STAGGERED TEST BASIS

A STAGGERED TEST BASIS shall consist of the testing of one of the systems, subsystems, channels, or other designated components during the interval specified by the Surveillance Frequency, so that all systems, subsystems, channels, or other designated components are tested during n Surveillance Frequency intervals, where n is the total number of systems, subsystems, channels, or other designated components in the associated function.

THERMAL POWER

THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant.

TRIP ACTUATING DEVICE
OPERATIONAL TEST
(TADOT)

A TADOT shall consist of operating the trip actuating device and verifying the OPERABILITY of ~~required alarm, interlock, display, and trip functions~~. The TADOT shall include adjustment, as necessary, of the trip actuating device so that it actuates at the required setpoint within the ~~required~~ accuracy.

necessary

The TADOT may be performed by means of any series of sequential, overlapping, or total channel steps

all devices in the channel required for trip actuating device OPERABILITY

, and each step must be performed within the Frequency in the Surveillance Frequency Control Program for the devices included in the step.

Attachment 2

**Proposed TS Pages (Final Typed) for WBN Units 1 and 2
(9 total pages)**

1.0 USE AND APPLICATION

1.1 Definitions

-----NOTE-----

The defined terms of this section appear in capitalized type and are applicable throughout these Technical Specifications and Bases.

<u>Term</u>	<u>Definition</u>
ACTIONS	ACTIONS shall be that part of a Specification that prescribes Required Actions to be taken under designated Conditions within specified Completion Times.
ACTUATION LOGIC TEST	An ACTUATION LOGIC TEST shall be the application of various simulated or actual input combinations in conjunction with each possible interlock logic state required for OPERABILITY of a logic circuit and the verification of the required logic output. The ACTUATION LOGIC TEST, as a minimum, shall include a continuity check of output devices.
AXIAL FLUX DIFFERENCE (AFD)	AFD shall be the difference in normalized flux signals between the top and bottom halves of a two section excore neutron detector.
CHANNEL CALIBRATION	A CHANNEL CALIBRATION shall be the adjustment, as necessary, of the channel output such that it responds within the necessary range and accuracy to known values of the parameter that the channel monitors. The CHANNEL CALIBRATION shall encompass all devices in the channel required for channel OPERABILITY. Calibration of instrument channels with resistance temperature detector (RTD) or thermocouple sensors may consist of an inplace qualitative assessment of sensor behavior and normal calibration of the remaining adjustable devices in the channel. Whenever a sensing element is replaced, the next required CHANNEL CALIBRATION shall include an inplace cross calibration that compares the other sensing elements with the recently installed sensing element. The CHANNEL CALIBRATION may be performed by means of any series of sequential, overlapping or total channel steps, and each step must be performed within the Frequency in the Surveillance Frequency Control Program for the devices included in the step.

(continued)

1.1 Definitions (continued)

CHANNEL CHECK	A CHANNEL CHECK shall be the qualitative assessment, by observation, of channel behavior during operation. This determination shall include, where possible, comparison of the channel indication and status to other indications or status derived from independent instrument channels measuring the same parameter.
CHANNEL OPERATIONAL TEST (COT)	A COT shall be the injection of a simulated or actual signal into the channel as close to the sensor as practicable to verify OPERABILITY of all devices in the channel required for channel OPERABILITY. The COT shall include adjustments, as necessary, of the required alarm, interlock, and trip setpoints required for channel OPERABILITY such that the setpoints are within the necessary range and accuracy. The COT may be performed by means of any series of sequential, overlapping, or total channel steps, and each step must be performed within the Frequency in the Surveillance Frequency Control Program for the devices included in the step.
CORE ALTERATION	CORE ALTERATION shall be the movement of any fuel, sources, or other reactivity control components, within the reactor vessel with the vessel head removed and fuel in the vessel. Suspension of CORE ALTERATIONS shall not preclude completion of movement of a component to a safe position.
CORE OPERATING LIMITS REPORT (COLR)	The COLR is the unit specific document that provides cycle specific parameter limits for the initial and current reload cycle. These cycle specific parameter limits shall be determined for the initial and each reload cycle in accordance with Specification 5.9.5. Plant operation within these limits is addressed in individual Specifications.
DOSE EQUIVALENT I-131	DOSE EQUIVALENT I-131 shall be that concentration of I-131 (microcuries/gram) that alone would produce the same thyroid dose as the quantity and isotopic mixture of I-131, I-132, I-133, I-134, and I-135 actually present. The thyroid dose conversion factors used for this calculation shall be those listed in Table E-7 of Regulatory Guide 1.109, Rev. 1, NRC, 1977.

(continued)

1.1 Definitions

LEAKAGE (continued)	<p>3. Reactor Coolant System (RCS) LEAKAGE through a steam generator to the Secondary System (primary-to-secondary LEAKAGE);</p> <p>b. <u>Unidentified LEAKAGE</u></p> <p>All LEAKAGE (except RCP seal water injection or leakoff) that is not identified LEAKAGE;</p> <p>c. <u>Pressure Boundary LEAKAGE</u></p> <p>LEAKAGE (except primary-to-secondary LEAKAGE) through a nonisolable fault in an RCS component body, pipe wall, or vessel wall.</p>
MASTER RELAY TEST	<p>A MASTER RELAY TEST shall consist of energizing all master relays in the channel required for channel OPERABILITY and verifying the OPERABILITY of each required master relay. The MASTER RELAY TEST shall include a continuity check of each associated required slave relay. The MASTER RELAY TEST may be performed by means of any series of sequential, overlapping, or total steps.</p>
MODE	<p>A MODE shall correspond to any one inclusive combination of core reactivity condition, power level, average reactor coolant temperature, and reactor vessel head closure bolt tensioning specified in Table 1.1-1 with fuel in the reactor vessel.</p>
OPERABLE-OPERABILITY	<p>A system, subsystem, train, component, or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified safety function(s) and when all necessary attendant instrumentation, controls, normal or emergency electrical power, cooling and seal water, lubrication, and other auxiliary equipment that are required for the system, subsystem, train, component, or device to perform its specified safety function(s) are also capable of performing their related support function(s).</p>
PDMS	<p>The Power Distribution Monitoring System (PDMS) is a real-time three dimensional core monitoring system. The system utilizes existing core instrumentation data and an on-line neutronics code to provide surveillance of core thermal limits.</p>
PHYSICS TESTS	<p>PHYSICS TESTS shall be those tests performed to measure the fundamental nuclear characteristics of the reactor core and related instrumentation. These tests are:</p>

(continued)

1.1 Definitions (continued)

SHUTDOWN MARGIN (SDM)
(continued)

- a. All rod cluster control assemblies (RCCAs) are fully inserted except for the single RCCA of highest reactivity worth, which is assumed to be fully withdrawn. With any RCCA not capable of being fully inserted, the reactivity worth of the RCCA must be accounted for in the determination of SDM; and
- b. In MODES 1 and 2, the fuel and moderator temperatures are changed to the nominal zero power design level.

SLAVE RELAY TEST

A SLAVE RELAY TEST shall consist of energizing all slave relays in the channel required for channel OPERABILITY and verifying the OPERABILITY of each required slave relay. The SLAVE RELAY TEST shall include a continuity check of associated required testable actuation devices. The SLAVE RELAY TEST may be performed by means of any series of sequential, overlapping, or total steps.

STAGGERED TEST BASIS

A STAGGERED TEST BASIS shall consist of the testing of one of the systems, subsystems, channels, or other designated components during the interval specified by the Surveillance Frequency, so that all systems, subsystems, channels, or other designated components are tested during n Surveillance Frequency intervals, where n is the total number of systems, subsystems, channels, or other designated components in the associated function.

THERMAL POWER

THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant.

TRIP ACTUATING DEVICE
OPERATIONAL TEST
(TADOT)

A TADOT shall consist of operating the trip actuating device and verifying the OPERABILITY of all devices in the channel required for trip actuating device OPERABILITY. The TADOT shall include adjustment, as necessary, of the trip actuating device so that it actuates at the required setpoint within the necessary accuracy. The TADOT may be performed by means of any series of sequential, overlapping, or total channel steps, and each step must be performed within the Frequency in the Surveillance Frequency Control Program for the devices included in the step.

1.0 USE AND APPLICATION

1.1 Definitions

-----NOTE-----
-
The defined terms of this section appear in capitalized type and are applicable throughout these Technical Specifications and Bases.

-

<u>Term</u>	<u>Definition</u>
ACTIONS	ACTIONS shall be that part of a Specification that prescribes Required Actions to be taken under designated Conditions within specified Completion Times.
ACTUATION LOGIC TEST	An ACTUATION LOGIC TEST shall be the application of various simulated or actual input combinations in conjunction with each possible interlock logic state required for OPERABILITY of a logic circuit and the verification of the required logic output. The ACTUATION LOGIC TEST, as a minimum, shall include a continuity check of output devices.
AXIAL FLUX DIFFERENCE (AFD)	AFD shall be the difference in normalized flux signals between the top and bottom halves of a two section excore neutron detector.
CHANNEL CALIBRATION	A CHANNEL CALIBRATION shall be the adjustment, as necessary, of the channel output such that it responds within the necessary range and accuracy to known values of the parameter that the channel monitors. The CHANNEL CALIBRATION shall encompass all devices in the channel required for channel OPERABILITY. Calibration of instrument channels with resistance temperature detector (RTD) or thermocouple sensors may consist of an inplace qualitative assessment of sensor behavior and normal calibration of the remaining adjustable devices in the channel. Whenever a sensing element is replaced, the next required CHANNEL CALIBRATION shall include an inplace cross calibration that compares the other sensing elements with the recently installed sensing element. The CHANNEL CALIBRATION may be performed by means of any series of sequential, overlapping or total channel steps, and each step must be performed within the Frequency in the Surveillance Frequency Control Program for the devices included in the step.

(continued)

1.1 Definitions (continued)

CHANNEL CHECK	A CHANNEL CHECK shall be the qualitative assessment, by observation, of channel behavior during operation. This determination shall include, where possible, comparison of the channel indication and status to other indications or status derived from independent instrument channels measuring the same parameter.
CHANNEL OPERATIONAL TEST (COT)	A COT shall be the injection of a simulated or actual signal into the channel as close to the sensor as practicable to verify the OPERABILITY of all devices in the channel required for channel OPERABILITY. The COT shall include adjustments, as necessary, of the required alarm, interlock, and trip setpoints required for the channel OPERABILITY such that the setpoints are within the necessary range and accuracy. The COT may be performed by means of any series of sequential, overlapping, or total channel steps, and each step must be performed within the Frequency in the Surveillance Frequency Control Program for the devices included in the step.
CORE ALTERATION	CORE ALTERATION shall be the movement of any fuel, sources, or other reactivity control components, within the reactor vessel with the vessel head removed and fuel in the vessel. Suspension of CORE ALTERATIONS shall not preclude completion of movement of a component to a safe position.
CORE OPERATING LIMITS REPORT (COLR)	The COLR is the unit specific document that provides cycle specific parameter limits for the initial and current reload cycle. These cycle specific parameter limits shall be determined for the initial and each reload cycle in accordance with Specification 5.9.5. Plant operation within these limits is addressed in individual Specifications.
DOSE EQUIVALENT I-131	DOSE EQUIVALENT I-131 shall be that concentration of I-131 (microcuries/gram) that alone would produce the same thyroid dose as the quantity and isotopic mixture of I-131, I-132, I-133, I-134, and I-135 actually present. The thyroid dose conversion factors used for this calculation shall be those listed in Table E-7 of Regulatory Guide 1.109, Rev. 1, NRC, 1977.

(continued)

1.1 Definitions (continued)

LEAKAGE

LEAKAGE shall be:

a. Identified LEAKAGE

1. LEAKAGE, such as that from pump seals or valve packing (except reactor coolant pump (RCP) seal water injection or leakoff), that is captured and conducted to collection systems or a sump or collecting tank;
2. LEAKAGE into the containment atmosphere from sources that are both specifically located and known either not to interfere with the operation of leakage detection systems or not to be pressure boundary LEAKAGE; or
3. Reactor Coolant System (RCS) LEAKAGE through a steam generator to the Secondary System (primary-to-secondary LEAKAGE);

b. Unidentified LEAKAGE

All LEAKAGE (except RCP seal water injection or leakoff) that is not identified LEAKAGE;

c. Pressure Boundary LEAKAGE

LEAKAGE (except primary-to-secondary LEAKAGE) through a nonisolable fault in an RCS component body, pipe wall, or vessel wall.

MASTER RELAY TEST

A MASTER RELAY TEST shall consist of energizing all master relays in the channel required for channel OPERABILITY and verifying the OPERABILITY of each required master relay. The MASTER RELAY TEST shall include a continuity check of each associated required slave relay. The MASTER RELAY TEST may be performed by means of any series of sequential, overlapping, or total steps.

MODE

A MODE shall correspond to any one inclusive combination of core reactivity condition, power level, average reactor coolant temperature, and reactor vessel head closure bolt tensioning specified in Table 1.1-1 with fuel in the reactor vessel.

(continued)

1.1 Definitions (continued)

QUADRANT POWER TILT RATIO (QPTR)	QPTR shall be the ratio of the maximum upper excore detector calibrated output to the average of the upper excore detector calibrated outputs, or the ratio of the maximum lower excore detector calibrated output to the average of the lower excore detector calibrated outputs, whichever is greater.
RATED THERMAL POWER (RTP)	RTP shall be a total reactor core heat transfer rate to the reactor coolant of 3459 MWt.
REACTOR TRIP SYSTEM (RTS) RESPONSE TIME	The RTS RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its RTS trip setpoint at the channel sensor until loss of stationary gripper coil voltage. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured. In lieu of measurement, response time may be verified for selected components provided that the components and the methodology for verification have been previously reviewed and approved by the NRC.
SHUTDOWN MARGIN (SDM)	<p>SDM shall be the instantaneous amount of reactivity by which the reactor is subcritical or would be subcritical from its present condition assuming:</p> <ol style="list-style-type: none"> All rod cluster control assemblies (RCCAs) are fully inserted except for the single RCCA of highest reactivity worth, which is assumed to be fully withdrawn. With any RCCA not capable of being fully inserted, the reactivity worth of the RCCA must be accounted for in the determination of SDM; and In MODES 1 and 2, the fuel and moderator temperatures are changed to the nominal zero power design level.
SLAVE RELAY TEST	A SLAVE RELAY TEST shall consist of energizing all slave relays in the channel required for channel OPERABILITY and verifying the OPERABILITY of each required slave relay. The SLAVE RELAY TEST shall include a continuity check of associated required testable actuation devices. The SLAVE RELAY TEST may be performed by means of any series of sequential, overlapping, or total steps.

1.1 Definitions (continued)

STAGGERED TEST BASIS

A STAGGERED TEST BASIS shall consist of the testing of one of the systems, subsystems, channels, or other designated components during the interval specified by the Surveillance Frequency, so that all systems, subsystems, channels, or other designated components are tested during n Surveillance Frequency intervals, where n is the total number of systems, subsystems, channels, or other designated components in the associated function.

THERMAL POWER

THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant.

TRIP ACTUATING DEVICE
OPERATIONAL TEST
(TADOT)

A TADOT shall consist of operating the trip actuating device and verifying the OPERABILITY of all devices in the channel required for trip actuating device OPERABILITY. The TADOT shall include adjustment, as necessary, of the trip actuating device so that it actuates at the required setpoint within the necessary accuracy. The TADOT may be performed by means of any series of sequential, overlapping, or total channel steps, and each step must be performed within the Frequency in the Surveillance Frequency Control Program for the devices included in the step.

Attachment 3

Proposed TS Bases Changes (For information only) for WBN Unit 1 (16 Pages)

Bases

SURVEILLANCE
REQUIREMENTS
(continued)

A successful test of the required contact(s) of a channel relay may be performed by the verification of the change of state of a single contact of the relay. This clarifies what is an acceptable TADOT of a relay. This is acceptable because all of the other required contacts of the relay are verified by other Technical Specifications and non-Technical Specifications tests at least once per refueling interval with applicable extensions.

SR 3.3.1.4

SR 3.3.1.4 is the performance of a TADOT. This test shall verify OPERABILITY by actuation of the end devices.

The RTB test shall include separate verification of the undervoltage and shunt trip mechanisms. Independent verification of RTB undervoltage and shunt trip Function is not required for the bypass breakers. No capability is provided for performing such a test at power. The bypass breaker test shall include a local shunt trip. A Note has been added to indicate that this test must be performed on the bypass breaker prior to placing it in service.

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

SR 3.3.1.5

SR 3.3.1.5 is the performance of an ACTUATION LOGIC TEST. The SSPS is tested, using the semiautomatic tester. The train being tested is placed in the bypass condition, thus preventing inadvertent actuation. Through the semiautomatic tester, all possible logic combinations, with and without applicable permissives, are tested for each protection Function. The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

SR 3.3.1.6

SR 3.3.1.6 is a calibration of the excore channels to the incore channels. If the measurements do not agree, the excore channels are not declared inoperable but must be calibrated to agree with the incore power distribution measurement(s). If the excore channels cannot be adjusted, the channels are declared inoperable. This Surveillance is performed to verify the $f(\Delta I)$ input to the Overtemperature ΔT Function. The incore power distribution measurement(s) may be obtained using the Movable Incore Detector System or an OPERABLE PDMS (Ref. 16).

A Note modifies SR 3.3.1.6. The Note states that this Surveillance is required only if reactor power is > 50% RTP and that 6 days is allowed for performing the first surveillance after reaching 50% RTP.

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

(continued)

Bases

SURVEILLANCE
REQUIREMENTS
(continued)

SR 3.3.1.7

SR 3.3.1.7 is the performance of a COT.

A COT is performed on each required channel to ensure the entire channel will perform the intended Function. Setpoints must be within the Allowable Values specified in Table 3.3.1-1.

The difference between the current "as found" values and the previous test "as left" values must be consistent with the drift allowance used in the setpoint methodology. The setpoint shall be left set consistent with the assumptions of the current unit specific setpoint methodology.

The "as found" and "as left" values must also be recorded and reviewed for consistency with the assumptions of References 6 and 7.

SR 3.3.1.7 is modified by a Note that this test shall include verification that the P-10 interlock is in the required state for the existing unit condition.

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

SR 3.3.1.8

SR 3.3.1.8 is the performance of a COT as described in SR 3.3.1.7, except it is modified by two Notes. Note 1 provides a 4 hour delay in the requirement to perform this Surveillance for source range instrumentation when entering MODE 3 from MODE 2. This Note allows a normal shutdown to proceed without a delay for testing in MODE 2 and for a short time in MODE 3 until the RTBs are open and SR 3.3.1.8 is no longer required to be performed. If the unit is to be in MODE 3 with the RTBs closed for greater than 4 hours, this Surveillance must be performed within 4 hours after entry into MODE 3. Note 2 states that this test shall include verification that the P-6 interlock is in the required state for the existing unit condition. The Frequency is modified by a Note that allows this surveillance to be satisfied if it has been performed within the frequency specified in the Surveillance Frequency Control Program prior to reactor startup and 4 hours after reducing power below P-10 and P-6. The Frequency of "prior to startup" ensures this surveillance is performed prior to critical operations and applies to the source and intermediate range instrument channels. The Frequency of "4 hours after reducing power below P-10" (applicable to intermediate channels) and "4 hours after reducing power below P-6" (applicable to source range channels) allows a normal shutdown to be completed and the unit removed from the MODE of Applicability for this surveillance without a delay to perform the testing required by this surveillance.

(continued)

A successful test of the required contact(s) of a channel relay may be performed by the verification of the change of state of a single contact of the relay. This clarifies what is an acceptable CHANNEL OPERATIONAL TEST of a relay. This is acceptable because all of the other required contacts of the relay are verified by other Technical Specifications and non Technical Specifications tests at least once per refueling interval with applicable extensions.

Bases

SURVEILLANCE
REQUIREMENTS

SR 3.3.1.8 (continued)

The Frequency thereafter applies if the plant remains in the MODE of Applicability after the initial performances of prior to reactor startup and four hours after reducing power below P-10 or P-6. The MODE of Applicability for this surveillance is < P-10 for the intermediate range channels and < P-6 for the source range channels. Once the unit is in MODE 3, this surveillance is no longer required. If power is to be maintained < P-10 or < P-6 for more than 4 hours, then the testing required by this surveillance must be performed prior to the expiration of the 4 hour limit. Four hours is a reasonable time to complete the required testing or place the unit in a MODE where this surveillance is no longer required. This test ensures that the NIS source and intermediate range channels are OPERABLE channels prior to taking the reactor critical and after reducing power into the applicable MODE (< P-10 or < P-6) for periods > 4 hours.

SR 3.3.1.9

SR 3.3.1.9 is the performance of a TADOT and the Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

A successful test of the required contact(s) of a channel relay may be performed by the verification of the change of state of a single contact of the relay. This clarifies what is an acceptable TADOT of a relay. This is acceptable because all of the other required contacts of the relay are verified by other Technical Specifications and non-Technical Specifications tests at least once per refueling interval with applicable extensions.

The SR is modified by a Note that excludes verification of setpoints from the TADOT. Since this SR applies to RCP undervoltage and underfrequency relays, setpoint verification requires elaborate bench calibration and is accomplished during the CHANNEL CALIBRATION.

SR 3.3.1.10

CHANNEL CALIBRATION is a complete check of the instrument loop, including the sensor. The test verifies that the channel responds to a measured parameter within the necessary range and accuracy.

CHANNEL CALIBRATIONS must be performed consistent with the assumptions of the Watts Bar setpoint methodology. The difference between the current "as found" values and the previous test "as left" values must be consistent with the drift allowance used in the setpoint methodology.

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

SR 3.3.1.10 is modified by a Note stating that this test shall include verification that the time constants are adjusted to the prescribed values where applicable. For channels with a trip time delay (TTD), this test shall include verification that the TTD coefficients are adjusted correctly.

(continued)

Bases

SURVEILLANCE
REQUIREMENTS
(continued)

SR 3.3.1.11

SR 3.3.1.11 is the performance of a CHANNEL CALIBRATION, as described in SR 3.3.1.10. This SR is modified by a Note stating that neutron detectors are excluded from the CHANNEL CALIBRATION. The CHANNEL CALIBRATION for the power range neutron detectors consists of a normalization of the detectors based on a power calorimetric performed above 15% RTP. The CHANNEL CALIBRATION for the source range and intermediate range neutron detectors consists of obtaining the detector plateau or preamp discriminator curves, evaluating those curves, and comparing the curves to the manufacturer's data. This Surveillance is not required for the NIS power range detectors for entry into MODE 2 or 1, and is not required for the NIS intermediate range detectors for entry into MODE 2, because the unit must be in at least MODE 2 to perform the test for the intermediate range detectors and MODE 1 for the power range detectors.

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

SR 3.3.1.12

SR 3.3.1.12 is the performance of a COT of RTS interlocks.

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

SR 3.3.1.13

SR 3.3.1.13 is the performance of a TADOT of the Manual Reactor Trip, Reactor Trip from Manual SI, and the Reactor Trip from Automatic SI Input from ESFAS. The test shall independently verify the OPERABILITY of the undervoltage and shunt trip mechanisms for these Reactor Trip Functions for the Reactor Trip Breakers. The test shall also verify OPERABILITY of the Reactor Trip Bypass Breakers for these Functions. Independent verification of the Reactor Trip Bypass Breakers undervoltage and shunt trip mechanisms is not required.

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

The SR is modified by a Note that excludes verification of setpoints from the TADOT. The Functions affected have no setpoints associated with them.

(continued)

A successful test of the required contact(s) of a channel relay may be performed by the verification of the change of state of a single contact of the relay. This clarifies what is an acceptable CHANNEL OPERATIONAL TEST of a relay. This is acceptable because all of the other required contacts of the relay are verified by other Technical Specifications and non Technical Specifications tests at least once per refueling interval with applicable extensions.

A successful test of the required contact(s) of a channel relay may be performed by the verification of the change of state of a single contact of the relay. This clarifies what is an acceptable TADOT of a relay. This is acceptable because all of the other required contacts of the relay are verified by other Technical Specifications and non-Technical Specifications tests at least once per refueling interval with applicable extensions.

Bases

SURVEILLANCE
REQUIREMENTS
(continued)

SR 3.3.1.14

SR 3.3.1.14 is the performance of a TADOT of Turbine Trip Functions. This TADOT is as described in SR 3.3.1.4, except that this test is performed prior to exceeding the P-9 interlock whenever the unit has been in Mode 3. This Surveillance is not required if it has been performed within the previous 31 days.

Verification of the Trip Setpoint does not have to be performed for this Surveillance. Performance of this test will ensure that the turbine trip Function is OPERABLE prior to exceeding the P-9 interlock.

SR 3.3.1.15

SR 3.3.1.15 verifies that the individual channel/train actuation response times are less than or equal to the maximum values assumed in the accident analysis. Response time testing acceptance criteria are included in Technical Requirements Manual, Section 3.3.1 (Ref. 8). Individual component response times are not modeled in the analyses. The analyses model the overall or total elapsed time, from the point at which the parameter exceeds the trip setpoint value at the sensor to the point at which the equipment reaches the required functional state (i.e., control and shutdown rods fully inserted in the reactor core).

For channels that include dynamic transfer Functions (e.g., lag, lead/lag, rate/lag, etc.), the response time test may be performed with the transfer Function set to one, with the resulting measured response time compared to the appropriate FSAR response time. Alternately, the response time test can be performed with the time constants set to their nominal value, provided the required response time is analytically calculated assuming the time constants are set at their nominal values. The response time may be measured by a series of sequential tests such that the entire response time is measured.

Response time may be verified by actual response time tests in any series of sequential, overlapping or total channel measurements, or by the summation of allocated sensor, signal processing and actuation logic response times with actual response time tests on the remainder of the channel. Allocations for sensor response times may be obtained from: (1) historical records based on acceptable response time tests (hydraulic, noise, or power interrupt tests), (2) in place, onsite, or offsite (e.g. vendor) test measurements, or (3) utilizing vendor engineering specifications. WCAP-13632-P-A Revision 2, "Elimination of Pressure Sensor Response Time Testing Requirements" (Reference 11), provides the basis and methodology for using allocated sensor response times in the overall verification of the channel response time for specific sensors identified in the WCAP. Response time verification for other sensor types must be demonstrated by test.

A successful test of the required contact(s) of a channel relay may be performed by the verification of the change of state of a single contact of the relay. This clarifies what is an acceptable TADOT of a relay. This is acceptable because all of the other required contacts of the relay are verified by other Technical Specifications and non-Technical Specifications tests at least once per refueling interval with applicable extensions.

(continued)

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.3.2.1 (continued)

Agreement criteria are determined by the unit staff, based on a combination of the channel instrument uncertainties, including indication and reliability. If a channel is outside the criteria, it may be an indication that the sensor or the signal processing equipment has drifted outside its limit.

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

SR 3.3.2.2

SR 3.3.2.2 is the performance of an ACTUATION LOGIC TEST. The train being tested is placed in the bypass condition, thus preventing inadvertent actuation. Through the semiautomatic tester, all possible logic combinations, with and without applicable permissives, are tested for each protection function. In addition, the master relay coil is pulse tested for continuity. This verifies that the logic modules are OPERABLE and that there is an intact voltage signal path to the master relay coils.

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

SR 3.3.2.3

SR 3.3.2.3 is the performance of a MASTER RELAY TEST. The MASTER RELAY TEST is the energizing of the master relay, verifying contact operation and a low voltage continuity check of the slave relay coil. Upon master relay contact operation, a low voltage is injected to the slave relay coil. This voltage is insufficient to pick up the slave relay, but large enough to demonstrate signal path continuity.

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

SR 3.3.2.4

SR 3.3.2.4 is the performance of a COT.

A COT is performed on each required channel to ensure the entire channel will perform the intended Function. Setpoints must be found within the Allowable Values specified in Table 3.3.2-1.

The difference between the current "as found" values and the previous test "as left" values must be consistent with the drift allowance used in the setpoint methodology. The setpoint shall be left set consistent with the assumptions of the current unit specific setpoint methodology.

(continued)

A successful test of the required contact(s) of a channel relay may be performed by the verification of the change of state of a single contact of the relay. This clarifies what is an acceptable CHANNEL OPERATIONAL TEST of a relay. This is acceptable because all of the other required contacts of the relay are verified by other Technical Specifications and non Technical Specifications tests at least once per refueling interval with applicable extensions.

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.3.2.4 (continued)

The "as found" and "as left" values must also be recorded and reviewed for consistency with the assumptions of Reference 6.

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

SR 3.3.2.5

SR 3.3.2.5 is the performance of a SLAVE RELAY TEST. The SLAVE RELAY TEST is the energizing of the slave relays. Contact operation is verified in one of two ways. Actuation equipment that may be operated in the design mitigation MODE is either allowed to function, or is placed in a condition where the relay contact operation can be verified without operation of the equipment. Actuation equipment that may not be operated in the design mitigation MODE is prevented from operation by the SLAVE RELAY TEST circuit. For this latter case, contact operation is verified by a continuity check of the circuit containing the slave relay.

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

This SR is modified by a Note, which states that performance of this test is not required for those relays tested by SR 3.3.2.7.

SR 3.3.2.6

SR 3.3.2.6 is the performance of a TADOT. This test is a check of the AFW Pumps Train A and B Suction Transfer on Suction Pressure—Low (Function 6.f), and Turbine Trip and Feedwater Isolation - Main Steam Valve Vault Rooms Water Level - High (Function 5.d and 5.e).

The SR is modified by a Note that excludes verification of setpoints for relays. Relay setpoints require elaborate bench calibration and are verified during CHANNEL CALIBRATION. The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

SR 3.3.2.7

SR 3.3.2.7 is the performance of a SLAVE RELAY TEST for slave relays K603A, K603B, K604A, K604B, K607A, K607B, K609A, K609B, K612A, K625A, and K625B. The SLAVE RELAY TEST is the energizing of the slave relays. Contact operation is verified in one of two ways. Actuation equipment which may be operated in the design mitigation MODE is either allowed to function or is placed in a condition where the relay contact operation can be verified without operation of the equipment. Actuation equipment which may not be operated in the design mitigation MODE is prevented from operation by the slave relay test circuit.

A successful test of the required contact(s) of a channel relay may be performed by the verification of the change of state of a single contact of the relay. This clarifies what is an acceptable TADOT of a relay. This is acceptable because all of the other required contacts of the relay are verified by other Technical Specifications and non-Technical Specifications tests at least once per refueling interval with applicable extensions.

(continued)

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.3.2.7 (continued)

For this latter case, contact operation is verified by a continuity check of the circuit containing the slave relay.

A successful test of the required contact(s) of a channel relay may be performed by the verification of the change of state of a single contact of the relay. This clarifies what is an acceptable TADOT of a relay. This is acceptable because all of the other required contacts of the relay are verified by other Technical Specifications and non-Technical Specifications tests at least once per refueling interval with applicable extensions.

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

SR 3.3.2.8

SR 3.3.2.8 is the performance of a TADOT. This test is a check of the Manual Actuation Functions and AFW pump start on trip of all MFW pumps. The Surveillance Frequency is controlled under the Surveillance Frequency Control Program. The SR is modified by a Note that excludes verification of setpoints during the TADOT for manual initiation functions. The manual initiation functions have no associated setpoints.

SR 3.3.2.9

SR 3.3.2.9 is the performance of a CHANNEL CALIBRATION.

CHANNEL CALIBRATION is a complete check of the instrument loop, including the sensor. The test verifies that the channel responds to measured parameter within the necessary range and accuracy.

CHANNEL CALIBRATIONS must be performed consistent with the assumptions of the Watts Bar setpoint methodology.

The difference between the current "as found" values and the previous test "as left" values must be consistent with the drift allowance used in the setpoint methodology.

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

This SR is modified by a Note stating that this test should include verification that the time constants are adjusted to the prescribed values where applicable. For channels with a trip time delay (TTD), this test shall include verification that the TTD coefficients are adjusted correctly.

SR 3.3.2.10

This SR ensures the individual channel ESF RESPONSE TIMES are less than or equal to the maximum values assumed in the accident analysis. Response Time testing acceptance criteria are included in Technical Requirements Manual, Section 3.3.2 (Ref. 8). Individual component response times are not modeled in the analyses. The analyses model the overall or total elapsed time, from the point at which the parameter exceeds the Trip Setpoint value at the sensor, to the point at which the equipment in both trains reaches the required functional state (e.g., pumps at rated discharge pressure, valves in full open or closed position).

(continued)

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.3.2.10 (continued)

There is an additional note pertaining to this SR on Page 3 of Table 3.3.2-1 of the Technical Specification, which states the following (Ref. 14):

Note h: For the time period between February 23, 2000 and prior to turbine restart (following the next time the turbine is removed from service), the response time test requirement of SR 3.3.2.10 is not applicable for 1-FSV-47-027.

SR 3.3.2.11

SR 3.3.2.11 is the performance of a TADOT as described in SR 3.3.2.8, except that it is performed for the P-4 Reactor Trip Interlock, and the Frequency is once per RTB cycle. This Frequency is based on operating experience demonstrating that undetected failure of the P-4 interlock sometimes occurs when the RTB is cycled.

The SR is modified by a Note that excludes verification of setpoints during the TADOT. The Function tested has no associated setpoint.

REFERENCES

1. Watts Bar FSAR, Section 6.0, "Engineered Safety Features."
2. Watts Bar FSAR, Section 7.0, "Instrumentation and Controls."
3. Watts Bar FSAR, Section 15.0, "Accident Analyses."
4. Institute of Electrical and Electronic Engineers, IEEE-279-1971, "Criteria for Protection Systems for Nuclear Power Generating Stations," April 5, 1972.
5. Code of Federal Regulations, Title 10, Part 50.49, "Environmental Qualification of Electrical Equipment Important to Safety for Nuclear Power Plants."
6. WCAP-12096, Rev. 7, "Westinghouse Setpoint Methodology for Protection System, Watts Bar 1 and 2," March 1997.
7. WCAP-10271-P-A, Supplement 1 and Supplement 2, Rev. 1, "Evaluation of Surveillance Frequencies and Out of Service Times for the Reactor Protection Instrumentation System," and "Evaluation of Surveillance Frequencies and Out of Service Times for the Engineered Safety Features Actuation System." May 1986 and June 1990.
8. Watts Bar Technical Requirements Manual, Section 3.3.2, "Engineered Safety Feature Response Times."
9. DELETED

(continued)

A successful test of the required contact(s) of a channel relay may be performed by the verification of the change of state of a single contact of the relay. This clarifies what is an acceptable TADOT of a relay. This is acceptable because all of the other required contacts of the relay are verified by other Technical Specifications and non-Technical Specifications tests at least once per refueling interval with applicable extensions.

BASES

SURVEILLANCE
REQUIREMENTS
(continued)

SR 3.3.4.4

SR 3.3.4.4 is the performance of a TADOT. This test should verify the OPERABILITY of the reactor trip breakers (RTBs) open and closed indication on the remote shutdown panel, by actuating the RTBs. The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

REFERENCES

1. Title 10, Code of Federal Regulations, Part 50, Appendix A, "General Design Criteria 19, "Control Room."
2. Watts Bar FSAR Section 7.4, "Systems Required for Safe Shutdown."
3. TVA Calculation WBN-OSG4-193, "Auxiliary Control System Required Equipment per GDC 19."
4. Design Criteria WB-DC-40-58, "Auxiliary Control System."

A successful test of the required contact(s) of a channel relay may be performed by the verification of the change of state of a single contact of the relay. This clarifies what is an acceptable TADOT of a relay. This is acceptable because all of the other required contacts of the relay are verified by other Technical Specifications and non-Technical Specifications tests at least once per refueling interval with applicable extensions.

BASES

ACTIONS
(continued)

C.1

Condition C applies to the LOP Diesel Start function for unbalanced voltage with one or more channels per bus inoperable.

A Note has been added which states that Condition C is only applicable to Function 5 of Table 3.3.5-1.

Required Action C.1 requires restoring the channel(s) to OPERABLE status. The 1 hour Completion Time takes into account the low probability of an event requiring a LOP start occurring during this interval.

D.1

Condition D applies to each of the LOP DG start Functions when the Required Action and associated Completion Time for Condition A, B, or C are not met.

In these circumstances the Conditions specified in LCO 3.8.1, "AC Sources—Operating," or LCO 3.8.2, "AC Sources—Shutdown," for the DG made inoperable by failure of the LOP DG start instrumentation are required to be entered immediately. The actions of those LCOs provide for adequate compensatory actions to assure unit safety.

SURVEILLANCE
REQUIREMENTS

A Note has been added to refer to Table 3.3.5-1 to determine which Surveillance Requirements apply for each LOP Function.

SR 3.3.5.1

SR 3.3.5.1 is the performance of a TADOT. The test checks operation of the undervoltage, degraded voltage, and unbalanced voltage relays that provide actuation signals. The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

This SR has been modified by a Note that excludes verification of setpoints for relays/timers. Relay/timer setpoints require elaborate bench calibration and are verified during a CHANNEL CALIBRATION.

SR 3.3.5.2

SR 3.3.5.2 is the performance of a CHANNEL CALIBRATION.

The setpoints, as well as the response to a loss of voltage, a degraded voltage, and an unbalanced voltage test, shall include a single point verification that the trip occurs within the required time delay, as shown in Reference 1.

CHANNEL CALIBRATION is a check of the four functions. The test verifies that the channel responds to a measured parameter within the necessary range and accuracy.

A successful test of the required contact(s) of a channel relay may be performed by the verification of the change of state of a single contact of the relay. This clarifies what is an acceptable TADOT of a relay. This is acceptable because all of the other required contacts of the relay are verified by other Technical Specifications and non-Technical Specifications tests at least once per refueling interval with applicable extensions.

(continued)

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.3.6.2 (continued)

The SR is modified by a Note stating that the surveillance is only applicable to the actuation logic of the ESFAS instrumentation.

SR 3.3.6.3

SR 3.3.6.3 is the performance of a MASTER RELAY TEST. The MASTER RELAY TEST is the energizing of the master relay, verifying contact operation and a low voltage continuity check of the slave relay coil. Upon master relay contact operation, a low voltage is injected to the slave relay coil. This voltage is insufficient to pick up the slave relay, but large enough to demonstrate signal path continuity. The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

The SR is modified by a note stating that the surveillance is only applicable to the actuation logic of the ESFAS instrumentation.

SR 3.3.6.4

A COT is performed on each required channel to ensure the entire channel will perform the intended Function. The Surveillance Frequency is controlled under the Surveillance Frequency Control Program. This test verifies the capability of the instrumentation to provide the containment vent system isolation. The setpoint shall be left consistent with the current unit specific calibration procedure tolerance.

SR 3.3.6.5

SR 3.3.6.5 is the performance of a SLAVE RELAY TEST. The SLAVE RELAY TEST is the energizing of the slave relays. Contact operation is verified in one of two ways. Actuation equipment that may be operated in the design mitigation mode is either allowed to function or is placed in a condition where the relay contact operation can be verified without operation of the equipment. Actuation equipment that may not be operated in the design mitigation mode is prevented from operation by the SLAVE RELAY TEST circuit. For this latter case, contact operation is verified by a continuity check of the circuit containing the slave relay. This test is performed every 92 days. The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

SR 3.3.6.6

SR 3.3.6.6 is the performance of a TADOT. This test is a check of the Manual Actuation Functions. Each Manual Actuation Function is tested up to, and including, the master relay coils. In some instances, the test includes actuation of the end device (i.e., pump starts, valve cycles, etc.).

A successful test of the required contact(s) of a channel relay may be performed by the verification of the change of state of a single contact of the relay. This clarifies what is an acceptable CHANNEL OPERATIONAL TEST of a relay. This is acceptable because all of the other required contacts of the relay are verified by other Technical Specifications and non Technical Specifications tests at least once per refueling interval with applicable extensions.

A successful test of the required contact(s) of a channel relay may be performed by the verification of the change of state of a single contact of the relay. This clarifies what is an acceptable TADOT of a relay. This is acceptable because all of the other required contacts of the relay are verified by other Technical Specifications and non-Technical Specifications tests at least once per refueling interval with applicable extensions.

(continued)

BASES

SURVEILLANCE
REQUIREMENTS
(continued)

SR 3.3.7.2

A COT is performed on each required channel to ensure the entire channel will perform the intended function. This test verifies the capability of the instrumentation to provide the CREVS actuation. The setpoints shall be left consistent with the unit specific calibration procedure tolerance. The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

SR 3.3.7.3

SR 3.3.7.3 is the performance of a TADOT. This test is a check of the Manual Actuation Functions. Each Manual Actuation Function is tested up to, and including, the relay coils. In some instances, the test includes actuation of the end device (i.e., pump starts, valve cycles, etc.).

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

The SR is modified by a Note that excludes verification of setpoints during the TADOT. The Functions tested have no setpoints associated with them.

SR 3.3.7.4

CHANNEL CALIBRATION is a complete check of the instrument loop, including the sensor. The test verifies that the channel responds to a measured parameter within the necessary range and accuracy.

The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

None.

A successful test of the required contact(s) of a channel relay may be performed by the verification of the change of state of a single contact of the relay. This clarifies what is an acceptable CHANNEL OPERATIONAL TEST of a relay. This is acceptable because all of the other required contacts of the relay are verified by other Technical Specifications and non Technical Specifications tests at least once per refueling interval with applicable extensions.

A successful test of the required contact(s) of a channel relay may be performed by the verification of the change of state of a single contact of the relay. This clarifies what is an acceptable TADOT of a relay. This is acceptable because all of the other required contacts of the relay are verified by other Technical Specifications and non-Technical Specifications tests at least once per refueling interval with applicable extensions.

BASES

SURVEILLANCE REQUIREMENTS A Note has been added to the SR Table to clarify that Table 3.3.8-1 determines which SRs apply to which ABGTS Actuation Functions.

SR 3.3.8.1

SR 3.3.8.1 is the performance of a TADOT. This test is a check of the manual actuation functions. Each manual actuation function is tested up to, and including, the relay coils. In some instances, the test includes actuation of the end device (e.g., pump starts, valve cycles, etc.). The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

The SR is modified by a Note that excludes verification of setpoints during the TADOT. The Functions tested have no setpoints associated with them.

REFERENCES 1. Title 10, Code of Federal Regulations, Part 100.11, "Determination of Exclusion Area, Low Population Zone, and Population Center Distance."

A successful test of the required contact(s) of a channel relay may be performed by the verification of the change of state of a single contact of the relay. This clarifies what is an acceptable TADOT of a relay. This is acceptable because all of the other required contacts of the relay are verified by other Technical Specifications and non-Technical Specifications tests at least once per refueling interval with applicable extensions.

BASES

SURVEILLANCE
REQUIREMENTS
(continued)

SR 3.4.12.6

The required RHR suction relief valve shall be demonstrated OPERABLE by verifying both RHR suction isolation valves are open and by testing it in accordance with the Inservice Testing Program. This Surveillance is only performed if the RHR suction relief valve is being used to satisfy this LCO.

Both RHR suction isolation valves are verified locked open, with power to the valve operator removed, to ensure that accidental closure will not occur. The "locked open" valves must be locally verified in the open position with the manual actuator locked. The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

SR 3.4.12.7

The COT is required to be in frequency prior to decreasing RCS temperature to $\leq 350^{\circ}\text{F}$ or be performed within 12 hours after decreasing RCS temperature to $\leq 350^{\circ}\text{F}$ on each required PORV to verify and, as necessary, adjust its lift setpoint. The COT will verify the setpoint is within the PTLR allowed maximum limits in the PTLR. PORV actuation could depressurize the RCS and is not required. The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

The 12 hour allowance to meet the requirement considers the unlikelihood of a low temperature overpressure event during this time.

A Note has been added indicating that this SR is required to be met within 12 hours after decreasing RCS cold leg temperature to $\leq 350^{\circ}\text{F}$.

SR 3.4.12.8

Performance of a CHANNEL CALIBRATION on each required PORV actuation channel is required to adjust the whole channel so that it responds and the valve opens within the required range and accuracy to known input. The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

REFERENCES

1. Title 10, Code of Federal Regulations, Part 50, Appendix G, "Fracture Toughness Requirements."
2. Generic Letter 88-11, "NRC Position on Radiation Embrittlement of Reactor Vessel Materials and Its Impact on Plant Operation."
3. ASME Boiler and Pressure Vessel Code, Section III.
4. Watts Bar FSAR, Section 5.2.2.4, "RCS Pressure Control During Low Temperature Operation."

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A successful test of the required contact(s) of a channel relay may be performed by the verification of the change of state of a single contact of the relay. This clarifies what is an acceptable CHANNEL OPERATIONAL TEST of a relay. This is acceptable because all of the other required contacts of the relay are verified by other Technical Specifications and non Technical Specifications tests at least once per refueling interval with applicable extensions.

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.4.15.1

SR 3.4.15.1 requires the performance of a CHANNEL CHECK of the required containment atmosphere particulate radioactivity monitor. The check gives reasonable confidence that the channel is operating properly. The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

SR 3.4.15.2

SR 3.4.15.2 requires the performance of a COT on the required containment atmosphere particulate radioactivity monitor. The test ensures that the monitor can perform its function in the desired manner. The test verifies the alarm setpoint and the relative accuracy of the instrument string. The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

SR 3.4.15.3 and SR 3.4.15.4

These SRs require the performance of a CHANNEL CALIBRATION for each of the RCS leakage detection instrumentation channels. The calibration verifies the accuracy of the instrument string, including the instruments located inside containment. The Surveillance Frequency is controlled under the Surveillance Frequency Control Program.

REFERENCES

1. 10 CFR 50, Appendix A, General Design Criterion 30, "Quality of Reactor Coolant Pressure Boundary."
2. Regulatory Guide 1.45, "Reactor Coolant Pressure Boundary Leakage Detection Systems," Revision 0, May 1973.
3. Watts Bar FSAR, Section 5.2.7, "RCPB Leakage Detection Systems."

A successful test of the required contact(s) of a channel relay may be performed by the verification of the change of state of a single contact of the relay. This clarifies what is an acceptable CHANNEL OPERATIONAL TEST of a relay. This is acceptable because all of the other required contacts of the relay are verified by other Technical Specifications and non Technical Specifications tests at least once per refueling interval with applicable extensions.