

Enclosure to TSTF-507, Revision 0

Part 1 of 3

Technical Specification Task Force Improved Standard Technical Specifications Change Traveler

Add Exception for LCO 3.0.7 to LCO 3.0.1

NUREGs Affected: 1430 1431 1432 1433 1434

Classification: 2) Consistency/Standardization

Recommended for CLIIP?: (Unassigned)

Correction or Improvement: (Unassigned)

Industry Contact: Steve Wideman, (620) 364-4037, stwidem@wcnoc.com

Add exception for LCO 3.0.7 to LCO 3.0.1

This change completes Revision 0 change NRC-03, C.5 which added LCO 3.0.7 to address test exception LCOs and was omitted by the original change. The CEOG, BWR-4 and BWR-6 ITS already contain this change.

Revision History

OG Revision 0

Revision Status: Closed

Revision Proposed by:

Revision Description:

Original Issue

Owners Group Review Information

Date Originated by OG: 15-Mar-95

Owners Group Comments:

WOG-03, C.1

Owners Group Resolution: Approved Date: 11-Aug-95

TSTF Review Information

TSTF Received Date: 05-Sep-95

Date Distributed for Review: 05-Sep-95

OG Review Completed: BWO WOG CEOG BWROG

TSTF Comments:

(No Comments)

TSTF Resolution: Approved

Date: 05-Sep-95

NRC Review Information

NRC Received Date: 03-Oct-95

NRC Comments:

10/6/95 J. Leuhman review complete, accept change.

10/6/95 - to C. Grimes for review.

11/17/95 - C. Grimes approved change.

Final Resolution: Superseded by Revision

Final Resolution Date: 08-Jan-96

TSTF Revision 1

Revision Status: Active

31-Jul-03

TSTF Revision 1**Revision Status: Active**

Revision Proposed by: TSTF

Revision Description:

Remarked the pages to use TSTF number instead of OG number.

TSTF Review Information

TSTF Received Date: 08-Jan-96

Date Distributed for Review: 08-Jan-96

OG Review Completed: BWOG WOG CEOG BWROG

TSTF Comments:

(No Comments)

TSTF Resolution: Approved

Date: 08-Jan-96

NRC Review Information

NRC Received Date: 08-Jan-96

NRC Comments:

Date of NRC Letter: 27-Sep-96

1/30/96 - Changes processed and certified.

1/31/96 Control books, database, and TS+BBS updated.

2/1/96 TSTF-06 change approved in letter to NEL.

Final Resolution: NRC Approves

Final Resolution Date: 01-Feb-96

Affected Technical Specifications

LCO 3.0.1

LCO Applicability

31-Jul-03

3.0 LIMITING CONDITION FOR OPERATION (LCO) APPLICABILITY

LCO 3.0.1 LCOs shall be met during the MODES or other specified conditions in the Applicability, except as provided in LCO 3.0.2.

and LCO 3.0.7

LCO 3.0.2 Upon discovery of a failure to meet an LCO, the Required Actions of the associated Conditions shall be met, except as provided in LCO 3.0.5 and LCO 3.0.6.

If the LCO is met or is no longer applicable prior to expiration of the specified Completion Time(s), completion of the Required Action(s) is not required, unless otherwise stated.

LCO 3.0.3 When an LCO is not met and the associated ACTIONS are not met, an associated ACTION is not provided, or if directed by the associated ACTIONS, the unit shall be placed in a MODE or other specified condition in which the LCO is not applicable. Action shall be initiated within 1 hour to place the unit, as applicable, in:

- a. MODE 3 within 7 hours;
- b. MODE 4 within 13 hours; and
- c. MODE 5 within 37 hours.

Exceptions to this Specification are stated in the individual Specifications.

Where corrective measures are completed that permit operation in accordance with the LCO or ACTIONS, completion of the actions required by LCO 3.0.3 is not required.

LCO 3.0.3 is only applicable in MODES 1, 2, 3, and 4.

LCO 3.0.4 When an LCO is not met, entry into a MODE or other specified condition in the Applicability shall not be made except when the associated ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time. This

(continued)

3.0 LIMITING CONDITION FOR OPERATION (LCO) APPLICABILITY

LCO 3.0.1 LCOs shall be met during the MODES or other specified conditions in the Applicability, except as provided in LCO 3.0.2.

↑ and LCO 3.0.7

LCO 3.0.2 Upon discovery of a failure to meet an LCO, the Required Actions of the associated Conditions shall be met, except as provided in LCO 3.0.5 and LCO 3.0.6.

If the LCO is met or is no longer applicable prior to expiration of the specified Completion Time(s), completion of the Required Action(s) is not required unless otherwise stated.

LCO 3.0.3 When an LCO is not met and the associated ACTIONS are not met, an associated ACTION is not provided, or if directed by the associated ACTIONS, the unit shall be placed in a MODE or other specified condition in which the LCO is not applicable. Action shall be initiated within 1 hour to place the unit, as applicable, in:

- a. MODE 3 within 7 hours;
- b. MODE 4 within 13 hours; and
- c. MODE 5 within 37 hours.

Exceptions to this Specification are stated in the individual Specifications.

Where corrective measures are completed that permit operation in accordance with the LCO or ACTIONS, completion of the actions required by LCO 3.0.3 is not required.

LCO 3.0.3 is only applicable in MODES 1, 2, 3, and 4.

LCO 3.0.4 When an LCO is not met, entry into a MODE or other specified condition in the Applicability shall not be made except when the associated ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time. This

(continued)

Technical Specification Task Force Improved Standard Technical Specifications Change Traveler

Relocate the details of RTD and thermocouple calibration from the Channel Calibration definition

NUREGs Affected: 1430 1431 1432 1433 1434

Classification: 2) Consistency/Standardization

Recommended for CLIIP?: (Unassigned)

Correction or Improvement: (Unassigned)

Industry Contact: Steve Wideman, (620) 364-4037, stwidem@wcnoc.com

Relocate the details of RTD and thermocouple calibration from the Channel Calibration definition to the Bases associated with calibration of these components.

The details associated with defining acceptable means by which a channel calibration can be accomplished for RTDs and thermocouples is proposed to be relocated to the Bases associated with the calibration of these components. The information contained in the definition is prescriptive in nature, better suited as Bases information consistent with other material relocated to the Bases.

Revision History

OG Revision 0

Revision Status: Closed

Revision Proposed by: Ginna

Revision Description:
Original Issue

Owners Group Review Information

Date Originated by OG: 02-Nov-95

Owners Group Comments:
(No Comments)

Owners Group Resolution: Approved Date: 02-Nov-95

TSTF Review Information

TSTF Received Date: 02-Nov-95 Date Distributed for Review: 02-Nov-95

OG Review Completed: BWOG WOG CEOG BWROG

TSTF Comments:
(No Comments)

TSTF Resolution: Approved Date: 14-Nov-95

NRC Review Information

NRC Received Date: 16-Nov-95

NRC Comments:

11/19/95 - reviewer modified package.
12/7/95 - pkg to C. Grimes to review
6/11/96 - C. Grimes comment: TSTF-19 to be referred to a Tech Br.
9/18/96 - No change in status.
10/30/96 - Awaiting ICSB for support.
12/31/96 - NRC requested changes to TSTF-19. TSTF considering.

31-Jul-03

OG Revision 0**Revision Status: Closed**

1/31/97 - Revision sent to TSTF for review.

3/28/97 - Revision forwarded to NRC.

Final Resolution: Superseded by Revision

Final Resolution Date: 07-Apr-97

TSTF Revision 1**Revision Status: Active**

Revision Proposed by: NRC

Revision Description:

Letter from C. I. Grimes to James Davis dated 12/31/96 requested modifications to TSTF-19. 1) Remove the sentence, ", which may consist of an inplace qualitative assessment of sensor behavior and normal calibration of the remaining adjustable devices in the channel," and 2) add inserts similar to Insert 1 and 2 to BWO SR 3.3.1.6, SR 3.3.17.2, SR 3.3.18.3, WOG SR 3.3.3.2, 3.3.4.3, and CEOG (analog and digital) 3.3.11.2 and 3.3.12.3.

TSTF Review Information

TSTF Received Date: 31-Dec-96

Date Distributed for Review: 03-Feb-97

OG Review Completed: BWO WOG CEOG BWROG

TSTF Comments:

(No Comments)

TSTF Resolution: Approved

Date: 21-Mar-97

NRC Review Information

NRC Received Date: 07-Apr-97

NRC Comments:

4/10/97 - Forwarded to reviewer.

10/6/97 HICB recommended approval.

10/8/97 - to C. Schulten for TSB recommendation.

10/1/97 - NRC indicated that they would approve.

10/6/97 - HICB recommended approval.

Final Resolution: NRC Approves

Final Resolution Date: 01-Dec-97

Affected Technical Specifications

1.1	Definition of Channel Calibration	
SR 3.3.1.6 Bases	RPS Instrumentation	NUREG(s)- 1430 Only
SR 3.3.17.2 Bases	PAM Instrumentation	NUREG(s)- 1430 Only
SR 3.3.18.3 Bases	Remote Shutdown System	NUREG(s)- 1430 Only
SR 3.3.1.12 Bases	RTS Instrumentation	NUREG(s)- 1431 Only
SR 3.3.3.2 Bases	PAM Instrumentation	NUREG(s)- 1431 Only

31-Jul-03

SR 3.3.4.3 Bases	Remote Shutdown System	NUREG(s)- 1431 Only
SR 3.3.11.2 Bases	PAM Instrumentation (Analog)	NUREG(s)- 1432 Only
SR 3.3.11.2 Bases	PAM Instrumentation (Digital)	NUREG(s)- 1432 Only
SR 3.3.12.3 Bases	Remote Shutdown System (Analog)	NUREG(s)- 1432 Only
SR 3.3.12.3 Bases	Remote Shutdown System (Digital)	NUREG(s)- 1432 Only

INSERT 1

Whenever a sensing element is replaced, the next required CHANNEL CALIBRATION of the resistance temperature detectors (RTD) sensors is accomplished by an inplace cross calibration that compares the other sensing elements with the recently installed sensing element.

INSERT 2

Whenever a sensing element is replaced, the next required CHANNEL CALIBRATION of the Core Exit thermocouple sensors is accomplished by an inplace cross calibration that compares the other sensing elements with the recently installed sensing element.

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.
ALLOWABLE THERMAL POWER	ALLOWABLE THERMAL POWER shall be the maximum reactor core heat transfer rate to the reactor coolant permitted by consideration of the number and configuration of reactor coolant pumps (RCPs) in operation.
AXIAL POWER IMBALANCE	AXIAL POWER IMBALANCE shall be the power in the top half of the core, expressed as a percentage of RATED THERMAL POWER (RTP), minus the power in the bottom half of the core, expressed as a percentage of RTP.
AXIAL POWER SHAPING RODS (APSRs)	APSRs shall be control components used to control the axial power distribution of the reactor core. The APSRs are positioned manually by the operator and are not trippable.
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 the entire channel, including the required sensor, alarm, display, and trip functions, and shall include the CHANNEL FUNCTIONAL TEST. Calibration of instrument channels with resistance temperature detector (RTD) or thermocouple sensors may consist of an in-place qualitative assessment of sensor behavior and normal calibration of the remaining adjustable devices in the channel. Whenever a

(continued)

1.1 Definitions

CHANNEL CALIBRATION
(continued)

~~sensing element is replaced, the next required CHANNEL CALIBRATION shall include an in-place 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 so that the entire channel is calibrated.

The CHANNEL CALIBRATION shall also include testing of safety related Reactor Protection System (RPS), Engineered Safety Feature Actuation System (ESFAS), and Emergency Feedwater Initiation and Control (EFIC) bypass functions for each channel affected by the bypass operation.

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 FUNCTIONAL TEST

A CHANNEL FUNCTIONAL TEST shall be the injection of a simulated or actual signal into the channel as close to the sensor as practicable to verify OPERABILITY, including required alarms, interlocks, display, and trip functions. The ESFAS CHANNEL FUNCTIONAL TEST shall also include testing of ESFAS safety related bypass functions for each channel affected by bypass operation.

CONTROL RODS

CONTROL RODS shall be all full length safety and regulating rods that are used to shut down the reactor and control power level during maneuvering operations.

CORE ALTERATION

CORE ALTERATION shall be the movement of any fuel, sources, or reactivity control components, within the reactor vessel with the vessel head removed and fuel in the vessel. Suspension of CORE

(continued)

BASES

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SR 3.3.1.6 (continued)

A CHANNEL CALIBRATION is a complete check of the instrument channel, including the sensor. The test verifies that the channel responds to the measured parameter within the necessary range and accuracy. CHANNEL CALIBRATION leaves the channel adjusted to account for instrument drift to ensure that the instrument channel remains operational between successive tests. CHANNEL CALIBRATION shall find that measurement errors and bistable setpoint errors are within the assumptions of the unit specific setpoint analysis. CHANNEL CALIBRATIONS must be performed consistent with the assumptions of the unit specific setpoint analysis.

The Frequency is justified by the assumption of an [18] month calibration interval in the determination of the magnitude of equipment drift in the setpoint analysis.

Insert 1

SR 3.3.1.7

This SR verifies individual channel actuation response times are less than or equal to the maximum values assumed in the accident analysis. 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 analytical limit at the sensor to the point of rod insertion. Response time testing acceptance criteria for this unit are included in Reference 1.

A Note to the Surveillance indicates that neutron detectors are excluded from RPS RESPONSE TIME testing. This Note is necessary because of the difficulty in generating an appropriate detector input signal. Excluding the detectors is acceptable because the principles of detector operation ensure a virtually instantaneous response.

Response time tests are conducted on an [18] month STAGGERED TEST BASIS. Testing of the final actuation devices, which make up the bulk of the response time, is included in the testing of each channel. Therefore, staggered testing results in response time verification of these devices every [18] months. The [18] month Frequency is based on unit operating experience, which shows that random failures of

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BASES

SURVEILLANCE
REQUIREMENTS
(continued)

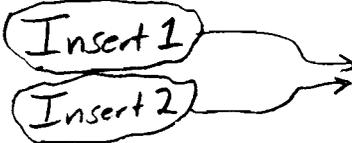
SR 3.3.17.2

A CHANNEL CALIBRATION is performed every [18] months or approximately at every refueling. CHANNEL CALIBRATION is a complete check of the instrument channel, including the sensor. This test verifies the channel responds to measured parameters within the necessary range and accuracy.

A Note clarifies that the neutron detectors are not required to be tested as part of the CHANNEL CALIBRATION. There is no adjustment that can be made to the detectors. Furthermore, adjustment of the detectors is unnecessary because they are passive devices, with minimal drift. Slow changes in detector sensitivity are compensated for by performing the daily calorimetric calibration and the monthly axial channel calibration.

For the Containment Area Radiation instrumentation, a CHANNEL CALIBRATION may consist of an electronic calibration of the channel, not including the detector, for range decades above 10 R/hr, and a one point calibration check of the detector below 10 R/hr with a gamma source.

Insert 1
Insert 2



The Frequency is based on operating experience and consistency with the typical industry refueling cycle and is justified by the assumption of an [18] month calibration interval in the determination of the magnitude of equipment drift.

REFERENCES

1. [Unit Specific Documents (e.g., FSAR, NRC Regulatory Guide 1.97 SER letter).]
 2. Regulatory Guide 1.97.
 3. NUREG-0737, 1979.
 4. 32-1177256-00, "Technical Basis for Reactor Vessel Level Indication System (RVLIS) Action Statement," April 10, 1990.
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BASES

SURVEILLANCE
REQUIREMENTS

SR 3.3.18.3 (continued)

because they are passive devices, with minimal drift. Slow changes in detector sensitivity are compensated for by performing the daily calorimetric calibration and the monthly axial channel calibration.

Insert 1 →

The Frequency is based on operating experience and consistency with the typical industry refueling cycle and is justified by the assumption of an [18] month calibration interval in the determination of the magnitude of equipment drift.

REFERENCES

1. 10 CFR 50, Appendix A, GDC 19.
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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 excore neutron detector].
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 in-place 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 in-place 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.

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BASES

SURVEILLANCE
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SR 3.3.1.11 (continued)

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 [18] month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown these components usually pass the Surveillance when performed on the [18] month Frequency.

SR 3.3.1.12

SR 3.3.1.12 is the performance of a CHANNEL CALIBRATION, as described in SR 3.3.1.10, every [18] months. This SR is modified by a Note stating that this test shall include verification of the RCS resistance temperature detector (RTD) bypass loop flow rate. INSERT 1

This test will verify the rate lag compensation for flow from the core to the RTDs.

The Frequency is justified by the assumption of an 18 month calibration interval in the determination of the magnitude of equipment drift in the setpoint analysis.

SR 3.3.1.13

SR 3.3.1.13 is the performance of a COT of RTS interlocks every [18] months.

The Frequency is based on the known reliability of the interlocks and the multichannel redundancy available, and has been shown to be acceptable through operating experience.

(continued)

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.3.3.1 (continued)

should be compared to similar unit instruments located throughout the unit.

Agreement criteria are determined by the unit staff, based on a combination of the channel instrument uncertainties, including isolation, indication, and readability. 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. If the channels are within the criteria, it is an indication that the channels are OPERABLE.

As specified in the SR, a CHANNEL CHECK is only required for those channels that are normally energized.

The Frequency of 31 days is based on operating experience that demonstrates that channel failure is rare. The CHANNEL CHECK supplements less formal, but more frequent, checks of channels during normal operational use of the displays associated with the LCO required channels.

SR 3.3.3.2

A CHANNEL CALIBRATION is performed every [18] months, or approximately at every refueling. CHANNEL CALIBRATION is a complete check of the instrument loop, including the sensor. The test verifies that the channel responds to measured parameter with the necessary range and accuracy. This SR is modified by a Note that excludes neutron detectors. The calibration method for neutron detectors is specified in the Bases of LCO 3.3.1, "Reactor Trip System (RTS) Instrumentation." The Frequency is based on operating experience and consistency with the typical industry refueling cycle.

INSERT
2

REFERENCES

1. [Unit specific document (e.g., FSAR, NRC Regulatory Guide 1.97 SER letter).]
 2. Regulatory Guide 1.97, [date].
 3. NUREG-0737, Supplement 1, "TMI Action Items."
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BASES

SURVEILLANCE
REQUIREMENTS

SR 3.3.4.1 (continued)

within the criteria, it is an indication that the channels are OPERABLE. 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.

As specified in the Surveillance, a CHANNEL CHECK is only required for those channels which are normally energized.

The Frequency of 31 days is based upon operating experience which demonstrates that channel failure is rare. The CHANNEL CHECK supplements less formal, but more frequent, checks of channels during normal operational use of the displays associated with the LCO required channels.

SR 3.3.4.2

SR 3.3.4.2 verifies each required Remote Shutdown System control circuit and transfer switch performs the intended function. This verification is performed from the remote shutdown panel and locally, as appropriate. Operation of the equipment from the remote shutdown panel is not necessary. The Surveillance can be satisfied by performance of a continuity check. This will ensure that if the control room becomes inaccessible, the unit can be placed and maintained in MODE 3 from the remote shutdown panel and the local control stations. The [18] month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. (However, this Surveillance is not required to be performed only during a unit outage.) Operating experience demonstrates that remote shutdown control channels usually pass the Surveillance test when performed at the [18] month Frequency.

SR 3.3.4.3

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

Insert 1 →

(continued)

1.1 Definitions

CHANNEL CALIBRATION (continued)

the entire channel, including the required sensor, alarm, display, and trip functions, and shall include the CHANNEL FUNCTIONAL TEST. Calibration of instrument channels with resistance temperature detector (RTD) or thermocouple sensors may consist of an in-place 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 in-place 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 so that the entire channel is calibrated.

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 FUNCTIONAL TEST

A CHANNEL FUNCTIONAL TEST shall be:

- a. Analog and bistable channels—the injection of a simulated or actual signal into the channel as close to the sensor as practicable to verify OPERABILITY, including required alarms, interlocks, display and trip functions;
- b. Digital computer channels—the use of diagnostic programs to test digital computer hardware and the injection of simulated process data into the channel to verify OPERABILITY, including alarm and trip functions.

The CHANNEL FUNCTIONAL TEST may be performed by means of any series of sequential, overlapping, or total channel steps so that the entire channel is tested.

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BASES

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SR 3.3.11.1 (continued)

The Frequency of 31 days is based upon plant operating experience with regard to channel OPERABILITY and drift, which demonstrates that failure of more than one channel of a given Function in any 31 day interval is a rare event. The CHANNEL CHECK supplements less formal, but more frequent, checks of channel during normal operational use of the displays associated with this LCO's required channels.

SR 3.3.11.2

A CHANNEL CALIBRATION is performed every [18] months or approximately every refueling. CHANNEL CALIBRATION is a complete check of the instrument channel including the sensor. The Surveillance verifies the channel responds to the measured parameter within the necessary range and accuracy. A Note allows exclusion of neutron detectors from the CHANNEL CALIBRATION.

At this unit, CHANNEL CALIBRATION shall find measurement errors are within the following acceptance criteria:

For the Containment Area Radiation instrumentation, a CHANNEL CALIBRATION may consist of an electronic calibration of the channel, not including the detector, for range decades above 10 R/hr, and a one point calibration check of the detector below 10 R/hr with a gamma source.

Insert 1

Insert 2

The Frequency is based upon operating experience and consistency with the typical industry refueling cycle and is justified by an [18] month calibration interval for the determination of the magnitude of equipment drift.

REFERENCES

1. Plant specific document (e.g., FSAR, NRC Regulatory Guide 1.97, SER letter).
 2. Regulatory Guide 1.97.
 3. NUREG-0737, Supplement 1.
 4. NRC Safety Evaluation Report (SER).
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BASES

SURVEILLANCE
REQUIREMENTSSR 3.3.12.3 (continued)

that the channel responds to the measured parameter within the necessary range and accuracy. ←

Insert 1

The 18 month Frequency is based upon the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power.

The SR is modified by a Note, which excludes neutron detectors from the CHANNEL CALIBRATION.

SR 3.3.12.4

SR 3.3.12.4 is the performance of a CHANNEL FUNCTIONAL TEST every 18 months. This Surveillance should verify the OPERABILITY of the reactor trip circuit breaker (RTCB) open/closed indication on the remote shutdown panels by actuating the RTCBs. The Frequency of 18 months was chosen because the RTCBs cannot be exercised while the unit is at power. Operating experience has shown that these components usually pass the Surveillance when performed at a Frequency of once every 18 months. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

REFERENCES

1. 10 CFR 50, Appendix A, GDC 19, and Appendix R.
2. NRC Safety Evaluation Report (SER).

BASES

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REQUIREMENTS

SR 3.3.11.1 (continued)

which demonstrates that failure of more than one channel of a given Function in any 31 day interval is a rare event. The CHANNEL CHECK supplements less formal, but more frequent, checks of channel during normal operational use of the displays associated with this LCO's required channels.

SR 3.3.11.2

A CHANNEL CALIBRATION is performed every [18] months or approximately every refueling. CHANNEL CALIBRATION is a complete check of the instrument channel including the sensor. The Surveillance verifies the channel responds to the measured parameter within the necessary range and accuracy.

[At this unit, CHANNEL CALIBRATION shall find measurement errors are within the following acceptance criteria:]

For the Containment Area Radiation instrumentation, a CHANNEL CALIBRATION may consist of an electronic calibration of the channel, not including the detector, for range decades above 10 R/hr, and a one point calibration check of the detector below 10 R/hr with a gamma source.

Insert 1

Insert 2

The Frequency is based upon operating experience and consistency with the typical industry refueling cycle and is justified by the assumption of an [18] month calibration interval for the determination of the magnitude of equipment drift.

REFERENCES

1. [Plant specific document (e.g., FSAR, NRC Regulatory Guide 1.97, SER letter).]
 2. Regulatory Guide 1.97.
 3. NUREG-0737, Supplement 1.
 4. NRC Safety Evaluation Report (SER).
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BASES

SURVEILLANCE
REQUIREMENTS

SR 3.3.12.1 (continued)

CHANNEL CALIBRATION. Agreement criteria are determined by the plant staff, based on a combination of the channel instrument uncertainties, including indication and readability. 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. As specified in the Surveillance, a CHANNEL CHECK is only required for those channels that are normally energized.

The Frequency is based on plant operating experience that demonstrates channel failure is rare.

SR 3.3.12.2

SR 3.3.12.2 verifies that each required Remote Shutdown System transfer switch and control circuit performs its intended function. This verification is performed from the reactor shutdown panel and locally, as appropriate. Operation of the equipment from the remote shutdown panel is not necessary. The Surveillance can be satisfied by performance of a continuity check. This will ensure that if the control room becomes inaccessible, the plant can be brought to and maintained in MODE 3 from the reactor shutdown panel and the local control stations. The [18] month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience demonstrates that Remote Shutdown System control channels seldom fail to pass the Surveillance when performed at a Frequency of once every [18] months.

SR 3.3.12.3

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

Insert 1

The [18] month Frequency is based on the need to perform this Surveillance under the conditions that apply during a

(continued)

Technical Specification Task Force

Improved Standard Technical Specifications Change Traveler

Exempt RCP seal water injection or leakoff from the definition of Unidentified Leakage

NUREGs Affected: 1430 1431 1432 1433 1434

Classification: 1) Correct Specifications

Recommended for CLIIP?: (Unassigned)

Correction or Improvement: (Unassigned)

Industry Contact: Paul Infanger, (352) 563-4796, paul.infanger@pgnmail.com

Revise the definition of Unidentified Leakage from "All Leakage that is not identified leakage or controlled leakage." to "All leakage (except RCP seal water injection or leakoff) that is not identified leakage.

The exception for controlled leakage from NUREG-0123 was revised in the definition of identified leakage to an exception for "RCP seal water injection or leakoff." However, the term was retained in the definition of Unidentified Leakage. This term, Controlled Leakage, should therefore be similarly revised and included as an exception in the definition of Unidentified Leakage since it is not considered to be Leakage, and the undefined term "Controlled Leakage" should not be used.

This change is consistent with NUREG-1431.

Revision History

OG Revision 0

Revision Status: Active

Revision Proposed by: ANO-1

Revision Description:
Original Issue

Owners Group Review Information

Date Originated by OG: 24-Aug-95

Owners Group Comments:
(No Comments)

Owners Group Resolution: Approved Date: 08-Sep-95

TSTF Review Information

TSTF Received Date: 22-Sep-95 Date Distributed for Review: 03-Oct-95

OG Review Completed: BWOG WOG CEOG BWROG

TSTF Comments:

NUREG-1431 already has this change. N/A for BWRs. CEOG Accepts.

TSTF Resolution: Approved Date: 25-Nov-95

NRC Review Information

NRC Received Date: 03-Jan-96

NRC Comments:

6/11/96 - C. Grimes comment: decision on TSTF-40 to be made.

9/18/96 - no change in status

3/13/97 - Approved.

31-Jul-03

OG Revision 0

Revision Status: Active

Final Resolution: NRC Approves

Final Resolution Date: 13-Mar-97

Affected Technical Specifications

- 1.1 Definitions
 - Change Description: Definition of Leakage
-

1.1 Definitions

LEAKAGE
(continued)

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

b. Unidentified LEAKAGE

(except RCP seal water injection or leakoff)

All LEAKAGE that is not identified LEAKAGE or ~~controlled LEAKAGE~~;

c. Pressure Boundary LEAKAGE

LEAKAGE (except SG LEAKAGE) through a nonisolable fault in an RCS component body, pipe wall, or vessel wall.

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.

NUCLEAR HEAT FLUX HOT CHANNEL FACTOR $F_q(Z)$

$F_q(Z)$ shall be the maximum local linear power density in the core divided by the core average fuel rod linear power density, assuming nominal fuel pellet and fuel rod dimensions.

NUCLEAR ENTHALPY RISE HOT CHANNEL FACTOR ($F_{\Delta H}^N$)

($F_{\Delta H}^N$) shall be the ratio of the integral of linear power along the fuel rod on which minimum departure from nucleate boiling ratio occurs, to the average fuel rod power.

OPERABLE—OPERABILITY

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).

(continued)

1.1 Definitions

ENGINEERED SAFETY
FEATURE (ESF) RESPONSE
TIME
(continued)

function (i.e., the valves travel to their required positions, pump discharge pressures reach their required values, etc.). Times shall include diesel generator starting and sequence loading delays, where applicable. 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.

L_a

The maximum allowable containment leakage rate, L_a , shall be [0.25]% of containment air weight per day at the calculated peak containment pressure (P_a).

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 (SG) to the Secondary System.

b. Unidentified LEAKAGE

(except RCP seal water injection or leakoff)

All LEAKAGE that is not identified LEAKAGE;

c. Pressure Boundary LEAKAGE

LEAKAGE (except SG LEAKAGE) through a nonisolable fault in an RCS component body, pipe wall, or vessel wall.

(continued)

Technical Specification Task Force

Improved Standard Technical Specifications Change Traveler

Revise the wording of SR 3.0.2 to be consistent with the other NUREGs

NUREGs Affected: 1430 1431 1432 1433 1434

Classification: 2) Consistency/Standardization

Recommended for CLIIP?: (Unassigned)

Correction or Improvement: (Unassigned)

Industry Contact: Paul Infanger, (352) 563-4796, paul.infanger@pgnmail.com

Delete the phrase "Required Action requires performance of a surveillance or its" so that SR 3.0.2 would read: "If a Completion Time requires periodic performance on a "once per..." basis, the above Frequency extension applies to each performance after the initial performance."

The deleted phrase is unnecessary and potentially confusing. It is unnecessary since all "Once per..." basis requirements for Required Actions are in the Completion Time column. The deleted phrase is potentially confusing since it could be read to imply that the extension could only be applied if the periodic Required Action is a Surveillance. The proposed wording provides all the information that is necessary to correctly apply the extension. The proposed wording is consistent with NUREGs 1431, 1432, 1433, and 1434.

Revision History

OG Revision 0

Revision Status: Active

Revision Proposed by: ANO-1

Revision Description:
Original Issue

Owners Group Review Information

Date Originated by OG: 24-Aug-95

Owners Group Comments:
(No Comments)

Owners Group Resolution: Approved Date: 08-Sep-95

TSTF Review Information

TSTF Received Date: 22-Sep-95 Date Distributed for Review: 03-Oct-95

OG Review Completed: BWOG WOG CEOG BWROG

TSTF Comments:

N/A - WOG, CEOG, BWR/4, BWR/6

TSTF Resolution: Approved

Date: 25-Nov-95

NRC Review Information

NRC Received Date: 03-Jan-96

NRC Comments:

Date of NRC Letter: 27-Sep-96

6/11/96 - C. Grimes comment: decision not made on TSTF-42.

9/18/96 - Approved.

Final Resolution: NRC Approves

Final Resolution Date: 18-Sep-96

31-Jul-03

OG Revision 0

Revision Status: Active

Affected Technical Specifications

SR 3.0.2

SR Applicability

31-Jul-03

3.0 SURVEILLANCE REQUIREMENT (SR) APPLICABILITY

SR 3.0.1 SRs shall be met during the MODES or other specified conditions in the Applicability for individual LCOs, unless otherwise stated in the SR. Failure to meet a Surveillance, whether such failure is experienced during the performance of the Surveillance or between performances of the Surveillance, shall be failure to meet the LCO. Failure to perform a Surveillance within the specified Frequency shall be failure to meet the LCO except as provided in SR 3.0.3. Surveillances do not have to be performed on inoperable equipment or variables outside specified limits.

SR 3.0.2 The specified Frequency for each SR is met if the Surveillance is performed within 1.25 times the interval specified in the Frequency, as measured from the previous performance or as measured from the time a specified condition of the Frequency is met.

For Frequencies specified as "once," the above interval extension does not apply.

~~If a Required Action requires performance of a surveillance or its Completion Time requires periodic performance on a "once per . . ." basis, the above Frequency extension applies to each performance after the initial performance.~~

Exceptions to this Specification are stated in the individual Specifications.

SR 3.0.3 If it is discovered that a Surveillance was not performed within its specified Frequency, then compliance with the requirement to declare the LCO not met may be delayed, from the time of discovery, up to 24 hours or up to the limit of the specified Frequency, whichever is less. This delay period is permitted to allow performance of the Surveillance.

If the Surveillance is not performed within the delay period, the LCO must immediately be declared not met, and the applicable Condition(s) must be entered.

When the Surveillance is performed within the delay period and the Surveillance is not met, the LCO must immediately be

(continued)

Technical Specification Task Force Improved Standard Technical Specifications Change Traveler

Eliminate "manipulation" from the definition of Core Alteration

NUREGs Affected: 1430 1431 1432 1433 1434

Classification: 2) Consistency/Standardization

Recommended for CLIIP?: (Unassigned)

Correction or Improvement: (Unassigned)

Industry Contact: Patricia Furio, (410) 495-4374, patricia.s.furio@ccnppi.com

The words, "or manipulation" were deleted from the definition of Core Alteration.

When considering components in the Reactor Vessel such as Fuel , CEAs, or sources, it is improbable (by definition of manipulation) that fuel, CEAs or Sources could be manipulated without moving these components. Also this change would make the CE NUREG consistent with the other PWR NUREGs.

Revision History

OG Revision 0

Revision Status: Active

Revision Proposed by: Calvert Cliffs

Revision Description:
Original Issue

Owners Group Review Information

Date Originated by OG: 14-Sep-95

Owners Group Comments:
(No Comments)

Owners Group Resolution: Approved Date: 02-Oct-95

TSTF Review Information

TSTF Received Date: 27-Nov-95

Date Distributed for Review: 27-Nov-95

OG Review Completed: BWOG WOG CEOG BWROG

TSTF Comments:

WOG - Not applicable to WOG

TSTF Resolution: Approved

Date: 21-Mar-96

NRC Review Information

NRC Received Date: 25-Mar-96

NRC Comments:

Date of NRC Letter: 27-Sep-96

4/22/96 R. Tjader recommended approval. Comment: Core Alts involve movement of fuel or components and manipulation is redundant. This change will make the consistent with the other PWRs.

6/11/96 - C. Grimes comment: TSTF-47 will be referred to a Tech Br.

9/18/96 - Approved.

Final Resolution: NRC Approves

Final Resolution Date: 18-Sep-96

31-Jul-03

Affected Technical Specifications

1.1

Definition of Core Alteration

TSTF-47

1.1 Definitions (continued)

CORE ALTERATION	CORE ALTERATION shall be the movement of ^{manipulation} of any fuel, sources, or reactivity control components [excluding control element assemblies (CEAs) withdrawn into the upper guide structure], 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 current reload cycle. These cycle specific parameter limits shall be determined for each reload cycle in accordance with Specification 5.6.5. 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 III of TID-14844, AEC, 1962, "Calculation of Distance Factors for Power and Test Reactor Sites," or those listed in Table E-7 of Regulatory Guide 1.109, Rev. 1, NRC, 1977, or ICRP 30, Supplement to Part 1, page 192-212, Table titled, "Committed Dose Equivalent in Target Organs or Tissues per Intake of Unit Activity"].
E—AVERAGE DISINTEGRATION ENERGY	E shall be the average (weighted in proportion to the concentration of each radionuclide in the reactor coolant at the time of sampling) of the sum of the average beta and gamma energies per disintegration (in MeV) for isotopes, other than iodines, with half lives > [15] minutes, making up at least 95% of the total noniodine activity in the coolant.
ENGINEERED SAFETY FEATURE (ESF) RESPONSE TIME	The ESF RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its ESF actuation setpoint at the channel sensor until the ESF equipment is capable of performing its safety

(continued)

Technical Specification Task Force

Improved Standard Technical Specifications Change Traveler

Use of generic titles for utility positions

NUREGs Affected: 1430 1431 1432 1433 1434

Classification: 3) Improve Specifications

Recommended for CLIIP?: (Unassigned)

Correction or Improvement: (Unassigned)

Industry Contact: Patricia Furio, (410) 495-4374, patricia.s.furio@ccnppi.com

On November 10, 1994, the NRC responded to a request by the BWR/6 owners to change the Section 2.0 "Safety Limits" and Section 5.0 "Administrative Controls" to allow the use of generic personnel titles as provided by ANSI/ANS 3.1 in lieu of plant-specific personnel titles [Letter from C. I. Grimes (NRC) to Lee Bush (WOG), Brian Mann (CEOG), Clinton Szabo (B&WOG) and Andrew Maron (BWROG), attached]. The NRC approved that request and provided example marked pages to the Rev. 0 Improved Technical Specifications. This change was not incorporated into Revision 1 of the ITS and is being proposed as a generic change for incorporation into the ITS.

There is one difference between the NRC's proposed ITS changes and this change. The November 10, 1994 letter suggested using the bracketed phrase "a specified corporate executive position" to identify the utility corporate officer to be notified in case of a Safety Limit violation. This change proposes to use the phrase "the corporate officer with direct responsibility for the plant" (not bracketed) in lieu of inserting a plant-specific title.

The attached letter from the NRC describes the justification for the change.

Note that TSTF-05 deletes the portions of the Safety Limits affected by this change.

Revision History

OG Revision 0

Revision Status: Closed

Revision Proposed by: Calvert Cliffs

Revision Description:
Original Issue

Owners Group Review Information

Date Originated by OG: 23-Jan-96

Owners Group Comments:
(No Comments)

Owners Group Resolution: Approved Date: 24-Jan-96

TSTF Review Information

TSTF Received Date: 05-Mar-96 Date Distributed for Review: 07-Mar-96

OG Review Completed: BWOG WOG CEOG BWROG

TSTF Comments:
(No Comments)

TSTF Resolution: Approved Date: 16-Apr-96

NRC Review Information

NRC Received Date: 12-Jun-96

31-Jul-03

OG Revision 0**Revision Status: Closed**

NRC Comments:

Date of NRC Letter: 22-Sep-97

6/18/96 - recommend approval. Comment: Reviewers must be consistent in the use of brackets (Section 2.0).
Why aren't brackets used in the Bases?

6/20/96 - pkg to C. Grimes to review.

9/18/96 - no change in status

3/18/97 - no change in status

4/17/97 - C. Grimes agreed to resolve

9/22/97 - Modify to be consistent in the use of brackets in the Bases, as well as in the Specifications.

10/2/97 - TSTF provided R.1.

Final Resolution: Superseded by Revision

Final Resolution Date: 02-Oct-97

TSTF Revision 1**Revision Status: Active**

Revision Proposed by: NRC

Revision Description:

Created Rev. 1 to address NRC comments regarding the use of brackets.

TSTF Review Information

TSTF Received Date: 01-Oct-97

Date Distributed for Review: 01-Oct-97

OG Review Completed: BWOG WOG CEOG BWROG

TSTF Comments:

(No Comments)

TSTF Resolution: Approved

Date: 02-Oct-97

NRC Review Information

NRC Received Date: 02-Oct-97

NRC Comments:

10/2/97 - Reviewer recommended approval and provided to W. Beckner for disposition.

Final Resolution: NRC Approves

Final Resolution Date: 02-Dec-97

Affected Technical Specifications

5.1.1	Administrative Controls - Responsibility
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5.2.1	Administrative Controls - Onsite and Offsite Organizations
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5.2.2.d	Administrative Controls - Unit Staff
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5.2.2.e	Administrative Controls - Unit Staff
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5.2.2.f	Administrative Controls - Unit Staff
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5.5.1	Administrative Controls - Programs and Manuals
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31-Jul-03

5.7.1	Administrative Controls - High Radiation Area	
SL 2.2.6	Safety Limits	NUREG(s)- 1430 Only
SL 2.2.7	Safety Limits	NUREG(s)- 1430 Only
SL 2.2.7 Bases	Safety Limits	NUREG(s)- 1430 Only
SL 2.2.4	Safety Limits	NUREG(s)- 1431 Only
SL 2.2.4 Bases	Safety Limits	NUREG(s)- 1431 Only
SL 2.2.5	Safety Limits	NUREG(s)- 1431 Only
SL 2.2.5 Bases	Safety Limits	NUREG(s)- 1431 Only
SL Vio 2.2.4	Safety Limits (Analog)	NUREG(s)- 1432 Only
SL Vio 2.2.4	Safety Limits (Digital)	NUREG(s)- 1432 Only
SL Vio 2.2.5	Safety Limits (Analog)	NUREG(s)- 1432 Only
SL Vio 2.2.5	Safety Limits (Digital)	NUREG(s)- 1432 Only
SL Vio 2.2.5 Bases	RCS Pressure Safety Limits (Analog)	NUREG(s)- 1432 Only
SL Vio 2.2.5 Bases	RCS Pressure Safety Limits (Digital)	NUREG(s)- 1432 Only
SL Vio 2.2.5 Bases	Reactor Core Safety Limits (Analog)	NUREG(s)- 1432 Only
SL Vio 2.2.5 Bases	Reactor Core Safety Limits (Digital)	NUREG(s)- 1432 Only
SL 2.2.3	Safety Limits	NUREG(s)- 1433 1434 Only
SL 2.2.3 Bases	Safety Limits	NUREG(s)- 1433 1434 Only
SL 2.2.4	Safety Limits	NUREG(s)- 1433 1434 Only
SL 2.2.4 Bases	Safety Limits	NUREG(s)- 1433 1434 Only



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

TSTF-65 Rev 1

November 10, 1994

Mr. Lee Bush
Westinghouse Owners Group
c/o Commonwealth Edison Company
Zion Nuclear Power Station
101 Shiloh Boulevard
Zion, Illinois 60099

Mr. Brian Mann
Combustion Engineering Owners Group
c/o Baltimore Gas and Electric Company
Calvert Cliffs Nuclear Power Plant
1650 Calvert Cliffs Parkway
Lusby, Maryland 20657-4702

Mr. Clinton Szabo
Babcock & Wilcox Owners Group
c/o Entergy Operations
Arkansas Nuclear One
Route 3, Box 137G
Russelville, Arkansas 72801

Mr. Andrew Maron
BWR Owners Group
c/o Pennsylvania Power and Light
Company
Two North Ninth Street, A2-4
Allentown, Pennsylvania 18101-1179

Gentlemen:

The BWR/6 Owners recently proposed a change to Section 2.0 "Safety Limits" and Section 5.0 "Administrative Controls" of the improved STS. The proposed change would allow the use of generic personnel titles as provided by ANSI/ANS 3.1 in lieu of plant specific personnel titles. This change does not eliminate any of the qualifications, responsibilities or requirements for these positions, since the plant-specific personnel titles are currently identified in licensee controlled documents such as the Final Safety Analysis Report (FSAR) or the Quality Assurance (QA) Plan. In addition, the improved STS require that these positions meet the qualifications of Regulatory Guide (RG) 1.8 or an ANSI Standard acceptable to the NRC staff. The proposal provides a more direct link between the personnel qualifications as identified in the STS and STS-required responsibilities by utilizing the same ANSI/ANS Standard position title. With the plant-specific personnel titles specified in the TS, a utility could utilize a person meeting the ANSI/ANS Standard qualifications to fulfill the TS qualification requirements while utilizing a separate person with the TS-identified title to perform the TS-required responsibilities. This is clearly not the intent of the TS requirements. The proposal will preclude this by utilizing the same generic position title for the responsibilities as contained in the qualifications requirements by reference to ANSI/ANS Standard or RG 1.8. ←

The staff has reviewed the proposal and finds that lower case titles for all titles in the improved STS are acceptable. The titles selected by the licensee should agree with those titles in the ANSI Standard committed to in improved STS Section 5.3. The relationship between the titles in the ANSI standard and the titles used by the licensee should be described in Section 17 of the FSAR or QA Plan as appropriate. Changes to titles in the FSAR/QA Plan should be handled using normal FSAR/QA Plan change procedures (10 CFR 50.54(a)). ←

L. Bush, et al.

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November 10, 1994

Titles have been identified in improved STS Section 2.0 and 5.0. Appropriately de-capitalized and bracketed titles for the positions in improved STS Section 2.0 and 5.0 are included as Enclosures 1 through 5. In addition, a Reviewer's Note should be placed at the beginning of improved STS Chapter 5.0 detailing the use of generic titles and title changes, and Specification 5.2.1.a should be modified as shown to provide the link between the generic titles in the improved STS and the FSAR/QA Plan.

In the letter dated October 25, 1993, from W. T. Russell to the chairpersons of the NSSS Owners Groups, the NRC staff provided its review of the Administrative Controls Chapter (5.0) of the improved STS. One of the comments provided changed 5.2.2.f to require that the Operations Manager or the Assistant Operations Manager hold an "active" senior reactor operator (SRO) license. Subsequently, the Owners Groups proposed in BWO-09, change C.5 that this requirement be changed to read "active or inactive." During meetings with the BWR/6 Owners, the basis for the original staff position, the acceptability of the Owners Groups proposal, and the use of various adjectives such as active, inactive, current, and valid as they relate to NRC-licensed operators and senior operators were raised as issues.

Current ANSI Standard commitments require the Operations Manager to "hold at time of appointment..." or "Obtain and hold..." an SRO license. An individual licensed pursuant to 10 CFR Part 55 is considered to hold a license. This license can be valid, current, active or inactive.

When used to describe Part 55 licenses, valid and current are equivalent terms and simply mean that the license holder (1) has passed the NRC initial license examination, (2) is participating in and current in the facility licensee's licensed operator requalification program, and (3) has renewed or will renew the license in accordance with 10 CFR 55.57. An active license is a license that is not only current and valid, but one for which the individual has been standing the required proficiency watches of 10 CFR 55.53(e). An active license is only necessary if the individual will assume licensed operator watchstanding duties. Individuals not maintaining an active license in accordance with the requirements of 10 CFR 55.53(e) are considered to have an inactive license. An inactive license can still be current and valid.

In addition, it is necessary for the Operations Manager or Assistant Operations Manager to hold a senior operator license in order to effectively (1) interface with the day-to-day operational aspects of control room activities and (2) communicate operational issues to higher levels of plant and utility management. In order to fulfill the job requirements of the Operations Manager or Assistant Operations Manager positions, it is not necessary for these individuals to maintain the watchstanding proficiency necessary to be considered the shift supervisor or to be considered the operator at the controls.

In conclusion, stating in Section 5.2.2.f that the Operations Manager or Assistant Operations Manager holds an SRO license is sufficient. It is unnecessary to add to Section 5.2.2.f. the word "active" as proposed in the

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version sent to the Owners Groups or the Owners Groups language of "active or inactive." Further, requiring this level of operations management to hold a license is consistent with the requirements of most current TS. In some cases, current TS may specify a "valid" or "current" license of the individual in the senior operations management position. Finally, the use of "active" to describe the license status of individuals designated to assume the control room command function is correct. Enclosures 1 through 5 include proposed changes the improved STS to reflect this position.

We would appreciate your written response to the above staff positions or, if you prefer, we can meet with you to discuss this matter.

Sincerely,



Christopher I. Grimes, Chief
Technical Specifications Branch
Division of Project Support
Office of Nuclear Reactor Regulation

Enclosures: As stated (5)

cc w/enclosure:

J. Eaton, NEI
D. Hoffman, EXCEL

INSERT A

[Reviewer's Note: Titles for members of the unit staff shall be specified by use of an overall statement referencing an ANSI Standard acceptable to the NRC staff from which the titles were obtained, or an alternative title may be designated for this position. Generally, the first method is preferable; however, the second methods is adaptable to those unit staffs requiring special titles because of unique organizational structures.

The ANSI Standard shall be the same ANSI Standard referenced in Section 5.3, Unit Staff Qualifications. If alternative titles are used, all requirements of these Technical Specifications apply to the position with the alternative title as apply with the specified title. Unit staff titles shall be specified in the Final Safety Analysis Report or Quality Assurance Plan. Unit staff titles shall be maintained and revised using those procedures approved for modifying/revising the Final Safety Analysis Report or Quality Assurance Plan.]

INSERT B

including the plant-specific titles of those personnel fulfilling the responsibilities of the positions delineated in these Technical Specifications.

2.0 SLs

2.2 SL Violations (continued)

- 2.2.3 In MODE 1 or 2, if SL 2.1.2 is not met, restore compliance within limits and be in MODE 3 within 1 hour.
- 2.2.4 In MODES 3, 4, and 5, if SL 2.1.2 is not met, restore RCS pressure to \leq [2750] psig within 5 minutes.
- 2.2.5 Within 1 hour, notify the NRC Operations Center, in accordance with 10 CFR 50.72.
- 2.2.6 Within 24 hours, notify the ~~(Vice President - Nuclear Operations)~~.
- 2.2.7 Within 30 days, a Licensee Event Report (LER) shall be prepared pursuant to 10 CFR 50.73. The LER shall be submitted to the NRC and the ~~Plant Superintendent~~, and ~~Vice President - Nuclear Operations~~.
- 2.2.8 Operation of the plant shall not be resumed until authorized by the NRC.

the corporate officer with direct responsibility for the plant.

BASES

SAFETY LIMIT
VIOLATIONS

2.2.7 (continued)

management of the nuclear plant, and the utility Vice
~~President - Nuclear Operations.~~

2.2.8

*Corporate officer with direct responsibility
for the plant.*

If SL 2.1.1.1, SL 2.1.1.2, or SL 2.1.1.3 is violated, restart of the unit shall not commence until authorized by the NRC. This requirement ensures the NRC that all necessary reviews, analyses, and actions are completed before the unit begins its restart to normal operation.

REFERENCES

1. 10 CFR 50, Appendix A, GDC 10.
 2. FSAR, Section [].
 3. 10 CFR 50.72.
 4. 10 CFR 50.73.
-
-

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Rev 1

5.0 ADMINISTRATIVE CONTROLS

5.1 Responsibility

5.1.1

The ~~Plant Superintendent~~ shall be responsible for overall unit operation and shall delegate in writing the succession to this responsibility during his absence.

manager

The ~~Plant Superintendent~~ or his designee shall approve, prior to implementation, each proposed test, experiment or modification to systems or equipment that affect nuclear safety.

5.1.2

The [Shift Supervisor (SS)] shall be responsible for the control room command function. During any absence of the [SS] from the control room while the unit is in MODE 1, 2, 3, or 4, an individual with an active Senior Reactor Operator (SRO) license shall be designated to assume the control room command function. During any absence of the [SS] from the control room while the unit is in MODE 5 or 6, an individual with an active SRO license or Reactor Operator license shall be designated to assume the control room command function.

Insert A

5.0 ADMINISTRATIVE CONTROLS

5.2 Organization

5.2.1 Onsite and Offsite Organizations

Onsite and offsite organizations shall be established for unit operation and corporate management, respectively. The onsite and offsite organizations shall include the positions for activities affecting safety of the nuclear power plant.

- a. Lines of authority, responsibility, and communication shall be defined and established throughout highest management levels, intermediate levels, and all operating organization positions. These relationships shall be documented and updated, as appropriate, in organization charts, functional descriptions of departmental responsibilities and relationships, and job descriptions for key personnel positions, or in equivalent forms of documentation. These requirements shall be documented in the [FSAR];

Insert B

Manager

- b. The ~~Plant Superintendent~~ ^g shall be responsible for overall safe operation of the plant and shall have control over those onsite activities necessary for safe operation and maintenance of the plant;

QA Plan

- c. ~~The~~ ^g ~~specified corporate executive position~~ ^{officer} shall have corporate responsibility for overall plant nuclear safety and shall take any measures needed to ensure acceptable performance of the staff in operating, maintaining, and providing technical support to the plant to ensure nuclear safety; and

- d. The individuals who train the operating staff, carry out health physics, or perform quality assurance functions may report to the appropriate onsite manager; however, these individuals shall have sufficient organizational freedom to ensure their independence from operating pressures.

5.2.2 Unit Staff

The unit staff organization shall include the following:

- a. A non-licensed operator shall be assigned to each reactor containing fuel and an additional non-licensed operator

(continued)

5.2 Organization

5.2.2 Unit Staff (continued)

shall be assigned for each control room from which a reactor is operating in MODES 1, 2, 3, or 4.

Two unit sites with both units shutdown or defueled require a total of three non-licensed operators for the two units.

- b. At least one licensed Reactor Operator (RO) shall be present in the control room when fuel is in the reactor. In addition, while the unit is in MODE 1, 2, 3, or 4, at least one licensed Senior Reactor Operator (SRO) shall be present in the control room.
- c. Shift crew composition may be less than the minimum requirement of 10 CFR 50.54(m)(2)(i) and 5.2.2.a and 5.2.2.g for a period of time not to exceed 2 hours in order to accommodate unexpected absence of on-duty shift crew members provided immediate action is taken to restore the shift crew composition to within the minimum requirements.
- d. A ~~Health Physics~~ Technician shall be on site when fuel is in the reactor. The position may be vacant for not more than 2 hours, in order to provide for unexpected absence, provided immediate action is taken to fill the required position.

radiation protection

- e. Administrative procedures shall be developed and implemented to limit the working hours of unit staff who perform safety related functions (e.g., licensed SROs, licensed ROs, health physicists, auxiliary operators, and key maintenance personnel).

Adequate shift coverage shall be maintained without routine heavy use of overtime. The objective shall be to have operating personnel work an [8 or 12] hour day, nominal 40 hour week while the unit is operating. However, in the event that unforeseen problems require substantial amounts of overtime to be used, or during extended periods of shutdown for refueling, major maintenance, or major plant modification, on a temporary basis the following guidelines shall be followed:

(continued)

5.2 Organization

5.2.2 Unit Staff (continued)

1. An individual should not be permitted to work more than 16 hours straight, excluding shift turnover time;
2. An individual should not be permitted to work more than 16 hours in any 24 hour period, nor more than 24 hours in any 48 hour period, nor more than 72 hours in any 7 day period, all excluding shift turnover time;
3. A break of at least 8 hours should be allowed between work periods, including shift turnover time;
4. Except during extended shutdown periods, the use of overtime should be considered on an individual basis and not for the entire staff on a shift.

Any deviation from the above guidelines shall be authorized in advance by the ^{Manager} ~~Plant Superintendent~~ or his designee, in accordance with approved administrative procedures, or by higher levels of management, in accordance with established procedures and with documentation of the basis for granting the deviation.

Controls shall be included in the procedures such that individual overtime shall be reviewed monthly by the ^{Manager} ~~Plant Superintendent~~ or his designee to ensure that excessive hours have not been assigned. Routine deviation from the above guidelines is not authorized.

OR

The amount of overtime worked by unit staff members performing safety related functions shall be limited and controlled in accordance with the NRC Policy Statement on working hours (Generic Letter 82-12).

- f. The ^g ~~Operations Manager~~ or ~~Assistant Operations Manager~~ shall hold an SRO license.
- g. The Shift Technical Advisor (STA) shall provide advisory technical support to the Shift Supervisor (SS) in the areas of thermal hydraulics, reactor engineering, and plant analysis with regard to the safe operation of the unit. In addition, the STA shall meet the qualifications specified by the Commission Policy Statement on Engineering Expertise on Shift.

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5.0 ADMINISTRATIVE CONTROLS

5.5 Programs and Manuals

The following programs shall be established, implemented, and maintained.

5.5.1 Offsite Dose Calculation Manual (ODCM)

- a. The ODCM shall contain the methodology and parameters used in the calculation of offsite doses resulting from radioactive gaseous and liquid effluents, in the calculation of gaseous and liquid effluent monitoring alarm and trip setpoints, and in the conduct of the radiological environmental monitoring program; and
- b. The ODCM shall also contain the radioactive effluent controls and radiological environmental monitoring activities, and descriptions of the information that should be included in the Annual Radiological Environmental Operating, and Radioactive Effluent Release Reports required by Specification [5.6.2] and Specification [5.6.3].

Licensee initiated changes to the ODCM:

- a. Shall be documented and records of reviews performed shall be retained. This documentation shall contain:
 1. sufficient information to support the change(s) together with the appropriate analyses or evaluations justifying the change(s), and
 2. a determination that the change(s) maintain the levels of radioactive effluent control required by 10 CFR 20.1302, 40 CFR 190, 10 CFR 50.36a, and 10 CFR 50, Appendix I, and not adversely impact the accuracy or reliability of effluent, dose, or setpoint calculations;
- b. Shall become effective after the approval of the ~~Plant Superintendent~~ ^{Plant}  and ; and
- c. Shall be submitted to the NRC in the form of a complete, legible copy of the entire ODCM as a part of or concurrent with the Radioactive Effluent Release Report for the period of the report in which any change in the ODCM was made. Each change shall be identified by markings in the margin of the affected pages, clearly indicating the area of the

(continued)

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5.0 ADMINISTRATIVE CONTROLS

[5.7 High Radiation Area]

5.7.1

radiation
protection

Pursuant to 10 CFR 20, paragraph 20.1601(c), in lieu of the requirements of 10 CFR 20.1601, each high radiation area, as defined in 10 CFR 20, in which the intensity of radiation is > 100 mrem/hr but < 1000 mrem/hr, shall be barricaded and conspicuously posted as a high radiation area and entrance thereto shall be controlled by requiring issuance of a Radiation Work Permit (RWP). Individuals qualified in radiation protection procedures (e.g., ~~Health Physics Technicians~~) or personnel continuously escorted by such individuals may be exempt from the RWP issuance requirement during the performance of their assigned duties in high radiation areas with exposure rates ≤ 1000 mrem/hr, provided they are otherwise following plant radiation protection procedures for entry into such high radiation areas.

Any individual or group of individuals permitted to enter such areas shall be provided with or accompanied by one or more of the following:

- a. A radiation monitoring device that continuously indicates the radiation dose rate in the area.
- b. A radiation monitoring device that continuously integrates the radiation dose rate in the area and alarms when a preset integrated dose is received. Entry into such areas with this monitoring device may be made after the dose rate levels in the area have been established and personnel are aware of them.
- c. An individual qualified in radiation protection procedures with a radiation dose rate monitoring device, who is responsible for providing positive control over the activities within the area and shall perform periodic radiation surveillance at the frequency specified by the ~~Radiation Protection Manager~~ in the RWP.

5.7.2

In addition to the requirements of Specification 5.7.1, areas with radiation levels ≥ 1000 mrem/hr shall be provided with locked or continuously guarded doors to prevent unauthorized entry and the keys shall be maintained under the administrative control of the Shift Foreman on duty or health physics supervision. Doors shall remain locked except during periods of access by personnel

(continued)

2.0 SAFETY LIMITS (SLs)

2.1 SLs

2.1.1 Reactor Core SLs

In MODES 1 and 2, the combination of THERMAL POWER, Reactor Coolant System (RCS) highest loop average temperature, and pressurizer pressure shall not exceed the SLs specified in Figure 2.1.1-1.

2.1.2 RCS Pressure SL

In MODES 1, 2, 3, 4, and 5, the RCS pressure shall be maintained \leq [2735] psig.

2.2 SL Violations

2.2.1 If SL 2.1.1 is violated, restore compliance and be in MODE 3 within 1 hour.

2.2.2 If SL 2.1.2 is violated: _

2.2.2.1 In MODE 1 or 2, restore compliance and be in MODE 3 within 1 hour.

2.2.2.2 In MODE 3, 4, or 5, restore compliance within 5 minutes.

2.2.3 Within 1 hour, notify the NRC Operations Center, in accordance with 10 CFR 50.72.

2.2.4 Within 24 hours, notify the ^{of} Plant ^{manager} Superintendent and Vice President - Nuclear Operations.

2.2.5 Within 30 days a Licensee Event Report (LER) shall be prepared pursuant to 10 CFR 50.73. The LER shall be submitted to the NRC, the [offsite review function], and the Plant Superintendent, and Vice President - Nuclear Operations. ^{ie} ^{Manager}

2.2.6 Operation of the unit shall not be resumed until authorized by the NRC.

the corporate officer with direct responsibility for the plant

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BASES

APPLICABILITY
(continued)

5, and 6, Applicability is not required since the reactor is not generating significant THERMAL POWER.

SAFETY LIMIT
VIOLATIONS

The following SL violation responses are applicable to the reactor core SLs.

2.2.1

If SL 2.1.1 is violated, the requirement to go to MODE 3 places the unit in a MODE in which this SL is not applicable.

The allowed Completion Time of 1 hour recognizes the importance of bringing the unit to a MODE of operation where this SL is not applicable, and reduces the probability of fuel damage.

2.2.3

If SL 2.1.1 is violated, the NRC Operations Center must be notified within 1 hour, in accordance with 10 CFR 50.72 (Ref. 5).

2.2.4

If SL 2.1.1 is violated, the ~~Plant Superintendent~~ ^{Manager} and the ~~Vice President - Nuclear Operations~~ shall be notified within 24 hours. This 24 hour period provides time for the plant operators and staff to take the appropriate immediate action and assess the condition of the unit before reporting to senior management.

2.2.5

If SL 2.1.1 is violated, a Licensee Event Report shall be prepared and submitted within 30 days to the NRC in accordance with 10 CFR 50.73 (Ref. 6). A copy of the report shall also be provided to the ~~Plant Superintendent~~ ^{Manager} and the ~~Vice President - Nuclear Operations~~.

Corporate officer with direct responsibility for the plant

(continued)

5.0 ADMINISTRATIVE CONTROLS

5.1 Responsibility

5.1.1 The ~~Plant Superintendent~~ shall be responsible for overall unit operation and shall delegate in writing the succession to this responsibility during his absence.

Manager

The ~~Plant Superintendent~~ or his designee shall approve, prior to implementation, each proposed test, experiment or modification to systems or equipment that affect nuclear safety.

5.1.2 The [Shift Supervisor (SS)] shall be responsible for the control room command function. During any absence of the [SS] from the control room while the unit is in MODE 1, 2, 3, or 4, an individual with an active Senior Reactor Operator (SRO) license shall be designated to assume the control room command function. During any absence of the [SS] from the control room while the unit is in MODE 5 or 6, an individual with an active SRO license or Reactor Operator license shall be designated to assume the control room command function.

Insert A

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5.0 ADMINISTRATIVE CONTROLS

5.2 Organization

5.2.1 Onsite and Offsite Organizations

Onsite and offsite organizations shall be established for unit operation and corporate management, respectively. The onsite and offsite organizations shall include the positions for activities affecting safety of the nuclear power plant.

- a. Lines of authority, responsibility, and communication shall be defined and established throughout highest management levels, intermediate levels, and all operating organization positions. These relationships shall be documented and updated, as appropriate, in organization charts, functional descriptions of departmental responsibilities and relationships, and job descriptions for key personnel positions, or in equivalent forms of documentation. These requirements shall be documented in the [FSAR];

Insert B

ICDA Plan

- b. The ^{manager} ~~Plant Superintendent~~ shall be responsible for overall safe operation of the plant and shall have control over those onsite activities necessary for safe operation and maintenance of the plant;
- c. The ^{officer} ~~specified corporate executive position~~ shall have corporate responsibility for overall plant nuclear safety and shall take any measures needed to ensure acceptable performance of the staff in operating, maintaining, and providing technical support to the plant to ensure nuclear safety; and
- d. The individuals who train the operating staff, carry out health physics, or perform quality assurance functions may report to the appropriate onsite manager; however, these individuals shall have sufficient organizational freedom to ensure their independence from operating pressures.

5.2.2 Unit Staff

The unit staff organization shall include the following:

- a. A non-licensed operator shall be assigned to each reactor containing fuel and an additional non-licensed operator

(continued)

5.2 Organization

5.2.2 Unit Staff (continued)

shall be assigned for each control room from which a reactor is operating in MODES 1, 2, 3, or 4.

Two unit sites with both units shutdown or defueled require a total of three non-licensed operators for the two units.

b. At least one licensed Reactor Operator (RO) shall be present in the control room when fuel is in the reactor. In addition, while the unit is in MODE 1, 2, 3, or 4, at least one licensed Senior Reactor Operator (SRO) shall be present in the control room.

c. Shift crew composition may be less than the minimum requirement of 10 CFR 50.54(m)(2)(i) and 5.2.2.a and 5.2.2.g for a period of time not to exceed 2 hours in order to accommodate unexpected absence of on-duty shift crew members provided immediate action is taken to restore the shift crew composition to within the minimum requirements.

d. A ~~Health Physicist~~ Technician shall be on site when fuel is in the reactor. The position may be vacant for not more than 2 hours, in order to provide for unexpected absence, provided immediate action is taken to fill the required position.

e. Administrative procedures shall be developed and implemented to limit the working hours of unit staff who perform safety related functions (e.g., licensed SROs, licensed ROs, health physicists, auxiliary operators, and key maintenance personnel).

Adequate shift coverage shall be maintained without routine heavy use of overtime. The objective shall be to have operating personnel work an [8 or 12] hour day, nominal 40 hour week while the unit is operating. However, in the event that unforeseen problems require substantial amounts of overtime to be used, or during extended periods of shutdown for refueling, major maintenance, or major plant modification, on a temporary basis the following guidelines shall be followed:

1. An individual should not be permitted to work more than 16 hours straight, excluding shift turnover time;

(continued)

5.2 Organization

5.2.2 Unit Staff (continued)

2. An individual should not be permitted to work more than 16 hours in any 24 hour period, nor more than 24 hours in any 48 hour period, nor more than 72 hours in any 7 day period, all excluding shift turnover time;
3. A break of at least 8 hours should be allowed between work periods, including shift turnover time;
4. Except during extended shutdown periods, the use of overtime should be considered on an individual basis and not for the entire staff on a shift.

Any deviation from the above guidelines shall be authorized in advance by the ~~Plant Superintendent~~ ^{Manager} or his designee, in accordance with approved administrative procedures, or by higher levels of management, in accordance with established procedures and with documentation of the basis for granting the deviation.

Controls shall be included in the procedures such that individual overtime shall be reviewed monthly by the ~~Plant Superintendent~~ ^{Manager} or his designee to ensure that excessive hours have not been assigned. Routine deviation from the above guidelines is not authorized.

OR

The amount of overtime worked by unit staff members performing safety related functions shall be limited and controlled in accordance with the NRC Policy Statement on working hours (Generic Letter 82-12).

- f. The ~~Operations Manager~~ or ~~Assistant Operations Manager~~ shall hold an SRO license.
- g. The Shift Technical Advisor (STA) shall provide advisory technical support to the Shift Supervisor (SS) in the areas of thermal hydraulics, reactor engineering, and plant analysis with regard to the safe operation of the unit. In addition, the STA shall meet the qualifications specified by the Commission Policy Statement on Engineering Expertise on Shift.

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5.0 ADMINISTRATIVE CONTROLS

5.5 Programs and Manuals

The following programs shall be established, implemented, and maintained.

5.5.1 Offsite Dose Calculation Manual (ODCM)

- a. The ODCM shall contain the methodology and parameters used in the calculation of offsite doses resulting from radioactive gaseous and liquid effluents, in the calculation of gaseous and liquid effluent monitoring alarm and trip setpoints, and in the conduct of the radiological environmental monitoring program; and
- b. The ODCM shall also contain the radioactive effluent controls and radiological environmental monitoring activities, and descriptions of the information that should be included in the Annual Radiological Environmental Operating, and Radioactive Effluent Release Reports required by Specification [5.6.2] and Specification [5.6.3].

Licensee initiated changes to the ODCM:

- a. Shall be documented and records of reviews performed shall be retained. This documentation shall contain:
 - 1. sufficient information to support the change(s) together with the appropriate analyses or evaluations justifying the change(s), and
 - 2. a determination that the change(s) maintain the levels of radioactive effluent control required by 10 CFR 20.1302, 40 CFR 190, 10 CFR 50.36a, and 10 CFR 50, Appendix I, and not adversely impact the accuracy or reliability of effluent, dose, or setpoint calculations;
- b. Shall become effective after the approval of the ~~Plant~~ ^g ~~Superintendent~~; and
- c. Shall be submitted to the NRC in the form of a complete, legible copy of the entire ODCM as a part of or concurrent with the Radioactive Effluent Release Report for the period of the report in which any change in the ODCM was made. Each change shall be identified by markings in the margin of the affected pages, clearly indicating the area of the

Manager →

(continued)

5.0 ADMINISTRATIVE CONTROLS

[5.7 High Radiation Area]

5.7.1 Pursuant to 10 CFR 20, paragraph 20.1601(c), in lieu of the requirements of 10 CFR 20.1601, each high radiation area, as defined in 10 CFR 20, in which the intensity of radiation is > 100 mrem/hr but < 1000 mrem/hr, shall be barricaded and conspicuously posted as a high radiation area and entrance thereto shall be controlled by requiring issuance of a Radiation Work Permit (RWP). Individuals qualified in radiation protection procedures (e.g., ~~Health Physics Technicians~~) or personnel continuously escorted by such individuals may be exempt from the RWP issuance requirement during the performance of their assigned duties in high radiation areas with exposure rates ≤ 1000 mrem/hr, provided they are otherwise following plant radiation protection procedures for entry into such high radiation areas.

radiation protection

Any individual or group of individuals permitted to enter such areas shall be provided with or accompanied by one or more of the following:

- a. A radiation monitoring device that continuously indicates the radiation dose rate in the area.
- b. A radiation monitoring device that continuously integrates the radiation dose rate in the area and alarms when a preset integrated dose is received. Entry into such areas with this monitoring device may be made after the dose rate levels in the area have been established and personnel are aware of them.
- c. An individual qualified in radiation protection procedures with a radiation dose rate monitoring device, who is responsible for providing positive control over the activities within the area and shall perform periodic radiation surveillance at the frequency specified by the ~~Radiation Protection Manager~~ in the RWP.

5.7.2 In addition to the requirements of Specification 5.7.1, areas with radiation levels ≥ 1000 mrem/hr shall be provided with locked or continuously guarded doors to prevent unauthorized entry and the keys shall be maintained under the administrative control of the Shift Foreman on duty or health physics supervision. Doors shall remain locked except during periods of access by personnel under an approved RWP that shall specify the dose rate levels in

(continued)

2.0 SAFETY LIMITS (SLs) (Analog)

2.1 SLs

2.1.1 Reactor Core SLs

In MODES 1 and 2, the combination of THERMAL POWER, pressurizer pressure, and the highest operating loop cold leg coolant temperature shall not exceed the limits shown in Figure 2.1.1-1.

2.1.2 Reactor Coolant System (RCS) Pressure SL

In MODES 1, 2, 3, 4, and 5, the RCS pressure shall be maintained \leq [2750] psia.

2.2 SL Violations

2.2.1 If SL 2.1.1 is violated, restore compliance and be in MODE 3 within 1 hour.

2.2.2 If SL 2.1.2 is violated:

2.2.2.1 In MODE 1 or 2, restore compliance and be in MODE 3 within 1 hour.

2.2.2.2 In MODE 3, 4, or 5, restore compliance within 5 minutes.

2.2.3 Within 1 hour, notify the NRC Operations Center, in accordance with 10 CFR 50.72.

2.2.4 Within 24 hours, notify the Plant ~~Superintendent~~ and ~~Vice President Nuclear Operations~~. *Manager*

2.2.5 Within ~~30~~ days, a Licensee Event Report (LER) shall be prepared pursuant to 10 CFR 50.73. The LER shall be submitted to the NRC and the Plant ~~Superintendent~~ and ~~Vice President Nuclear Operations~~. *Manager*

2.2.6 Operation of the unit shall not be resumed until authorized by the NRC.

the corporate officer with direct responsibility for the plant

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BASES

SAFETY LIMIT
VIOLATIONS
(continued)

2.2.1

If SL 2.1.1 is violated, the requirement to go to MODE 3 places the unit in a MODE in which this SL is not applicable.

The allowed Completion Time of 1 hour recognizes the importance of bringing the unit to a MODE of operation where this SL is not applicable and reduces the probability of fuel damage.

2.2.3

If SL 2.1.1 is violated, the NRC Operations Center must be notified within 1 hour, in accordance with 10 CFR 50.72 (Ref. 3).

2.2.4

If SL 2.1.1 is violated, the appropriate senior management of the nuclear plant and the utility shall be notified within 24 hours. This 24 hour period provides time for the plant operators and staff to take the appropriate immediate action and assess the condition of the unit before reporting to senior management.

2.2.5

If SL 2.1.1 is violated, a Licensee Event Report shall be prepared and submitted within 30 days to the NRC in accordance with 10 CFR 50.73 (Ref. 4). A copy of the report shall also be provided to the senior management of the nuclear plant, and the utility Vice President - Nuclear Operations.

2.2.6

If SL 2.1.1 is violated, restart of the unit shall not commence until authorized by the NRC. This requirement ensures the NRC that all necessary reviews, analyses, and

Corporate officer with direct responsibility for the plant

(continued)

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BASES (continued)

SAFETY LIMIT
VIOLATIONS

2.2.2.2 (continued)

compound the problem by adding thermal gradient stresses to the existing pressure stress.

2.2.3

If the RCS pressure SL is violated, the NRC Operations Center must be notified within 1 hour, in accordance with 10 CFR 50.72 (Ref. 7).

2.2.4

If the RCS pressure SL is violated, the appropriate senior management of the nuclear plant and the utility shall be notified within 24 hours. This 24 hour period provides time for the plant operators and staff to take the appropriate immediate action and to assess the condition of the unit before reporting to senior management.

2.2.5

If the RCS pressure SL is violated, a Licensee Event Report shall be prepared and submitted within 30 days to the NRC in accordance with 10 CFR 50.73 (Ref. 8). A copy of the report shall also be provided to the senior management of the nuclear plant, and the utility Vice President Nuclear Operations.

2.2.6

If the RCS pressure SL is violated, restart of the unit shall not commence until authorized by the NRC. This requirement ensures the NRC that all necessary reviews, analyses, and actions are completed before the unit begins its restart to normal operation.

corporate officer with direct responsibility for the plant

(continued)

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2.0 SAFETY LIMITS (SLs) (Digital)

2.1 SLs

2.1.1 Reactor Core SLs

2.1.1.1 In MODES 1 and 2, departure from nucleate boiling ratio (DNBR) shall be maintained at $\geq [1.19]$.

2.1.1.2 In MODES 1 and 2, the peak linear heat rate (LHR) (adjusted for fuel rod dynamics) shall be maintained at $\leq [21.0]$ kW/ft.

2.1.2 Reactor Coolant System (RCS) Pressure SL

In MODES 1, 2, 3, 4, and 5, the RCS pressure shall be maintained at $\leq [2750]$ psia.

2.2 SL Violations

2.2.1 If SL 2.1.1.1 or SL 2.1.1.2 is violated, restore compliance and be in MODE 3 within 1 hour.

2.2.2 If SL 2.1.2 is violated:

2.2.2.1 In MODE 1 or 2, restore compliance and be in MODE 3 within 1 hour.

2.2.2.2 In MODE 3, 4, or 5, restore compliance within 5 minutes.

2.2.3 Within 1 hour, notify the NRC Operations Center, in accordance with 10 CFR 50.72.

2.2.4 Within 24 hours, notify the ~~Plant Superintendent~~ and ~~Vice President Nuclear Operations~~.

2.2.5 Within 30 days of the violation, a Licensee Event Report (LER) shall be prepared pursuant to 10 CFR 50.73. The LER shall be submitted to the NRC and the ~~Plant Superintendent~~ and ~~Vice President Nuclear Operations~~.

the corporate officer with direct responsibility for the plant

Manager

Manager

(continued)

Reactor Core SLs (Digital)
B 2.1.1

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BASES

SAFETY LIMIT VIOLATIONS

2.2.5 (continued)

report shall also be provided to the senior management of the nuclear plant, and the utility Vice President - Nuclear Operations.

2.2.6

If SL 2.1.1.1 or SL 2.1.1.2 is violated, restart of the unit shall not commence until authorized by the NRC. This requirement ensures the NRC that all necessary reviews, analyses, and actions are completed before the unit begins its restart to normal operation.

REFERENCES

1. 10 CFR 50, Appendix A, GDC 10, 1988.
 2. FSAR, Section [].
 3. 10 CFR 50.72.
 4. 10 CFR 50.73.
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corporate officer with direct responsibility for the plant

RCS Pressure SL (Digital)
B 2.1.2TSTF-65
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BASES

SAFETY LIMIT
VIOLATIONS2.2.2.2 (continued)

compound the problem by adding thermal gradient stresses to the existing pressure stress.

2.2.3

If the RCS pressure SL is violated, the NRC Operations Center must be notified within 1 hour, in accordance with 10 CFR 50.72 (Ref. 7).

2.2.4

If the RCS pressure SL is violated, the appropriate senior management of the nuclear plant and the utility shall be notified within 24 hours. This 24 hour period provides time for the plant operators and staff to take the appropriate immediate action and to assess the condition of the unit before reporting to the senior management.

2.2.5

If the RCS pressure SL is violated, a Licensee Event Report shall be prepared and submitted within 30 days to the NRC in accordance with 10 CFR 50.73 (Ref. 8). A copy of the report shall also be provided to the senior management of the nuclear plant, and the utility Vice President - Nuclear Operations.

2.2.6

If the RCS pressure SL is violated, restart of the unit shall not commence until authorized by the NRC. This requirement ensures the NRC that all necessary reviews, analyses, and actions are completed before the unit begins its restart to normal operation.

Corporate officer with direct responsibility for the plant.

(continued)

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5.0 ADMINISTRATIVE CONTROLS

5.1 Responsibility

5.1.1

The ~~[Plant Superintendent]~~ shall be responsible for overall unit operation and shall delegate in writing the succession to this responsibility during his absence.

Manager

The ~~[Plant Superintendent]~~ or his designee shall approve, prior to implementation, each proposed test, experiment or modification to systems or equipment that affect nuclear safety.

5.1.2

The [Shift Supervisor (SS)] shall be responsible for the control room command function. During any absence of the [SS] from the control room while the unit is in MODE 1, 2, 3, or 4, an individual with an active Senior Reactor Operator (SRO) license shall be designated to assume the control room command function. During any absence of the [SS] from the control room while the unit is in MODE 5 or 6, an individual with an active SRO license or Reactor Operator license shall be designated to assume the control room command function.

Insert A

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5.0 ADMINISTRATIVE CONTROLS

5.2 Organization

5.2.1 Onsite and Offsite Organizations

Onsite and offsite organizations shall be established for unit operation and corporate management, respectively. The onsite and offsite organizations shall include the positions for activities affecting safety of the nuclear power plant.

a. Lines of authority, responsibility, and communication shall be defined and established throughout highest management levels, intermediate levels, and all operating organization positions. These relationships shall be documented and updated, as appropriate, in organization charts, functional descriptions of departmental responsibilities and relationships, and job descriptions for key personnel positions, or in equivalent forms of documentation. These requirements shall be documented in the [FSAR];

Insert B

Manager

IQA Plan

b. The ~~Plant Superintendent~~ shall be responsible for overall safe operation of the plant and shall have control over those onsite activities necessary for safe operation and maintenance of the plant;

c. ~~The~~ ^{officer} specified corporate ~~executive position~~ shall have corporate responsibility for overall plant nuclear safety and shall take any measures needed to ensure acceptable performance of the staff in operating, maintaining, and providing technical support to the plant to ensure nuclear safety; and

d. The individuals who train the operating staff, carry out health physics, or perform quality assurance functions may report to the appropriate onsite manager; however, these individuals shall have sufficient organizational freedom to ensure their independence from operating pressures.

5.2.2 Unit Staff

The unit staff organization shall include the following:

a. A non-licensed operator shall be assigned to each reactor containing fuel and an additional non-licensed operator

(continued)

5.2 Organization

5.2.2 Unit Staff (continued)

shall be assigned for each control room from which a reactor is operating in MODES 1, 2, 3, or 4.

Two unit sites with both units shutdown or defueled require a total of three non-licensed operators for the two units.

- b. At least one licensed Reactor Operator (RO) shall be present in the control room when fuel is in the reactor. In addition, while the unit is in MODE 1, 2, 3, or 4, at least one licensed Senior Reactor Operator (SRO) shall be present in the control room.
- c. Shift crew composition may be less than the minimum requirement of 10 CFR 50.54(m)(2)(i) and 5.2.2.a and 5.2.2.g for a period of time not to exceed 2 hours in order to accommodate unexpected absence of on-duty shift crew members provided immediate action is taken to restore the shift crew composition to within the minimum requirements.

radiation protection

- d. A ~~Health Physics Technician~~ shall be on site when fuel is in the reactor. The position may be vacant for not more than 2 hours, in order to provide for unexpected absence, provided immediate action is taken to fill the required position.

- e. Administrative procedures shall be developed and implemented to limit the working hours of unit staff who perform safety related functions (e.g., licensed SROs, licensed ROs, health physicists, auxiliary operators, and key maintenance personnel).

Adequate shift coverage shall be maintained without routine heavy use of overtime. The objective shall be to have operating personnel work an [8 or 12] hour day, nominal 40 hour week while the unit is operating. However, in the event that unforeseen problems require substantial amounts of overtime to be used, or during extended periods of shutdown for refueling, major maintenance, or major plant modification, on a temporary basis the following guidelines shall be followed:
 - 1. An individual should not be permitted to work more than 16 hours straight, excluding shift turnover time;

(continued)

5.2 Organization

5.2.2 Unit Staff (continued)

2. An individual should not be permitted to work more than 16 hours in any 24 hour period, nor more than 24 hours in any 48 hour period, nor more than 72 hours in any 7 day period, all excluding shift turnover time;
3. A break of at least 8 hours should be allowed between work periods, including shift turnover time;
4. Except during extended shutdown periods, the use of overtime should be considered on an individual basis and not for the entire staff on a shift.

Any deviation from the above guidelines shall be authorized in advance by the ~~Plant Superintendent~~ ^{Manager} or his designee, in accordance with approved administrative procedures, or by higher levels of management, in accordance with established procedures and with documentation of the basis for granting the deviation.

Controls shall be included in the procedures such that individual overtime shall be reviewed monthly by the ~~Plant Superintendent~~ ^{Manager} or his designee to ensure that excessive hours have not been assigned. Routine deviation from the above guidelines is not authorized.

OR

The amount of overtime worked by unit staff members performing safety related functions shall be limited and controlled in accordance with the NRC Policy Statement on working hours (Generic Letter 82-12).

- f. The ~~Operations Manager or Assistant Operations Manager~~ shall hold an SRO license.
- g. The Shift Technical Advisor (STA) shall provide advisory technical support to the Shift Supervisor (SS) in the areas of thermal hydraulics, reactor engineering, and plant analysis with regard to the safe operation of the unit. In addition, the STA shall meet the qualifications specified by the Commission Policy Statement on Engineering Expertise on Shift.

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5.0 ADMINISTRATIVE CONTROLS

5.5 Programs and Manuals

The following programs shall be established, implemented, and maintained.

5.5.1 Offsite Dose Calculation Manual (ODCM)

- a. The ODCM shall contain the methodology and parameters used in the calculation of offsite doses resulting from radioactive gaseous and liquid effluents, in the calculation of gaseous and liquid effluent monitoring alarm and trip setpoints, and in the conduct of the radiological environmental monitoring program; and
- b. The ODCM shall also contain the radioactive effluent controls and radiological environmental monitoring activities and descriptions of the information that should be included in the Annual Radiological Environmental Operating, and Radioactive Effluent Release Reports required by Specification [5.6.2.] and Specification [5.6.3].

Licensee initiated changes to the ODCM:

- a. Shall be documented and records of reviews performed shall be retained. This documentation shall contain:
 - 1. Sufficient information to support the change(s) together with the appropriate analyses or evaluations justifying the change(s),
 - 2. A determination that the change(s) maintain the levels of radioactive effluent control required by 10 CFR 20.1302, 40 CFR 190, 10 CFR 50.36a, and 10 CFR 50, Appendix I, and not adversely impact the accuracy or reliability of effluent, dose, or setpoint calculations;
- b. Shall become effective after the approval of the Plant ~~Superintendent~~; and
- c. Shall be submitted to the NRC in the form of a complete, legible copy of the entire ODCM as a part of or concurrent with the Radioactive Effluent Release Report for the period of the report in which any change in the ODCM was made. Each change shall be identified by markings in the margin of

manager →

Plant

(continued)

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5.0 ADMINISTRATIVE CONTROLS

[5.7 High Radiation Area]

5.7.1 Pursuant to 10 CFR 20, paragraph 20.1601(c), in lieu of the requirements of 10 CFR 20.1601, each high radiation area, as defined in 10 CFR 20, in which the intensity of radiation is > 100 mrem/hr but < 1000 mrem/hr, shall be barricaded and conspicuously posted as a high radiation area and entrance thereto shall be controlled by requiring issuance of a Radiation Work Permit (RWP). Individuals qualified in radiation protection procedures (e.g., ~~Health Physics Technicians~~) or personnel continuously escorted by such individuals may be exempt from the RWP issuance requirement during the performance of their assigned duties in high radiation areas with exposure rates ≤ 1000 mrem/hr, provided they are otherwise following plant radiation protection procedures for entry into such high radiation areas.

radiation protection

Any individual or group of individuals permitted to enter such areas shall be provided with or accompanied by one or more of the following:

- a. A radiation monitoring device that continuously indicates the radiation dose rate in the area.
- b. A radiation monitoring device that continuously integrates the radiation dose rate in the area and alarms when a preset integrated dose is received. Entry into such areas with this monitoring device may be made after the dose rate levels in the area have been established and personnel are aware of them.
- c. An individual qualified in radiation protection procedures with a radiation dose rate monitoring device, who is responsible for providing positive control over the activities within the area and shall perform periodic radiation surveillance at the frequency specified by the ~~Radiation Protection Manager~~ in the RWP.

5.7.2 In addition to the requirements of Specification 5.7.1, areas with radiation levels ≥ 1000 mrem/hr shall be provided with locked or continuously guarded doors to prevent unauthorized entry and the keys shall be maintained under the administrative control of the Shift Foreman on duty or health physics supervision. Doors shall remain locked except during periods of access by personnel

(continued)

2.0 SAFETY LIMITS (SLs)

2.1 SLs

2.1.1 Reactor Core SLs

2.1.1.1 With the reactor steam dome pressure < 785 psig or core flow < 10% rated core flow:

THERMAL POWER shall be \leq 25% RTP.

2.1.1.2 With the reactor steam dome pressure \geq 785 psig and core flow \geq 10% rated core flow:

MCPR shall be \geq [1.07] for two recirculation loop operation or \geq [1.08] for single recirculation loop operation.

2.1.1.3 Reactor vessel water level shall be greater than the top of active irradiated fuel.

2.1.2 Reactor Coolant System Pressure SL

Reactor steam dome pressure shall be \leq 1325 psig.

2.2 SL Violations

With any SL violation, the following actions shall be completed:

2.2.1 Within 1 hour, notify the NRC Operations Center, in accordance with 10 CFR 50.72.

2.2.2 Within 2 hours:

2.2.2.1 Restore compliance with all SLs; and

2.2.2.2 Insert all insertable control rods.

2.2.3 Within 24 hours, notify the ~~General Manager, Nuclear Plant~~ and ~~Vice President, Nuclear Operations~~ ^{plant}

the corporate officer with direct responsibility for the plant.

(continued)

2.0 SLs

2.2 SL Violations (continued)

2.2.4 Within 30 days, a Licensee Event Report (LER) shall be prepared pursuant to 10 CFR 50.73. The LER shall be submitted to the NRC and the ~~General Manager - Nuclear Plant~~ and ~~Vice President - Nuclear Operations~~.

plant

2.2.5 Operation of the unit shall not be resumed until authorized by the NRC.

the corporate officer with direct responsibility for the plant.

BASES

SAFETY LIMIT
VIOLATIONS
(continued)

2.2.3

If any SL is violated, the senior management of the nuclear plant and the ~~Utility Vice President - Nuclear Operations~~ shall be notified within 24 hours. The 24 hour period provides time for plant operators and staff to take the appropriate immediate action and assess the condition of the unit before reporting to the appropriate utility management.

2.2.4

If any SL is violated, a Licensee Event Report shall be prepared and submitted within 30 days to the NRC in accordance with 10 CFR 50.73 (ref. 6). A copy of the report shall also be provided to the senior management of the nuclear plant and the ~~Utility Vice President - Nuclear Operations~~.

2.2.5

If any SL is violated, restart of the unit shall not commence until authorized by the NRC. This requirement ensures the NRC that all necessary reviews, analyses, and actions are completed before the unit begins its restart to normal operation.

REFERENCES

1. 10 CFR 50, Appendix A, GDC 10.
2. NEDE-24011-P-A (latest approved revision).
3. XN-NF524(A), Revision 1, November 1983.
4. 10 CFR 50.72.
5. 10 CFR 100.
6. 10 CFR 50.73.

corporate officer with direct responsibility
for the plant.

5.0 ADMINISTRATIVE CONTROLS

5.1 Responsibility

5.1.1

The ~~Plant Superintendent~~ shall be responsible for overall unit operation and shall delegate in writing the succession to this responsibility during his absence.

Manager

The ~~Plant Superintendent~~ or his designee shall approve, prior to implementation, each proposed test, experiment or modification to systems or equipment that affect nuclear safety.

5.1.2

The [Shift Supervisor (SS)] shall be responsible for the control room command function. During any absence of the [SS] from the control room while the unit is in MODE 1, 2, or 3, an individual with an active Senior Reactor Operator (SRO) license shall be designated to assume the control room command function. During any absence of the [SS] from the control room while the unit is in MODE 4 or 5, an individual with an active SRO license or Reactor Operator license shall be designated to assume the control room command function.

Insert A

5.0 ADMINISTRATIVE CONTROLS

5.2 Organization

5.2.1 Onsite and Offsite Organizations

Onsite and offsite organizations shall be established for unit operation and corporate management, respectively. The onsite and offsite organizations shall include the positions for activities affecting safety of the nuclear power plant.

a. Lines of authority, responsibility, and communication shall be defined and established throughout highest management levels, intermediate levels, and all operating organization positions. These relationships shall be documented and updated, as appropriate, in organization charts, functional descriptions of departmental responsibilities and relationships, and job descriptions for key personnel positions, or in equivalent forms of documentation. These requirements shall be documented in the [FSAR];

Insert B

Manager

IQA Plan

b. The ~~Plant Superintendent~~ shall be responsible for overall safe operation of the plant and shall have control over those onsite activities necessary for safe operation and maintenance of the plant;

c. ~~The [specified corporate executive position]~~ shall have corporate responsibility for overall plant nuclear safety and shall take any measures needed to ensure acceptable performance of the staff in operating, maintaining, and providing technical support to the plant to ensure nuclear safety; and

officer

d. The individuals who train the operating staff, carry out health physics, or perform quality assurance functions may report to the appropriate onsite manager; however, these individuals shall have sufficient organizational freedom to ensure their independence from operating pressures.

5.2.2 Unit Staff

The unit staff organization shall include the following:

a. A non-licensed operator shall be assigned to each reactor containing fuel and an additional non-licensed operator

(continued)

5.2 Organization

5.2.2 Unit Staff (continued)

shall be assigned for each control room from which a reactor is operating in MODES 1, 2, or 3.

Two unit sites with both units shutdown or defueled require a total of three non-licensed operators for the two units.

b. At least one licensed Reactor Operator (RO) shall be present in the control room when fuel is in the reactor. In addition, while the unit is in MODE 1, 2, or 3, at least one licensed Senior Reactor Operator (SRO) shall be present in the control room.

c. Shift crew composition may be less than the minimum requirement of 10 CFR 50.54(m)(2)(i) and 5.2.2.a and 5.2.2.g for a period of time not to exceed 2 hours in order to accommodate unexpected absence of on-duty shift crew members provided immediate action is taken to restore the shift crew composition to within the minimum requirements.

radiation protection

d. A ~~Health Physics Technician~~ shall be on site when fuel is in the reactor. The position may be vacant for not more than 2 hours, in order to provide for unexpected absence, provided immediate action is taken to fill the required position.

e. Administrative procedures shall be developed and implemented to limit the working hours of unit staff who perform safety related functions (e.g., licensed SROs, licensed ROs, health physicists, auxiliary operators, and key maintenance personnel).

Adequate shift coverage shall be maintained without routine heavy use of overtime. The objective shall be to have operating personnel work an [8 or 12] hour day, nominal 40 hour week while the unit is operating. However, in the event that unforeseen problems require substantial amounts of overtime to be used, or during extended periods of shutdown for refueling, major maintenance, or major plant modification, on a temporary basis the following guidelines shall be followed:

1. An individual should not be permitted to work more than 16 hours straight, excluding shift turnover time;

(continued)

5.2 Organization

5.2.2 Unit Staff (continued)

2. An individual should not be permitted to work more than 16 hours in any 24 hour period, nor more than 24 hours in any 48 hour period, nor more than 72 hours in any 7 day period, all excluding shift turnover time;
3. A break of at least 8 hours should be allowed between work periods, including shift turnover time;
4. Except during extended shutdown periods, the use of overtime should be considered on an individual basis and not for the entire staff on a shift.

Any deviation from the above guidelines shall be authorized in advance by the Plant Superintendent or his designee, in accordance with approved administrative procedures, or by higher levels of management, in accordance with established procedures and with documentation of the basis for granting the deviation.

Controls shall be included in the procedures such that individual overtime shall be reviewed monthly by the Plant Superintendent or his designee to ensure that excessive hours have not been assigned. Routine deviation from the above guidelines is not authorized.

OR

The amount of overtime worked by unit staff members performing safety related functions shall be limited and controlled in accordance with the NRC Policy Statement on working hours (Generic Letter 82-12).

- f. The Operations Manager or Assistant Operations Manager shall hold an SRO license.
- g. The Shift Technical Advisor (STA) shall provide advisory technical support to the Shift Supervisor (SS) in the areas of thermal hydraulics, reactor engineering, and plant analysis with regard to the safe operation of the unit. In addition, the STA shall meet the qualifications specified by the Commission Policy Statement on Engineering Expertise on Shift.

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5.0 ADMINISTRATIVE CONTROLS

5.5 Programs and Manuals

The following programs shall be established, implemented and maintained.

5.5.1 Offsite Dose Calculation Manual (ODCM)

- a. The ODCM shall contain the methodology and parameters used in the calculation of offsite doses resulting from radioactive gaseous and liquid effluents, in the calculation of gaseous and liquid effluent monitoring alarm and trip setpoints, and in the conduct of the radiological environmental monitoring program; and
- b. The ODCM shall also contain the radioactive effluent controls and radiological environmental monitoring activities and descriptions of the information that should be included in the Annual Radiological Environmental Operating, and Radioactive Effluent Release, reports required by Specification [5.6.2] and Specification [5.6.3].

Licensee initiated changes to the ODCM:

- a. Shall be documented and records of reviews performed shall be retained. This documentation shall contain:
 - 1. sufficient information to support the change(s) together with the appropriate analyses or evaluations justifying the change(s), and
 - 2. a determination that the change(s) maintain the levels of radioactive effluent control required by 10 CFR 20.1302, 40 CFR 190, 10 CFR 50.36a, and 10 CFR 50, Appendix I, and not adversely impact the accuracy or reliability of effluent, dose, or setpoint calculations;
- b. Shall become effective after review and acceptance by the [onsite review (action)] and the approval of the ~~Plant~~ ^{Manager} Superintendent; and
- c. Shall be submitted to the NRC in the form of a complete, legible copy of the entire ODCM as a part of or concurrent with the Radioactive Effluent Release Report for the period of the report in which any change in the ODCM was made. Each change shall be identified by markings in the margin of the affected pages, clearly indicating the area of the page

(continued)

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5.0 ADMINISTRATIVE CONTROLS

[5.7 High Radiation Area]

5.7.1

radiation protection

Pursuant to 10 CFR 20, paragraph 20.1601(c), in lieu of the requirements of 10 CFR 20.1601, each high radiation area, as defined in 10 CFR 20, in which the intensity of radiation is > 100 mrem/hr but < 1000 mrem/hr, shall be barricaded and conspicuously posted as a high radiation area and entrance thereto shall be controlled by requiring issuance of a Radiation Work Permit (RWP). Individuals qualified in radiation protection procedures (e.g., ~~Health Physics Technicians~~) or personnel continuously escorted by such individuals may be exempt from the RWP issuance requirement during the performance of their assigned duties in high radiation areas with exposure rates ≤ 1000 mrem/hr, provided they are otherwise following plant radiation protection procedures for entry into such high radiation areas.

Any individual or group of individuals permitted to enter such areas shall be provided with or accompanied by one or more of the following:

- a. A radiation monitoring device that continuously indicates the radiation dose rate in the area.
- b. A radiation monitoring device that continuously integrates the radiation dose rate in the area and alarms when a preset integrated dose is received. Entry into such areas with this monitoring device may be made after the dose rate levels in the area have been established and personnel are aware of them.
- c. An individual qualified in radiation protection procedures with a radiation dose rate monitoring device, who is responsible for providing positive control over the activities within the area and shall perform periodic radiation surveillance at the frequency specified by the ~~Radiation Protection Manager~~ in the RWP.

5.7.2

In addition to the requirements of Specification 5.7.1, areas with radiation levels ≥ 1000 mrem/hr shall be provided with locked or continuously guarded doors to prevent unauthorized entry and the keys shall be maintained under the administrative control of the Shift Foreman on duty or health physics supervision. Doors shall remain locked except during periods of access by personnel under an approved RWP that shall specify the dose rate levels in the immediate work

(continued)

2.0 SAFETY LIMITS (SLs)

2.1 SLs

2.1.1 Reactor Core SLs

2.1.1.1 With the reactor steam dome pressure < 785 psig or core flow < 10% rated core flow:

THERMAL POWER shall be \leq 25% RTP.

2.1.1.2 With the reactor steam dome pressure \geq 785 psig and core flow \geq 10% rated core flow:

MCPR shall be \geq [1.07] for two recirculation loop operation or \geq [1.08] for single recirculation loop operation.

2.1.1.3 Reactor vessel water level shall be greater than the top of active irradiated fuel.

2.1.2 Reactor Coolant System Pressure SL

Reactor steam dome pressure shall be \leq 1325 psig.

2.2 SL Violations

With any SL violation, the following actions shall be completed:

2.2.1 Within 1 hour, notify the NRC Operations Center, in accordance with 10 CFR 50.72.

2.2.2 Within 2 hours:

2.2.2.1 Restore compliance with all SLs; and

2.2.2.2 Insert all insertable control rods.

2.2.3 Within 24 hours, notify the ~~General Manager - Nuclear Plant~~ and ~~Vice President - Nuclear Operations~~ ^{plant}

the corporate officer with direct responsibility for the plant

(continued)

2.0 SLs

2.2 SL Violations (continued)

2.2.4 Within ~~30~~ days, a Licensee Event Report (LER) shall be prepared pursuant to 10 CFR 50.73. The LER shall be submitted to the NRC and the ~~General Manager Nuclear Plant~~ and ~~Vice President Nuclear Operations~~.

plant

2.2.5 Operation of the unit shall not be resumed until authorized by the NRC.

the corporate officer with direct responsibility for the plant.

BASES

SAFETY LIMIT
VIOLATIONS
(continued)

2.2.3

If any SL is violated, the senior management of the nuclear plant and the ~~Utility Vice President, Nuclear Operations~~ shall be notified within 24 hours. The 24 hour period provides time for plant operators and staff to take the appropriate immediate action and assess the condition of the unit before reporting to the appropriate utility management.

2.2.4

If any SL is violated, a Licensee Event Report shall be prepared and submitted within 30 days to the NRC in accordance with 10 CFR 50.73 [Ref. 6]. A copy of the report shall also be provided to the senior management of the nuclear plant and the ~~Utility Vice President, Nuclear Operations~~.

2.2.5

If any SL is violated, restart of the unit shall not commence until authorized by the NRC. This requirement ensures the NRC that all necessary reviews, analyses, and actions are completed before the unit begins its restart to normal operation.

REFERENCES

1. 10 CFR 50, Appendix A, GDC 10.
2. NEDE-24011-P-A, (latest approved revision).
3. XN-NF524(A), Revision 1, November 1983.
4. 10 CFR 50.72.
5. 10 CFR 100.
6. 10 CFR 50.73.

Corporate officer with direct responsibility for the plant.

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5.0 ADMINISTRATIVE CONTROLS

5.1 Responsibility

5.1.1

The [Plant Superintendent] shall be responsible for overall unit operation and shall delegate in writing the succession to this responsibility during his absence.

Manager

The [Plant Superintendent] or his designee shall approve, prior to implementation, each proposed test, experiment or modification to systems or equipment that affect nuclear safety.

5.1.2

The [Shift Supervisor (SS)] shall be responsible for the control room command function. During any absence of the [SS] from the control room while the unit is in MODE 1, 2, or 3, an individual with an active Senior Reactor Operator (SRO) license shall be designated to assume the control room command function. During any absence of the [SS] from the control room while the unit is in MODE 4 or 5, an individual with an active SRO license or Reactor Operator license shall be designated to assume the control room command function.

Insert A

5.0 ADMINISTRATIVE CONTROLS

5.2 Organization

5.2.1 Onsite and Offsite Organizations

Onsite and offsite organizations shall be established for unit operation and corporate management, respectively. The onsite and offsite organizations shall include the positions for activities affecting safety of the nuclear power plant.

a. Lines of authority, responsibility, and communication shall be defined and established throughout highest management levels, intermediate levels, and all operating organization positions. These relationships shall be documented and updated, as appropriate, in organization charts, functional descriptions of departmental responsibilities and relationships, and job descriptions for key personnel positions, or in equivalent forms of documentation. These requirements shall be documented in the [FSAR];

Insert B

Manager

IOA plan

b. The ~~Plant~~ Superintendent shall be responsible for overall safe operation of the plant and shall have control over those onsite activities necessary for safe operation and maintenance of the plant;

c. ~~The~~ officer ~~specified corporate executive position~~ shall have corporate responsibility for overall plant nuclear safety and shall take any measures needed to ensure acceptable performance of the staff in operating, maintaining, and providing technical support to the plant to ensure nuclear safety; and

d. The individuals who train the operating staff, carry out health physics, or perform quality assurance functions may report to the appropriate onsite manager; however, these individuals shall have sufficient organizational freedom to ensure their independence from operating pressures.

5.2.2 Unit Staff

The unit staff organization shall include the following:

a. A non-licensed operator shall be assigned to each reactor containing fuel and an additional non-licensed operator

(continued)

5.2 Organization

5.2.2 Unit Staff (continued)

shall be assigned for each control room from which a reactor is operating in MODES 1, 2, or 3.

Two unit sites with both units shutdown or defueled require a total of three non-licensed operators for the two units.

- b. At least one licensed Reactor Operator (RO) shall be present in the control room when fuel is in the reactor. In addition, while the unit is in MODE 1, 2, or 3, at least one licensed Senior Reactor Operator (SRO) shall be present in the control room.
- c. Shift crew composition may be less than the minimum requirement of 10 CFR 50.54(m)(2)(i) and 5.2.2.a and 5.2.2.g for a period of time not to exceed 2 hours in order to accommodate unexpected absence of on-duty shift crew members provided immediate action is taken to restore the shift crew composition to within the minimum requirements.
- d. A ~~Health Physics~~ Technician shall be on site when fuel is in the reactor. The position may be vacant for not more than 2 hours, in order to provide for unexpected absence, provided immediate action is taken to fill the required position.

radiation protection

- e. Administrative procedures shall be developed and implemented to limit the working hours of unit staff who perform safety related functions (e.g., licensed SROs, licensed ROs, health physicists, auxiliary operators, and key maintenance personnel).

Adequate shift coverage shall be maintained without routine heavy use of overtime. The objective shall be to have operating personnel work an [8 or 12] hour day, nominal 40 hour week, while the unit is operating. However, in the event that unforeseen problems require substantial amounts of overtime to be used, or during extended periods of shutdown for refueling, major maintenance, or major plant modification, on a temporary basis the following guidelines shall be followed:

(continued)

5.2 Organization

5.2.2 Unit Staff (continued)

1. An individual should not be permitted to work more than 16 hours straight, excluding shift turnover time;
2. An individual should not be permitted to work more than 16 hours in any 24 hour period, nor more than 24 hours in any 48 hour period, nor more than 72 hours in any 7 day period, all excluding shift turnover time;
3. A break of at least 8 hours should be allowed between work periods, including shift turnover time;
4. Except during extended shutdown periods, the use of overtime should be considered on an individual basis and not for the entire staff on a shift.

Any deviation from the above guidelines shall be authorized in advance by the ~~Plant Superintendent~~ ^{Manager} or his designee, in accordance with approved administrative procedures, or by higher levels of management, in accordance with established procedures and with documentation of the basis for granting the deviation.

Controls shall be included in the procedures such that individual overtime shall be reviewed monthly by the ~~Plant Superintendent~~ ^{Manager} or his designee to ensure that excessive hours have not been assigned. Routine deviation from the above guidelines is not authorized.

OR

The amount of overtime worked by unit staff members performing safety related functions shall be limited and controlled in accordance with the NRC Policy Statement on working hours (Generic Letter 82-12).

- f. The ~~Operations Manager~~ or ~~Assistant Operations Manager~~ shall hold an SRO license.
- g. The Shift Technical Advisor (STA) shall provide advisory technical support to the Shift Supervisor (SS) in the areas of thermal hydraulics, reactor engineering, and plant analysis with regard to the safe operation of the unit. In addition, the STA shall meet the qualifications specified by the Commission Policy Statement on Engineering Expertise on Shift.

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5.0 ADMINISTRATIVE CONTROLS

5.5 Programs and Manuals

The following programs shall be established, implemented, and maintained.

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- a. The ODCM shall contain the methodology and parameters used in the calculation of offsite doses resulting from radioactive gaseous and liquid effluents, in the calculation of gaseous and liquid effluent monitoring alarm and trip setpoints, and in the conduct of the radiological environmental monitoring program; and
- b. The ODCM shall also contain the radioactive effluent controls and radiological environmental monitoring activities and descriptions of the information that should be included in the Annual Radiological Environmental Operating, and Radioactive Effluent Release Reports required by Specification [5.6.2] and Specification [5.6.3].

Licensee initiated changes to the ODCM:

- a. Shall be documented and records of reviews performed shall be retained. This documentation shall contain: -
 - 1. sufficient information to support the change(s) together with the appropriate analyses or evaluations justifying the change(s), and
 - 2. a determination that the change(s) maintain the levels of radioactive effluent control required by 10 CFR 20.1302, 40 CFR 190, 10 CFR 50.36a, and 10 CFR 50, Appendix I, and not adversely impact the accuracy or reliability of effluent, dose, or setpoint calculations;
- b. Shall become effective after review and acceptance by the [onsite review function] and the approval of the ~~Plant Superintendent~~ ^{Plant Manager}; and
- c. Shall be submitted to the NRC in the form of a complete, legible copy of the entire ODCM as a part of, or concurrent with, the Radioactive Effluent Release Report for the period of the report in which any change in the ODCM was made.

(continued)

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5.0 ADMINISTRATIVE CONTROLS

[5.7 High Radiation Area]

5.7.1

Radiation protection

Pursuant to 10 CFR 20, paragraph 20.1601(c), in lieu of the requirements of 10 CFR 20.1601, each high radiation area, as defined in 10 CFR 20, in which the intensity of radiation is > 100 mrem/hr but < 1000 mrem/hr, shall be barricaded and conspicuously posted as a high radiation area and entrance thereto shall be controlled by requiring issuance of a Radiation Work Permit (RWP). Individuals qualified in radiation protection procedures (e.g., Health Physics Technicians) or personnel continuously escorted by such individuals may be exempt from the RWP issuance requirement during the performance of their assigned duties in high radiation areas with exposure rates ≤ 1000 mrem/hr, provided they are otherwise following plant radiation protection procedures for entry into such high radiation areas.

Any individual or group of individuals permitted to enter such areas shall be provided with or accompanied by one or more of the following:

- a. A radiation monitoring device that continuously indicates the radiation dose rate in the area.
- b. A radiation monitoring device that continuously integrates the radiation dose rate in the area and alarms when a preset integrated dose is received. Entry into such areas with this monitoring device may be made after the dose rate levels in the area have been established and personnel are aware of them.
- c. An individual qualified in radiation protection procedures with a radiation dose rate monitoring device, who is responsible for providing positive control over the activities within the area and shall perform periodic radiation surveillance at the frequency specified by the [Radiation Protection Manager] in the RWP.

5.7.2

In addition to the requirements of Specification 5.7.1, areas with radiation levels ≥ 1000 mrem/hr shall be provided with locked or continuously guarded doors to prevent unauthorized entry and the keys shall be maintained under the administrative control of the Shift Foreman on duty or health physics supervision. Doors shall remain locked except during periods of access by personnel

(continued)

Technical Specification Task Force Improved Standard Technical Specifications Change Traveler

Relocates discussion of exceptions from LCO 3.0.4 to the Bases

NUREGs Affected: 1430 1431 1432 1433 1434

Classification: 1) Correct Specifications

Recommended for CLIIP?: (Unassigned)

Correction or Improvement: (Unassigned)

Industry Contact: Steve Wideman, (620) 364-4037, stwidem@wcnoc.com

This change removes the additional discussion provided in LCO 3.0.4 with respect to the use of exceptions and provides the necessary discussion in the Bases.

This change provides consistency with LCO 3.0.3 by moving the discussion of exceptions from the LCO to the Bases. In addition, this change reduces the potential for confusion by revising the discussion to eliminate the repeated use of the phrase "Modes or other specified conditions in the Applicability" to increase clarity.

Revision History

OG Revision 0

Revision Status: Active

Revision Proposed by: Ginna

Revision Description:

Original Issue

Owners Group Review Information

Date Originated by OG: 30-Oct-95

Owners Group Comments:

Ginna 3

Owners Group Resolution: Approved Date: 09-Nov-96

TSTF Review Information

TSTF Received Date: 27-Nov-95

Date Distributed for Review: 27-Nov-95

OG Review Completed: BWOG WOG CEOG BWROG

TSTF Comments:

CEOG accepts

BWOG accepts

BWROG accepts

TSTF Resolution: Approved

Date: 30-Apr-96

NRC Review Information

NRC Received Date: 17-Jul-96

NRC Comments:

9/18/96 - Review pending.

3/14/97 - NRC approves.

Final Resolution: NRC Approves

Final Resolution Date: 14-Mar-97

31-Jul-03

OG Revision 0

Revision Status: Active

Affected Technical Specifications

LCO 3.0.4 LCO Applicability

LCO 3.0.4 Bases LCO Applicability

31-Jul-03

3.0 LCO APPLICABILITY

LCO 3.0.4
(continued)

Specification shall not prevent changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

Exceptions to this Specification are stated in the individual Specifications. These exceptions allow entry into MODES or other specified conditions in the Applicability when the associated ACTIONS to be entered allow unit operation in the MODE or other specified condition in the Applicability only for a limited period of time.

SR 3.0.4 is only applicable for entry into a Mode or other specified condition in the Applicability in Modes 1, 2, 3 and 4.

Reviewer's Note: LCO 3.0.4 has been revised so that changes in MODES or other specified conditions in the Applicability that are part of a shutdown of the unit shall not be prevented. In addition, LCO 3.0.4 has been revised so that it is only applicable for entry into a MODE or other specified condition in the Applicability in MODES 1, 2, 3, and 4. The MODE change restrictions in LCO 3.0.4 were previously applicable in all MODES. Before this version of LCO 3.0.4 can be implemented on a plant-specific basis, the licensee must review the existing technical specifications to determine where specific restrictions on MODE changes or Required Actions should be included in individual LCOs to justify this change; such an evaluation should be summarized in a matrix of all existing LCOs to facilitate NRC staff review of a conversion to the STS.

LCO 3.0.5

Equipment removed from service or declared inoperable to comply with ACTIONS may be returned to service under administrative control solely to perform testing required to demonstrate its OPERABILITY or the OPERABILITY of other equipment. This is an exception to LCO 3.0.2 for the system returned to service under administrative control to perform the testing required to demonstrate OPERABILITY.

(continued)

BASES

LCO 3.0.4
(continued)

provisions of LCO 3.0.4 shall not prevent changes in MODES or other specified conditions in the Applicability that result from any unit shutdown.

Insert

Exceptions to LCO 3.0.4 are stated in the individual Specifications. Exceptions may apply to all the ACTIONS or to a specific Required Action of a Specification.

LCO 3.0.4 is only applicable when entering MODE 4 from MODE 5, MODE 3 from MODE 4, MODE 2 from MODE 3, or Mode 1 from Mode 2. Furthermore, LCO 3.0.4 is applicable when entering any other specified condition in the Applicability only while operating in MODES 1, 2, 3, or 4. The requirements of LCO 3.0.4 do not apply in MODES 5 and 6, or in other specified conditions of the Applicability (unless in MODES 1, 2, 3, or 4) because the ACTIONS or individual specifications sufficiently define the remedial measures to be taken. [In some cases (e.g., ..) these ACTIONS provide a Note that states "While this LCO is not met, entry into a MODE or other specified condition in the Applicability is not permitted, unless required to comply with ACTIONS." This Note is a requirement explicitly precluding entry into a MODE or other specified condition of the Applicability.]

Surveillances do not have to be performed on the associated inoperable equipment (or on variables outside the specified limits), as permitted by SR 3.0.1. Therefore, changing MODES or other specified conditions while in an ACTIONS Condition, in compliance with LCO 3.0.4 or where an exception to LCO 3.0.4 is stated, is not a violation of SR 3.0.1 or SR 3.0.4 for those Surveillances that do not have to be performed due to the associated inoperable equipment. However, SRs must be met to ensure OPERABILITY prior to declaring the associated equipment OPERABLE (or variable within limits) and restoring compliance with the affected LCO.

LCO 3.0.5

LCO 3.0.5 establishes the allowance for restoring equipment to service under administrative controls when it has been removed from service or declared inoperable to comply with ACTIONS. The sole purpose of this Specification is to provide an exception to LCO 3.0.2 (e.g., to not comply with

(continued)

TSTF-104

3.0 LCO APPLICABILITY

LCO 3.0.4
(continued)

Specification shall not prevent changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

Exceptions to this Specification are stated in the individual Specifications. These exceptions allow entry into MODES or other specified conditions in the Applicability when the associated ACTIONS to be entered allow unit operation in the MODE or other specified condition in the Applicability only for a limited period of time.

LCO 3.0.4 is only applicable for entry into a MODE or others specified condition in the Applicability in MODES 1, 2, 3, and 4.

Reviewers's Note: LCO 3.0.4 has been revised so that changes in MODES or other specified conditions in the Applicability that are part of a shutdown of the unit shall not be prevented. In addition, LCO 3.0.4 has been revised so that it is only applicable for entry into a MODE or other specified condition in the Applicability in MODES 1, 2, 3, and 4: The MODE change restrictions in LCO 3.0.4 were previously applicable in all MODES. Before this version of LCO 3.0.4 can be implemented on a plant-specific basis, the licensee must review the existing technical specifications to determine where specific restrictions on MODE changes or Required Actions should be included in individual LCOs to justify this change; such an evaluation should be summarized in a matrix of all existing LCOs to facilitate NRC staff review of a conversion to the STS.

LCO 3.0.5

Equipment removed from service or declared inoperable to comply with ACTIONS may be returned to service under administrative control solely to perform testing required to demonstrate its OPERABILITY or the OPERABILITY of other equipment. This is an exception to LCO 3.0.2 for the system returned to service under administrative control to perform the testing required to demonstrate OPERABILITY.

(continued)

BASES

LCO 3.0.4
(continued)

that are required to comply with ACTIONS. In addition, the provisions of LCO 3.0.4 shall not prevent changes in MODES or other specified conditions in the Applicability that result from any unit shutdown.

Insert

Exceptions to LCO 3.0.4 are stated in the individual Specifications. Exceptions may apply to all the ACTIONS or to a specific Required Action of a Specification.

LCO 3.0.4 is only applicable when entering MODE 4 from MODE 5, MODE 3 from MODE 4, MODE 2 from MODE 3, or MODE 1 from MODE 2. Furthermore, LCO 3.0.4 is applicable when entering any other specified condition in the Applicability only while operating in MODES 1, 2, 3, or 4. The requirements of LCO 3.0.4 do not apply in MODES 5 and 6, or in other specified conditions of the Applicability (unless in MODES 1, 2, 3, or 4) because the ACTIONS of individual Specifications sufficiently define the remedial measures to be taken. [In some cases (e.g., ..) these ACTIONS provide a Note that states "While this LCO is not met, entry into a MODE or other specified condition in the Applicability is not permitted, unless required to comply with ACTIONS." This Note is a requirement explicitly precluding entry into a MODE or other specified condition of the Applicability.]

Surveillances do not have to be performed on the associated inoperable equipment (or on variables outside the specified limits), as permitted by SR 3.0.1. Therefore, changing MODES or other specified conditions while in an ACTIONS Condition, in compliance with LCO 3.0.4 or where an exception to LCO 3.0.4 is stated, is not a violation of SR 3.0.1 or SR 3.0.4 for those Surveillances that do not have to be performed due to the associated inoperable equipment. However, SRs must be met to ensure OPERABILITY prior to declaring the associated equipment OPERABLE (or variable within limits) and restoring compliance with the affected LCO.

LCO 3.0.5

LCO 3.0.5 establishes the allowance for restoring equipment to service under administrative controls when it has been removed from service or declared inoperable to comply with ACTIONS. The sole purpose of this Specification is to

(continued)

3.0 LCO APPLICABILITY

LCO 3.0.4
(continued)

Specification shall not prevent changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

Exceptions to this Specification are stated in the individual Specifications. These exceptions allow entry into MODES or other specified conditions in the Applicability when the associated ACTIONS to be entered allow unit operation in the MODE or other specified condition in the Applicability only for a limited period of time.

LCO 3.0.4 is only applicable for entry into a MODE or other specified condition in the Applicability in MODES 1, 2, 3, and 4.

Reviewers's Note: LCO 3.0.4 has been revised so that changes in MODES or other specified conditions in the Applicability that are part of a shutdown of the unit shall not be prevented. In addition, LCO 3.0.4 has been revised so that it is only applicable for entry into a MODE or other specified condition in the Applicability in MODES 1, 2, 3, and 4. The MODE change restrictions in LCO 3.0.4 were previously applicable in all MODES. Before this version of LCO 3.0.4 can be implemented on a plant-specific basis, the licensee must review the existing technical specifications to determine where specific restrictions on MODE changes or Required Actions should be included in individual LCOs to justify this change; such an evaluation should be summarized in a matrix of all existing LCOs to facilitate NRC staff review of a conversion to the STS.

LCO 3.0.5

Equipment removed from service or declared inoperable to comply with ACTIONS may be returned to service under administrative control solely to perform testing required to demonstrate its OPERABILITY or the OPERABILITY of other equipment. This is an exception to LCO 3.0.2 for the system returned to service under administrative control to perform the testing required to demonstrate OPERABILITY.

(continued)

BASES

LCO 3.0.4
(continued)

The provisions of LCO 3.0.4 shall not prevent changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS. In addition, the provisions of LCO 3.0.4 shall not prevent changes in MODES or other specified conditions in the Applicability that result from any unit shutdown.

Insert

Exceptions to LCO 3.0.4 are stated in the individual Specifications. Exceptions may apply to all the ACTIONS or to a specific Required Action of a Specification.

LCO 3.0.4 is only applicable when entering MODE 4 from MODE 5, MODE 3 from MODE 4, MODE 2 from MODE 3, or MODE 1 from MODE 2. Furthermore, LCO 3.0.4 is applicable when entering any other specified condition in the Applicability only while operating in MODES 1, 2, 3, or 4. The requirements of LCO 3.0.4 do not apply in MODES 5 and 6, or in other specified conditions of the Applicability (unless in MODES 1, 2, 3, or 4) because the ACTIONS of individual Specifications sufficiently define the remedial measures to be taken. [In some cases (e.g., ..) these ACTIONS provide a Note that states "While this LCO is not met, entry into a MODE or other specified condition in the Applicability is not permitted, unless required to comply with ACTIONS." This Note is a requirement explicitly precluding entry into a MODE or other specified condition of the Applicability.]

Surveillances do not have to be performed on the associated inoperable equipment (or on variables outside the specified limits), as permitted by SR 3.0.1. Therefore, changing MODES or other specified conditions while in an ACTIONS Condition, in compliance with LCO 3.0.4 or where an exception to LCO 3.0.4 is stated, is not a violation of SR 3.0.1 or SR 3.0.4 for those Surveillances that do not have to be performed due to the associated inoperable equipment. However, SRs must be met to ensure OPERABILITY prior to declaring the associated equipment OPERABLE (or variable within limits) and restoring compliance with the affected LCO.

LCO 3.0.5

LCO 3.0.5 establishes the allowance for restoring equipment to service under administrative controls when it has been removed from service or declared inoperable to comply with

(continued)

3.0 LCO APPLICABILITY

LCO 3.0.4
(continued)

Specification shall not prevent changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

Exceptions to this Specification are stated in the individual Specifications. These exceptions allow entry into MODES or other specified conditions in the Applicability when the associated ACTIONS to be entered allow unit operation in the MODE or other specified condition in the Applicability only for a limited period of time.

LCO 3.0.4 is only applicable for entry into a MODE or other specified condition in the Applicability in MODES 1, 2, and 3.

Reviewers's Note: LCO 3.0.4 has been revised so that changes in MODES or other specified conditions in the Applicability that are part of a shutdown of the unit shall not be prevented. In addition, LCO 3.0.4 has been revised so that it is only applicable for entry into a MODE or other specified condition in the Applicability in MODES 1, 2, and 3. The MODE change restrictions in LCO 3.0.4 were previously applicable in all MODES. Before this version of LCO 3.0.4 can be implemented on a plant-specific basis, the licensee must review the existing technical specifications to determine where specific restrictions on MODE changes or Required Actions should be included in individual LCOs to justify this change; such an evaluation should be summarized in a matrix of all existing LCOs to facilitate NRC staff review of a conversion to the STS.

LCO 3.0.5

Equipment removed from service or declared inoperable to comply with ACTIONS may be returned to service under administrative control solely to perform testing required to demonstrate its OPERABILITY or the OPERABILITY of other equipment. This is an exception to LCO 3.0.2 for the system returned to service under administrative control to perform the testing required to demonstrate OPERABILITY.

(continued)

BASES

LCO 3.0.4
(continued)

interpreted as endorsing the failure to exercise the good practice of restoring systems or components to OPERABLE status before entering an associated MODE or other specified condition in the Applicability.

The provisions of LCO 3.0.4 shall not prevent changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS. In addition, the provisions of LCO 3.0.4 shall not prevent changes in MODES or other specified conditions in the Applicability that result from any unit shutdown.

Insert

Exceptions to LCO 3.0.4 are stated in the individual Specifications. Exceptions may apply to all the ACTIONS or to a specific Required Action of a Specification.

LCO 3.0.4 is only applicable when entering MODE 3 from MODE 4, MODE 2 from MODE 3 or 4, or MODE 1 from MODE 2. Furthermore, LCO 3.0.4 is applicable when entering any other specified condition in the Applicability only while operating in MODE 1, 2, or 3. The requirements of LCO 3.0.4 do not apply in MODES 4 and 5, or in other specified conditions of the Applicability (unless in MODE 1, 2, or 3) because the ACTIONS of individual Specifications sufficiently define the remedial measures to be taken. [In some cases (e.g., ..) these ACTIONS provide a Note that states "While this LCO is not met, entry into a MODE or other specified condition in the Applicability is not permitted, unless required to comply with ACTIONS." This Note is a requirement explicitly precluding entry into a MODE or other specified condition of the Applicability.]

Surveillances do not have to be performed on the associated inoperable equipment (or on variables outside the specified limits), as permitted by SR 3.0.1. Therefore, changing MODES or other specified conditions while in an ACTIONS Condition, either in compliance with LCO 3.0.4, or where an exception to LCO 3.0.4 is stated, is not a violation of SR 3.0.1 or SR 3.0.4 for those Surveillances that do not have to be performed due to the associated inoperable equipment. However, SRs must be met to ensure OPERABILITY prior to declaring the associated equipment OPERABLE (or variable within limits) and restoring compliance with the affected LCO.

(continued)

BASES

LCO 3.0.4 (continued) that are required to comply with ACTIONS. In addition, the provisions of LCO 3.0.4 shall not prevent changes in MODES or other specified conditions in the Applicability that result from any unit shutdown.

Insert

Exceptions to LCO 3.0.4 are stated in the individual Specifications. Exceptions may apply to all the ACTIONS or to a specific Required Action of a Specification.

LCO 3.0.4 is only applicable when entering MODE 3 from MODE 4, MODE 2 from MODE 3 or 4, or MODE 1 from MODE 2. Furthermore, LCO 3.0.4 is applicable when entering any other specified condition in the Applicability only while operating in MODE 1, 2, or 3. The requirements of LCO 3.0.4 do not apply in MODES 4 and 5, or in other specified conditions of the Applicability (unless in MODE 1, 2, or 3) because the ACTIONS of individual specifications sufficiently define the remedial measures to be taken. [In some cases (e.g., ..) these ACTIONS provide a Note that states "While this LCO is not met, entry into a MODE or other specified condition in the Applicability is not permitted, unless required to comply with ACTIONS." This Note is a requirement explicitly precluding entry into a MODE or other specified condition of the Applicability.]

Surveillances do not have to be performed on the associated inoperable equipment (or on variables outside the specified limits), as permitted by SR 3.0.1. Therefore, changing MODES or other specified conditions while in an ACTIONS Condition, either in compliance with LCO 3.0.4 or where an exception to LCO 3.0.4 is stated, is not a violation of SR 3.0.1 or SR 3.0.4 for those Surveillances that do not have to be performed due to the associated inoperable equipment. However, SRs must be met to ensure OPERABILITY prior to declaring the associated equipment OPERABLE (or variable within limits) and restoring compliance with the affected LCO.

LCO 3.0.5 LCO 3.0.5 establishes the allowance for restoring equipment to service under administrative controls when it has been removed from service or declared inoperable to comply with ACTIONS. The sole purpose of this Specification is to provide an exception to LCO 3.0.2 (e.g., to not comply with

LCO 3.0.5 the applicable Required Action(s)) to allow the performance

(continued)

3.0 LCO APPLICABILITY

LCO 3.0.4
(continued)

Specification shall not prevent changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS or that are part of a shutdown of the unit.

Exceptions to this Specification are stated in the individual Specifications. These exceptions allow entry into MODES or other specified conditions in the Applicability when the associated ACTIONS to be entered allow unit operation in the MODE or other specified condition in the Applicability only for a limited period of time.

LCO 3.0.4 is only applicable for entry into a MODE or other specified condition in the Applicability in MODES 1, 2, and 3.

Reviewer's Note: LCO 3.0.4 has been revised so that changes in MODES or other specified conditions in the Applicability that are part of a shutdown of the unit shall not be prevented. In addition, LCO 3.0.4 has been revised so that it is only applicable for entry into a MODE or other specified condition in the Applicability in MODES 1, 2, and 3. The MODE change restrictions in LCO 3.0.4 were previously applicable in all MODES. Before this version of LCO 3.0.4 can be implemented on a plant-specific basis, the licensee must review the existing technical specifications to determine where specific restrictions on MODE changes or Required Actions should be included in individual LCOs to justify this change; such an evaluation should be summarized in a matrix of all existing LCOs to facilitate NRC staff review of a conversion to the STS.

LCO 3.0.5

Equipment removed from service or declared inoperable to comply with ACTIONS may be returned to service under administrative control solely to perform testing required to demonstrate its OPERABILITY or the OPERABILITY of other equipment. This is an exception to LCO 3.0.2 for the system returned to service under administrative control to perform the testing required to demonstrate OPERABILITY.

(continued)

Insert

The exceptions allow entry into MODES or other specified conditions in the Applicability when the associated ACTIONS to be entered do not provide for continued operation for an unlimited period of time.

Technical Specification Task Force Improved Standard Technical Specifications Change Traveler

Change to Diesel Fuel Oil Testing Program

NUREGs Affected: 1430 1431 1432 1433 1434

Classification: 3) Improve Specifications

Recommended for CLIIP?: (Unassigned)

Correction or Improvement: (Unassigned)

Industry Contact: Steve Wideman, (620) 364-4037, stwidem@wcnoc.com

The proposed change will make it clear that the TS requirement is only applicable to the new fuel, must be done within 31 days following addition to the storage tanks, and is only required to be done one time.

As worded, paragraph b of the Diesel Fuel Oil Testing Program can be, and has been, misinterpreted.

Revision History

OG Revision 0

Revision Status: Closed

Revision Proposed by: Ginna

Revision Description:

Original Issue

Owners Group Review Information

Date Originated by OG: 30-Oct-95

Owners Group Comments:

Ginna 16

Owners Group Resolution: Approved Date: 09-Nov-95

TSTF Review Information

TSTF Received Date: 29-Nov-95

Date Distributed for Review: 30-Nov-95

OG Review Completed: BWOG WOG CEOG BWROG

TSTF Comments:

CEOG Accepts

BWOG Accepts

BWROG Accepts

TSTF Resolution: Approved

Date: 30-Apr-96

NRC Review Information

NRC Received Date: 17-Jul-96

NRC Comments:

Date of NRC Letter: 27-Sep-96

9/18/96 - Approved. NOTE: BWOG frequency was not changed to 31 days. TSTF to correct on final change.
10/30/96 - NRC requests revision 1 to change BWOG frequency from 30 to 31 days. TSTF to provide.

Final Resolution: Superseded by Revision

Final Resolution Date: 23-Jan-97

31-Jul-03

TSTF Revision 1**Revision Status: Active**

Revision Proposed by: NRC

Revision Description:

Changed BWOG frequency from 30 to 31 days.

TSTF Review Information

TSTF Received Date: 30-Oct-96

Date Distributed for Review: 20-Nov-96

OG Review Completed: BWOG WOG CEOG BWROG

TSTF Comments:

(No Comments)

TSTF Resolution: Approved

Date: 30-Oct-96

NRC Review Information

NRC Received Date: 23-Jan-97

Final Resolution: NRC Approves

Final Resolution Date: 23-Jan-97

Affected Technical Specifications

5.5.13	Diesel Fuel Oil Testing Program	NUREG(s)- 1430 1431 1432 Only
5.5.10	Diesel Fuel Oil Testing Program	NUREG(s)- 1433 1434 Only

31-Jul-03

Insert

verify that the properties of the new fuel oil, other than those addressed in a., above, are within limits for ASTM 2D fuel oil.

5.5 Programs and Manuals (continued)

5.5.13 Diesel Fuel Oil Testing Program

A diesel fuel oil testing program to implement required testing of both new fuel oil and stored fuel oil shall be established. The program shall include sampling and testing requirements, and acceptance criteria, all in accordance with applicable ASTM Standards. The purpose of the program is to establish the following:

- a. Acceptability of new fuel oil for use prior to addition to storage tanks by determining that the fuel oil has:
 - 1. An API gravity or an absolute specific gravity within limits,
 - 2. A flash point and kinematic viscosity within limits for ASTM 2D fuel oil, and
 - 3. A clear and bright appearance with proper color;
- b. ~~Other properties for ASTM 2D fuel oil are within limits within 31 days following sampling and addition to storage tanks; and~~
Insert *of the new fuel oil*
- c. Total particulate concentration of the fuel oil is ≤ 10 mg/l when tested every 31 days in accordance with ASTM D-2276, Method A-2 or A-3.

5.5.14 Technical Specifications (TS) Bases Control Program

This program provides a means for processing changes to the Bases of these Technical Specifications.

- a. Changes to the Bases of the TS shall be made under appropriate administrative controls and reviews.
- b. Licensees may make changes to Bases without prior NRC approval provided the changes do not involve either of the following:

A change in the TS incorporated in the license; or

A change to the updated FSAR or Bases that involves an unreviewed safety question as defined in 10 CFR 50.59.

(continued)

5.5 Programs and Manuals

5.5.13 Diesel Fuel Oil Testing Program (continued)

2. a flash point and kinematic viscosity within limits for ASTM 2D fuel oil, and
3. a clear and bright appearance with proper color;
- b. ~~Other properties for ASTM 2D fuel oil are within limits within 30 days following sampling and addition to storage tanks; and 31~~ *Other properties for ASTM 2D fuel oil are within limits of the new fuel oil*
- c. Total particulate concentration of the fuel oil is ≤ 10 mg/l when tested every 31 days in accordance with ASTM D-2276, Method A-2 or A-3.

Insert

5.5.14 Technical Specifications (TS) Bases Control Program

This program provides a means for processing changes to the Bases of these Technical Specifications.

- a. Changes to the Bases of the TS shall be made under appropriate administrative controls and reviews.
- b. Licensees may make changes to Bases without prior NRC approval provided the changes do not involve either of the following:
 1. A change in the TS incorporated in the license; or
 2. A change to the updated FSAR or Bases that involves an unreviewed safety question as defined in 10 CFR 50.59.
- c. The Bases Control Program shall contain provisions to ensure that the Bases are maintained consistent with the FSAR.
- d. Proposed changes that meet the criteria of 5.5.14b above shall be reviewed and approved by the NRC prior to implementation. Changes to the Bases implemented without prior NRC approval shall be provided to the NRC on a frequency consistent with 10 CFR 50.71(e).

(continued)

5.5 Programs and Manuals

5.5.10 Diesel Fuel Oil Testing Program (continued)

- a. Acceptability of new fuel oil for use prior to addition to storage tanks by determining that the fuel oil has:
 1. an API gravity or an absolute specific gravity within limits,
 2. a flash point and kinematic viscosity within limits for ASTM 2D fuel oil,
 3. a clear and bright appearance with proper color;
- b. ~~Other properties for ASTM 2D fuel oil are within limits within 31 days following sampling and addition to storage tanks; and~~
Insert *of the new fuel oil*
- c. Total particulate concentration of the fuel oil is ≤ 10 mg/l when tested every 31 days in accordance with ASTM D-2276, Method A-2 or A-3.

5.5.11 Technical Specifications (TS) Bases Control Program

This program provides a means for processing changes to the Bases of these Technical Specifications.

- a. Changes to the Bases of the TS shall be made under appropriate administrative controls and reviews.
- b. Licensees may make changes to Bases without prior NRC approval provided the changes do not involve either of the following:
 1. a change in the TS incorporated in the license; or
 2. a change to the updated FSAR or Bases that involves an unreviewed safety question as defined in 10 CFR 50.59.
- c. The Bases Control Program shall contain provisions to ensure that the Bases are maintained consistent with the FSAR.
- d. Proposed changes that meet the criteria of 5.5.11b above shall be reviewed and approved by the NRC prior to implementation. Changes to the Bases implemented without

(continued)

5.5 Programs and Manuals

5.5.13 Diesel Fuel Oil Testing Program (continued)

2. a flash point and kinematic viscosity within limits for ASTM 2D fuel oil, and
 3. a clear and bright appearance with proper color;
- b. Other properties for ASTM 2D fuel oil are within limits
within 31 days following sampling and addition to storage
tanks; and *of the new fuel oil*
- c. Total particulate concentration of the fuel oil is ≤ 10 mg/l when tested every 31 days in accordance with ASTM D-2276, Method A-2 or A-3.

Insert

5.5.14 Technical Specifications (TS) Bases Control Program

This program provides a means for processing changes to the Bases of these Technical Specifications.

- a. Changes to the Bases of the TS shall be made under appropriate administrative controls and reviews.
- b. Licensees may make changes to Bases without prior NRC approval provided the changes do not involve either of the following:
 1. a change in the TS incorporated in the license; or
 2. a change to the updated FSAR or Bases that involves an unreviewed safety question as defined in 10 CFR 50.59.
- c. The Bases Control Program shall contain provisions to ensure that the Bases are maintained consistent with the FSAR.
- d. Proposed changes that meet the criteria of Specification 5.5.14b above shall be reviewed and approved by the NRC prior to implementation. Changes to the Bases implemented without prior NRC approval shall be provided to the NRC on a frequency consistent with 10 CFR 50.71(e).

(continued)

5.5 Programs and Manuals (continued)

5.5.10 Diesel Fuel Oil Testing Program

A diesel fuel oil testing program to implement required testing of both new fuel oil and stored fuel oil shall be established. The program shall include sampling and testing requirements, and acceptance criteria, all in accordance with applicable ASTM Standards. The purpose of the program is to establish the following:

- a. Acceptability of new fuel oil for use prior to addition to storage tanks by determining that the fuel oil has:
 1. an API gravity or an absolute specific gravity within limits,
 2. a flash point and kinematic viscosity within limits for ASTM 2D fuel oil, and
 3. a clear and bright appearance with proper color;
- b. ~~Other properties for ASTM 2D fuel oil are within limits within 31 days following sampling and addition to storage tanks; and~~
Insert ~~of the new fuel oil.~~
- c. Total particulate concentration of the fuel oil is ≤ 10 mg/l when tested every 31 days in accordance with ASTM D-2276, Method A-2 or A-3.

5.5.11 Technical Specifications (TS) Bases Control Program

This program provides a means for processing changes to the Bases of these Technical Specifications.

- a. Changes to the Bases of the TS shall be made under appropriate administrative controls and reviews.
- b. Licensees may make changes to Bases without prior NRC approval provided the changes do not involve either of the following:
 1. a change in the TS incorporated in the license; or
 2. a change to the updated FSAR or Bases that involves an unreviewed safety question as defined in 10 CFR 50.59.

(continued)

5.5 Programs and Manuals

5.5.10 Diesel Fuel Oil Testing Program (continued)

- a. Acceptability of new fuel oil for use prior to addition to storage tanks by determining that the fuel oil has:
 - 1. an API gravity or an absolute specific gravity within limits,
 - 2. a flash point and kinematic viscosity within limits for ASTM 2D fuel oil,
 - 3. a clear and bright appearance with proper color;
- b. ~~Other properties for ASTM 2D fuel oil are within limits within 31 days following sampling and addition to storage tanks; and~~
Insert *of the new fuel oil*
- c. Total particulate concentration of the fuel oil is ≤ 10 mg/l when tested every 31 days in accordance with ASTM D-2276, Method A-2 or A-3.

5.5.11 Technical Specifications (TS) Bases Control Program

This program provides a means for processing changes to the Bases of these Technical Specifications.

- a. Changes to the Bases of the TS shall be made under appropriate administrative controls and reviews.
- b. Licensees may make changes to Bases without prior NRC approval provided the changes do not involve either of the following:
 - 1. a change in the TS incorporated in the license; or
 - 2. a change to the updated FSAR or Bases that involves an unreviewed safety question as defined in 10 CFR 50.59.
- c. The Bases Control Program shall contain provisions to ensure that the Bases are maintained consistent with the FSAR.
- d. Proposed changes that meet the criteria of 5.5.11b above shall be reviewed and approved by the NRC prior to implementation. Changes to the Bases implemented without

(continued)

Technical Specification Task Force

Improved Standard Technical Specifications Change Traveler

Administrative Controls Program Exceptions

NUREGs Affected: 1430 1431 1432 1433 1434

Classification: 3) Improve Specifications

Recommended for CLIIP?: (Unassigned)

Correction or Improvement: (Unassigned)

Industry Contact: Paul Infanger, (352) 563-4796, paul.infanger@pgnmail.com

Revise Administrative Controls 5.5.9 to add the following sentence, "The provisions of SR 3.0.2 are applicable to the Steam Generator Tube Surveillance Program test frequencies," and revise 5.5.13 to add the following sentence, "The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Diesel Fuel Oil Testing Program testing frequencies."

These sentences provide consistency with the current application of these requirements as provided in 5.5.6, "Pre-Stressed Concrete Containment Tendon Surveillance Program," and in 5.5.11, "Ventilation Filter Testing program." SR 3.0.2 and SR 3.0.3 are already applicable to the surveillances which reference these programs, and, therefore, the lack of an applicability statement in the Programs introduces confusion. Further, the applicability of SR 3.0.2 and SR 3.0.3 to the program surveillances is consistent with current licensing basis and the old STS. SR 3.0.3 is not addressed for the SGTSP since these tests cannot be performed during operation.

Revision History

OG Revision 0

Revision Status: Active

Revision Proposed by: ANO-1

Revision Description:

Original Issue

Owners Group Review Information

Date Originated by OG: 15-Dec-95

Owners Group Comments:

1/15/96 - Approved by TE

Owners Group Resolution: Approved Date: 01-Feb-96

TSTF Review Information

TSTF Received Date: 01-Jul-96

Date Distributed for Review: 31-Jul-96

OG Review Completed: BWOOG WOG CEOG BWROG

TSTF Comments:

CEOG - Applicable, CEOG accepts

WOG - Applicable and accepts

BWROG - applicable and accepts

TSTF Resolution: Approved

Date: 10-Oct-96

NRC Review Information

NRC Received Date: 22-Jan-97

NRC Comments:

3/13/97 - NRC approves.

31-Jul-03

OG Revision 0**Revision Status: Active**

Final Resolution: NRC Approves

Final Resolution Date: 13-Mar-97

Affected Technical Specifications

5.5.9	Steam Generator Tube Surveillance Program	NUREG(s)- 1430 1431 1432 Only
5.5.13	Diesel Fuel Oil Testing Program	NUREG(s)- 1430 1431 1432 Only
5.5.10	Diesel Fuel Oil Testing Program	NUREG(s)- 1433 1434 Only

31-Jul-03

5.5 Programs and Manuals (continued)

5.5.8 Inservice Testing Program

This program provides controls for inservice testing of ASME Code Class 1, 2, and 3 components including applicable supports. The program shall include the following:

- a. Testing frequencies specified in Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda as follows:

<u>ASME Boiler and Pressure Vessel Code and applicable Addenda terminology for inservice testing activities</u>	<u>Required Frequencies for performing inservice testing activities</u>
Weekly	At least once per 7 days
Monthly	At least once per 31 days
Quarterly or every 3 months	At least once per 92 days
Semiannually or every 6 months	At least once per 184 days
Every 9 months	At least once per 276 days
Yearly or annually	At least once per 366 days
Biennially or every 2 years	At least once per 731 days

- b. The provisions of SR 3.0.2 are applicable to the above required Frequencies for performing inservice testing activities;
- c. The provisions of SR 3.0.3 are applicable to inservice testing activities; and
- d. Nothing in the ASME Boiler and Pressure Vessel Code shall be construed to supersede the requirements of any TS.

5.5.9 Steam Generator (SG) Tube Surveillance Program

Reviewer's Note: The Licensees current licensing basis steam generator tube surveillance requirements shall be relocated from the LCO and included here. An appropriate administrative controls program format should be used.

Insert

The provisions of SR 3.0.2 are applicable to the SG Tube Surveillance Program test frequencies.

(continued)

TSTF-118

5.5 Programs and Manuals

5.5.13 Diesel Fuel Oil Testing Program (continued)

2. a flash point and kinematic viscosity within limits for ASTM 2D fuel oil, and
 3. a clear and bright appearance with proper color;
- b. Other properties for ASTM 2D fuel oil are within limits within 30 days following sampling and addition to storage tanks; and
- c. Total particulate concentration of the fuel oil is ≤ 10 mg/l when tested every 31 days in accordance with ASTM D-2276, Method A-2 or A-3.

5.5.14 Technical Specifications (TS) Bases Control Program

This program provides a means for processing changes to the Bases of these Technical Specifications.

- a. Changes to the Bases of the TS shall be made under appropriate administrative controls and reviews.
- b. Licensees may make changes to Bases without prior NRC approval provided the changes do not involve either of the following:
 1. A change in the TS incorporated in the license; or
 2. A change to the updated FSAR or Bases that involves an unreviewed safety question as defined in 10 CFR 50.59.
- c. The Bases Control Program shall contain provisions to ensure that the Bases are maintained consistent with the FSAR.
- d. Proposed changes that meet the criteria of 5.5.14b above shall be reviewed and approved by the NRC prior to implementation. Changes to the Bases implemented without prior NRC approval shall be provided to the NRC on a frequency consistent with 10 CFR 50.71(e).

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Diesel Fuel Oil Testing Program testing frequencies.

(continued)

5.5 Programs and Manuals (continued)

5.5.8 Inservice Testing Program

This program provides controls for inservice testing of ASME Code Class 1, 2, and 3 components including applicable supports. The program shall include the following:

- a. Testing frequencies specified in Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda as follows:

<u>ASME Boiler and Pressure Vessel Code and applicable Addenda terminology for inservice testing activities</u>	<u>Required Frequencies for performing inservice testing activities</u>
Weekly	At least once per 7 days
Monthly	At least once per 31 days
Quarterly or every 3 months	At least once per 92 days
Semiannually or every 6 months	At least once per 184 days
Every 9 months	At least once per 276 days
Yearly or annually	At least once per 366 days
Biennially or every 2 years	At least once per 731 days

- b. The provisions of SR 3.0.2 are applicable to the above required Frequencies for performing inservice testing activities;
- c. The provisions of SR 3.0.3 are applicable to inservice testing activities; and
- d. Nothing in the ASME Boiler and Pressure Vessel Code shall be construed to supersede the requirements of any TS.

5.5.9 Steam Generator (SG) Tube Surveillance Program

Reviewer's Note: The Licensee's current licensing basis steam generator tube surveillance requirements shall be relocated from the LCO and included here. An appropriate administrative controls program format should be used.

The provisions of SR 3.0.2 are applicable to the SG Tube Surveillance Program Test Frequencies.

(continued)

TSTF-118

5.5 Programs and Manuals

5.5.13 Diesel Fuel Oil Testing Program (continued)

2. a flash point and kinematic viscosity within limits for ASTM 2D fuel oil, and
3. a clear and bright appearance with proper color;
- b. Other properties for ASTM 2D fuel oil are within limits within 31 days following sampling and addition to storage tanks; and
- c. Total particulate concentration of the fuel oil is ≤ 10 mg/l when tested every 31 days in accordance with ASTM D-2276, Method A-2 or A-3.

5.5.14 Technical Specifications (TS) Bases Control Program

This program provides a means for processing changes to the Bases of these Technical Specifications.

- a. Changes to the Bases of the TS shall be made under appropriate administrative controls and reviews.
- b. Licensees may make changes to Bases without prior NRC approval provided the changes do not involve either of the following:
 1. a change in the TS incorporated in the license; or
 2. a change to the updated FSAR or Bases that involves an unreviewed safety question as defined in 10 CFR 50.59.
- c. The Bases Control Program shall contain provisions to ensure that the Bases are maintained consistent with the FSAR.
- d. Proposed changes that meet the criteria of Specification 5.5.14b above shall be reviewed and approved by the NRC prior to implementation. Changes to the Bases implemented without prior NRC approval shall be provided to the NRC on a frequency consistent with 10 CFR 50.71(e).

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Diesel Fuel Oil Testing Program test frequencies.

(continued)

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5.5 Programs and Manuals (continued)

5.5.8 Inservice Testing Program

This program provides controls for inservice testing of ASME Code Class 1, 2, and 3 components including applicable supports. The program shall include the following:

- a. Testing frequencies specified in Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda as follows:

<u>ASME Boiler and Pressure Vessel Code and applicable Addenda terminology for inservice testing activities</u>	<u>Required Frequencies for performing inservice testing activities</u>
Weekly	At least once per 7 days
Monthly	At least once per 31 days
Quarterly or every 3 months	At least once per 92 days
Semiannually or every 6 months	At least once per 184 days
Every 9 months	At least once per 276 days
Yearly or annually	At least once per 366 days
Biennially or every 2 years	At least once per 731 days

- b. The provisions of SR 3.0.2 are applicable to the above required Frequencies for performing inservice testing activities;
- c. The provisions of SR 3.0.3 are applicable to inservice testing activities; and
- d. Nothing in the ASME Boiler and Pressure Vessel Code shall be construed to supersede the requirements of any TS.

5.5.9 Steam Generator (SG) Tube Surveillance Program

Reviewer's Note: The Licensees current licensing basis steam generator tube surveillance requirements shall be relocated from the LCO and included here. An appropriate administrative controls program format should be used.

The provisions of SR 3.0.2 are applicable to the SG Tube Surveillance Program.

(continued)

TSTF-118

5.5 Programs and Manuals (continued)

5.5.13 Diesel Fuel Oil Testing Program

A diesel fuel oil testing program to implement required testing of both new fuel oil and stored fuel oil shall be established. The program shall include sampling and testing requirements, and acceptance criteria, all in accordance with applicable ASTM Standards. The purpose of the program is to establish the following:

- a. Acceptability of new fuel oil for use prior to addition to storage tanks by determining that the fuel oil has:
 1. An API gravity or an absolute specific gravity within limits,
 2. A flash point and kinematic viscosity within limits for ASTM 2D fuel oil, and
 3. A clear and bright appearance with proper color;
- b. Other properties for ASTM 2D fuel oil are within limits within 31 days following sampling and addition to storage tanks; and
- c. Total particulate concentration of the fuel oil is ≤ 10 mg/l when tested every 31 days in accordance with ASTM D-2276, Method A-2 or A-3.

5.5.14 Technical Specifications (TS) Bases Control Program

This program provides a means for processing changes to the Bases of these Technical Specifications.

- a. Changes to the Bases of the TS shall be made under appropriate administrative controls and reviews.
- b. Licensees may make changes to Bases without prior NRC approval provided the changes do not involve either of the following:

A change in the TS incorporated in the license; or

A change to the updated FSAR or Bases that involves an unreviewed safety question as defined in 10 CFR 50.59.

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Diesel Fuel Oil Testing Program testing frequencies.

(continued)

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5.5 Programs and Manuals

5.5.10 Diesel Fuel Oil Testing Program (continued)

- a. Acceptability of new fuel oil for use prior to addition to storage tanks by determining that the fuel oil has:
 1. an API gravity or an absolute specific gravity within limits,
 2. a flash point and kinematic viscosity within limits for ASTM 2D fuel oil,
 3. a clear and bright appearance with proper color;
- b. Other properties for ASTM 2D fuel oil are within limits within 31 days following sampling and addition to storage tanks; and
- c. Total particulate concentration of the fuel oil is ≤ 10 mg/l when tested every 31 days in accordance with ASTM D-2276, Method A-2 or A-3.

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Diesel Fuel Oil Testing Program testing frequencies.

5.5.11 Technical Specifications (TS) Bases Control Program

This program provides a means for processing changes to the Bases of these Technical Specifications.

- a. Changes to the Bases of the TS shall be made under appropriate administrative controls and reviews.
- b. Licensees may make changes to Bases without prior NRC approval provided the changes do not involve either of the following:
 1. a change in the TS incorporated in the license; or
 2. a change to the updated FSAR or Bases that involves an unreviewed safety question as defined in 10 CFR 50.59.
- c. The Bases Control Program shall contain provisions to ensure that the Bases are maintained consistent with the FSAR.
- d. Proposed changes that meet the criteria of 5.5.11b above shall be reviewed and approved by the NRC prior to implementation. Changes to the Bases implemented without

(continued)

TSTF-118

5.5 Programs and Manuals (continued)

5.5.10 Diesel Fuel Oil Testing Program

A diesel fuel oil testing program to implement required testing of both new fuel oil and stored fuel oil shall be established. The program shall include sampling and testing requirements, and acceptance criteria, all in accordance with applicable ASTM Standards. The purpose of the program is to establish the following:

- a. Acceptability of new fuel oil for use prior to addition to storage tanks by determining that the fuel oil has:
 1. an API gravity or an absolute specific gravity within limits,
 2. a flash point and kinematic viscosity within limits for ASTM 2D fuel oil, and
 3. a clear and bright appearance with proper color;
- b. Other properties for ASTM 2D fuel oil are within limits within 31 days following sampling and addition to storage tanks; and
- c. Total particulate concentration of the fuel oil is ≤ 10 mg/l when tested every 31 days in accordance with ASTM D-2276, Method A-2 or A-3.

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Diesel Fuel Oil Testing Program testing frequencies.

5.5.11 Technical Specifications (TS) Bases Control Program

This program provides a means for processing changes to the Bases of these Technical Specifications.

- a. Changes to the Bases of the TS shall be made under appropriate administrative controls and reviews.
- b. Licensees may make changes to Bases without prior NRC approval provided the changes do not involve either of the following:
 1. a change in the TS incorporated in the license; or
 2. a change to the updated FSAR or Bases that involves an unreviewed safety question as defined in 10 CFR 50.59.

(continued)

Technical Specification Task Force

Improved Standard Technical Specifications Change Traveler

Delete Specific Reference to Bypasses in CFT and Calibration Definitions

NUREGs Affected: 1430 1431 1432 1433 1434

Classification: 2) Consistency/Standardization

Recommended for CLIIP?: (Unassigned)

Correction or Improvement: (Unassigned)

Industry Contact: Paul Infanger, (352) 563-4796, paul.infanger@pgnmail.com

Revise the definition of CHANNEL CALIBRATION to delete the following sentence: "The CHANNEL CALIBRATION shall also include testing of safety related Reactor Protection System (RPS), Engineered Safety Feature Actuation System (ESFAS), and Emergency Feedwater Initiation and Control (EFIC) bypass functions for each channel affected by the bypass operation." and revise the definition of CHANNEL FUNCTIONAL TEST to delete the last sentence, "The ESFAS CHANNEL FUNCTIONAL TEST shall also include testing of ESFAS safety related bypass functions for each channel affected by bypass operation."

Separate delineation of the inclusion of bypasses in the CFT and CAL are not necessary. The current industry standards clearly indicate the operating bypasses are a part of the system function (IEEE-603, which replaced IEEE-279, and is endorsed by RG 1.153) and that CFT should include the testing of such bypasses (IEEE 338, Section 6.3.2). Further, such application of including the required channel bypasses is consistent with the application provided in the ISTS NUREGs for all other vendors.

Revision History

OG Revision 0

Revision Status: Active

Revision Proposed by: ANO-1

Revision Description:
Original Issue

Owners Group Review Information

Date Originated by OG: 15-Dec-95

Owners Group Comments:

1/15/96 - TE Comment - Were bypass functions removed from the Instrument TSs because of the definition?

2/7/96 - Approved by FPC

Owners Group Resolution: Approved Date: 01-Feb-96

TSTF Review Information

TSTF Received Date: 01-Jul-96

Date Distributed for Review: 31-Jul-96

OG Review Completed: BWOG WOG CEOG BWROG

TSTF Comments:

CEOG - Not applicable

WOG - NA

BWROG - NA

TSTF Resolution: Approved

Date: 10-Oct-96

NRC Review Information

NRC Received Date: 22-Jan-97

31-Jul-03

OG Revision 0

Revision Status: Active

NRC Comments:

4/17/97 - This change will likely be superseded by the Traveler to revise the Channel Calibration and Channel Functional Test definitions.

Final Resolution: NRC Approves

Final Resolution Date: 01-Oct-97

Affected Technical Specifications

1.1 Definition of Channel Calibration

1.1 Definition of Channel Functional Test

31-Jul-03

Definitions

1.1

1.1 Definitions

CHANNEL CALIBRATION
(continued)

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 so that the entire channel is calibrated.

~~The CHANNEL CALIBRATION shall also include testing of safety related Reactor Protection System (RPS), Engineered Safety Feature Actuation System (ESFAS), and Emergency Feedwater Initiation and Control (EFIC) bypass functions for each channel affected by the bypass operation.~~

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 FUNCTIONAL TEST

A CHANNEL FUNCTIONAL TEST shall be the injection of a simulated or actual signal into the channel as close to the sensor as practicable to verify OPERABILITY, including required alarms, interlocks, display, and trip functions.

~~The ESFAS CHANNEL FUNCTIONAL TEST shall also include testing of ESFAS safety related bypass functions for each channel affected by bypass operation.~~

CONTROL RODS

CONTROL RODS shall be all full length safety and regulating rods that are used to shut down the reactor and control power level during maneuvering operations.

CORE ALTERATION

CORE ALTERATION shall be the movement of any fuel, sources, or reactivity control components, within the reactor vessel with the vessel head removed and fuel in the vessel. Suspension of CORE

(continued)

Technical Specification Task Force

Improved Standard Technical Specifications Change Traveler

Delete EFPD Definition

NUREGs Affected: 1430 1431 1432 1433 1434

Classification: 2) Consistency/Standardization

Recommended for CLIIP?: (Unassigned)

Correction or Improvement: (Unassigned)

Industry Contact: Paul Infanger, (352) 563-4796, paul.infanger@pgnmail.com

Delete the definition of EFFECTIVE FULL POWER DAYS.

This definition is unnecessary, and inconsistent with the other ISTS NUREGs. EFPD is a very well understood, common term which does not require definition. This term is consistently used throughout the nuclear industry, and has been consistently applied for many years without a TS definition. Additionally, the term is not used as a defined term in the Bases.

A search of the ISTS NUREGs reveals that the term "EFPD" is used in 37 Specifications or Bases in the PWR NUREGs. It is only defined in one occurrence (NUREG-1430, LCO 3.2.2 Bases). EFPD is not a defined term in the other ISTS NUREGs. Therefore, eliminating the defined term from NUREG-1430 and eliminating the one occurrence of it's definition from the NUREG-1430 Bases makes NUREG-1430 internally consistent in its usage and with the other NUREGs (both definitions, Specifications, and Bases).

Revision History

OG Revision 0

Revision Status: Closed

Revision Proposed by: ANO-1

Revision Description:
Original Issue

Owners Group Review Information

Date Originated by OG: 15-Dec-95

Owners Group Comments:
1/15/96 - Approved by TE
1/16/96 - Approved by FPC

Owners Group Resolution: Approved Date: 01-Feb-96

TSTF Review Information

TSTF Received Date: 01-Jul-96

Date Distributed for Review: 31-Jul-96

OG Review Completed: BWOOG WOG CEOG BWROG

TSTF Comments:

CEOG - Not applicable
WOG - NA
BWROG - NA

TSTF Resolution: Approved

Date: 10-Oct-96

NRC Review Information

NRC Received Date: 22-Jan-97

31-Jul-03

OG Revision 0**Revision Status: Closed**

NRC Comments:

2/7/97 - Reviewer recommended approval.

2/13/97 - To C. Grimes for disposition.

3/18/97 C. Grimes modified pkg. The proposed changes are intended to establish consistent terminology in the B&W STS. However, it is not clear from the justification how the changes achieve consistency both within the B&W STS, and between B&W and the other STS, relative to the proper terminology and use of defined terms.

4/17/97 NRC report states that TSTF preparing revision package.

Final Resolution: Superseded by Revision

Final Resolution Date: 17-Apr-97

TSTF Revision 1**Revision Status: Active**

Revision Proposed by: TSTF

Revision Description:

NRC requested additional information on how the proposed change made the B&W NUREG more consistent with the other NUREGs and internally. A search of the ISTS NUREGs reveals that the term "EFPD" is used in 37 Specifications or Bases in the PWR NUREGs. It is only defined in one occurrence (NUREG-1430, LCO 3.2.2 Bases). EFPD is not a defined term in the other ISTS NUREGs. Therefore, eliminating the defined term from NUREG-1430 and eliminating the one occurrence of it's definition from the NUREG-1430 Bases makes NUREG-1430 internally consistent in its usage and with the other NUREGs (both definitions, Specifications, and Bases).

TSTF Review Information

TSTF Received Date: 11-Jan-97

Date Distributed for Review: 15-Jan-98

OG Review Completed: BWOG WOG CEOG BWROG

TSTF Comments:

(No Comments)

TSTF Resolution: Approved

Date: 05-Feb-98

NRC Review Information

NRC Received Date: 20-Feb-98

Final Resolution: NRC Approves

Final Resolution Date: 21-Apr-98

Affected Technical Specifications

1.1	Definitions - EFPD
	Change Description: Definition Deleted
LCO 3.2.2 Bases	APSR Insertion Limits

31-Jul-03

Definitions
1.1

1.1 Definitions

CORE ALTERATION (continued)	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 current reload cycle. These cycle specific limits shall be determined for each reload cycle in accordance with Specification 5.6.5. 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 III of TID-14844, AEC, 1962, "Calculation of Distance Factors for Power and Test Reactor Sites," or those listed in Table E-7 of Regulatory Guide 1.109, Rev. 1, NRC, 1977, or ICRP 30, Supplement to Part 1, page 192-212, Table titled, "Committed Dose Equivalent in Target Organs or Tissues per Intake of Unit Activity"].
E—AVERAGE DISINTEGRATION ENERGY	E shall be the average (weighted in proportion to the concentration of each radionuclide in the reactor coolant at the time of sampling) of the sum of the average beta and gamma energies per disintegration (in MeV) for isotopes, other than iodines, with half lives > [15] minutes, making up at least 95% of the total noniodine activity in the coolant.
EFFECTIVE FULL POWER DAY (EFPD)	EFPD shall be the ratio of the number of hours of production of a given THERMAL POWER to 24 hours, multiplied by the ratio of the given THERMAL POWER to the RTP. One EFPD is equivalent to the thermal energy produced by operating the reactor core at RTP for one full day.
EMERGENCY FEEDWATER INITIATION AND CONTROL (EFIC) RESPONSE TIME	The EFIC RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its EFIC actuation setpoint at the channel sensor until the emergency feedwater equipment is

(continued)

BASES

LCO
(continued)

controlling the power distribution within an acceptable range.

The fuel cycle design assumes APSR withdrawal at the ~~effective full power day (EFPD)~~ burnup window specified in the COLR. Prior to this window, the APSRs cannot be maintained fully withdrawn in steady state operation. After this window, the APSRs are not allowed to be reinserted for the remainder of the fuel cycle.

Error adjusted maximum allowable setpoints for APSR insertion are provided in the COLR. The setpoints are derived by adjustment of the measurement system independent limits to allow for THERMAL POWER level uncertainty and rod position errors.

Actual alarm setpoints implemented in the unit may be more restrictive than the maximum allowable setpoint values to allow for additional conservatism between the actual alarm setpoints and the measurement system independent limits.

APPLICABILITY

The APSR physical insertion limits shall be maintained with the reactor in MODES 1 and 2. These limits maintain the power distribution within the range assumed in the accident analyses. In MODE 1, the limits on APSR insertion specified by this LCO maintain the axial fuel burnup design conditions assumed in the reload safety evaluation analysis. In MODE 2, applicability is required because $k_{eff} > 0.99$. Applicability in MODES 3, 4, and 5 is not required, because the power distribution assumptions in the accident analyses would not be exceeded in these MODES.

ACTIONS

For steady state power operation, a normal position for APSR insertion is specified in the station operating procedures. The APSRs may be positioned as necessary for transient AXIAL POWER IMBALANCE control until the fuel cycle design requires them to be fully withdrawn. (Not all fuel cycles may incorporate APSR withdrawal.) APSR position limits are not imposed for gray APSRs, with two exceptions. If the fuel cycle design incorporates an APSR withdrawal (usually near end of cycle (EOC)), the APSRs may not be maintained in the fully withdrawn position prior to the fuel cycle burnup for

(continued)

Technical Specification Task Force

Improved Standard Technical Specifications Change Traveler

Revise Reporting Requirements to be Consistent with 10 CFR 20

NUREGs Affected: 1430 1431 1432 1433 1434

Classification: 3) Improve Specifications

Recommended for CLIIP?: (Unassigned)

Correction or Improvement: (Unassigned)

Industry Contact: Steve Wideman, (620) 364-4037, stwidem@wcnoc.com

This change revises 5.6.1, Occupational Radiation Exposure Report, and 5.6.3, Radioactive Effluent Release Report, to be consistent with NRC letter dated 7/28/95 by C. I. Grimes on changes to Tech Specs resulting from 10 CFR 20 and 50.36a changes.

NRC provided guidance on how to change the ITS in a proposed Generic Letter that was never issued. These changes reflect the rule changes.

Revision History

OG Revision 0

Revision Status: Active

Revision Proposed by: Diablo Canyon

Revision Description:

Original Issue

Owners Group Review Information

Date Originated by OG: 16-Aug-96

Owners Group Comments:

(No Comments)

Owners Group Resolution: Approved Date: 16-Aug-96

TSTF Review Information

TSTF Received Date: 27-Sep-96

Date Distributed for Review: 27-Sep-96

OG Review Completed: BWOG WOG CEOG BWROG

TSTF Comments:

CEOG - Applicable, accepts

BWROG - Applicable, accepts

WOG - Applicable, accepts

TSTF Resolution: Approved

Date: 21-Oct-96

NRC Review Information

NRC Received Date: 23-Jan-97

NRC Comments:

3/13/97 - NRC approves.

Final Resolution: NRC Approves

Final Resolution Date: 13-Mar-97

04-Aug-03

Affected Technical Specifications

5.6.1 Occupational Radiation Exposure Report

5.6.3 Radioactive Effluent Release Report

TSTF-152

5.0 ADMINISTRATIVE CONTROLS

5.6 Reporting Requirements

The following reports shall be submitted in accordance with 10 CFR 50.4.

5.6.1 Occupational Radiation Exposure Report

-----NOTE-----
A single submittal may be made for a multiple unit station. The submittal should combine sections common to all units at the station.

Insert →

~~A tabulation on an annual basis of the number of station, utility, and other personnel (including contractors) receiving exposures > 100 mrem/yr and their associated man rem exposure according to work and job functions (e.g., reactor operations and surveillance, inservice inspection, routine maintenance, special maintenance [describe maintenance], waste processing, and refueling). This tabulation supplements the requirements of 10 CFR 20.2206. The dose assignments to various duty functions may be estimated based on pocket dosimeter, thermoluminescent dosimeter (TLD), or film badge measurements. Small exposures totalling < 20% of the individual total dose need not be accounted for. In the aggregate, at least 80% of the total whole body dose received from external sources should be assigned to specific major work functions. The report shall be submitted by April 30 of each year. [The initial report shall be submitted by April 30 of the year following the initial criticality.]~~

5.6.2 Annual Radiological Environmental Operating Report

-----NOTE-----
A single submittal may be made for a multiple unit station. The submittal should combine sections common to all units at the station.

The Annual Radiological Environmental Operating Report covering the operation of the unit during the previous calendar year shall be submitted by May 15 of each year. The report shall include summaries, interpretations, and analyses of trends of the results of the radiological environmental monitoring program for the reporting period. The material provided shall be consistent with the objectives outlined in the Offsite Dose Calculation Manual

(continued)

TSTF-152

5.6 Reporting Requirements

5.6.2 Annual Radiological Environmental Operating Report (continued)

(ODCM), and in 10 CFR 50, Appendix I, Sections IV.B.2, IV.B.3, and IV.C.

The Annual Radiological Environmental Operating Report shall include the results of analyses of all radiological environmental samples and of all environmental radiation measurements taken during the period pursuant to the locations specified in the table and figures in the ODCM, as well as summarized and tabulated results of these analyses and measurements [in the format of the table in the Radiological Assessment Branch Technical Position, Revision 1, November 1979]. [The report shall identify the TLD results that represent collocated dosimeters in relation to the NRC TLD program and the exposure period associated with each result.] In the event that some individual results are not available for inclusion with the report, the report shall be submitted noting and explaining the reasons for the missing results. The missing data shall be submitted in a supplementary report as soon as possible.

5.6.3 Radioactive Effluent Release Report

-----NOTE-----

A single ^{shall} ~~should~~ submittal may be made for a multiple unit station. The submittal ~~should~~ combine sections common to all units at the station; however, for units with separate radwaste systems, the submittal shall specify the releases of radioactive material from each unit.

in the previous year

prior to May 1 of each year

The Radioactive Effluent Release Report covering the operation of the unit shall be submitted in accordance with 10 CFR 50.36a. The report shall include a summary of the quantities of radioactive liquid and gaseous effluents and solid waste released from the unit. The material provided shall be consistent with the objectives outlined in the ODCM and Process Control Program and in conformance with 10 CFR 50.36a and 10 CFR 50, Appendix I, Section IV.B.1.

Part

(continued)

TSTF-152

5.0 ADMINISTRATIVE CONTROLS

5.6 Reporting Requirements

The following reports shall be submitted in accordance with 10 CFR 50.4.

5.6.1 Occupational Radiation Exposure Report

-----NOTE-----
A single submittal may be made for a multiple unit station. The submittal should combine sections common to all units at the station.

Insert →

~~A tabulation on an annual basis of the number of station, utility, and other personnel (including contractors) receiving exposures > 100 mrem/yr and their associated man rem exposure according to work and job functions (e.g., reactor operations and surveillance, inservice inspection, routine maintenance, special maintenance [describe maintenance], waste processing, and refueling). This tabulation supplements the requirements of 10 CFR 20.2206. The dose assignments to various duty functions may be estimated based on pocket dosimeter, thermoluminescent dosimeter (TLD), or film badge measurements. Small exposures totalling < 20% of the individual total dose need not be accounted for. In the aggregate, at least 80% of the total whole body dose received from external sources should be assigned to specific major work functions. The report shall be submitted by April 30 of each year. [The initial report shall be submitted by April 30 of the year following the initial criticality.]~~

5.6.2 Annual Radiological Environmental Operating Report

-----NOTE-----
A single submittal may be made for a multiple unit station. The submittal should combine sections common to all units at the station.

The Annual Radiological Environmental Operating Report covering the operation of the unit during the previous calendar year shall be submitted by May 15 of each year. The report shall include summaries, interpretations, and analyses of trends of the results of the radiological environmental monitoring program for the reporting period. The material provided shall be consistent with the objectives outlined in the Offsite Dose Calculation Manual

(continued)

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5.6 Reporting Requirements

5.6.2 Annual Radiological Environmental Operating Report (continued)

(ODCM), and in 10 CFR 50, Appendix I, Sections IV.B.2, IV.B.3, and IV.C.

The Annual Radiological Environmental Operating Report shall include the results of analyses of all radiological environmental samples and of all environmental radiation measurements taken during the period pursuant to the locations specified in the table and figures in the ODCM, as well as summarized and tabulated results of these analyses and measurements [in the format of the table in the Radiological Assessment Branch Technical Position, Revision 1, November 1979]. [The report shall identify the TLD results that represent collocated dosimeters in relation to the NRC TLD program and the exposure period associated with each result.] In the event that some individual results are not available for inclusion with the report, the report shall be submitted noting and explaining the reasons for the missing results. The missing data shall be submitted in a supplementary report as soon as possible.

5.6.3 Radioactive Effluent Release Report

-----NOTE-----

A single submittal ^{shall} may be made for a multiple unit station. The submittal ~~should~~ combine sections common to all units at the station; however, for units with separate radwaste systems, the submittal shall specify the releases of radioactive material from each unit.

in the previous year

Prior to May 1 of each year

The Radioactive Effluent Release Report covering the operation of the unit shall be submitted in accordance with 10 CFR 50.36a. The report shall include a summary of the quantities of radioactive liquid and gaseous effluents and solid waste released from the unit. The material provided shall be consistent with the objectives outlined in the ODCM and Process Control Program and in conformance with 10 CFR 50.36a and 10 CFR, 50, Appendix I, Section IV.B.1.

Part

(continued)

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5.0 ADMINISTRATIVE CONTROLS

5.6 Reporting Requirements

The following reports shall be submitted in accordance with 10 CFR 50.4.

5.6.1 Occupational Radiation Exposure Report

-----NOTE-----
A single submittal may be made for a multiple unit station. The submittal should combine sections common to all units at the station.

Insert →

~~A tabulation on an annual basis of the number of station, utility, and other personnel (including contractors) receiving exposures > 100 mrem/yr and their associated man rem exposure according to work and job functions (e.g., reactor operations and surveillance, inservice inspection, routine maintenance, special maintenance [describe maintenance], waste processing, and refueling). This tabulation supplements the requirements of 10 CFR 20.2206. The dose assignments to various duty functions may be estimated based on pocket dosimeter, thermoluminescent dosimeter (TLD), or film badge measurements. Small exposures totalling < 20% of the individual total dose need not be accounted for. In the aggregate, at least 80% of the total whole body dose received from external sources should be assigned to specific major work functions. The report shall be submitted by April 30 of each year. [The initial report shall be submitted by April 30 of the year following initial criticality.]~~

5.6.2 Annual Radiological Environmental Operating Report

-----NOTE-----
A single submittal may be made for a multiple unit station. The submittal should combine sections common to all units at the station.

The Annual Radiological Environmental Operating Report covering the operation of the unit during the previous calendar year shall be submitted by May 15 of each year. The report shall include summaries, interpretations, and analyses of trends of the results of the radiological environmental monitoring program for the reporting period. The material provided shall be consistent with the objectives outlined in the Offsite Dose Calculation Manual

(continued)

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5.6 Reporting Requirements

5.6.2 Annual Radiological Environmental Operating Report (continued)

(ODCM), and in 10 CFR 50, Appendix I, Sections IV.B.2, IV.B.3, and IV.C.

The Annual Radiological Environmental Operating Report shall include the results of analyses of all radiological environmental samples and of all environmental radiation measurements taken during the period pursuant to the locations specified in the table and figures in the ODCM, as well as summarized and tabulated results of these analyses and measurements [in the format of the table in the Radiological Assessment Branch Technical Position, Revision 1, November 1979]. [The report shall identify the TLD results that represent collocated dosimeters in relation to the NRC TLD program and the exposure period associated with each result.] In the event that some individual results are not available for inclusion with the report, the report shall be submitted noting and explaining the reasons for the missing results. The missing data shall be submitted in a supplementary report as soon as possible.

5.6.3 Radioactive Effluent Release Report

-----NOTE-----

(shall)

A single submittal may be made for a multiple unit station. The submittal ~~should~~ combine sections common to all units at the station; however, for units with separate radwaste systems, the submittal shall specify the releases of radioactive material from each unit.

In the previous year

prior to May 1 of each year

The Radioactive Effluent Release Report covering the operation of the unit shall be submitted in accordance with 10 CFR 50.36a. The report shall include a summary of the quantities of radioactive liquid and gaseous effluents and solid waste released from the unit. The material provided shall be consistent with the objectives outlined in the ODCM and Process Control Program and in conformance with 10 CFR 50.36a and 10 CFR 50, Appendix I, Section IV.B.1.

(Part)

5.6.4 Monthly Operating Reports

Routine reports of operating statistics and shutdown experience[, including documentation of all challenges to the pressurizer

(continued)

TSTF-152

5.0 ADMINISTRATIVE CONTROLS

5.6 Reporting Requirements

The following reports shall be submitted in accordance with 10 CFR 50.4.

5.6.1 Occupational Radiation Exposure Report

-----NOTE-----
A single submittal may be made for a multiple unit station. The submittal should combine sections common to all units at the station.

Insert →

A tabulation on an annual basis of the number of station, utility, and other personnel (including contractors) receiving exposures > 100 mrem/yr and their associated man rem exposure according to work and job functions (e.g., reactor operations and surveillance, inservice inspection, routine maintenance, special maintenance [describe maintenance], waste processing, and refueling). This tabulation supplements the requirements of 10 CFR 20.2206. The dose assignments to various duty functions may be estimated based on pocket dosimeter, thermoluminescent dosimeter (TLD), or film badge measurements. Small exposures totalling < 20% of the individual total dose need not be accounted for. In the aggregate, at least 80% of the total whole body dose received from external sources should be assigned to specific major work functions. The report shall be submitted by April 30 of each year. [The initial report shall be submitted by April 30 of the year following initial criticality.]

5.6.2 Annual Radiological Environmental Operating Report

-----NOTE-----
A single submittal may be made for a multiple unit station. The submittal should combine sections common to all units at the station.

The Annual Radiological Environmental Operating Report covering the operation of the unit during the previous calendar year shall be submitted by May 15 of each year. The report shall include summaries, interpretations, and analyses of trends of the results of the radiological environmental monitoring program for the reporting period. The material provided shall be consistent with the objectives outlined in the Offsite Dose Calculation Manual

(continued)

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5.6 Reporting Requirements

5.6.2 Annual Radiological Environmental Operating Report (continued)

(ODCM), and in 10 CFR 50, Appendix I, Sections IV.B.2, IV.B.3, and IV.C.

The Annual Radiological Environmental Operating Report shall include the results of analyses of all radiological environmental samples and of all environmental radiation measurements taken during the period pursuant to the locations specified in the table and figures in the ODCM, as well as summarized and tabulated results of these analyses and measurements [in the format of the table in the Radiological Assessment Branch Technical Position, Revision 1, November 1979]. [The report shall identify the TLD results that represent collocated dosimeters in relation to the NRC TLD program and the exposure period associated with each result.] In the event that some individual results are not available for inclusion with the report, the report shall be submitted noting and explaining the reasons for the missing results. The missing data shall be submitted in a supplementary report as soon as possible.

5.6.3 Radioactive Effluent Release Report

-----NOTE-----
A single submittal ^{shall} may be made for a multiple unit station. The submittal ~~should~~ combine sections common to all units at the station; however, for units with separate radwaste systems, the submittal shall specify the releases of radioactive material from each unit.

during the previous year
prior to May 1 of each year

The Radioactive Effluent Release Report covering the operation of the unit shall be submitted in accordance with 10 CFR 50.36a. The report shall include a summary of the quantities of radioactive liquid and gaseous effluents and solid waste released from the unit. The material provided shall be consistent with the objectives outlined in the ODCM and Process Control Program and in conformance with 10 CFR 50.36a and 10 CFR 50, Appendix I, Section IV.B.1.

Part

5.6.4 Monthly Operating Reports

Routine reports of operating statistics and shutdown experience[, including documentation of all challenges to the safety/relief

(continued)

5.6 Reporting Requirements

5.6.2 Annual Radiological Environmental Operating Report (continued)

(ODCM), and in 10 CFR 50, Appendix I, Sections IV.B.2, IV.B.3, and IV.C:

The Annual Radiological Environmental Operating Report shall include the results of analyses of all radiological environmental samples and of all environmental radiation measurements taken during the period pursuant to the locations specified in the table and figures in the ODCM, as well as summarized and tabulated results of these analyses and measurements [in the format of the table in the Radiological Assessment Branch Technical Position, Revision 1, November 1979]. [The report shall identify the TLD results that represent collocated dosimeters in relation to the NRC TLD program and the exposure period associated with each result.] In the event that some individual results are not available for inclusion with the report, the report shall be submitted noting and explaining the reasons for the missing results. The missing data shall be submitted in a supplementary report as soon as possible.

5.6.3 Radioactive Effluent Release Report

-----^{shall}NOTE-----
A single submittal may be made for a multiple unit station. The submittal ~~should~~ combine sections common to all units at the station; however, for units with separate radwaste systems, the submittal shall specify the releases of radioactive material from each unit.

during the previous year

prior to May 1 of each year

The Radioactive Effluent Release Report covering the operation of the unit shall be submitted in accordance with 10 CFR 50.36a. The report shall include a summary of the quantities of radioactive liquid and gaseous effluents and solid waste released from the unit. The material provided shall be consistent with the objectives outlined in the ODCM and Process Control Program and in conformance with 10 CFR 50.36a and 10 CFR 50, Appendix I, Section IV.B.1.

Part

5.6.4 Monthly Operating Reports

Routine reports of operating statistics and shutdown experience[, including documentation of all challenges to the safety/relief

(continued)

TSTF-152

5.0 ADMINISTRATIVE CONTROLS

5.6 Reporting Requirements

The following reports shall be submitted in accordance with 10 CFR 50.4.

5.6.1 Occupational Radiation Exposure Report

-----NOTE-----
A single submittal may be made for a multiple unit station. The submittal should combine sections common to all units at the station.

Insert →

A tabulation on an annual basis of the number of station, utility, and other personnel (including contractors) receiving exposures > 100 mrem/yr and their associated man rem exposure according to work and job functions (e.g., reactor operations and surveillance, inservice inspection, routine maintenance, special maintenance [describe maintenance], waste processing, and refueling). This tabulation supplements the requirements of 10 CFR 20.2206. The dose assignments to various duty functions may be estimated based on pocket dosimeter, thermoluminescent dosimeter (TLD), or film badge measurements. Small exposures totalling < 20% of the individual total dose need not be accounted for. In the aggregate, at least 80% of the total whole body dose received from external sources should be assigned to specific major work functions. The report shall be submitted by April 30 of each year. [The initial report shall be submitted by April 30 of the year following initial criticality.]

5.6.2 Annual Radiological Environmental Operating Report

-----NOTE-----
A single submittal may be made for a multiple unit station. The submittal should combine sections common to all units at the station.

The Annual Radiological Environmental Operating Report covering the operation of the unit during the previous calendar year shall be submitted by May 15 of each year. The report shall include summaries, interpretations, and analyses of trends of the results of the Radiological Environmental Monitoring Program for the reporting period. The material provided shall be consistent with the objectives outlined in the Offsite Dose Calculation Manual

(continued)

INSERT

A tabulation on an annual basis of the number of station, utility, and other personnel (including contractors), for whom monitoring was performed, receiving an annual deep dose equivalent > 100 mrems and the associated collective deep dose equivalent (reported in person - rem) according to work and job functions (e.g., reactor operations and surveillance, inservice inspection, routine maintenance, special maintenance [describe maintenance], waste processing, and refueling). This tabulation supplements the requirements of 10 CFR 20.2206. The dose assignments to various duty functions may be estimated based on pocket ionization chamber, thermoluminescence dosimeter (TLD), electronic dosimeter, or film badge measurements. Small exposures totaling < 20 percent of the individual total dose need not be accounted for. In the aggregate, at least 80 percent of the total deep dose equivalent received from external sources should be assigned to specific major work functions. The report covering the previous calendar year shall be submitted by April 30 of each year. [The initial report shall be submitted by April 30 of the year following the initial criticality.]

Technical Specification Task Force Improved Standard Technical Specifications Change Traveler

Correct Inconsistency Between LCO 3.0.6 and the SFDP Regarding Performance of an Evaluation

NUREGs Affected: 1430 1431 1432 1433 1434

Classification: 1) Correct Specifications

Recommended for CLIIP?: (Unassigned)

Correction or Improvement: (Unassigned)

Industry Contact: Steve Wideman, (620) 364-4037, stwidem@wcnoc.com

Revise LCO 3.0.6 to explicitly require an evaluation per the Safety Function Determination Program. Delete statement "additional . . . limitations may be required" from LCO 3.0.6.

There is an inconsistency between LCO 3.0.6, the Safety Function Determination Program (SFDP), and the LCO 3.0.6 Bases. As currently written, LCO 3.0.6 does not explicitly require an evaluation in accordance with the SFDP, rather it states that additional evaluations may be required. Both the SFDP and the LCO 3.0.6 Bases state that upon entry into LCO 3.0.6, an evaluation shall be made to determine if a loss of safety function exists. In addition, because LCO 3.0.6 states that the evaluation be done in accordance with the SFDP and the SFDP states that other appropriate actions may be taken, there is no need for the statement "additional . . . limitations may be required" in LCO 3.0.6.

Revision History

OG Revision 0

Revision Status: Active

Revision Proposed by: Prairie Island

Revision Description:
Original Issue

Owners Group Review Information

Date Originated by OG: 10-Oct-96

Owners Group Comments:
(No Comments)

Owners Group Resolution: Approved Date: 10-Oct-96

TSTF Review Information

TSTF Received Date: 11-Oct-96 Date Distributed for Review: 29-Oct-96

OG Review Completed: BWOG WOG CEOG BWROG

TSTF Comments:

CEOG - Applicable, accepts
BWROG - Applicable, accepts
BWOG - Applicable, accepts

TSTF Resolution: Approved

Date: 03-Dec-96

NRC Review Information

NRC Received Date: 27-Mar-97

NRC Comments:

4/16/97 - Reviewer recommends approval.
4/16/97 - Forwarded to C. Grimes for disposition.

04-Aug-03

OG Revision 0

Revision Status: Active

5/2/97 C. Grimes approved changes.

Final Resolution: NRC Approves

Final Resolution Date: 02-May-97

Affected Technical Specifications

LCO 3.0.6

LCO Applicability

04-Aug-03

3.0 LCO APPLICABILITY (continued)

LCO 3.0.6 When a supported system LCO is not met solely due to a support system LCO not being met, the Conditions and Required Actions associated with this supported system are not required to be entered. Only the support system LCO ACTIONS are required to be entered. This is an exception to LCO 3.0.2 for the supported system. In this event, *an* ~~additional~~ evaluations ~~and limitations may be required~~ in accordance with Specification 5.5.15, "Safety Function Determination Program." If a loss of safety function is determined to exist by this program, the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists are required to be entered.

When a support system's Required Action directs a supported system to be declared inoperable or directs entry into Conditions and Required Actions for a supported system, the applicable Conditions and Required Actions shall be entered in accordance with LCO 3.0.2.

shall be performed

LCO 3.0.7 Test Exception LCOs [3.1.9, 3.1.10, 3.1.11 and 3.4.19] allow specified Technical Specification (TS) requirements to be changed to permit performance of special tests and operations. Unless otherwise specified, all other TS requirements remain unchanged. Compliance with Test Exception LCOs is optional. When a Test Exception LCO is desired to be met but is not met, the ACTIONS of the Test Exception LCO shall be met. When a Test Exception LCO is not desired to be met, entry into a MODE or other specified condition in the Applicability shall be made in accordance with the other applicable Specifications.

3.0 LCO APPLICABILITY (continued)

LCO 3.0.6

When a supported system LCO is not met solely due to a support system LCO not being met, the Conditions and Required Actions associated with this supported system are not required to be entered. Only the support system LCO ACTIONS are required to be entered. This is an exception to LCO 3.0.2 for the supported system. In this event, additional evaluations and limitations may be required in accordance with Specification 5.5.15, "Safety Function Determination Program (SFDP)." If a loss of safety function is determined to exist by this program, the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists are required to be entered.

an

When a support system's Required Action directs a supported system to be declared inoperable or directs entry into Conditions and Required Actions for a supported system, the applicable Conditions and Required Actions shall be entered in accordance with LCO 3.0.2.

LCO 3.0.7

Test Exception LCOs [3.1.9, 3.1.10, 3.1.11, and 3.4.19] allow specified Technical Specification (TS) requirements to be changed to permit performance of special tests and operations. Unless otherwise specified, all other TS requirements remain unchanged. Compliance with Test Exception LCOs is optional. When a Test Exception LCO is desired to be met but is not met, the ACTIONS of the Test Exception LCO shall be met. When a Test Exception LCO is not desired to be met, entry into a MODE or other specified condition in the Applicability shall be made in accordance with the other applicable Specifications.

Shall be performed

3.0 LCO APPLICABILITY (continued)

LCO 3.0.6 When a supported system LCO is not met solely due to a support system LCO not being met, the Conditions and Required Actions associated with this supported system are not required to be entered. Only the support system LCO ACTIONS are required to be entered. This is an exception to LCO 3.0.2 for the supported system. In this event, *an* ~~additional~~ evaluations ~~and limitations may be required~~ in accordance with Specification 5.5.15, "Safety Function Determination Program (SFDP)." If a loss of safety function is determined to exist by this program, the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists are required to be entered.

When a support system's Required Action directs a supported system to be declared inoperable or directs entry into Conditions and Required Actions for a supported system, the applicable Conditions and Required Actions shall be entered in accordance with LCO 3.0.2.

shall be performed

LCO 3.0.7 Special test exception (STE) LCOs [in each applicable LCO section] allow specified Technical Specifications (TS) requirements to be changed to permit performance of special tests and operations. Unless otherwise specified, all other TS requirements remain unchanged. Compliance with STE LCOs is optional. When an STE LCO is desired to be met but is not met, the ACTIONS of the STE LCO shall be met. When an STE LCO is not desired to be met, entry into a MODE or other specified condition in the Applicability shall only be made in accordance with the other applicable Specifications.

3.0 LCO APPLICABILITY (continued)

LCO 3.0.6 When a supported system LCO is not met solely due to a support system LCO not being met, the Conditions and Required Actions associated with this supported system are not required to be entered. Only the support system LCO ACTIONS are required to be entered. This is an exception to LCO 3.0.2 for the supported system. In this event, ~~additional evaluations and limitations may be required~~ in accordance with Specification 5.5.12, "Safety Function Determination Program (SFDP)." If a loss of safety function is determined to exist by this program, the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists are required to be entered.

When a support system's Required Action directs a supported system to be declared inoperable or directs entry into Conditions and Required Actions for a supported system, the applicable Conditions and Required Actions shall be entered in accordance with LCO 3.0.2.

shall be performed

LCO 3.0.7 Special Operations LCOs in Section 3.10 allow specified Technical Specifications (TS) requirements to be changed to permit performance of special tests and operations. Unless otherwise specified, all other TS requirements remain unchanged. Compliance with Special Operations LCOs is optional. When a Special Operations LCO is desired to be met but is not met, the ACTIONS of the Special Operations LCO shall be met. When a Special Operations LCO is not desired to be met, entry into a MODE or other specified condition in the Applicability shall only be made in accordance with the other applicable Specifications.

3.0 LCO APPLICABILITY (continued)

LCO 3.0.6 When a supported system LCO is not met solely due to a support system LCO not being met, the Conditions and Required Actions associated with this supported system are not required to be entered. Only the support system LCO ACTIONS are required to be entered. This is an exception to LCO 3.0.2 for the supported system. In this event, *an* ~~additional evaluations and limitations may be required~~ in accordance with Specification 5.5.12, "Safety Function Determination Program (SFDP)." If a loss of safety function is determined to exist by this program, the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists are required to be entered.

When a support system's Required Action directs a supported system to be declared inoperable or directs entry into Conditions and Required Actions for a supported system, the applicable Conditions and Required Actions shall be entered in accordance with LCO 3.0.2.

shall be performed

LCO 3.0.7 Special Operations LCOs in Section 3.10 allow specified Technical Specifications (TS) requirements to be changed to permit performance of special tests and operations. Unless otherwise specified, all other TS requirements remain LCO 3.0.7 unchanged. Compliance with Special Operations LCOs is optional. When a Special Operations LCO is desired to be met but is not met, the ACTIONS of the Special Operations LCO shall be met. When a Special Operations LCO is not desired to be met, entry into a MODE or other specified condition in the Applicability shall only be made in accordance with the other applicable Specifications.

Technical Specification Task Force
Improved Standard Technical Specifications Change Traveler

Revision of Channel Calibration, Channel Functional Test, and Related Definitions

NUREGs Affected: 1430 1431 1432 1433 1434

Classification: 1) Correct Specifications

Recommended for CLIIP?: (Unassigned)

Correction or Improvement: (Unassigned)

Industry Contact: Tom Silko, (802) 258-4146, tsilko@entergy.com

In a meeting between the NRC and the NEI TSTF on April 17, 1997, the NRC described problems that had been found with the ISTS definitions of Channel Calibration, Channel Functional Test, and related definitions. The NRC proposed revised definitions for these terms. Based on the NRC's suggestions, revised definitions of these terms have been developed and Bases statements have been added.

31-Jul-03

The revised definitions eliminate a current ambiguity and possible misinterpretation of Channel Calibration, Channel Functional Test, Actuation Logic Test, Channel Operational Test, Trip Actuating Device Operational Test, and Logic System Functional Test. The current definitions use phrases similar to "required sensor, alarm, interlock, display and trip functions," and "required relays and contacts, trip units, solid state logic elements, etc." There is ambiguity in the application of the word "required" and whether the list is inclusive or representative. Therefore, this list has been replaced with phrases similar to, "all devices in the channel required for channel OPERABILITY." This clarifies the use of the word "required" and makes clear that the components that are required to be tested or calibrated are only those that are necessary for the channel to perform its safety function. The list of components is eliminated from the definition. These changes will clarify the requirements and allow for consistent application of the definitions, tests, and calibrations.

In addition, in the statement at the end of each definition addressing the allowance to have the test "... performed by means of any series of sequential, overlapping or total channel steps. . ." the statement "... so that the entire channel/relay is tested/calibrated. . ." is deleted. This deletion is purely to remove the conflict between the verbatim reading of the definition where it is stated "... of all devices in the channel required for channel OPERABILITY. . ." and the flexibility of testing permitting a "... successful test to be the verification of the change of state of a single contact of the relay. . ." as stated in the Bases.

The revised CHANNEL FUNCTIONAL TEST definition does not address the method of the testing of all of the required channel devices. As discussed in the Peach Bottom NRC Inspection Report addressing channel testing methods, a successful test of a channel relay and associated required contacts may be the verification of a single contact and that all contacts of the required device need not be tested provided the required channel contact is otherwise tested. The Bases of applicable Surveillances are modified to include this clarification of the acceptable methods of testing. This clarification is applied to all Channel Functional Tests, Channel Operational Tests, and TADOTs.

In the Bases of the SRs a statement is added to indicate that, "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 FUNCTIONAL TEST / CHANNEL OPERATIONAL TEST / 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." This statement is modified for BWRs only to address the BWR specifics of the scram contactors as they pertain to the test of the Manual Scram Function. This statement is necessary to clarify what verification is required to support a successful test. This Bases statement to address the specifics of how the tests as defined may be performed is appropriate and acceptable because: 1) the entire scope of the required test is still being performed - only the acceptance criteria is modified to require verification of a certain portion of the instrument functions to have a successful test, and 2) all portions of the scope of the required test required for OPERABILITY are being tested, and 3) provision for the acceptance of the verification of change of the state of a single contact of the relay as desired by the NRC.

Other changes are made for consistency of the definitions between the ISTS NUREGs. The NUREG-1430 Channel Functional Test and NUREG-1431 Channel Operational Test definitions are modified to include the sentence, "The CHANNEL FUNCTIONAL (OPERATIONAL for NUREG-1431) TEST may be performed by means of any series of sequential, overlapping, or total channel steps." This allowance currently exists in the CEOG, BWR/4 and BWR/6 definitions of Channel Functional Test and is understood to apply to the BWOG and WOG definitions, although not stated. Editorial changes to the WOG Channel Calibration definition are made for consistency with the other ITS NUREGs.

The changes proposed increase the consistency of the five NUREGs and are not intended to change the meaning or intent of the affected definitions.

Revision History

OG Revision 0

Revision Status: Closed

Revision Proposed by: Grand Gulf

Revision Description:
Original Issue

31-Jul-03

OG Revision 0**Revision Status: Closed****Owners Group Review Information**

Date Originated by OG: 19-May-97

Owners Group Comments:

Approved by the BWROG on 5/19/97

Owners Group Resolution: Approved Date: 19-May-97

TSTF Review Information

TSTF Received Date: 07-Jul-97

Date Distributed for Review: 07-Jul-97

OG Review Completed: BWOG WOG CEOG BWROG

TSTF Comments:

Preliminary review and comment by the TSTF on 7/9/97. Changes made and Traveler approved for wider review distribution for review.

Distributed for comment to all plants involved in Owner's Group ITS activities on 7/14/97.

Discussed with NRC at October TSTF/NRC meeting.

Originally approved by the TSTF on 10/13/97.

4/21/98 - TSTF agreed to provide to NRC with Bases changes by end of May, 1998.

7/2/98 - Revision 1 created.

TSTF Resolution: Superceded

Date: 02-Jul-98

TSTF Revision 1**Revision Status: Closed**

Revision Proposed by: TSTF

Revision Description:

The Rev 1 is provided to explain the proposed changes in the definitions and to provide for the Industry position of allowing the Bases to further explain the specifics of how the testing is performed.

TSTF Review Information

TSTF Received Date: 02-Jul-98

Date Distributed for Review: 02-Jul-98

OG Review Completed: BWOG WOG CEOG BWROG

TSTF Comments:

(No Comments)

TSTF Resolution: Approved

Date: 10-Jul-98

NRC Review Information

NRC Received Date: 01-Sep-98

NRC Comments:

10/12/98 - NRC directs application of the insert to all CFTs and COTs. TSTF to modify.

Final Resolution: Superceded by Revision

Final Resolution Date: 12-Oct-98

31-Jul-03

TSTF Revision 2**Revision Status: Closed**

Revision Proposed by: NRC

Revision Description:

TSTF-205 is modified to apply the Insert to the Bases of all Channel Functional Tests, COTs, TADOTs, and LSFTs per NRC comment on 10/12/98.

TSTF Review Information

TSTF Received Date: 29-Oct-98

Date Distributed for Review: 29-Oct-98

OG Review Completed: BWOG WOG CEOG BWROG

TSTF Comments:

(No Comments)

TSTF Resolution: Approved

Date: 02-Nov-98

NRC Review Information

NRC Received Date: 03-Nov-98

NRC Comments:

11/12/98 - NRC will approve or provide status by 11/20/98.

Final Resolution: Superseded by Revision

Final Resolution Date: 22-Dec-98

TSTF Revision 3**Revision Status: Active**

Revision Proposed by: NRC

Revision Description:

This revision addresses NRC comments. The Traveler is revised to incorporate NRC requested changes to NUREG-1431 definitions of Master Relay Test and Slave Relay Test to make the wording of these definitions more consistent with similar definitions in other NUREGs. Also incorporated is the the NRC request to add the statement, "at least once per refueling interval with applicable extensions" to the Bases inserts to clarify that the Frequency of the testing of all of the other required contacts of the relay is performed at least once per refueling interval (18 or 24 months, as appropriate) and that the SR 3.0.2 extension, or other applicable extensions, apply.

TSTF Review Information

TSTF Received Date: 17-Dec-98

Date Distributed for Review: 17-Dec-98

OG Review Completed: BWOG WOG CEOG BWROG

TSTF Comments:

(No Comments)

TSTF Resolution: Approved

Date: 17-Dec-98

NRC Review Information

NRC Received Date: 24-Dec-98

NRC Comments:

Date of NRC Letter: 13-Jan-99

1/11/98 - Reviewer recommends approval.

31-Jul-03

TSTF Revision 3 **Revision Status: Active**

Final Resolution: NRC Approves

Final Resolution Date: 13-Jan-99

Affected Technical Specifications

1.1	Definitions - Channel Calibration	
1.1	Definitions - Channel Functional Test	NUREG(s)- 1430 1432 1433 1434 Only
SR 3.3.1.4 Bases	Reactor Protection System (RPS) Instrumentation	NUREG(s)- 1430 Only
SR 3.3.2.1 Bases	Reactor Protection System (RPS) Manual Reactor Trip	NUREG(s)- 1430 Only
SR 3.3.3.1 Bases	Reactor Protection System (RPS)—Reactor Trip Module (RTM)	NUREG(s)- 1430 Only
SR 3.3.4.1 Bases	CONTROL ROD Drive (CRD) Trip Devices	NUREG(s)- 1430 Only
SR 3.3.5.2 Bases	Engineered Safety Feature Actuation System (ESFAS) Instrumentation	NUREG(s)- 1430 Only
SR 3.3.6.1 Bases	Engineered Safety Feature Actuation System (ESFAS) Manual Initiation	NUREG(s)- 1430 Only
SR 3.3.7.1 Bases	Engineered Safety Feature Actuation System (ESFAS) Automatic Actuation Logic	NUREG(s)- 1430 Only
SR 3.3.8.2 Bases	Emergency Diesel Generator (EDG) Loss of Power Start (LOPS)	NUREG(s)- 1430 Only
SR 3.3.11.2 Bases	Emergency Feedwater Initiation and Control (EFIC) System Instrumentation	NUREG(s)- 1430 Only
SR 3.3.12.1 Bases	Emergency Feedwater Initiation and Control (EFIC) Manual Initiation	NUREG(s)- 1430 Only
SR 3.3.13.1 Bases	Emergency Feedwater Initiation and Control (EFIC) Logic	NUREG(s)- 1430 Only
SR 3.3.14.1 Bases	Emergency Feedwater Initiation and Control (EFIC)-Emergency Feedwater (EFW)—Vector Valve Logic	NUREG(s)- 1430 Only
SR 3.3.15.2 Bases	Reactor Building (RB) Purge Isolation—High Radiation	NUREG(s)- 1430 Only
SR 3.3.16.2 Bases	Control Room Isolation—High Radiation	NUREG(s)- 1430 Only
SR 3.4.12.7 Bases	Low Temperature Overpressure Protection (LTOP) System	NUREG(s)- 1430 Only
SR 3.4.15.2 Bases	RCS Leakage Detection Instrumentation	NUREG(s)- 1430 Only
SR 3.7.5.6 Bases	Emergency Feedwater (EFW) System	NUREG(s)- 1430 Only
1.1	Definitions - Actuation Logic Test	NUREG(s)- 1431 Only
1.1	Definitions - Channel Operational Test	NUREG(s)- 1431 Only

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1.1	Definitions - Master Relay Test	NUREG(s)- 1431 Only
1.1	Definitions - Slave Relay Test	NUREG(s)- 1431 Only
1.1	Definitions - Trip Actuating Device Operational Test	NUREG(s)- 1431 Only
SR 3.3.1.4 Bases	Reactor Trip System (RTS) Instrumentation	NUREG(s)- 1431 Only
SR 3.3.1.7 Bases	Reactor Trip System (RTS) Instrumentation	NUREG(s)- 1431 Only
SR 3.3.1.8 Bases	Reactor Trip System (RTS) Instrumentation	NUREG(s)- 1431 Only
SR 3.3.1.9 Bases	Reactor Trip System (RTS) Instrumentation	NUREG(s)- 1431 Only
SR 3.3.1.13 Bases	Reactor Trip System (RTS) Instrumentation	NUREG(s)- 1431 Only
SR 3.3.1.14 Bases	Reactor Trip System (RTS) Instrumentation	NUREG(s)- 1431 Only
SR 3.3.1.15 Bases	Reactor Trip System (RTS) Instrumentation	NUREG(s)- 1431 Only
SR 3.3.2.5 Bases	Engineered Safety Feature Actuation System (ESFAS) Instrumentation	NUREG(s)- 1431 Only
SR 3.3.2.7 Bases	Engineered Safety Feature Actuation System (ESFAS) Instrumentation	NUREG(s)- 1431 Only
SR 3.3.2.8 Bases	Engineered Safety Feature Actuation System (ESFAS) Instrumentation	NUREG(s)- 1431 Only
SR 3.3.2.11 Bases	Engineered Safety Feature Actuation System (ESFAS) Instrumentation	NUREG(s)- 1431 Only
SR 3.3.4.4 Bases	Remote Shutdown System	NUREG(s)- 1431 Only
SR 3.3.5.2 Bases	Loss of Power (LOP) Diesel Generator (DG) Start Instrumentation	NUREG(s)- 1431 Only
SR 3.3.6.4 Bases	Containment Purge and Exhaust Isolation Instrumentation	NUREG(s)- 1431 Only
SR 3.3.6.6 Bases	Containment Purge and Exhaust Isolation Instrumentation	NUREG(s)- 1431 Only
SR 3.3.7.2 Bases	Control Room Emergency Filtration System (CREFS) Actuation Instrumentation	NUREG(s)- 1431 Only
SR 3.3.7.6 Bases	Control Room Emergency Filtration System (CREFS) Actuation Instrumentation	NUREG(s)- 1431 Only
SR 3.3.8.2 Bases	Fuel Building Air Cleanup System (FBACS) Actuation Instrumentation	NUREG(s)- 1431 Only
SR 3.3.8.4 Bases	Fuel Building Air Cleanup System (FBACS) Actuation Instrumentation	NUREG(s)- 1431 Only
SR 3.3.9.1 Bases	Boron Dilution Protection System (BDPS)	NUREG(s)- 1431 Only
SR 3.4.12.8 Bases	Low Temperature Overpressure Protection (LTOP) System	NUREG(s)- 1431 Only

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SR 3.4.15.2 Bases	RCS Leakage Detection Instrumentation	NUREG(s)- 1431 Only
SR 3.4.19.2 Bases	RCS Loops-Test Exceptions	NUREG(s)- 1431 Only
SR 3.1.5.4 Bases	Control Element Assembly (CEA) Alignment (Digital)	NUREG(s)- 1432 Only
SR 3.1.5.6 Bases	Control Element Assembly (CEA) Alignment (Analog)	NUREG(s)- 1432 Only
SR 3.3.1.4 Bases	Reactor Protective System (RPS) Instrumentation-Operating (Analog)	NUREG(s)- 1432 Only
SR 3.3.1.6 Bases	Reactor Protective System (RPS) Instrumentation-Operating (Analog)	NUREG(s)- 1432 Only
SR 3.3.1.7 Bases	Reactor Protective System (RPS) Instrumentation-Operating (Analog)	NUREG(s)- 1432 Only
SR 3.3.1.7 Bases	Reactor Protective System (RPS) Instrumentation-Operating (Digital)	NUREG(s)- 1432 Only
SR 3.3.1.9 Bases	Reactor Protective System (RPS) Instrumentation-Operating (Digital)	NUREG(s)- 1432 Only
SR 3.3.1.11 Bases	Reactor Protective System (RPS) Instrumentation-Operating (Digital)	NUREG(s)- 1432 Only
SR 3.3.1.13 Bases	Reactor Protective System (RPS) Instrumentation-Operating (Digital)	NUREG(s)- 1432 Only
SR 3.3.2.2 Bases	Reactor Protective System (RPS) Instrumentation-Shutdown (Analog)	NUREG(s)- 1432 Only
SR 3.3.2.2 Bases	Reactor Protective System (RPS) Instrumentation-Shutdown (Digital)	NUREG(s)- 1432 Only
SR 3.3.2.3 Bases	Reactor Protective System (RPS) Instrumentation-Shutdown (Analog)	NUREG(s)- 1432 Only
SR 3.3.2.3 Bases	Reactor Protective System (RPS) Instrumentation-Shutdown (Digital)	NUREG(s)- 1432 Only
SR 3.3.3.1 Bases	Reactor Protective System (RPS) Logic and Trip Initiation (Analog)	NUREG(s)- 1432 Only
SR 3.3.3.2 Bases	Reactor Protective System (RPS) Logic and Trip Initiation (Analog)	NUREG(s)- 1432 Only
SR 3.3.3.3 Bases	Control Element Assembly Calculators (CEACs) (Digital)	NUREG(s)- 1432 Only
SR 3.3.3.3 Bases	Reactor Protective System (RPS) Logic and Trip Initiation (Analog)	NUREG(s)- 1432 Only
SR 3.3.3.5 Bases	Control Element Assembly Calculators (CEACs) (Digital)	NUREG(s)- 1432 Only
SR 3.3.4.1 Bases	Reactor Protective System (RPS) Logic and Trip Initiation (Digital)	NUREG(s)- 1432 Only

SR 3.3.4.2 Bases	Engineered Safety Features Actuation System (ESFAS) Instrumentation (Analog)	NUREG(s)- 1432 Only
SR 3.3.4.2 Bases	Reactor Protective System (RPS) Logic and Trip Initiation (Digital)	NUREG(s)- 1432 Only
SR 3.3.4.3 Bases	Engineered Safety Features Actuation System (ESFAS) Instrumentation (Analog)	NUREG(s)- 1432 Only
SR 3.3.4.3 Bases	Reactor Protective System (RPS) Logic and Trip Initiation (Digital)	NUREG(s)- 1432 Only
SR 3.3.5.1 Bases	Engineered Safety Features Actuation System (ESFAS) Logic and Manual Trip (Analog)	NUREG(s)- 1432 Only
SR 3.3.5.2 Bases	Engineered Safety Features Actuation System (ESFAS) Instrumentation (Digital)	NUREG(s)- 1432 Only
SR 3.3.5.2 Bases	Engineered Safety Features Actuation System (ESFAS) Logic and Manual Trip (Analog)	NUREG(s)- 1432 Only
SR 3.3.5.5 Bases	Engineered Safety Features Actuation System (ESFAS) Instrumentation (Digital)	NUREG(s)- 1432 Only
SR 3.3.6.1 Bases	Engineered Safety Features Actuation System (ESFAS) Logic and Manual Trip (Digital)	NUREG(s)- 1432 Only
SR 3.3.6.2 Bases	Diesel Generator (DG)-Loss of Voltage Start (LOVS) (Analog)	NUREG(s)- 1432 Only
SR 3.3.6.3 Bases	Engineered Safety Features Actuation System (ESFAS) Logic and Manual Trip (Digital)	NUREG(s)- 1432 Only
SR 3.3.7.2 Bases	Containment Purge Isolation Signal (CPIS) (Analog)	NUREG(s)- 1432 Only
SR 3.3.7.2 Bases	Diesel Generator (DG)-Loss of Voltage Start (LOVS) (Digital)	NUREG(s)- 1432 Only
SR 3.3.7.3 Bases	Containment Purge Isolation Signal (CPIS) (Analog)	NUREG(s)- 1432 Only
SR 3.3.7.5 Bases	Containment Purge Isolation Signal (CPIS) (Analog)	NUREG(s)- 1432 Only
SR 3.3.8.2 Bases	Control Room Isolation Signal (CRIS) (Analog)	NUREG(s)- 1432 Only
SR 3.3.8.3 Bases	Containment Purge Isolation Signal (CPIS) (Digital)	NUREG(s)- 1432 Only
SR 3.3.8.3 Bases	Control Room Isolation Signal (CRIS) (Analog)	NUREG(s)- 1432 Only
SR 3.3.8.4 Bases	Containment Purge Isolation Signal (CPIS) (Digital)	NUREG(s)- 1432 Only
SR 3.3.8.5 Bases	Containment Purge Isolation Signal (CPIS) (Digital)	NUREG(s)- 1432 Only
SR 3.3.8.5 Bases	Control Room Isolation Signal (CRIS) (Analog)	NUREG(s)- 1432 Only
SR 3.3.8.8 Bases	Containment Purge Isolation Signal (CPIS) (Digital)	NUREG(s)- 1432 Only
SR 3.3.9.2 Bases	Chemical and Volume Control System (CVCS) Isolation Signal (Analog)	NUREG(s)- 1432 Only

SR 3.3.9.2 Bases	Control Room Isolation Signal (CRIS) (Digital)	NUREG(s)- 1432 Only
SR 3.3.9.3 Bases	Control Room Isolation Signal (CRIS) (Digital)	NUREG(s)- 1432 Only
SR 3.3.9.5 Bases	Control Room Isolation Signal (CRIS) (Digital)	NUREG(s)- 1432 Only
SR 3.3.10.1 Bases	Shield Building Filtration Actuation Signal (SBFAS) (Analog)	NUREG(s)- 1432 Only
SR 3.3.10.2 Bases	Fuel Handling Isolation Signal (FHIS) (Digital)	NUREG(s)- 1432 Only
SR 3.3.10.2 Bases	Shield Building Filtration Actuation Signal (SBFAS) (Analog)	NUREG(s)- 1432 Only
SR 3.3.10.3 Bases	Fuel Handling Isolation Signal (FHIS) (Digital)	NUREG(s)- 1432 Only
SR 3.3.10.4 Bases	Fuel Handling Isolation Signal (FHIS) (Digital)	NUREG(s)- 1432 Only
SR 3.3.12.4 Bases	Remote Shutdown System (Analog)	NUREG(s)- 1432 Only
SR 3.3.12.4 Bases	Remote Shutdown System (Digital)	NUREG(s)- 1432 Only
SR 3.3.13.2 Bases	[Logarithmic] Power Monitoring Channels (Analog)	NUREG(s)- 1432 Only
SR 3.3.13.2 Bases	[Logarithmic] Power Monitoring Channels (Digital)	NUREG(s)- 1432 Only
SR 3.4.12.6 Bases	Low Temperature Overpressure Protection (LTOP) System	NUREG(s)- 1432 Only
SR 3.4.15.2 Bases	RCS Leakage Detection Instrumentation	NUREG(s)- 1432 Only
SR 3.4.17.2 Bases	Special Test Exceptions (STE) RCS Loops	NUREG(s)- 1432 Only
1.1	Definitions - Logic System Functional Test	NUREG(s)- 1433 1434 Only
SR 3.3.1.1.4 Bases	Reactor Protection System (RPS) Instrumentation	NUREG(s)- 1433 Only
SR 3.3.1.1.5 Bases	Reactor Protection System (RPS) Instrumentation	NUREG(s)- 1433 Only
SR 3.3.1.1.9 Bases	Reactor Protection System (RPS) Instrumentation	NUREG(s)- 1433 Only
SR 3.3.1.1.12 Bases	Reactor Protection System (RPS) Instrumentation	NUREG(s)- 1433 Only
SR 3.3.1.2.5 Bases	Source Range Monitor (SRM) Instrumentation	NUREG(s)- 1433 Only
SR 3.3.1.2.6 Bases	Source Range Monitor (SRM) Instrumentation	NUREG(s)- 1433 Only
SR 3.3.2.1.1 Bases	Control Rod Block Instrumentation	NUREG(s)- 1433 Only
SR 3.3.2.1.2 Bases	Control Rod Block Instrumentation	NUREG(s)- 1433 Only
SR 3.3.2.1.3 Bases	Control Rod Block Instrumentation	NUREG(s)- 1433 Only
SR 3.3.2.1.6 Bases	Control Rod Block Instrumentation	NUREG(s)- 1433 Only

SR 3.3.2.2.2 Bases	Feedwater and Main Turbine High Water Level Trip Instrumentation	NUREG(s)- 1433 Only
SR 3.3.4.1.1 Bases	End of Cycle Recirculation Pump Trip (EOC-RPT) Instrumentation	NUREG(s)- 1433 Only
SR 3.3.4.2.2 Bases	Anticipated Transient Without Scram Recirculation Pump Trip (ATWS-RPT) Instrumentation	NUREG(s)- 1433 Only
SR 3.3.5.1.2 Bases	Emergency Core Cooling System (ECCS) Instrumentation	NUREG(s)- 1433 Only
SR 3.3.5.2.2 Bases	Reactor Core Isolation Cooling (RCIC) System Instrumentation	NUREG(s)- 1433 Only
SR 3.3.6.1.2 Bases	Primary Containment Isolation Instrumentation	NUREG(s)- 1433 Only
SR 3.3.6.1.5 Bases	Primary Containment Isolation Instrumentation	NUREG(s)- 1433 Only
SR 3.3.6.2.2 Bases	Secondary Containment Isolation Instrumentation	NUREG(s)- 1433 Only
SR 3.3.6.3.2 Bases	Low-Low Set (LLS) Instrumentation	NUREG(s)- 1433 Only
SR 3.3.6.3.3 Bases	Low-Low Set (LLS) Instrumentation	NUREG(s)- 1433 Only
SR 3.3.6.3.4 Bases	Low-Low Set (LLS) Instrumentation	NUREG(s)- 1433 Only
SR 3.3.7.1.2 Bases	[Main Control Room Environmental Control (MCREC)] System Instrumentation	NUREG(s)- 1433 Only
SR 3.3.8.1.2 Bases	Loss of Power (LOP) Instrumentation	NUREG(s)- 1433 Only
SR 3.3.8.2.1 Bases	Reactor Protection System (RPS) Electric Power Monitoring	NUREG(s)- 1433 Only
SR 3.4.6.2 Bases	RCS Leakage Detection Instrumentation	NUREG(s)- 1433 Only
SR 3.9.2.2 Bases	Refuel Position One-Rod-Out Interlock	NUREG(s)- 1433 Only
SR 3.3.1.1.4 Bases	Reactor Protection System (RPS) Instrumentation	NUREG(s)- 1434 Only
SR 3.3.1.1.5 Bases	Reactor Protection System (RPS) Instrumentation	NUREG(s)- 1434 Only
SR 3.3.1.1.9 Bases	Reactor Protection System (RPS) Instrumentation	NUREG(s)- 1434 Only
SR 3.3.1.1.12 Bases	Reactor Protection System (RPS) Instrumentation	NUREG(s)- 1434 Only
SR 3.3.1.2.5 Bases	Source Range Monitor (SRM) Instrumentation	NUREG(s)- 1434 Only
SR 3.3.1.2.6 Bases	Source Range Monitor (SRM) Instrumentation	NUREG(s)- 1434 Only
SR 3.3.2.1.1 Bases	Control Rod Block Instrumentation	NUREG(s)- 1434 Only
SR 3.3.2.1.2 Bases	Control Rod Block Instrumentation	NUREG(s)- 1434 Only
SR 3.3.2.1.3 Bases	Control Rod Block Instrumentation	NUREG(s)- 1434 Only

SR 3.3.2.1.4 Bases	Control Rod Block Instrumentation	NUREG(s)- 1434 Only
SR 3.3.2.1.8 Bases	Control Rod Block Instrumentation	NUREG(s)- 1434 Only
SR 3.3.4.1.1 Bases	End of Cycle Recirculation Pump Trip (EOC-RPT) Instrumentation	NUREG(s)- 1434 Only
SR 3.3.4.2.2 Bases	Anticipated Transient Without Scram Recirculation Pump Trip (ATWS-RPT) Instrumentation	NUREG(s)- 1434 Only
SR 3.3.5.1.2 Bases	Emergency Core Cooling System (ECCS) Instrumentation	NUREG(s)- 1434 Only
SR 3.3.5.2.2 Bases	Reactor Core Isolation Cooling (RCIC) System Instrumentation	NUREG(s)- 1434 Only
SR 3.3.6.1.2 Bases	Primary Containment Isolation Instrumentation	NUREG(s)- 1434 Only
SR 3.3.6.2.2 Bases	Secondary Containment Isolation Instrumentation	NUREG(s)- 1434 Only
SR 3.3.6.3.2 Bases	Residual Heat Removal (RHR) Containment Spray System Instrumentation	NUREG(s)- 1434 Only
SR 3.3.6.4.2 Bases	Suppression Pool Makeup (SPMU) System Instrumentation	NUREG(s)- 1434 Only
SR 3.3.6.5.1 Bases	Relief and Low-Low Set (LLS) Instrumentation	NUREG(s)- 1434 Only
SR 3.3.7.1.2 Bases	[Control Room Fresh Air (CRFA)] System Instrumentation	NUREG(s)- 1434 Only
SR 3.3.8.1.2 Bases	Loss of Power (LOP) Instrumentation	NUREG(s)- 1434 Only
SR 3.3.8.2.1 Bases	Reactor Protection System (RPS) Electric Power Monitoring	NUREG(s)- 1434 Only
SR 3.4.7.2 Bases	RCS Leakage Detection Instrumentation	NUREG(s)- 1434 Only
SR 3.9.1.1 Bases	Refueling Equipment Interlocks	NUREG(s)- 1434 Only
SR 3.9.2.2 Bases	Refuel Position One-Rod-Out Interlock	NUREG(s)- 1434 Only

BASES INSERTS

INSERT A

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 FUNCTIONAL 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.

INSERT B

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 FUNCTIONAL 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. In accordance with Reference 9, the scram contactors must be tested as part of the Manual Scram Function.

INSERT C

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.

INSERT D

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.

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.
ALLOWABLE THERMAL POWER	ALLOWABLE THERMAL POWER shall be the maximum reactor core heat transfer rate to the reactor coolant permitted by consideration of the number and configuration of reactor coolant pumps (RCPs) in operation.
AXIAL POWER IMBALANCE	AXIAL POWER IMBALANCE shall be the power in the top half of the core, expressed as a percentage of RATED THERMAL POWER (RTP), minus the power in the bottom half of the core, expressed as a percentage of RTP.
AXIAL POWER SHAPING RODS (APSRs)	APSRs shall be control components used to control the axial power distribution of the reactor core. The APSRs are positioned manually by the operator and are not trippable.
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 <u>the entire channel, including the required sensor/ alarm, display, and trip functions, and shall include</u> (the CHANNEL FUNCTIONAL TEST. 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

all devices in the channel required for channel OPERABILITY and

(continued)

1.1 Definitions

CHANNEL CALIBRATION
(continued)

sensing element is replaced, the next required CHANNEL CALIBRATION shall include an in-place 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, so that the entire channel is calibrated.

The CHANNEL CALIBRATION shall also include testing of safety related Reactor Protection System (RPS), Engineered Safety Feature Actuation System (ESFAS), and Emergency Feedwater Initiation and Control (EFIC) bypass functions for each channel affected by the bypass operation.

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 FUNCTIONAL TEST

of all devices in the channel required for channel OPERABILITY.

A CHANNEL FUNCTIONAL TEST shall be the injection of a simulated or actual signal into the channel as close to the sensor as practicable to verify OPERABILITY, including required alarms, interlocks, display, and trip functions!

The ESFAS CHANNEL FUNCTIONAL TEST shall also include testing of ESFAS safety related bypass functions for each channel affected by bypass operation.

CONTROL RODS

FP CONTROL RODS shall be all full length safety and regulating rods that are used to shut down the reactor and control power level during maneuvering operations.

CORE ALTERATION

CORE ALTERATION shall be the movement of any fuel, sources, or reactivity control components, within the reactor vessel with the vessel head removed and fuel in the vessel. Suspension of CORE

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

(continued)

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.3.1.2 (continued)

a small fraction of [2]% in any 24 hour period. Furthermore, the control room operators monitor redundant indications and alarms to detect deviations in channel outputs.

SR 3.3.1.3

A comparison of power range nuclear instrumentation channels against incore detectors shall be performed at a 31 day Frequency when reactor power is > 15% RTP. A Note clarifies that 24 hours is allowed for performing the first Surveillance after reaching 15% RTP. If the absolute difference between the power range and incore measurements is \geq [2]% RTP, the power range channel is not inoperable, but a CHANNEL CALIBRATION that adjusts the measured imbalance to agree with the incore measurements is necessary. If the power range channel cannot be properly recalibrated, the channel is declared inoperable. The calculation of the Allowable Value envelope assumes a difference in out of core to incore measurements of 2.5%. Additional inaccuracies beyond those that are measured are also included in the setpoint envelope calculation. The 31 day Frequency is adequate, considering that long term drift of the excore linear amplifiers is small and burnup of the detectors is slow. Also, the excore readings are a strong function of the power produced in the peripheral fuel bundles, and do not represent an integrated reading across the core. The slow changes in neutron flux during the fuel cycle can also be detected at this interval.

SR 3.3.1.4

Insert
A

A CHANNEL FUNCTIONAL TEST is performed on each required RPS channel to ensure that the entire channel will perform the intended function. Setpoints must be found within the Allowable Values specified in Table 3.3.1-1. Any setpoint adjustment shall be consistent with the assumptions of the current unit specific setpoint analysis.

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

(continued)

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BASES

ACTIONS

C.1 (continued)

or 5, the unit must be placed in a MODE in which manual trip is not required. To achieve this status, all CRD trip breakers must be opened. The allowed Completion Time of 6 hours is reasonable, based on operating experience, to open all CRD trip breakers without challenging unit systems.

SURVEILLANCE
REQUIREMENTS

SR 3.3.2.1

Insert A

This SR requires the performance of a CHANNEL FUNCTIONAL TEST of the Manual Reactor Trip Function. This test verifies the OPERABILITY of the Manual Reactor Trip by actuation of the CRD trip breakers. The Frequency shall be once prior to each reactor startup if not performed within the preceding 7 days to ensure the OPERABILITY of the Manual Reactor Trip Function prior to achieving criticality. The Frequency was developed in consideration that these Surveillances are only performed during a unit outage.

REFERENCES

1. FSAR, Chapter [7].
-
-

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.3.3.1 (continued)

[this Frequency, the licensee must justify the Frequency as required by the NRC Staff SER for the topical report.]

The SRs include performance of a CHANNEL FUNCTIONAL TEST every [45] days on a STAGGERED TEST BASIS. This test shall verify the OPERABILITY of the RTM and its ability to receive and properly respond to channel trip and reactor trip signals. Calculations have shown that the Frequency (45 days) maintains a high level of reliability of the Reactor Trip System in BAW-10167 (Ref. 2).

Insert
A

REFERENCES

1. FSAR, Chapter [7].
 2. BAW-10167, May 1986.
-
-

BASES

ACTIONS

C.1 and C.2 (continued)

The 1 hour Completion Time is sufficient to perform the Required Action.

D.1, D.2.1, and D.2.2

If the Required Actions of Condition A, B, or C are not met within the required Completion Time in MODE 1, 2, or 3, the unit must be brought to a MODE in which the LCO does not apply. To achieve this status, the unit must be brought to at least MODE 3, with all CRD trip breakers open or with all power to the CRD System removed within 6 hours. The allowed Completion Time of 6 hours is reasonable, based on operating experience, to reach MODE 3 from full power conditions in an orderly manner and without challenging unit systems.

E.1 and E.2

If the Required Actions of Condition A, B, or C are not met within the required Completion Time in MODE 4 or 5, the unit must be brought to a MODE in which the LCO does not apply. To achieve this status, all CRD trip breakers must be opened or all power to the CRD System removed within 6 hours. The allowed Completion Time of 6 hours is reasonable, based on operating experience, to open all CRD trip breakers or remove all power to the CRD System without challenging unit systems.

SURVEILLANCE
REQUIREMENTS

SR 3.3.4.1

SR 3.3.4.1 is to perform a CHANNEL FUNCTIONAL TEST every 31 days. This test verifies the OPERABILITY of the trip devices by actuation of the end devices. Also, this test independently verifies the undervoltage and shunt trip mechanisms of the AC breakers. The Frequency of 31 days is based on operating experience, which has demonstrated that failure of more than one channel of a given function in any 31 day interval is a rare event.

Insert A

REFERENCES

1. FSAR, Chapter [7].
-

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.3.5.2 (continued)

as inoperable, although during this time period it cannot initiate ESFAS. This allowance is based on the inability to perform the Surveillance in the time permitted by the Required Actions. Eight hours is the average time required to perform the Surveillance. It is not acceptable to routinely remove channels from service for more than 8 hours to perform required Surveillance testing.

Insert
A

A CHANNEL FUNCTIONAL TEST is performed on each required ESFAS channel to ensure the entire channel will perform the intended functions. Any setpoint adjustment shall be consistent with the assumptions of the current unit specific setpoint analysis.

The Frequency of 31 days is based on unit operating experience, with regard to channel OPERABILITY and drift, which demonstrates that failure of more than one channel of a given function in any 31 day interval is a rare event.

SR 3.3.5.3

CHANNEL CALIBRATION is a complete check of the instrument channel, including the sensor. The test verifies that the channel responds to a measured parameter within the necessary range and accuracy. CHANNEL CALIBRATION leaves the channel adjusted to account for instrument drift to ensure that the instrument channel remains operational between successive tests. CHANNEL CALIBRATION shall find that measurement errors and bistable setpoint errors are within the assumptions of the unit specific setpoint analysis. CHANNEL CALIBRATIONS must be performed consistent with the assumptions of the unit specific setpoint analysis.

This Frequency is justified by the assumption of an [18] month calibration interval to determine the magnitude of equipment drift in the setpoint analysis.

SR 3.3.5.4

SR 3.3.5.4 ensures that the ESFAS actuation channel response times are less than or equal to the maximum times assumed in the accident analysis. The response time values are the

(continued)

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BASES

APPLICABILITY (continued) to respond by manually operating the ESF components, if required.

ACTIONS A Note has been added to the ACTIONS indicating separate Condition entry is allowed for each ESFAS manual initiation Function.

A.1

Condition A applies when one manual initiation channel of one or more ESFAS Functions becomes inoperable. Required Action A.1 must be taken to restore the channel to OPERABLE status within the next 72 hours. The Completion Time of 72 hours is based on unit operating experience and administrative controls, which provide alternative means of ESFAS Function initiation via individual component controls. The 72 hour Completion Time is consistent with the allowed outage time for the safety systems actuated by ESFAS.

B.1 and B.2

Required Action B.1 and Required Action B.2 apply if Required Action A.1 cannot be met within the required Completion Time. If Required Action A.1 cannot be met within the required Completion Time, the unit must be brought to a MODE in which the LCO does not apply. To achieve this status, the unit must be brought to at least MODE 3 within 6 hours and to MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required MODES from full power conditions in an orderly manner and without challenging unit systems.

SURVEILLANCE REQUIREMENTS

SR 3.3.6.1

Insert A

This SR requires the performance of a CHANNEL FUNCTIONAL TEST of the ESFAS manual initiation. This test verifies that the initiating circuitry is OPERABLE and will actuate the end device (i.e., pump, valves, etc.). The [18] month Frequency is based on the need to perform this Surveillance

(continued)

BASES

ACTIONS

A.1 and A.2 (continued)

equivalent to the automatic actuation logic performing its safety function ahead of time. In some cases, placing the component in its engineered safeguard configuration would violate unit safety or operational considerations. In these cases, the component status should not be changed, but the supported system component must be declared inoperable. Conditions which would preclude the placing of a component in its engineered safeguard configuration include, but are not limited to, violation of system separation, activation of fluid systems that could lead to thermal shock, or isolation of fluid systems that are normally functioning. The Completion Time of 1 hour is based on operating experience and reflects the urgency associated with the inoperability of a safety system component.

Required Action A.2 requires entry into the Required Actions of the affected supported systems, since the true effect of automatic actuation logic failure is inoperability of the supported system. The Completion Time of 1 hour is based on operating experience and reflects the urgency associated with the inoperability of a safety system component.

SURVEILLANCE
REQUIREMENTS

SR 3.3.7.1

SR 3.3.7.1 is the performance of a CHANNEL FUNCTIONAL TEST on a 31 day STAGGERED TEST BASIS. The test demonstrates that every automatic actuation logic associated with one of the two safety system trains successfully performs the two-out-of-three logic combinations every 31 days. All automatic actuation logics are thus retested every 62 days. The test simulates the required one-out-of-three inputs to the logic circuit and verifies the successful operation of the automatic actuation logic. The Frequency is based on operating experience that demonstrates the rarity of more than one channel failing within the same 31 day interval.

Insert
A

Automatic actuation logic response time testing is incorporated into the response time testing required by LCO 3.3.5.

(continued)

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.3.8.1 (continued)

the probability of two random failures in redundant channels in any 12 hour period is low, the CHANNEL CHECK minimizes the chance of loss of protective function due to failure of redundant channels. The CHANNEL CHECK supplements less formal, but more frequent, checks of channel OPERABILITY during normal operational use of the displays associated with this LCO's required channels.

SR 3.3.8.2

The Note allows channel bypass for testing without defining it as inoperable although during this time period it cannot actuate a diesel start. This allowance is based on the assumption that 4 hours is the average time required to perform channel Surveillance. The 4 hour testing allowance does not significantly reduce the probability that the EDG will start trip when necessary. It is not acceptable to routinely remove channels from service for more than 4 hours to perform required Surveillance testing.

A CHANNEL FUNCTIONAL TEST is performed on each required EDG LOPS channel to ensure the entire channel will perform the intended function. Any setpoint adjustments shall be consistent with the assumptions of the current unit specific setpoint analysis. The Frequency of 31 days is considered reasonable based on the reliability of the components and on operating experience that demonstrates channel failure is rare.

Insert A

SR 3.3.8.3

A CHANNEL CALIBRATION is a complete check of the instrument channel, including the sensor. The setpoints and the response to a loss of voltage and a degraded voltage test shall include a single point verification that the trip occurs within the required delay time, as shown in Reference 1. CHANNEL CALIBRATION shall find that measurement setpoint errors are within the assumptions of the unit specific setpoint analysis. CHANNEL CALIBRATIONS must be performed consistent with the assumptions of the unit specific setpoint analysis in Reference 4.

(continued)

BASES

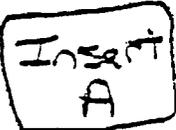
SURVEILLANCE
REQUIREMENTS

SR 3.3.11.1 (continued)

criteria, it is an indication that the channels are OPERABLE. If the channels are normally off scale during times when surveillance is required, the CHANNEL CHECK will only verify that they are off scale in the same direction. Off scale low current loop channels are verified to be reading at the bottom of the range and not failed downscale.

The Frequency, about once every shift, is based on operating experience that demonstrates channel failure is rare. Since the probability of two random failures in redundant channels in any 12 hour period is extremely low, the CHANNEL CHECK minimizes the chance of loss of protective function due to failure of redundant channels. The CHANNEL CHECK supplements less formal, but more frequent, checks of channel operability during normal operational use of the displays associated with the LCO required channels.

SR 3.3.11.2

 A CHANNEL FUNCTIONAL TEST verifies the function of the required trip, interlock, and alarm functions of the channel. Setpoints for both trip and bypass removal functions must be found within the Allowable Value specified in the LCO. (Note that the Allowable Values for the bypass removal functions are specified in the Applicable MODES or Other Specified Condition column of Table 3.3.11-1 as limits on applicability for the trip Functions.) Any setpoint adjustment shall be consistent with the assumptions of the current unit specific setpoint analysis.

The Frequency of 31 days is based on unit operating experience with regard to channel OPERABILITY and drift, which demonstrates that failure of more than one channel of a given function in any 31 day interval is a rare event.

SR 3.3.11.3

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

(continued)

BASES (continued)

SURVEILLANCE
REQUIREMENTS

SR 3.3.12.1

Insert
A

This SR requires the performance of a CHANNEL FUNCTIONAL TEST to ensure that the channels can perform their intended functions. ~~However~~ for MFW and Main Steam Line Isolation, the test need not include actuation of the end device. This is due to the risk of a unit transient caused by the closure of valves associated with MFW and Main Steam Line Isolation or actuating EFW during testing at power. The Frequency of 31 days is based on operating experience that demonstrates the rarity of more than one channel failing within the same 31 day interval.

REFERENCES

1. IEEE-279-1971, April 1972.
-
-

BASES

ACTIONS

A.1 (continued)

Therefore, the failed channel(s) must be restored to OPERABLE status to re-establish the system's single-failure tolerance.

Condition A can be thought of as equivalent to failure of a single train of a two train safety system (e.g., the safety function can be accomplished, but a single failure cannot be taken). Thus, the Completion Time of 72 hours has been chosen to be consistent with Completion Times for restoring one inoperable ESF System train.

The EFIC System has not been analyzed for failure of one train of one Function and the opposite train of the same Function. In this condition, the potential for system interactions that disable heat removal capability on EFW has not been evaluated. Consequently, any combination of failures in both channels A and B is not covered by Condition A and must be addressed by entry into LCO 3.0.3.

B.1 and B.2

If Required Action A.1 cannot be met within the required Completion Time, the unit must be brought to a MODE in which the LCO does not apply. To achieve this status, the unit must be brought to at least MODE 3 within 6 hours and to MODE 4 within 12 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required MODES from full power conditions in an orderly manner and without challenging unit systems.

SURVEILLANCE
REQUIREMENTS

SR 3.3.13.1

This SR requires the performance of a CHANNEL FUNCTIONAL TEST to ensure that the channels can perform their intended functions. This test verifies MFW and Main Steam Line Isolation and EFW initiation automatic actuation logics are functional. ↑ This test simulates the required inputs to the logic circuit and verifies successful operation of the automatic actuation logic. The test need not include actuation of the end device. This is due to the risk of a unit transient caused by the closure of valves associated

Insert A

(continued)

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BASES

ACTIONS

A.1 (continued)

These conflicting requirements result in the necessity for two valves in series, in parallel with two valves in series, and a four channel valve command system.

With one channel inoperable, the system cannot meet the single-failure criterion and still meet the dual functional criteria previously described. Therefore, when one vector valve logic channel is inoperable, the channel must be restored to OPERABLE status within 72 hours. This is analogous to having one EFW train inoperable; wherein a 72 hour Completion Time is provided by the Required Actions of LCO 3.7.4, "EFW System." As such, the Completion Time of 72 hours is based on engineering judgement.

B.1 and B.2

If Required Action A.1 cannot be met within the required Completion Time, the unit must be brought to a MODE in which the LCO does not apply. To achieve this status, the unit must be brought to at least MODE 3 within 6 hours and to MODE 4 within 12 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

SURVEILLANCE
REQUIREMENTS

SR 3.3.14.1

SR 3.3.14.1 is the performance of a CHANNEL FUNCTIONAL TEST every 31 days. This test demonstrates that the EFIC—EFW—vector valve logic performs its function as desired. The Frequency is based on operating experience that demonstrates the rarity of more than one channel failing within the same 31 day interval.

Insert A

REFERENCES

None.

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.3.15.1 (continued)

including isolation, indication, and readability. If a channel is outside the criteria, it may be an indication that the transmitter or the signal processing equipment has drifted outside its limit. If the channels are within the criteria, it is an indication that the channels are OPERABLE. The Frequency, about once every shift, is based on operating experience that demonstrates channel failure is rare. [At this unit, the following administrative controls and design features (e.g., downscale alarms) immediately alert operators to loss of function.]

SR 3.3.15.2

This SR requires the performance of a CHANNEL FUNCTIONAL TEST once every 92 days to ensure that the channels can perform their intended functions. This test verifies the capability of the instrumentation to provide the RB isolation. Any setpoint adjustment shall be consistent with the assumptions of the current unit specific setpoint analysis.

Insert
A

In MODES 1, 2, 3, and 4, the test does not include the actuation of the purge valves, as these valves are normally closed.

The justification of a 92 day Frequency, in view of the fact that there is only one channel, is Draft NUREG-1366 (Ref. 4).

SR 3.3.15.3

CHANNEL CALIBRATION is a complete check of the instrument loop and the sensor. The test verifies that the channel responds to a measured parameter within the necessary range and accuracy. CHANNEL CALIBRATION leaves the channel adjusted to account for instrument drifts between successive calibrations to ensure that the channel remains operational between successive tests. CHANNEL CALIBRATIONS must be performed consistent with the unit specific setpoint analysis.

(continued)

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.3.16.2 (continued)

average time required to perform channel surveillance. It is not acceptable to routinely remove channels from service for more than 3 hours to perform required surveillance testing.

SR 3.3.16.2 is the performance of a CHANNEL FUNCTIONAL TEST once every 92 days to ensure that the channels can perform their intended functions. This test verifies the capability of the instrumentation to provide the automatic Control Room Isolation. Any setpoint adjustment shall be consistent with the assumptions of the current unit specific setpoint analysis.

Insert
A

The justification of a 92 day Frequency, in view of the fact that there is only one channel, is Draft NUREG-1066 (Ref. 3).

SR 3.3.16.3

This SR requires the performance of a CHANNEL CALIBRATION with a setpoint Allowable Value of $\leq [25]$ mR/hr to ensure that the instrument channel remains operational with the correct setpoint. This test is a complete check of the instrument loop and the transmitter.

CHANNEL CALIBRATION is a complete check of the instrument loop and the sensor. The test verifies that the channel responds to a measured parameter within the necessary range and accuracy. CHANNEL CALIBRATION leaves the channel adjusted to account for instrument drifts between successive calibrations to ensure that the channel remains operational between successive tests. CHANNEL CALIBRATIONS must be performed consistent with the unit specific setpoint analysis.

The Frequency is based on the assumption of an [18] month calibration interval in the determination of the magnitude of equipment drift in the setpoint analysis and is consistent with the typical refueling cycle.

(continued)

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.4.12.7 (continued)

Insert A

using the PORV for LTOP. PORV actuation is not needed, as it could depressurize the RCS.

The [12] hour Frequency considers the unlikelihood of a low temperature overpressure event during the time. The 31 day Frequency is based on industry accepted practice and is acceptable by experience with equipment reliability.

SR 3.4.12.8

The performance of a CHANNEL CALIBRATION is required every [18] months. The CHANNEL CALIBRATION for the LTOP setpoint ensures that the PORV will be actuated at the appropriate RCS pressure by verifying the accuracy of the instrument string. The calibration can only be performed in shutdown.

The Frequency considers a typical refueling cycle and industry accepted practice.

REFERENCES

1. 10 CFR 50, Appendix G.
 2. Generic Letter 88-11.
 3. FSAR, Section 15.
 4. 10 CFR 50.46.
 5. 10 CFR 50, Appendix K.
-
-

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BASES

ACTIONS

C.1 and C.2 (continued)

experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

D.1

With both required monitors inoperable, no automatic means of monitoring leakage are available, and immediate plant shutdown in accordance with LCO 3.0.3 is required.

SURVEILLANCE
REQUIREMENTS

SR 3.4.15.1

SR 3.4.15.1 requires the performance of a CHANNEL CHECK of the required containment atmosphere radioactivity monitor. The check gives reasonable confidence that each channel is operating properly. The Frequency of 12 hours is based on instrument reliability and is reasonable for detecting off normal conditions.

SR 3.4.15.2

SR 3.4.15.2 requires the performance of a CHANNEL FUNCTIONAL TEST of the required containment atmosphere radioactivity monitor. The test ensures that the monitor can perform its function in the desired manner. The test verifies the alarm setpoint and relative accuracy of the instrument string. The Frequency of 92 days considers instrument reliability, and operating experience has shown it proper for detecting degradation.

Insert
A

SR 3.4.15.3 and SR 3.4.15.4

These SRs require the performance of a CHANNEL CALIBRATION for each of the required RCS leakage detection instrumentation channels. The calibration verifies the accuracy of the instrument string, including the instruments located inside containment. The Frequency of [18] months is a typical refueling cycle and considers channel reliability.

(continued)

BASES

SURVEILLANCE
REQUIREMENTS
(continued)

SR 3.7.5.5

This SR ensures that the EFW System is properly aligned by verifying the flow paths to each steam generator prior to entering MODE 2 after more than 30 days in MODE 5 or 6. OPERABILITY of EFW flow paths must be demonstrated before sufficient core heat is generated that would require the operation of the EFW System during a subsequent shutdown. The Frequency is reasonable, based on engineering judgment, in view of other administrative controls to ensure that the flow paths are OPERABLE. To further ensure EFW System alignment, flow path OPERABILITY is verified, following extended outages to determine no misalignment of valves has occurred. This SR ensures that the flow path from the CST to the steam generator is properly aligned. (This SR is not required by those units that use EFW for normal startup and shutdown.)

Insert
A

SR 3.7.5.6 and SR 3.7.5.7

For this facility, the CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION for the EFW pump suction pressure interlocks are as follows:

REFERENCES

1. FSAR, Section [9.2.7].
 2. FSAR, Section [9.2.8].
 3. ASME, Boiler and Pressure Vessel Code, Section XI.
-
-

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.
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Required for OPERABILITY of a logic circuit

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].
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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
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Output such as necessary

the entire channel, including the required sensor, alarm, interlock, display, and trip functions.

<p><i>Values of the parameter that the channel monitors.</i></p> <p><i>all devices in the channel required for channel OPERABILITY.</i></p>	<p>Calibration of instrument channels with resistance temperature detector (RTD) or thermocouple sensors may consist of an in-place 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 in-place 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>
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(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)

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 that the setpoints are within the required range and accuracy.

required for channel OPERABILITY such

CORE ALTERATION

CORE ALTERATION shall be the movement of any fuel sources, or 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 current reload cycle. These cycle specific parameter limits shall be determined for each reload cycle in accordance with Specification 5.6.5. 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 III of TID-14844, AEC, 1962, "Calculation of Distance Factors for Power and Test Reactor Sites," or those listed in Table E-7 of Regulatory Guide 1.109, Rev. 1, NRC, 1977, or ICRP 30, Supplement to Part 1, page

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

(continued)

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

1.1 Definitions

LEAKAGE
(continued)

systems or not to be pressure boundary
LEAKAGE; or

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

b. Unidentified LEAKAGE

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

all master relays
in the channel
required for
channel OPERABILITY

c. Pressure Boundary LEAKAGE

LEAKAGE (except SG LEAKAGE) through a
nonisolable fault in an RCS component body,
pipe wall, or vessel wall.

MASTER RELAY TEST

required
master

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.

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.

OPERABLE—OPERABILITY

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).

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)

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

1.1 Definitions

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].

all slave relays in the channel required for channel OPERABILITY

SLAVE RELAY TEST

Required

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.

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

all devices in the channel required for trip actuating device OPERABILITY.

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

BASES

SURVEILLANCE
REQUIREMENTS
(continued)

SR 3.3.1.4

SR 3.3.1.4 is the performance of a TADOT every 31 days on a STAGGERED TEST BASIS. This test shall verify OPERABILITY by actuation of the end devices.↑

Insert D

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 independent test for bypass breakers is included in SR 3.3.1.14. 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 Frequency of every 31 days on a STAGGERED TEST BASIS is adequate. It is based on industry operating experience, considering instrument reliability and operating history data.

SR 3.3.1.5

SR 3.3.1.5 is the performance of an ACTUATION LOGIC TEST. The SSPS is tested every 31 days on a STAGGERED TEST BASIS, 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 Frequency of every 31 days on a STAGGERED TEST BASIS is adequate. It is based on industry operating experience, considering instrument reliability and operating history data.

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 detector measurements. 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.

(continued)

BASES

**SURVEILLANCE
REQUIREMENTS**

SR 3.3.1.6 (continued)

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 [24] hours is allowed for performing the first surveillance after reaching 50% RTP.

The Frequency of 92 EFPD is adequate. It is based on industry operating experience, considering instrument reliability and operating history data for instrument drift.

SR 3.3.1.7

SR 3.3.1.7 is the performance of a COT every [92] days.

A COT is performed on each required channel to ensure the entire channel will perform the intended Function. ←

Insert C

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 Reference 7.

SR 3.3.1.7 is modified by a Note that 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 3.3.1.7 is no longer required to be performed. If the unit is to be in MODE 3 with the RTBs closed for > 4 hours this Surveillance must be performed prior to 4 hours after entry into MODE 3.

The Frequency of [92] days is justified in Reference 7.

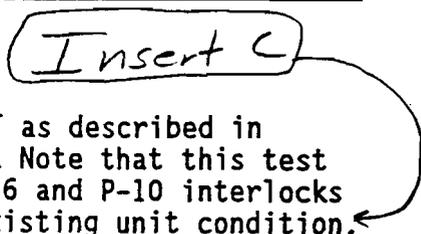
(continued)

BASES

SURVEILLANCE
REQUIREMENTS
(continued)

SR 3.3.1.8

Insert C

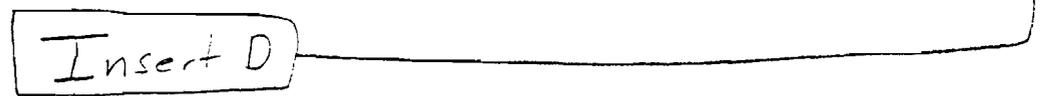


SR 3.3.1.8 is the performance of a COT as described in SR 3.3.1.7, except it is modified by a Note that this test shall include verification that the P-6 and P-10 interlocks are in their required state for the existing unit condition. The Frequency is modified by a Note that allows this surveillance to be satisfied if it has been performed within [92] days of the Frequencies prior to reactor startup and four 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, intermediate and power range low instrument channels. The Frequency of "4 hours after reducing power below P-10" (applicable to intermediate and power range low 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. The Frequency of every 92 days 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 power range low and 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, intermediate, and power range low channels are OPERABLE 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 is performed every [92] days, as justified in Reference 7.

Insert D



(continued)

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.3.1.11 (continued)

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 [18] month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown these components usually pass the Surveillance when performed on the [18] month Frequency.

SR 3.3.1.12

SR 3.3.1.12 is the performance of a CHANNEL CALIBRATION, as described in SR 3.3.1.10, every [18] months. This SR is modified by a Note stating that this test shall include verification of the RCS resistance temperature detector (RTD) bypass loop flow rate.

This test will verify the rate lag compensation for flow from the core to the RTDs.

The Frequency is justified by the assumption of an 18 month calibration interval in the determination of the magnitude of equipment drift in the setpoint analysis.

SR 3.3.1.13

SR 3.3.1.13 is the performance of a COT of RTS interlocks every [18] months↑

Insert C

The Frequency is based on the known reliability of the interlocks and the multichannel redundancy available, and has been shown to be acceptable through operating experience.

(continued)

BASES

SURVEILLANCE
REQUIREMENTS
(continued)

SR 3.3.1.14

Insert
D

SR 3.3.1.14 is the performance of a TADOT of the Manual Reactor Trip, RCP Breaker Position, and the SI Input from ESFAS. This TADOT is performed every [18] months. The test shall independently verify the OPERABILITY of the undervoltage and shunt trip mechanisms for the Manual Reactor Trip Function for the Reactor Trip Breakers and Reactor Trip Bypass Breakers. The Reactor Trip Bypass Breaker test shall include testing of the automatic undervoltage trip.

The Frequency is based on the known reliability of the Functions and the multichannel redundancy available, and has been shown to be acceptable through operating experience.

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

SR 3.3.1.15

Insert D

SR 3.3.1.15 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 reactor startup. A Note states that 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 taking the reactor critical. This test cannot be performed with the reactor at power and must therefore be performed prior to reactor startup.

SR 3.3.1.16

SR 3.3.1.16 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 15 (Ref. 8). Individual component response times are not modeled in the analyses.

(continued)

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.3.2.3 (continued)

tester is not used and the continuity check does not have to be performed, as explained in the Note. This SR is applied to the balance of plant actuation logic and relays that do not have the SSPS test circuits installed to utilize the semiautomatic tester or perform the continuity check. This test is also performed every 31 days on a STAGGERED TEST BASIS. The Frequency is adequate based on industry operating experience, considering instrument reliability and operating history data.

SR 3.3.2.4

SR 3.3.2.4 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. This test is performed every 31 days on a STAGGERED TEST BASIS. The time allowed for the testing (4 hours) and the surveillance interval are justified in Reference 8.

SR 3.3.2.5

SR 3.3.2.5 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 3.3.1-1.↑

Insert C

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 the

(continued)

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.3.2.5 (continued)

surveillance interval extension analysis (Ref. 8) when applicable.

The Frequency of 92 days is justified in Reference 8.

SR 3.3.2.6

SR 3.3.2.6 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 Frequency is adequate, based on industry operating experience, considering instrument reliability and operating history data.

SR 3.3.2.7

SR 3.3.2.7 is the performance of a TADOT every [92] days. This test is a check of the Loss of Offsite Power, Undervoltage RCP, and AFW Pump Suction Transfer on Suction Pressure—Low Functions. Each Function is tested up to, and including, the master transfer relay coils. ↑

Insert D

The test also includes trip devices that provide actuation signals directly to the SSPS. 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 Frequency is adequate. It is based on industry operating experience, considering instrument reliability and operating history data.

(continued)

BASES

SURVEILLANCE
REQUIREMENTS
(continued)

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. It is performed every [18] months. 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.). The Frequency is adequate, based on industry operating experience and is consistent with the typical refueling cycle. 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.

Insert D

SR 3.3.2.9

SR 3.3.2.9 is the performance of a CHANNEL CALIBRATION.

A CHANNEL CALIBRATION is performed every [18] months, or approximately at every refueling. 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 unit specific 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 Frequency of [18] months is based on the assumption of an [18] month calibration interval in the determination of the magnitude of equipment drift in the setpoint methodology.

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.

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

(continued)

BASES

SURVEILLANCE
REQUIREMENTSSR 3.3.2.11 (continued)

Insert D

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. FSAR, Chapter [6].
2. FSAR, Chapter [7].
3. FSAR, Chapter [15].
4. IEEE-279-1971.
5. 10 CFR 50.49.
6. RTS/ESFAS Setpoint Methodology Study.
7. NUREG-1218, April 1988.
8. WCAP-10271-P-A, Supplement 2, Rev. 1, June 1990.
9. Technical Requirements Manual, Section 15. "Response Times."

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.3.4.3 (continued)

The Frequency of [18] months is based upon operating experience and consistency with the typical industry refueling cycle.

SR 3.3.4.4

SR 3.3.4.4 is the performance of a TADOT every 18 months. 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 Frequency is based upon operating experience and consistency with the typical industry refueling outage.

Insert D

REFERENCES

1. 10 CFR 50, Appendix A, GDC 19.
-
-

BASES

SURVEILLANCE
REQUIREMENTS
(continued)

SR 3.3.5.2

Insert D

SR 3.3.5.2 is the performance of a TADOT. This test is performed every [31 days]. The test checks trip devices that provide actuation signals directly, bypassing the analog process control equipment. For these tests, the relay Trip Setpoints are verified and adjusted as necessary. The Frequency is based on the known reliability of the relays and controls and the multichannel redundancy available, and has been shown to be acceptable through operating experience.

SR 3.3.5.3

SR 3.3.5.3 is the performance of a CHANNEL CALIBRATION.

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

A CHANNEL CALIBRATION is performed every [18] months, or approximately at every refueling. 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 Frequency of [18] months is based on operating experience and consistency with the typical industry refueling cycle and is justified by the assumption of an [18] month calibration interval in the determination of the magnitude of equipment drift in the setpoint analysis.

REFERENCES

1. FSAR, Section [8.3].
 2. FSAR, Chapter [15].
 3. Unit Specific RTS/ESFAS Setpoint Methodology Study.
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BASES

SURVEILLANCE
REQUIREMENTS

SR 3.3.6.1 (continued)

channels during normal operational use of the displays associated with the LCO required channels.

SR 3.3.6.2

SR 3.3.6.2 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 there is an intact voltage signal path to the master relay coils. This test is performed every 31 days on a STAGGERED TEST BASIS. The Surveillance interval is acceptable based on instrument reliability and industry operating experience.

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. This test is performed every 31 days on a STAGGERED TEST BASIS. The Surveillance interval is acceptable based on instrument reliability and industry operating experience.

SR 3.3.6.4

A COT is performed every 92 days on each required channel to ensure the entire channel will perform the intended Function. The Frequency is based on the staff recommendation for increasing the availability of radiation monitors according to NUREG-1366 (Ref. 2). This test verifies the capability of the instrumentation to provide the containment purge and exhaust system isolation. The

Insert C

(continued)

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.3.6.4 (continued)

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 Frequency is acceptable based on instrument reliability and industry operating experience.

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 and is performed every [18] months. 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.).

Insert
D

The test also includes trip devices that provide actuation signals directly to the SSPS, bypassing the analog process control equipment. The SR is modified by a Note that excludes verification of setpoints during the TADOT. The Functions tested have no setpoints associated with them.

The Frequency is based on the known reliability of the Function and the redundancy available, and has been shown to be acceptable through operating experience.

(continued)

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BASES

SURVEILLANCE
REQUIREMENTS

SR 3.3.7.1 (continued)

including indication and readability. 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 Frequency is based on operating experience that demonstrates channel failure is rare. The CHANNEL CHECK supplements less formal, but more frequent, checks of channels during normal operational use of the displays associated with the LCO required channels.

SR 3.3.7.2

A COT is performed once every 92 days 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 CREFS actuation. The setpoints shall be left consistent with the unit specific calibration procedure tolerance. The Frequency is based on the known reliability of the monitoring equipment and has been shown to be acceptable through operating experience.

Insert
C

SR 3.3.7.3

SR 3.3.7.3 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 there is an intact voltage signal path to the master relay coils. This test is performed every 31 days on a STAGGERED TEST BASIS. The Frequency is justified in WCAP-10271-P-A, Supplement 2, Rev. 1 (Ref. 1).

SR 3.3.7.4

SR 3.3.7.4 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

(continued)

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BASES

**SURVEILLANCE
REQUIREMENTS**

SR 3.3.7.4 (continued)

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. This test is performed every 31 days on a STAGGERED TEST BASIS. The Frequency is acceptable based on instrument reliability and industry operating experience.

SR 3.3.7.5

SR 3.3.7.5 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 Frequency is acceptable based on instrument reliability and industry operating experience.

SR 3.3.7.6

SR 3.3.7.6 is the performance of a TADOT. This test is a check of the Manual Actuation Functions and is performed every [18] months. 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.).

Insert
D

The test also includes trip devices that provide actuation signals directly to the Solid State Protection System, bypassing the analog process control equipment. The Frequency is based on the known reliability of the Function and the redundancy available, and has been shown to be acceptable through operating experience. The SR is modified by a Note that excludes verification of setpoints during the

(continued)

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.3.8.1 (continued)

channels monitoring the same parameter should read approximately the same value. Significant deviations between the two instrument channels could be an indication of excessive instrument drift in one of the channels or of something even more serious. A CHANNEL CHECK will detect gross channel failure; thus, it is key to verifying the instrumentation continues to operate properly between each CHANNEL CALIBRATION.

Agreement criteria are determined by the unit staff, based on a combination of the channel instrument uncertainties, including indication and readability. 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 Frequency is based on operating experience that demonstrates channel failure is rare. The CHANNEL CHECK supplements less formal, but more frequent, checks of channels during normal operational use of the displays associated with the LCO required channels.

SR 3.3.8.2

A COT is performed once every 92 days 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 FBACS actuation. The setpoints shall be left consistent with the unit specific calibration procedure tolerance. The Frequency of 92 days is based on the known reliability of the monitoring equipment and has been shown to be acceptable through operating experience.

Insert
C

SR 3.3.8.3

SR 3.3.8.3 is the performance of an ACTUATION LOGIC TEST. The actuation logic is tested every 31 days on a STAGGERED TEST BASIS. All possible logic combinations, with and without applicable permissives, are tested for each protection function. The Frequency is based on the known

(continued)

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.3.8.3 (continued)

reliability of the relays and controls and the multichannel redundancy available, and has been shown to be acceptable through operating experience.

SR 3.3.8.4

SR 3.3.8.4 is the performance of a TADOT. This test is a check of the manual actuation functions and is performed every [18] months. 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 (e.g., pump starts, valve cycles, etc.). The Frequency is based on operating experience and is consistent with the typical industry refueling cycle. The SR is modified by a Note that excludes verification of setpoints during the TADOT. The Functions tested have no setpoints associated with them.

Insert
D

SR 3.3.8.5

A CHANNEL CALIBRATION is performed every [18] months, or approximately at every refueling. 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 Frequency is based on operating experience and is consistent with the typical industry refueling cycle.

REFERENCES

1. 10 CFR 100.11.
 2. Unit Specific Setpoint Calibration Procedure.
-

BASES

ACTIONS

B.1, B.2.1, B.2.2.1, and B.2.2.2 (continued)

once per 12 hours thereafter. This backup action is intended to confirm that no unintended boron dilution has occurred while the BDPS was inoperable, and that the required SDM has been maintained. The specified Completion Time takes into consideration sufficient time for the initial determination of SDM and other information available in the control room related to SDM.

SURVEILLANCE
REQUIREMENTS

The BDPS trains are subject to a COT and a CHANNEL CALIBRATION.

SR 3.3.9.1

SR 3.3.9.1 requires the performance of a COT every [92] days, to ensure that each train of the BDPS and associated trip setpoints are fully operational. This test shall include verification that the boron dilution alarm setpoint is equal to or less than an increase of twice the count rate within a 10 minute period. The Frequency of [92] days is consistent with the requirements for source range channels in WCAP-10271-P-A (Ref. 2).

Insert
C

SR 3.3.9.2

SR 3.3.9.2 is the performance of a CHANNEL CALIBRATION every [18] months. 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. For the BDPS, the CHANNEL CALIBRATION shall include verification that on a simulated or actual boron dilution flux doubling signal the centrifugal charging pump suction valves from the RWST open, and the normal CVCS volume control tank discharge valves close in the required closure time of ≤ 20 seconds.

The Frequency is based on operating experience and consistency with the typical industry refueling cycle.

(continued)

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.4.12.6 (continued)

The 72 hour Frequency is considered adequate in view of other administrative controls available to the operator in the control room, such as valve position indication, that verify that the PORV block valve remains open.

SR 3.4.12.7

Each required RHR suction relief valve shall be demonstrated OPERABLE by verifying its RHR suction valve and RHR suction isolation valve are open and by testing it in accordance with the Inservice Testing Program. (Refer to SR 3.4.12.4 for the RHR suction valve Surveillance and for a description of the requirements of the Inservice Testing Program.) This Surveillance is only performed if the RHR suction relief valve is being used to satisfy this LCO.

Every 31 days the RHR suction isolation valve is verified locked open, with power to the valve operator removed, to ensure that accidental closure will not occur. The "locked open" valve must be locally verified in its open position with the manual actuator locked in its inactive position. The 31 day Frequency is based on engineering judgment, is consistent with the procedural controls governing valve operation, and ensures correct valve position.

SR 3.4.12.8

Performance of a COT is required within 12 hours after decreasing RCS temperature to $\leq [275]^{\circ}\text{F}$ and every 31 days 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.

Insert
C

The 12 hour Frequency 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 12 hours after decreasing RCS cold leg temperature to $\leq [275]^{\circ}\text{F}$. The COT cannot be performed until in the LTOP MODES when the PORV lift setpoint can be reduced to the LTOP

(continued)

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BASES

ACTIONS

E.1 and E.2 (continued)

required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

F.1

With all required monitors inoperable, no automatic means of monitoring leakage are available, and immediate plant shutdown in accordance with LCO 3.0.3 is required.

SURVEILLANCE
REQUIREMENTS

SR 3.4.15.1

SR 3.4.15.1 requires the performance of a CHANNEL CHECK of the required containment atmosphere radioactivity monitor. The check gives reasonable confidence that the channel is operating properly. The Frequency of 12 hours is based on instrument reliability and is reasonable for detecting off normal conditions.

SR 3.4.15.2

SR 3.4.15.2 requires the performance of a COT on the required containment atmosphere radioactivity monitor. The test ensures that the monitor can perform its function in the desired manner. The test verifies the alarm setpoint and relative accuracy of the instrument string. The Frequency of 92 days considers instrument reliability, and operating experience has shown that it is proper for detecting degradation.

Insert
C

SR 3.4.15.3, [SR 3.4.15.4, and SR 3.4.15.5]

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 Frequency of [18] months is a typical refueling cycle and considers channel reliability. Again, operating experience has proven that this Frequency is acceptable.

(continued)

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BASES (continued)

ACTIONS

A.1

When THERMAL POWER is \geq the P-7 interlock setpoint 10%, the only acceptable action is to ensure the reactor trip breakers (RTBs) are opened immediately in accordance with Required Action A.1 to prevent operation of the fuel beyond its design limits. Opening the RTBs will shut down the reactor and prevent operation of the fuel outside of its design limits.

SURVEILLANCE
REQUIREMENTS

SR 3.4.19.1

Verification that the power level is $<$ the P-7 interlock setpoint (10%) will ensure that the fuel design criteria are not violated during the performance of the PHYSICS TESTS. The Frequency of once per hour is adequate to ensure that the power level does not exceed the limit. Plant operations are conducted slowly during the performance of PHYSICS TESTS and monitoring the power level once per hour is sufficient to ensure that the power level does not exceed the limit.

SR 3.4.19.2

The power range and intermediate range neutron detectors and the P-7 interlock setpoint must be verified to be OPERABLE and adjusted to the proper value. A COT is performed within 12 hours prior to initiation of the PHYSICS TESTS. This will ensure that the RTS is properly aligned to provide the required degree of core protection during the performance of the PHYSICS TESTS. \uparrow The time limit of 12 hours is sufficient to ensure that the instrumentation is OPERABLE shortly before initiating PHYSICS TESTS.

Insert
C

REFERENCES

1. 10 CFR 50, Appendix B, Section XI.
 2. 10 CFR 50, Appendix A, GDC 1, 1988.
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FOR INFORMATION
 ONLY

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.
AXIAL SHAPE INDEX (ASI)	ASI shall be the power generated in the lower half of the core less the power generated in the upper half of the core, divided by the sum of the power generated in the lower and upper halves of the core.

$$ASI = \frac{\text{lower} - \text{upper}}{\text{lower} + \text{upper}}$$

AZIMUTHAL POWER TILT (T _q)—Digital	AZIMUTHAL POWER TILT shall be the power asymmetry between azimuthally symmetric fuel assemblies.
AZIMUTHAL POWER TILT (T _q)—Analog	AZIMUTHAL POWER TILT shall be the maximum of the difference between the power generated in any core quadrant (upper or lower) (P _{quad}) and the average power of all quadrants (P _{avg}) in that half (upper or lower) of the core, divided by the average power of all quadrants in that half (upper or lower) of the core.

$$T_q = \text{Max} \left| \frac{P_{\text{quad}} - P_{\text{avg}}}{P_{\text{avg}}} \right|$$

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
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(continued)

1.1 Definitions

CHANNEL CALIBRATION
(continued)

all devices in the channel required for channel OPERABILITY and

the entire channel including the required sensor, alarm, display, and trip functions, and shall include the CHANNEL FUNCTIONAL TEST. Calibration of instrument channels with resistance temperature detector (RTD) or thermocouple sensors may consist of an in-place 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 in-place 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, so that the entire channel is calibrated.

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 FUNCTIONAL TEST

A CHANNEL FUNCTIONAL TEST shall be:

of all devices in the channel required for channel OPERABILITY

- a. Analog and bistable channels—the injection of a simulated or actual signal into the channel as close to the sensor as practicable to verify OPERABILITY, including required alarms, interlocks, display and trip functions;
- b. Digital computer channels—the use of diagnostic programs to test digital computer hardware and the injection of simulated process data into the channel to verify OPERABILITY, including alarm and trip functions.

The CHANNEL FUNCTIONAL TEST may be performed by means of any series of sequential, overlapping, or total channel steps so that the entire channel is tested.

(continued)

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SR 3.3.1.4 (continued)

Change, every [92] days to ensure the entire channel will perform its intended function when needed.

Insert
A

In addition to power supply tests, The RPS CHANNEL FUNCTIONAL TEST consists of three overlapping tests as described in Reference 7. These tests verify that the RPS is capable of performing its intended function, from bistable input through the RTCBs. They include:

Bistable Tests

The bistable setpoint must be found to trip within the Allowable Values specified in the LCO and left set consistent with the assumptions of the plant specific setpoint analysis (Ref. 5). As found and as left values must also be recorded and reviewed for consistency with the assumptions of the frequency extension analysis. The requirements for this review are outlined in Reference 6.

A test signal is superimposed on the input in one channel at a time to verify that the bistable trips within the specified tolerance around the setpoint. This is done with the affected RPS channel trip channel bypassed. Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint analysis.

The as found and as left values must also be recorded and reviewed for consistency with the assumptions of the Frequency extension analysis. The requirements for this review are outlined in Reference [9].

Matrix Logic Tests

Matrix Logic tests are addressed in LCO 3.3.3. This test is performed one matrix at a time. It verifies that a coincidence in the two input channels for each Function removes power from the matrix relays. During testing, power is applied to the matrix relay test coils and prevents the matrix relay contacts from assuming their de-energized state. This test will detect any short circuits around the bistable contacts in the coincidence logic, such as may be caused by faulty bistable relay or trip channel bypass contacts.

(continued)

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.1.5.3 (continued)

can be detected, and protection can be provided by the CEA deviation circuits.

SR 3.1.5.4

Demonstrating the CEA deviation circuit is OPERABLE verifies the circuit is functional. The 31 day Frequency takes into account other information continuously available to the operator in the control room, so that during CEA movement, deviations can be detected, and protection can be provided by the CEA motion inhibit.

SR 3.1.5.5

Verifying each CEA is trippable would require that each CEA be tripped. In MODES 1 and 2, tripping each CEA would result in radial or axial power tilts, or oscillations. Therefore, individual CEAs are exercised every 92 days to provide increased confidence that all CEAs continue to be trippable, even if they are not regularly tripped. A movement of [5 inches] is adequate to demonstrate motion without exceeding the alignment limit when only one CEA is being moved. The 92 day Frequency takes into consideration other information available to the operator in the control room and other surveillances being performed more frequently, which add to the determination of OPERABILITY of the CEAs. Between required performances of SR 3.1.5.5, if a CEA(s) is discovered to be immovable, but remains trippable and aligned, the CEA is considered to be OPERABLE. At any time, if a CEA(s) is immovable, a determination of the trippability (OPERABILITY) of the CEA(s) must be made, and appropriate action taken.

SR 3.1.5.6

Performance of a CHANNEL FUNCTIONAL TEST of each reed switch position transmitter channel ensures the channel is OPERABLE and capable of indicating CEA position over the entire length of the CEA's travel. Since this Surveillance must be performed when the reactor is shut down, an 18 month Frequency to be coincident with refueling outage was

Insert
A

(continued)

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.1.5.3 (continued)

which add to the determination of OPERABILITY of the CEAs (Ref. 7). Between required performances of SR 3.1.5.3, if a CEA(s) is discovered to be immovable but remains trippable and aligned, the CEA is considered to be OPERABLE. At anytime, if a CEA(s) is immovable, a determination of the trippability (OPERABILITY) of that CEA(s) must be made, and appropriate action taken.

SR 3.1.5.4

Insert A

Performance of a CHANNEL FUNCTIONAL TEST of each reed switch position transmitter channel ensures the channel is OPERABLE and capable of indicating CEA position over the entire length of the CEA's travel. Since this test must be performed when the reactor is shut down, an 18 month Frequency to be coincident with refueling outage was selected. Operating experience has shown that these components usually pass this Surveillance when performed at a Frequency of once every 18 months. Furthermore, the Frequency takes into account other surveillances being performed at shorter Frequencies, which determine the OPERABILITY of the CEA Reed Switch Indication System.

SR 3.1.5.5

Verification of full length CEA drop times determines that the maximum CEA drop time permitted is consistent with the assumed drop time used in the safety analysis (Ref. 7). Measuring drop times prior to reactor criticality, after reactor vessel head removal, ensures the reactor internals and CEDM will not interfere with CEA motion or drop time, and that no degradation in these systems has occurred that would adversely affect CEA motion or drop time. Individual CEAs whose drop times are greater than safety analysis assumptions are not OPERABLE. This SR is performed prior to criticality due to the plant conditions needed to perform the SR and the potential for an unplanned plant transient if the Surveillance were performed with the reactor at power.

(continued)

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REQUIREMENTS
(continued)

SR 3.3.1.6

Insert A

A CHANNEL FUNCTIONAL TEST on the Loss of Load, Power Rate of Change, and Manual Trip channels is performed prior to a reactor startup to ensure the entire channel will perform its intended function if required. The Loss of Load pressure sensor cannot be tested during reactor operation without closing the high pressure TSV, which would result in a turbine trip or reactor trip. The Power Rate of Change—High trip Function is required during startup operation and is bypassed when shut down or > 15% RTP. The Manual Trip Function can either be tested at power or shutdown; however, the simplicity of this circuitry and the absence of drift concern makes this Frequency adequate. Additionally, operating experience has shown that these components usually pass the Surveillance when performed at a Frequency of once per 7 days prior to each reactor startup.

Insert A

SR 3.3.1.7

SR 3.3.1.7 is a CHANNEL FUNCTIONAL TEST similar to SR 3.3.1.4, except SR 3.3.1.7 is applicable only to bypass Functions and is performed once within 92 days prior to each startup. Proper operation of bypass permissives is critical during plant startup because the bypasses must be in place to allow startup operation and must be removed at the appropriate points during power ascent to enable certain reactor trips. Consequently, the appropriate time to verify bypass removal function OPERABILITY is just prior to startup. The allowance to conduct this test within 92 days of startup is based on the reliability analysis presented in topical report CEN-327, "RPS/ESFAS Extended Test Interval Evaluation" (Ref. 9). Once the operating bypasses are removed, the bypasses must not fail in such a way that the associated trip Function gets inadvertently bypassed. This feature is verified by the trip Function CHANNEL FUNCTIONAL TEST, SR 3.3.1.4. Therefore, further testing of the bypass function after startup is unnecessary.

SR 3.3.1.8

SR 3.3.1.8 is the performance of a CHANNEL CALIBRATION every [18] months.

(continued)

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BASES

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REQUIREMENTS

SR 3.3.2.2 (continued)

required. The Power Rate of Change—High trip Function is required during startup operation and is bypassed when shut down or > 15% RTP. Additionally, operating experience has shown that these components usually pass the Surveillance when performed at a Frequency of once every 92 days prior to each reactor startup.

SR 3.3.2.3

SR 3.3.2.3 is a CHANNEL FUNCTIONAL TEST similar to SR 3.3.2.2, except SR 3.3.2.3 is applicable only to bypass Functions and is performed once within 92 days prior to each startup.

Insert A

Proper operation of bypass permissives is critical during plant startup because the bypasses must be in place to allow startup operation and must be removed at the appropriate points during power ascent to enable certain reactor trips. Consequently, the appropriate time to verify bypass removal function OPERABILITY is just prior to startup. The allowance to conduct this Surveillance within 92 days of startup is based on the reliability analysis presented in topical report CEN-327, "RPS/ESFAS Extended Test Interval Evaluation" (Ref. 5). Once the operating bypasses are removed, the bypasses must not fail in such a way that the associated trip Function gets inadvertently bypassed. This feature is verified by the trip Function CHANNEL FUNCTIONAL TEST, SR 3.3.2.2. Therefore, further testing of the bypass function after startup is unnecessary.

SR 3.3.2.4

SR 3.3.2.4 is the performance of a CHANNEL CALIBRATION every [18] months.

CHANNEL CALIBRATION is a complete check of the instrument channel including the sensor. The Surveillance verifies that the channel responds to a measured parameter within the necessary range and accuracy. CHANNEL CALIBRATION leaves the channel adjusted to account for instrument drift between successive calibrations to ensure that the channel remains

(continued)

BASES (continued)

SURVEILLANCE
REQUIREMENTS

Reviewer's Note: In order for a plant to take credit for topical reports as the basis for justifying Frequencies, topical reports must be supported by an NRC staff Safety Evaluation Report that establishes the acceptability of each topical report for that unit (Ref. 4).

SR 3.3.3.1

A CHANNEL FUNCTIONAL TEST on each RPS Logic channel and RTCB channel is performed every [92] days to ensure the entire channel will perform its intended function when needed.

Insert A

In addition to power supply tests, the RPS CHANNEL FUNCTIONAL TEST consists of three overlapping tests as described in Reference 3. These tests verify that the RPS is capable of performing its intended function, from bistable input through the RTCBs. The first test, the bistable test, is addressed by SR 3.3.1.4 in LCO 3.3.1.

This SR addresses the two tests associated with the RPS Logic: Matrix Logic and Trip Path.

Matrix Logic Tests

These tests are performed one matrix at a time. They verify that a coincidence in the two input channels for each Function removes power from the matrix relays. During testing, power is applied to the matrix relay test coils and prevents the matrix relay contacts from assuming their de-energized state. The Matrix Logic tests will detect any short circuits around the bistable contacts in the coincidence logic such as may be caused by faulty bistable relay or trip channel bypass contacts.

Trip Path Tests

These tests are similar to the Matrix Logic tests, except that test power is withheld from one matrix relay at a time, allowing the initiation circuit to de-energize, opening the affected set of RTCBs. The RTCBs must then be closed prior to testing the other three initiation circuits, or a reactor trip may result.

(continued)

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Trip Path Tests (continued)

The Frequency of [92] days is based on the reliability analysis presented in topical report CEN-327, "RPS/ESFAS Extended Test Interval Evaluation" (Ref. 5).

SR 3.3.3.2

Insert A

A CHANNEL FUNCTIONAL TEST on the Manual Trip channels is performed prior to a reactor startup to ensure the entire channel will perform its intended function if required. The Manual Trip Function can be tested either at power or shutdown. However, the simplicity of this circuitry and the absence of drift concern makes this Frequency adequate. Additionally, operating experience has shown that these components usually pass the Surveillance when performed once within 7 days prior to each reactor startup.

SR 3.3.3.3

Each RTCB is actuated by an undervoltage coil and a shunt trip coil. The system is designed so that either de-energizing the undervoltage coil or energizing the shunt trip coil will cause the circuit breaker to open. When an RTCB is opened, either during an automatic reactor trip or by using the manual push buttons in the control room, the undervoltage coil is de-energized and the shunt trip coil is energized. This makes it impossible to determine if one of the coils or associated circuitry is defective.

Therefore, once every 18 months, a CHANNEL FUNCTIONAL TEST is performed that individually tests all four sets of undervoltage coils and all four sets of shunt trip coils. During undervoltage coil testing, the shunt trip coils shall remain de-energized, preventing their operation. Conversely, during shunt trip coil testing, the undervoltage coils shall remain energized, preventing their operation. This Surveillance ensures that every undervoltage coil and every shunt trip coil is capable of performing its intended function and that no single active failure of any RTCB component will prevent a reactor trip. The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance

Insert A

(continued)

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BASES

SURVEILLANCE
REQUIREMENTS

SR 3.3.4.1 (continued)

the CHANNEL CHECK minimizes the chance of loss of protective function due to failure of redundant channels. The CHANNEL CHECK supplements less formal, but more frequent, checks of CHANNEL OPERABILITY during normal operational use of displays associated with the LCO required channels.

SR 3.3.4.2

A CHANNEL FUNCTIONAL TEST is performed every [92] days to ensure the entire channel will perform its intended function when needed.↑

Insert A

The CHANNEL FUNCTIONAL TEST tests the individual sensor subsystems using an analog test input to each bistable.

A test signal is superimposed on the input in one channel at a time to verify that the bistable trips within the specified tolerance around the setpoint. Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint analysis.

The as found and as left values must also be recorded and reviewed for consistency with the assumptions of the surveillance interval extension analysis. The requirements for this review are outlined in Reference [8].

SR 3.3.4.3

SR 3.3.4.3 is a CHANNEL FUNCTIONAL TEST similar to SR 3.3.4.2, except 3.3.4.3 is performed within 92 days prior to startup and is only applicable to bypass Functions. These include the Pressurizer Pressure—Low bypass and the MSIS Steam Generator Pressure—Low bypass.↑

The CHANNEL FUNCTIONAL TEST for proper operation of the bypass removal Functions is critical during plant heatups because the bypasses may be in place prior to entering MODE 3 but must be removed at the appropriate points during plant startup to enable the ESFAS Function. Consequently, just prior to startup is the appropriate time to verify

(continued)

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ACTIONS
(continued)

D.1 and D.2

Condition D is entered when the Required Action and associated Completion Time of Condition C are not met. If Required Action C.1 cannot be met within the required Completion Time, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

SURVEILLANCE
REQUIREMENTS

SR 3.3.5.1

A CHANNEL FUNCTIONAL TEST is performed every 92 days to ensure the entire channel will perform its intended function when needed. Sensor subsystem tests are addressed in LCO 3.3.4. This SR addresses Actuation Logic tests.

Insert A

Actuation Logic Tests

Actuation subsystem testing includes injecting one trip signal into each two-out-of-four logic subsystem in each ESFAS Function and using a bistable trip input to satisfy the trip logic. Initiation relays associated with the affected channel will then actuate the individual ESFAS components. Since each ESFAS Function employs subchannels of Actuation Logic, it is possible to actuate individual components without actuating an entire ESFAS Function.

Note 1 requires that Actuation Logic tests include operation of initiation relays. Note 2 allows deferred at power testing of certain relays to allow for the fact that operating certain relays during power operation could cause plant transients or equipment damage. Those initiation relays that cannot be tested at power must be tested in accordance with Note 2. These include [SIAS No. 5, SIAS No. 10, CIAS No. 5, and MSIS No. 1.]

These relays actuate the following components, which cannot be tested at power:

- RCP seal bleedoff isolation valves;

(continued)

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SURVEILLANCE
REQUIREMENTS

Actuation Logic Tests (continued)

- Service water isolation valves;
- VCT discharge valves;
- Letdown stop valves;
- CCW to and from the RCPs;
- MSIVs and feedwater isolation valves; and
- Instrument air containment isolation valves.

The reasons that each of the above cannot be fully tested at power are stated in Reference 1.

These tests verify that the ESFAS is capable of performing its intended function, from bistable input through the actuated components.

The Frequency of [92] days is based on the reliability analysis presented in topical report CEN-327, "RPS/ESFAS Extended Test Interval Evaluation" (Ref. 2).

SR 3.3.5.2

A CHANNEL FUNCTIONAL TEST is performed on the manual ESFAS actuation circuitry, de-energizing relays and providing Manual Trip of the Function. ↗

Insert A

This Surveillance verifies that the trip push buttons are capable of opening contacts in the Actuation Logic as designed, de-energizing the initiation relays and providing Manual Trip of the Function. The [18] month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown these components usually pass the Surveillance when performed at a Frequency of once every [18] months.

REFERENCES

1. FSAR, Section [7.3].
 2. CEN-327, June 2, 1986, including Supplement 1, March 3, 1989.
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BASES

SURVEILLANCE
REQUIREMENTS

SR 3.3.6.1 (continued)

The Frequency, about once every shift, is based upon operating experience that demonstrates channel failure is rare. Since the probability of two random failures in redundant channels in any 12 hour period is extremely low, the CHANNEL CHECK minimizes the chance of loss of protective function due to failure of redundant channels. The CHANNEL CHECK supplements less formal, but more frequent, checks of channel OPERABILITY during normal operational use of the displays associated with the LCO required channels.

SR 3.3.6.2

Insert A

A CHANNEL FUNCTIONAL TEST is performed every [92] days to ensure that the entire channel will perform its intended function when needed.

The Frequency of [92] days is based on plant operating experience with regard to channel OPERABILITY and drift, which demonstrates that failure of more than one channel of a given function in any [92] day Frequency is a rare event. Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint analysis.

The as found and as left values must also be recorded and reviewed for consistency with the assumptions of the surveillance interval extension analysis. The requirements for this review are outlined in Reference [6].

SR 3.3.6.3

SR 3.3.6.3 is the performance of a CHANNEL CALIBRATION every 18 months. The CHANNEL CALIBRATION verifies the accuracy of each component within the instrument channel. This includes calibration of the undervoltage relays and demonstrates that the equipment falls within the specified operating characteristics defined by the manufacturer.

The Surveillance verifies that the channel responds to a measured parameter within the necessary range and accuracy. CHANNEL CALIBRATION leaves the channel adjusted to account for instrument drift between successive calibrations to

(continued)

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.3.7.1 (continued)

The Frequency, about once every shift, is based on operating experience that demonstrates the rarity of channel failure. Since the probability of two random failures in redundant channels in any 12 hour period is low, the CHANNEL CHECK minimizes the chance of loss of protective function due to failure of redundant channels. The CHANNEL CHECK supplements less formal, but more frequent, checks of channel OPERABILITY during normal operational use of the displays associated with the LCO required channels.

Insert A

SR 3.3.7.2

A CHANNEL FUNCTIONAL TEST is performed on each containment radiation monitoring channel to ensure the entire channel will perform its intended function. Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint analysis.

The Frequency of [92] days is based on plant operating experience with regard to channel OPERABILITY and drift, which demonstrates that failure of more than one channel of a given Function in any [92] day interval is a rare event.

SR 3.3.7.3

Proper operation of the initiation relays is verified by de-energizing these relays during the CHANNEL FUNCTIONAL TEST of the Actuation Logic every [31] days. This will actuate the Function, operating all associated equipment. Proper operation of the equipment actuated by each train is thus verified. A Note indicates this Surveillance includes verification of operation for each initiation relay.

The Frequency of [31] days is based on plant operating experience with regard to channel OPERABILITY, which demonstrates that failure of more than one channel of a given Function in any [31] day interval is a rare event.

(continued)

BASES

SURVEILLANCE
REQUIREMENT
(continued)

SR 3.3.7.4

CHANNEL CALIBRATION is a complete check of the instrument channel including the sensor. The Surveillance verifies that the channel responds to a measured parameter within the necessary range and accuracy. CHANNEL CALIBRATION leaves the channel adjusted to account for instrument drift between successive calibrations to ensure that the channel remains operational between successive tests. CHANNEL CALIBRATIONS must be performed consistent with the plant specific setpoint analysis.

The Frequency is based upon the assumption of an [18] month calibration interval for the determination of the magnitude of equipment drift in the setpoint analysis.

SR 3.3.7.5

Every [18] months, a CHANNEL FUNCTIONAL TEST is performed on the manual CPIS actuation circuitry.

Insert A

This Surveillance verifies that the trip push buttons are capable of opening contacts in the Actuation Logic as designed, de-energizing the initiation relays and providing Manual Trip of the Function. The [18] month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown these components usually pass the Surveillance when performed at a Frequency of once every 18 months.

SR 3.3.7.6

This Surveillance ensures that the train actuation response times are less than or equal to the maximum times assumed in the analyses. The 18 month Frequency is based upon plant operating experience, which shows random failures of instrumentation components causing serious response time degradation, but not channel failure, are infrequent occurrences. Testing of the final actuating devices, which make up the bulk of the response time, is included. Testing

(continued)

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SR 3.3.8.1 (continued)

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

The Frequency, about once every shift, is based on operating experience that demonstrates the rarity of channel failure. Since the probability of two random failures in redundant channels in any 12 hour period is low, the CHANNEL CHECK minimizes the chance of loss of protective function due to failure of redundant channels. The CHANNEL CHECK supplements less formal, but more frequent, checks of channel OPERABILITY during normal operational use of the displays associated with the LCO required channels.

At this unit, the following administrative controls and design features (e.g., downscale alarms) immediately alert operations to loss of function in the nonredundant channels.

At this unit, verification of sample system alignment and operation for gaseous, particulate, and iodine monitors is required as follows:

SR 3.3.8.2

Insert A

A CHANNEL FUNCTIONAL TEST is performed on the required control room radiation monitoring channel to ensure the entire channel will perform its intended function. Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint analysis.

The as found and as left values must also be recorded and reviewed for consistency with the assumptions of the frequency extension analysis. The requirements for this review are outlined in Reference [4].

The Frequency of [92] days is based on plant operating experience with regard to channel OPERABILITY and drift, which demonstrates that failure of more than one channel of a given Function in any [92] day interval is a rare event.

(continued)

BASES

SURVEILLANCE
REQUIREMENTS
(continued)

SR 3.3.8.3

Proper operation of the individual initiation relays is verified by de-energizing these relays during the CHANNEL FUNCTIONAL TEST of the Actuation Logic every [31] days. This will actuate the Function, operating all associated equipment. Proper operation of the equipment actuated by each train is thus verified. ↗

Insert A

The Frequency of [31] days is based on plant operating experience with regard to channel OPERABILITY, which demonstrates that failure of more than one channel of a given Function in any [31] days interval is a rare event.

Note 1 indicates this Surveillance includes verification of operation for each initiation relay.

Note 2 indicates that relays that cannot be tested at power are excepted from the Surveillance Requirement while at power. These relays must, however, be tested during each entry into MODE 5 exceeding 24 hours unless they have been tested within the previous 6 months.

SR 3.3.8.4

CHANNEL CALIBRATION is a complete check of the instrument channel including the sensor. The Surveillance verifies that the channel responds to a measured parameter within the necessary range and accuracy. CHANNEL CALIBRATION leaves the channel adjusted to account for instrument drift between successive calibrations to ensure that the channel remains operational between successive surveillances. CHANNEL CALIBRATIONS must be performed consistent with the plant specific setpoint analysis.

The as found and as left values must also be recorded and reviewed for consistency with the assumptions of the surveillance interval extension analysis. The requirements for this review are outlined in Reference [4].

The Frequency is based upon the assumption of an [18] month calibration interval for the determination of the magnitude of equipment drift in the setpoint analysis.

(continued)

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BASES

SURVEILLANCE
REQUIREMENTS
(continued)

Insert A

SR 3.3.8.5

Every [18] months, a CHANNEL FUNCTIONAL TEST is performed on the manual CRIS actuation circuitry. ↗

This test verifies that the trip push buttons are capable of opening contacts in the Actuation Logic as designed, de-energizing the initiation relays and providing Manual Trip of the function. The [18] month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown these components usually pass the Surveillance when performed at a Frequency of once every [18] months.

SR 3.3.8.6

This Surveillance ensures that the train actuation response times are less than the maximum times assumed in the analyses. The [18] month Frequency is based upon plant operating experience, which shows that random failures of instrumentation components causing serious response time degradation, but not channel failure, are infrequent occurrences. Testing of the final actuating devices, which make up the bulk of the response time, is included in the Surveillance testing.

REFERENCES

1. FSAR, Chapter [15].
 2. "Plant Protection System Selection of Trip Setpoint Values."
 3. 10 CFR 50, Appendix A, GDC 19.
 4. [].
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BASES

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SR 3.3.9.1 (continued)

minimizes the chance of loss of protective function due to failure of redundant channels. The CHANNEL CHECK supplements less formal, but more frequent, checks of channel OPERABILITY during normal operational use of the displays associated with the LCO required channels.

SR 3.3.9.2

Insert A

A CHANNEL FUNCTIONAL TEST is performed on each channel to ensure the entire channel will perform its intended function. Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint analysis.

The as found and as left values must also be recorded and reviewed for consistency with the assumptions of the surveillance interval extension analysis. The requirements for this review are outlined in Reference [3].

The Frequency of 31 days is based on plant operating experience with regard to channel OPERABILITY and drift, which demonstrates that failure of more than one channel of a given Function in any 31 day interval is a rare event.

Proper operation of the individual subgroup relays is verified by de-energizing these relays during the CHANNEL FUNCTIONAL TEST of the Actuation Logic every 31 days. This will actuate the Function, operating all associated equipment. Proper operation of the equipment actuated by each train is thus verified. Note 1 indicates this test includes verification of operation for each initiation relay. [At this unit, the verification is conducted as follows:]

Note 2 indicates that relays that cannot be tested at power are excepted from the SR while at power. These relays must, however, be tested during each entry into MODE 5 exceeding 24 hours unless they have been tested within the previous 6 months.

[At this unit, the basis for this test exception is as follows:]

(continued)

BASES (continued)

ACTIONS

When the number of inoperable channels in a trip Function exceeds those specified in the Conditions associated with the same trip Function, then the plant is outside the safety analysis. Therefore, LCO 3.0.3 should be immediately entered if applicable in the current MODE of operation.

A.1

Condition A applies to the failure of one SBFAS Manual Trip channel or of one Actuation Logic associated with the Chemical and Volume Control System Isolation Signal or SBFAS. Required Action A.1 requires restoration of the inoperable channel to restore redundancy of the affected Function. The Completion Time of 48 hours is consistent with the Completion Time of other ESFAS Functions employing similar logic and should be adequate for most repairs while minimizing the risk of operating with an inoperable channel for a manually actuated Function.

B.1 and B.2

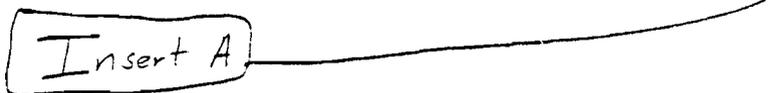
Condition B specifies the shutdown track to be followed if the Required Action and associated Completion Time of Condition A are not met. If Required Action A.1 cannot be met within the required Completion Time, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 5 within 36 hours. The Completion Times are reasonable, based on operating experience, to reach the required MODE from full power conditions in an orderly manner and without challenging plant systems.

SURVEILLANCE
REQUIREMENTS

SR 3.3.10.1

The SBFAS can be initiated either on a Safety Injection Actuation Signal (SIAS) or manually. This Surveillance is a restatement of SR 3.3.5.1 on the SIAS Function. Performing SR 3.3.5.1 satisfies this Surveillance. The Frequency is the same as that for SR 3.3.5.1.

Insert A



(continued)

BASES

**SURVEILLANCE
REQUIREMENTS**
(continued)

SR 3.3.10.2

Every [18] months, a CHANNEL FUNCTIONAL TEST is performed on the manual SBFAS actuation circuitry. ← Insert A

This Surveillance verifies that the trip push buttons are capable of opening contacts in the Actuation Logic as designed, de-energizing the initiation relays and providing Manual Trip of the Function. The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown these components usually pass the Surveillance when performed at a Frequency of once every [18] months.

REFERENCES

1. FSAR, Chapter [15].
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BASES

SURVEILLANCE
REQUIREMENTS

SR 3.3.12.3 (continued)

that the channel responds to the measured parameter within the necessary range and accuracy.

The 18 month Frequency is based upon the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power.

The SR is modified by a Note, which excludes neutron detectors from the CHANNEL CALIBRATION.

Insert A

SR 3.3.12.4

SR 3.3.12.4 is the performance of a CHANNEL FUNCTIONAL TEST every 18 months. This Surveillance should verify the OPERABILITY of the reactor trip circuit breaker (RTCB) open/closed indication on the remote shutdown panels by actuating the RTCBs. The Frequency of 18 months was chosen because the RTCBs cannot be exercised while the unit is at power. Operating experience has shown that these components usually pass the Surveillance when performed at a Frequency of once every 18 months. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

REFERENCES

1. 10 CFR 50, Appendix A, GDC 19, and Appendix R.
 2. NRC Safety Evaluation Report (SER).
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BASES

SURVEILLANCE
REQUIREMENTSSR 3.3.13.1 (continued)

Agreement criteria are determined by the plant staff and should be based on a combination of the channel instrument uncertainties including control isolation, indication, and readability. If a channel is outside the criteria, it may be an indication that the transmitter or the signal processing equipment has drifted outside its limits. If the channels are within the criteria, it is an indication that the channels are OPERABLE.

The Frequency, about once every shift, is based on operating experience that demonstrates the rarity of channel failure. Since the probability of two random failures in redundant channels in any 12 hour period is extremely low, CHANNEL CHECK minimizes the chance of loss of protective function due to failure of redundant channels. CHANNEL CHECK supplements less formal, but more frequent, checks of channel OPERABILITY during normal operational use of displays associated with the LCO required channels.

Insert A

SR 3.3.13.2

A CHANNEL FUNCTIONAL TEST is performed every [92] days to ensure that the entire channel is capable of properly indicating neutron flux. Internal test circuitry is used to feed preadjusted test signals into the preamplifier to verify channel alignment. It is not necessary to test the detector, because generating a meaningful test signal is difficult; the detectors are of simple construction, and any failures in the detectors will be apparent as change in channel output. This Frequency is the same as that employed for the same channels in the other applicable MODES. [At this unit, the channel trip Functions tested by the CHANNEL FUNCTIONAL TEST are as follows:]

SR 3.3.13.3

SR 3.3.13.3 is the performance of a CHANNEL CALIBRATION. A CHANNEL CALIBRATION is performed every [18] months. The Surveillance is a complete check and readjustment of the [logarithmic] power channel from the preamplifier input through to the remote indicators. The Surveillance verifies

(continued)

SR 3.3.1-7

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BASES

SURVEILLANCE
REQUIREMENTS
(continued)

Matrix Logic Tests

Matrix Logic tests are addressed in LCO 3.3.4. This test is performed one matrix at a time. It verifies that a coincidence in the two input channels for each Function removes power from the matrix relays. During testing, power is applied to the matrix relay test coils and prevents the matrix relay contacts from assuming their de-energized state. This test will detect any short circuits around the bistable contacts in the coincidence logic, such as may be caused by faulty bistable relay or trip channel bypass contacts.

Trip Path Tests

Trip path (Initiation Logic) tests are addressed in LCO 3.3.4. These tests are similar to the Matrix Logic tests, except that test power is withheld from one matrix relay at a time, allowing the initiation circuit to de-energize, thereby opening the affected set of RTCBs. The RTCBs must then be closed prior to testing the other three initiation circuits, or a reactor trip may result.

The Frequency of 92 days is based on the reliability analysis presented in topical report CEN-327, "RPS/ESFAS Extended Test Interval Evaluation" (Ref. 9).

The CPC and CEAC channels and excore nuclear instrumentation channels are tested separately.

The excore channels use preassigned test signals to verify proper channel alignment. The excore logarithmic channel test signal is inserted into the preamplifier input, so as to test the first active element downstream of the detector.

The power range excore test signal is inserted at the drawer input, since there is no preamplifier.

The quarterly CPC CHANNEL FUNCTIONAL TEST is performed using software. This software includes preassigned addressable constant values that may differ from the current values. Provisions are made to store the addressable constant values on a computer disk prior to testing and to reload them after testing. A Note is added to the Surveillance Requirements to verify that the CPC CHANNEL FUNCTIONAL TEST includes the correct values of addressable constants.

Insert A

(continued)

BASES

SURVEILLANCE
REQUIREMENTS
(continued)

SR 3.3.1.8

A Note indicates that neutron detectors are excluded from CHANNEL CALIBRATION. A CHANNEL CALIBRATION of the power range neutron flux channels every 92 days ensures that the channels are reading accurately and within tolerance (Ref. 9). The Surveillance verifies that the channel responds to a measured parameter within the necessary range and accuracy. CHANNEL CALIBRATION leaves the channel adjusted to account for instrument drift between successive calibrations to ensure that the channel remains operational between successive tests. CHANNEL CALIBRATIONS must be performed consistent with the plant specific setpoint analysis.

The as found and as left values must also be recorded and reviewed for consistency with the assumptions of the interval between surveillance interval extension analysis. The requirements for this review are outlined in Reference [9]. Operating experience has shown this Frequency to be satisfactory. The detectors are excluded from CHANNEL CALIBRATION because they are passive devices with minimal drift and because of the difficulty of simulating a meaningful signal. Slow changes in detector sensitivity are compensated for by performing the daily calorimetric calibration (SR 3.3.1.4) and the monthly linear subchannel gain check (SR 3.3.1.6). In addition, the associated control room indications are monitored by the operators.

SR 3.3.1.9

The characteristics and Bases for this Surveillance are as described for SR 3.3.1.7. This Surveillance differs from SR 3.3.1.7 only in that the CHANNEL FUNCTIONAL TEST on the Loss of Load functional unit is only required above 55% RTP. When above 55% and the trip is in effect, the CHANNEL FUNCTIONAL TEST will ensure the channel will perform its equipment protective function if needed. The Note allowing 2 hours after reaching 55% RTP is necessary for Surveillance performance. This Surveillance cannot be performed below 55% RTP, since the trip is bypassed.

INSERT
A

(continued)

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BASES

SURVEILLANCE
REQUIREMENTS
(continued)

SR 3.3.1.10

SR 3.3.1.10 is the performance of a CHANNEL CALIBRATION every [18] months.

CHANNEL CALIBRATION is a complete check of the instrument channel including the sensor. The Surveillance verifies that the channel responds to a measured parameter within the necessary range and accuracy. CHANNEL CALIBRATION leaves the channel adjusted to account for instrument drift between successive calibrations to ensure that the channel remains operational between successive tests. CHANNEL CALIBRATIONS must be performed consistent with the plant specific setpoint analysis.

The as found and as left values must also be recorded and reviewed for consistency with the assumptions of the surveillance interval extension analysis. The requirements for this review are outlined in Reference [9].

The Frequency is based upon the assumption of an [18] month calibration interval for the determination of the magnitude of equipment drift in the setpoint analysis as well as operating experience and consistency with the typical [18] month fuel cycle.

The Surveillance is modified by a Note to indicate that the neutron detectors are excluded from CHANNEL CALIBRATION because they are passive devices with minimal drift and because of the difficulty of simulating a meaningful signal. Slow changes in detector sensitivity are compensated for by performing the daily calorimetric calibration (SR 3.3.1.4) and the monthly linear subchannel gain check (SR 3.3.1.6).

SR 3.3.1.11

Every [18] months, a CHANNEL FUNCTIONAL TEST is performed on the CPCs. The CHANNEL FUNCTIONAL TEST shall include the injection of a signal as close to the sensors as practicable to verify OPERABILITY including alarm and trip Functions.

Insert A

The basis for the [18] month Frequency is that the CPCs perform a continuous self monitoring function that eliminates the need for frequent CHANNEL FUNCTIONAL TESTS. This CHANNEL FUNCTIONAL TEST essentially validates the self

(continued)

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Rev 3

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.3.1.11 (continued)

monitoring function and checks for a small set of failure modes that are undetectable by the self monitoring function. Operating experience has shown that undetected CPC or CEAC failures do not occur in any given [18] month interval.

SR 3.3.1.12

The three excore detectors used by each CPC channel for axial flux distribution information are far enough from the core to be exposed to flux from all heights in the core, although it is desired that they only read their particular level. The CPCs adjust for this flux overlap by using the predetermined shape annealing matrix elements in the CPC software.

After refueling, it is necessary to re-establish the shape annealing matrix elements for the excore detectors based on more accurate incore detector readings. This is necessary because refueling could possibly produce a significant change in the shape annealing matrix coefficients.

Incore detectors are inaccurate at low power levels. THERMAL POWER should be significant but < 70% to perform an accurate axial shape calculation used to derive the shape annealing matrix elements.

By restricting power to $\leq 70\%$ until shape annealing matrix elements are verified, excessive local power peaks within the fuel are avoided. Operating experience has shown this Frequency to be acceptable.

SR 3.3.1.13

SR 3.3.1.13 is a CHANNEL FUNCTIONAL TEST similar to SR 3.3.1.7, except SR 3.3.1.13 is applicable only to bypass functions and is performed once within 92 days prior to each startup. ↑ Proper operation of bypass permissives is critical during plant startup because the bypasses must be in place to allow startup operation and must be removed at the appropriate points during power ascent to enable certain reactor trips. Consequently, the appropriate time to verify bypass removal function OPERABILITY is just prior to

Insert A

(continued)

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BASES

SURVEILLANCE
REQUIREMENTS

SR 3.3.2.1 (continued)

instrumentation continues to operate properly between each CHANNEL CALIBRATION.

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

The Frequency, about once every shift, is based on operating experience that demonstrates the rarity of channel failure. Since the probability of two random failures in redundant channels in any 12 hour period is extremely low, the CHANNEL CHECK minimizes the chance of loss of protective function due to failure of redundant channels. The CHANNEL CHECK supplements less formal, but more frequent, checks of channel OPERABILITY during normal operational use of the displays associated with the LCO required channels.

SR 3.3.2.2

A CHANNEL FUNCTIONAL TEST on each channel, except Loss of Load and power range neutron flux, is performed every 92 days to ensure the entire channel will perform its intended function when needed. This SR is identical to SR 3.3.1.7. Only the Applicability differs.

Insert A

In addition to power supply tests, the RPS CHANNEL FUNCTIONAL TEST consists of three overlapping tests as described in the FSAR, Section [7.2] (Ref. 3). These tests verify that the RPS is capable of performing its intended function, from bistable input through the RTCBs. They include:

Bistable Tests

A test signal is superimposed on the input in one channel at a time to verify that the bistable trips within the specified tolerance around the setpoint. This is done with the affected RPS channel trip channel bypassed. Any

(continued)

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BASES

SURVEILLANCE
REQUIREMENTS

SR 3.3.2.3 (continued)

functions and is performed once within 92 days prior to each startup. This SR is identical to SR 3.3.1.13. Only the Applicability differs.

Insert A

Proper operation of bypass permissives is critical during plant startup because the bypasses must be in place to allow startup operation and must be removed at the appropriate points during power ascent to enable certain reactor trips. Consequently, the appropriate time to verify bypass removal function OPERABILITY is just prior to startup. The allowance to conduct this Surveillance within 92 days of startup is based on the reliability analysis presented in topical report CEN-327, "RPS/ESFAS Extended Test Interval Evaluation" (Ref. 6). Once the operating bypasses are removed, the bypasses must not fail in such a way that the associated trip Function gets inadvertently bypassed. This feature is verified by the trip Function CHANNEL FUNCTIONAL TEST, SR 3.3.2.2. Therefore, further testing of the bypass function after startup is unnecessary.

SR 3.3.2.4

SR 3.3.2.4 is the performance of a CHANNEL CALIBRATION every 18 months. This SR is identical to SR 3.3.1.10. Only the Applicability differs.

CHANNEL CALIBRATION is a complete check of the instrument channel excluding the sensor. The Surveillance verifies that the channel responds to a measured parameter within the necessary range and accuracy. CHANNEL CALIBRATION leaves the channel adjusted to account for instrument drift between successive calibrations to ensure that the channel remains operational between successive tests. CHANNEL CALIBRATIONS must be performed consistent with the plant specific setpoint analysis.

The as found and as left values must also be recorded and reviewed for consistency with the assumptions of the surveillance interval extension analysis. The requirements for this review are outlined in Reference [3].

The Frequency is based upon the assumption of an [18] month calibration interval for the determination of the magnitude

(continued)

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BASES

SURVEILLANCE
REQUIREMENTS

SR 3.3.3.2 (continued)

more autorestarts of a nonbypassed CPC occur within a 12 hour period, the CPC may not be completely reliable. Therefore, the Required Action of Condition D must be performed. The Frequency is based on operating experience that demonstrates the rarity of more than one channel failing within the same 12 hour interval.

SR 3.3.3.3

A CHANNEL FUNCTIONAL TEST on each CEAC channel is performed every 92 days to ensure the entire channel will perform its intended function when needed. The quarterly CHANNEL FUNCTIONAL TEST is performed using test software. The Frequency of 92 days is based on the reliability analysis presented in topical report CEN-327, "RPS/ESFAS Extended Test Interval Evaluation" (Ref. 5).

Insert A

SR 3.3.3.4

SR 3.3.3.4 is the performance of a CHANNEL CALIBRATION every [18] months.

CHANNEL CALIBRATION is a complete check of the instrument channel including the sensor. The Surveillance verifies that the channel responds to a measured parameter within the necessary range and accuracy. CHANNEL CALIBRATION leaves the channel adjusted to account for instrument drift between successive calibrations to ensure that the channel remains operational between successive surveillances. CHANNEL CALIBRATIONS must be performed consistent with the plant specific setpoint analysis.

The as found and as left values must also be recorded and reviewed for consistency with the assumptions of the surveillance interval extension analysis. The requirements for this review are outlined in Reference [5].

The Frequency is based upon the assumption of an [18] month calibration interval in the determination of the magnitude of equipment drift in the setpoint analysis and includes operating experience and consistency with the typical [18] month fuel cycle.

(continued)

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Rev 3

BASES

SURVEILLANCE
REQUIREMENTS
(continued)

SR 3.3.3.5

Every [18] months, a CHANNEL FUNCTIONAL TEST is performed on the CEACs. The CHANNEL FUNCTIONAL TEST shall include the injection of a signal as close to the sensors as practicable to verify OPERABILITY, including alarm and trip Functions. ↗

Insert A

The basis for the [18] month Frequency is that the CEACs perform a continuous self monitoring function that eliminates the need for frequent CHANNEL FUNCTIONAL TESTS. This CHANNEL FUNCTIONAL TEST essentially validates the self monitoring function and checks for a small set of failure modes that are undetectable by the self monitoring function. Operating experience has shown that undetected CPC or CEAC failures do not occur in any given [18] month interval.

SR 3.3.3.6

The isolation characteristics of each CEAC CEA position isolation amplifier and each optical isolator for CEAC to CPC data transfer are verified once per refueling to ensure that a fault in a CEAC or a CPC channel will not render another CEAC or CPC channel inoperable. The CEAC CEA position isolation amplifiers, mounted in CPC cabinets A and D, prevent a CEAC fault from propagating back to CPC A or D. The optical isolators for CPC to CEAC data transfer prevent a fault originating in any CPC channel from propagating back to any CEAC through this data link.

The Frequency is based on plant operating experience with regard to channel OPERABILITY, which demonstrates the failure of a channel in any [18] month interval is rare.

REFERENCES

1. 10 CFR 50.
2. 10 CFR 100.
3. FSAR, Section [7.2].
4. NRC Safety Evaluation Report, [Date].
5. CEN-327, June 2, 1986, including Supplement 1, March 3, 1989.

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BASES

ACTIONS

D.1 (continued)

If the affected RTCB cannot be opened, Required Action E is entered. This would only occur if there is a failure in the Manual Trip circuitry or the RTCB(s).

E.1 and E.2

Condition E is entered if Required Actions associated with Condition A, B, or D are not met within the required Completion Time or, if for one or more Functions, more than one Manual Trip, Matrix Logic, Initiation Logic, or RTCB channel is inoperable for reasons other than Condition A or D.

If the RTCBs associated with the inoperable channel cannot be opened, the reactor must be shut down within 6 hours and all the RTCBs opened. A Completion Time of 6 hours is reasonable, based on operating experience, for reaching the required plant conditions from full power conditions in an orderly manner and without challenging plant systems and for opening RTCBs. All RTCBs should then be opened, placing the plant in a MODE where the LCO does not apply and ensuring no CEA withdrawal occurs.

SURVEILLANCE
REQUIREMENTS

In order for a unit to take credit for topical reports as the basis for justifying Frequencies, topical reports must be supported by an NRC staff Safety Evaluation Report that establishes the acceptability of each topical report for that unit (Ref. 4).

SR 3.3.4.1

A CHANNEL FUNCTIONAL TEST on each RPS Logic channel and RTCB channel is performed every [92] days to ensure the entire channel will perform its intended function when needed.

Insert A

In addition to power supply tests, the RPS CHANNEL FUNCTIONAL TEST consists of three overlapping tests as described in Reference 3. These tests verify that the RPS is capable of performing its intended function, from

(continued)

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BASES (continued)

SURVEILLANCE
REQUIREMENTS

SR 3.3.5.1

Performance of the CHANNEL CHECK once every 12 hours ensures that a gross failure of instrumentation has not occurred. A CHANNEL CHECK is normally a comparison of the parameter indicated on one channel to a similar parameter on other channels. It is based on the assumption that instrument channels monitoring the same parameter should read approximately the same value. Significant deviations between instrument channels could be an indication of excessive instrument drift in one of the channels or of something even more serious. CHANNEL CHECK will detect gross channel failure; thus, it is key to verifying the instrumentation continues to operate properly between each CHANNEL CALIBRATION.

Agreement criteria are determined by the plant staff based on a combination of the channel instrument uncertainties, including indication and readability. 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. If the channels are within the criteria, it is an indication that the channels are OPERABLE.

The Frequency, about once every shift, is based on operating experience that demonstrates channel failure is rare. Since the probability of two random failures in redundant channels in any 12 hour period is low, the CHANNEL CHECK minimizes the chance of loss of protective function due to failure of redundant channels. The CHANNEL CHECK supplements less formal, but more frequent, checks of channel OPERABILITY during normal operational use of displays associated with the LCO required channels.

SR 3.3.5.2

A CHANNEL FUNCTIONAL TEST is performed every 92 days to ensure the entire channel will perform its intended function when needed.

The CHANNEL FUNCTIONAL TEST is part of an overlapping test sequence similar to that employed in the RPS. This sequence, consisting of SR 3.3.5.2, SR 3.3.6.1, and

Insert A

(continued)

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BASES

SURVEILLANCE
REQUIREMENTS

SR 3.3.5.3 (continued)

The [18] month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power.

SR 3.3.5.4

This Surveillance ensures that the train actuation response times are within the maximum values assumed in the safety analyses.

Response time testing acceptance criteria are included in Reference 10.

ESF RESPONSE TIME tests are conducted on a STAGGERED TEST BASIS of once every [18] months. The [18] month Frequency is consistent with the typical industry refueling cycle and is based upon plant operating experience, which shows that random failures of instrumentation components causing serious response time degradation, but not channel failure, are infrequent occurrences.

SR 3.3.5.5

SR 3.3.5.5 is a CHANNEL FUNCTIONAL TEST similar to SR 3.3.5.2, except SR 3.3.5.5 is performed within 92 days prior to startup and is only applicable to bypass functions. Since the Pressurizer Pressure—Low bypass is identical for both the RPS and ESFAS, this is the same Surveillance performed for the RPS in SR 3.3.1.13.

Insert A

The CHANNEL FUNCTIONAL TEST for proper operation of the bypass permissives is critical during plant heatups because the bypasses may be in place prior to entering MODE 3 but must be removed at the appropriate points during plant startup to enable the ESFAS Function. Consequently, just prior to startup is the appropriate time to verify bypass function OPERABILITY. Once the bypasses are removed, the bypasses must not fail in such a way that the associated ESFAS Function is inappropriately bypassed. This feature is verified by SR 3.3.5.2.

(continued)

BASES (continued)

SURVEILLANCE
REQUIREMENTS

SR 3.3.6.1

A CHANNEL FUNCTIONAL TEST is performed every [92] days to ensure the entire channel will perform its intended function when needed. ↗

Insert A

The CHANNEL FUNCTIONAL TEST is part of an overlapping test sequence similar to that employed in the RPS. This sequence, consisting of SR 3.3.5.2, SR 3.3.6.1, and SR 3.3.6.2, tests the entire ESFAS from the bistable input through the actuation of the individual subgroup relays. These overlapping tests are described in Reference 1. SR 3.3.5.2 and SR 3.3.6.1 are normally performed together and in conjunction with ESFAS testing. SR 3.3.6.2 verifies that the subgroup relays are capable of actuating their respective ESF components when de-energized.

These tests verify that the ESFAS is capable of performing its intended function, from bistable input through the actuated components. SR 3.3.5.2 is addressed in LCO 3.3.5. SR 3.3.6.1 includes Matrix Logic tests and trip path (Initiation Logic) tests.

Matrix Logic Tests

These tests are performed one matrix at a time. They verify that a coincidence in the two input channels for each function removes power to the matrix relays. During testing, power is applied to the matrix relay test coils, preventing the matrix relay contacts from assuming their energized state. The Matrix Logic tests will detect any short circuits around the bistable contacts in the coincidence logic, such as may be caused by faulty bistable relay or trip channel bypass contacts.

Trip Path (Initiation Logic) Tests

These tests are similar to the Matrix Logic tests, except that test power is withheld from one matrix relay at a time, allowing the initiation circuit to de-energize, opening one contact in each Actuation Logic channel.

The initiation circuit lockout relay must be reset (except for EFAS, which lacks initiation circuit lockout relays) prior to testing the other three initiation circuits, or an ESFAS actuation may result.

(continued)

BASES

SURVEILLANCE
REQUIREMENTS
(continued)

SR 3.3.6.3

A CHANNEL FUNCTIONAL TEST is performed on the manual ESFAS actuation circuitry, de-energizing relays and providing manual actuation of the function. ← Insert A

This test verifies that the trip push buttons are capable of opening contacts in the Actuation Logic as designed. The [18] month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown these components usually pass the Surveillance when performed at a Frequency of once every [18] months.

REFERENCES

1. FSAR, Section [7.3].
 2. CEN-327, May 1986, including Supplement 1, March 1989.
 3. CEN-403.
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BASES

SURVEILLANCE
REQUIREMENTS

SR 3.3.7.1 (continued)

Agreement criteria are determined by the plant staff based on a combination of channel instrument uncertainties, including indication and readability. If the channels are within the criteria, it is an indication that the channels are OPERABLE.

The Frequency, about once every shift, is based upon operating experience that demonstrates channel failure is rare. Since the probability of two random failures in redundant channels in any 12 hour period is extremely low, the CHANNEL CHECK minimizes the chance of loss of protective function due to failure of redundant channels. The CHANNEL CHECK supplements less formal, but more frequent, checks of channel OPERABILITY during normal operational use of the displays associated with the LCO required channels.

SR 3.3.7.2

A CHANNEL FUNCTIONAL TEST is performed every [92] days to ensure that the entire channel will perform its intended function when needed.

Insert A

The Frequency of [92] days is based on plant operating experience with regard to channel OPERABILITY and drift, which demonstrates that failure of more than one channel of a given function in any [92] day Frequency is a rare event. Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint analysis.

The as found and as left values must also be recorded and reviewed for consistency with the assumptions of the surveillance interval extension analysis. The requirements for this review are outlined in Reference [6].

SR 3.3.7.3

SR 3.3.7.3 is the performance of a CHANNEL CALIBRATION every [18] months. The CHANNEL CALIBRATION verifies the accuracy of each component within the instrument channel. This includes calibration of the undervoltage relays and demonstrates that the equipment falls within the specified operating characteristics defined by the manufacturer. The

(continued)

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BASES

SURVEILLANCE
REQUIREMENTS

SR 3.3.8.3 (continued)

(Ref. 4). The Frequency of 92 days is based on plant operating experience with regard to channel OPERABILITY and drift, which demonstrates that failure of more than one channel of a given Function in any 92 day Frequency is a rare event.

A Note to the SR indicates this Surveillance is applicable in MODES 1, 2, 3, and 4 only.

Instr A

SR 3.3.8.4

A CHANNEL FUNCTIONAL TEST is performed on the required containment radiation monitoring channel to ensure the entire channel will perform its intended function. Setpoints must be found within the Allowable Values specified in SR 3.3.8.4 and left consistent with the assumptions of the plant specific setpoint methodology (Ref. 4). The Frequency of 92 days is based on plant operating experience with regard to channel OPERABILITY and drift, which demonstrates that failure of more than one channel of a given Function in any 92 day interval is a rare event.

A Note to the SR indicates that this test is only applicable during CORE ALTERATIONS or during movement of irradiated fuel assemblies within containment.

SR 3.3.8.5

Proper operation of the individual initiation relays is verified by actuating these relays during the CHANNEL FUNCTIONAL TEST of the Actuation Logic every [18] months. This will actuate the Function, operating all associated equipment. Proper operation of the equipment actuated by each train is thus verified. The Frequency of [18] months is based on plant operating experience with regard to channel OPERABILITY and drift, which demonstrates that failure of more than one channel of a given Function during any [18] month interval is a rare event. A Note to the SR indicates that this Surveillance includes verification of operation for each initiation relay.

(continued)

BASES

SURVEILLANCE
REQUIREMENTS
(continued)SR 3.3.8.6

CHANNEL CALIBRATION is a complete check of the instrument channel including the sensor. The Surveillance verifies that the channel responds to a measured parameter within the necessary range and accuracy. CHANNEL CALIBRATION leaves the channel adjusted to account for instrument drift between successive calibrations to ensure that the channel remains operational between successive surveillances. CHANNEL CALIBRATIONS must be performed consistent with the plant specific setpoint analysis.

The as found and as left values must also be recorded and reviewed for consistency with the assumptions of the surveillance interval extension analysis. The requirements for this review are outlined in Reference [5].

The [18] month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power.

SR 3.3.8.7

This Surveillance ensures that the train actuation response times are less than or equal to the maximum times assumed in the analyses. The [18] month Frequency is based upon plant operating experience, which shows that random failures of instrumentation components causing serious response time degradation, but not channel failure, are infrequent occurrences. Testing of the final actuating devices, which make up the bulk of the response time, is included in the Surveillance.

SR 3.3.8.8

Every [18] months, a CHANNEL FUNCTIONAL TEST is performed on the CPIS Manual Trip channel. ← Insert A

This test verifies that the trip push buttons are capable of opening contacts in the Actuation Logic as designed, de-energizing the initiation relays and providing manual actuation of the Function. The [18] month Frequency is based on the need to perform this Surveillance under the

(continued)

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BASES

SURVEILLANCE
REQUIREMENTS

SR 3.3.9.1 (continued)

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

The Frequency, about once every shift, is based on operating experience that demonstrates the rarity of channel failure. Since the probability of two random failures in redundant channels in any 12 hour period is low, the CHANNEL CHECK minimizes the chance of loss of protective function due to failure of redundant channels. The CHANNEL CHECK supplements less formal, but more frequent, checks of channel OPERABILITY during normal operational use of the displays associated with the LCO required channels.

At this unit, the following administrative controls and design features (e.g., downscale alarms) immediately alert operations to loss of function in the nonredundant channels.

At this unit, verification of sample system alignment and operation for gaseous, particulate, and iodine monitors is required as follows:

SR 3.3.9.2

A CHANNEL FUNCTIONAL TEST is performed on the required control room radiation monitoring channel to ensure the entire channel will perform its intended function. Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint analysis.

The as found and as left values must also be recorded and reviewed for consistency with the assumptions of the frequency extension analysis. The requirements for this review are outlined in Reference [4].

Insert A

The Frequency of [92] days is based on plant operating experience with regard to channel OPERABILITY and drift, which demonstrates that failure of more than one channel of a given Function in any [92] day interval is a rare event.

(continued)

BASES

SURVEILLANCE
REQUIREMENTS
(continued)

SR 3.3.9.3

Proper operation of the individual initiation relays is verified by de-energizing these relays during the CHANNEL FUNCTIONAL TEST of the Actuation Logic every [18] months. This will actuate the Function, operating all associated equipment. Proper operation of the equipment actuated by each train is thus verified. ↑

Insert A

The Frequency of [18] months is based on plant operating experience with regard to channel OPERABILITY, which demonstrates that failure of more than one channel of a given Function in any [18] month interval is a rare event.

Note 1 indicates this Surveillance includes verification of operation for each initiation relay.

Note 2 indicates that relays that cannot be tested at power are excepted from the Surveillance Requirement while at power. These relays must, however, be tested during each entry into MODE 5 exceeding 24 hours unless they have been tested within the previous 6 months.

SR 3.3.9.4

CHANNEL CALIBRATION is a complete check of the instrument channel including the sensor. The Surveillance verifies that the channel responds to a measured parameter within the necessary range and accuracy. CHANNEL CALIBRATION leaves the channel adjusted to account for instrument drift between successive calibrations to ensure that the channel remains operational between successive surveillances. CHANNEL CALIBRATIONS must be performed consistent with the plant specific setpoint analysis.

The as found and as left values must also be recorded and reviewed for consistency with the assumptions of the surveillance interval extension analysis. The requirements for this review are outlined in Reference [4].

The Frequency is based upon the assumption of an [18] month calibration interval for the determination of the magnitude of equipment drift in the setpoint analysis.

(continued)

BASES

SURVEILLANCE
REQUIREMENTS
(continued)

SR 3.3.9.5

Every [18] months, a CHANNEL FUNCTIONAL TEST is performed on the manual CRIS actuation circuitry. ← Insert A

This test verifies that the trip push buttons are capable of opening contacts in the Actuation Logic as designed, de-energizing the initiation relays and providing Manual Trip of the function. The [18] month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown these components usually pass the Surveillance when performed at a Frequency of once every [18] months.

SR 3.3.9.6

This Surveillance ensures that the train actuation response times are less than the maximum times assumed in the analyses. The [18] month Frequency is based upon plant operating experience, which shows that random failures of instrumentation components causing serious response time degradation, but not channel failure, are infrequent occurrences. Testing of the final actuating devices, which make up the bulk of the response time, is included in the Surveillance testing.

REFERENCES

1. FSAR, Chapter [15].
 2. "Plant Protection System Selection of Trip Setpoint Values."
 3. 10 CFR 50, Appendix A, GDC 19.
 4. []
-

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BASES (continued)

SURVEILLANCE
REQUIREMENTS

SR 3.3.10.1

Performance of the CHANNEL CHECK once every 12 hours ensures that a gross failure of instrumentation has not occurred. A CHANNEL CHECK is normally a comparison of the parameter indicated on one channel to a similar parameter on other channels. It is based on the assumption that instrument channels monitoring the same parameter should read approximately the same value.

Significant deviations between the two instrument channels could be an indication of excessive instrument drift in one of the channels or of something even more serious. CHANNEL CHECK will detect gross channel failure; thus, it is key to verifying the instrumentation continues to operate properly between each CHANNEL CALIBRATION.

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

The Frequency, about once every shift, is based on operating experience that demonstrates the rarity of channel failure. Since the probability of two random failures in redundant channels in any 12 hour period is low, the CHANNEL CHECK minimizes the chance of loss of protective function due to failure of redundant channels. The CHANNEL CHECK supplements less formal, but more frequent, checks of channel OPERABILITY during normal operational use of the displays associated with the LCO required channels.

For this plant, the CHANNEL CHECK verification of sample system alignment and operation for gaseous, particulate, iodine, and gamma monitors is as follows:

SR 3.3.10.2

A CHANNEL FUNCTIONAL TEST is performed on the required fuel building radiation monitoring channel to ensure the entire channel will perform its intended function. Any setpoint

Insert A

(continued)

BASES

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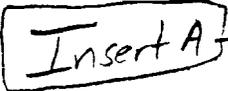
SR 3.3.10.2 (continued)

adjustment shall be consistent with the assumptions of the current plant specific setpoint analysis.

The as found and as left values must also be recorded and reviewed for consistency with the assumptions of the frequency extension analysis. The requirements for this review are outlined in Reference [4].

The Frequency of 92 days is based on plant operating experience with regard to channel OPERABILITY and drift, which demonstrates that failure of more than one channel of a given Function in any 92 day Frequency is a rare event.

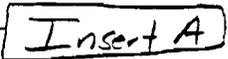
SR 3.3.10.3

Proper operation of the individual initiation relays is verified by actuating these relays during the CHANNEL FUNCTIONAL TEST of the Actuation Logic every [18] months. This will actuate the Function, operating all associated equipment. Proper operation of the equipment actuated by each train is thus verified.  The Frequency of [18] months is based on plant operating experience with regard to channel OPERABILITY and drift, which demonstrates that failure of more than one channel of a given Function during any [18] month Frequency is a rare event.

A Note to the SR indicates that this Surveillance includes verification of operation for each initiation relay.

[At this unit, the verification is conducted as follows:]

SR 3.3.10.4

Every 18 months, a CHANNEL FUNCTIONAL TEST is performed on the FHIS Manual Trip channel. 

This Surveillance verifies that the trip push buttons are capable of opening contacts in the Actuation Logic as designed, de-energizing the initiation relays and providing Manual Trip of the Function. The [18] month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the

(continued)

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REQUIREMENT

SR 3.3.12.3 (continued)

plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power.

SR 3.3.12.4

SR 3.3.12.4 is the performance of a CHANNEL FUNCTIONAL TEST every 18 months. This Surveillance should verify the OPERABILITY of the reactor trip circuit breaker (RTCB) open/closed indication on the remote shutdown panels by actuating the RTCBs. The Frequency of 18 months was chosen because the RTCBs cannot be exercised while the unit is at power. Operating experience has shown that these components usually pass the Surveillance when performed at a Frequency of once every 18 months. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

Insert A

REFERENCES

1. 10 CFR 50, Appendix A, GDC 19.
2. 10 CFR 50, Appendix R.
3. NRC Safety Evaluation Report (SER).

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REQUIREMENTS

SR 3.3.13.1 (continued)

continues to operate properly between each CHANNEL CALIBRATION.

Agreement criteria are determined by the plant staff and should be based on a combination of the channel instrument uncertainties including control isolation, indication, and readability. If a channel is outside of the criteria, it may be an indication that the transmitter or the signal processing equipment has drifted outside of its limits. If the channels are within the criteria, it is an indication that the channels are OPERABLE.

The Frequency, about once every shift, is based on operating experience that demonstrates the rarity of channel failure. Since the probability of two random failures in redundant channels in any 12 hour period is extremely low, CHANNEL CHECK minimizes the chance of loss of protective function due to failure of redundant channels. CHANNEL CHECK supplements less formal, but more frequent, checks of channel OPERABILITY during normal operational use of displays associated with the LCO required channels.

SR 3.3.13.2

A CHANNEL FUNCTIONAL TEST is performed every [92] days to ensure that the entire channel is capable of properly indicating neutron flux. Internal test circuitry is used to feed preadjusted test signals into the preamplifier to verify channel alignment. It is not necessary to test the ~~detector, because~~ generating a meaningful test signal is difficult; the detectors are of simple construction, and any failures in the detectors will be apparent as change in channel output. This Frequency is the same as that employed for the same channels in the other applicable MODES.

Insert A

[At this unit, the channel trip Functions tested by the CHANNEL FUNCTIONAL TEST are as follows:]

SR 3.3.13.3

SR 3.3.13.3 is the performance of a CHANNEL CALIBRATION. A CHANNEL CALIBRATION is performed every [18] months. The

(continued)

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.4.12.5 (continued)

locked in the inactive position. Thus, the block valve can be closed in the event the PORV develops excessive leakage or does not close (sticks open) after relieving an overpressure event.

The 72 hour Frequency considers operating experience with accidental movement of valves having remote control and position indication capabilities available where easily monitored. These considerations include the administrative controls over main control room access and equipment control.

SR 3.4.12.6

Performance of a CHANNEL FUNCTIONAL TEST is required every 31 days to verify and, as necessary, adjust the PORV open setpoints. The CHANNEL FUNCTIONAL TEST will verify on a monthly basis that the PORV lift setpoints are within the LCO limit. ~~PORV actuation could depressurize the RCS and is not required.~~ The 31 day Frequency considers experience with equipment reliability.

Insert A

A Note has been added indicating this SR is required to be performed [12] hours after decreasing RCS cold leg temperature to \leq [285] $^{\circ}$ F. The test cannot be performed until the RCS is in the LTOP MODES when the PORV lift setpoint can be reduced to the LTOP setting. The test must be performed within 12 hours after entering the LTOP MODES.

SR 3.4.12.7

Performance of a CHANNEL CALIBRATION on each required PORV actuation channel is required every [18] months to adjust the whole channel so that it responds and the valve opens within the required LTOP range and with accuracy to known input.

The [18] month Frequency considers operating experience with equipment reliability and matches the typical refueling outage schedule.

(continued)

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ACTIONS

E.1 and E.2 (continued)

power conditions in an orderly manner and without challenging plant systems.

F.1

If all required monitors are inoperable, no automatic means of monitoring leakage are available and immediate plant shutdown in accordance with LCO 3.0.3 is required.

SURVEILLANCE
REQUIREMENTS

SR 3.4.15.1

SR 3.4.15.1 requires the performance of a CHANNEL CHECK of the required containment atmosphere radioactivity monitors. The check gives reasonable confidence the channel is operating properly. The Frequency of [12] hours is based on instrument reliability and is reasonable for detecting off normal conditions.

SR 3.4.15.2

SR 3.4.15.2 requires the performance of a CHANNEL FUNCTIONAL TEST of the required containment atmosphere radioactivity monitors. The test ensures that the monitor can perform its function in the desired manner. The test verifies the alarm setpoint and relative accuracy of the instrument string. The Frequency of 92 days considers instrument reliability, and operating experience has shown it proper for detecting degradation.

Insert A

SR 3.4.15.3, SR 3.4.15.4, [and SR 3.4.15.5]

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 Frequency of [18] months is a typical refueling cycle and considers channel reliability. Operating experience has shown this Frequency is acceptable.

(continued)

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BASES (continued)

SURVEILLANCE
REQUIREMENTS

SR 3.4.17.1

THERMAL POWER must be verified to be within limits once per hour to ensure that the fuel design criteria are not violated during the performance of the PHYSICS TESTS. The hourly Frequency has been shown by operating practice to be sufficient to regularly assess conditions for potential degradation and verify operation is within the LCO limits. Plant operations are conducted slowly during the performance of PHYSICS TESTS, and monitoring the power level once per hour is sufficient to ensure that the power level does not exceed the limit.

SR 3.4.17.2

Within 12 hours of initiating startup or PHYSICS TESTS, a CHANNEL FUNCTIONAL TEST must be performed on each logarithmic power level and linear power level neutron flux monitoring channel to verify OPERABILITY and adjust setpoints to proper values. This will ensure that the Reactor Protection System is properly aligned to provide the required degree of core protection during startup or the performance of the PHYSICS TESTS. The interval is adequate to ensure that the appropriate equipment is OPERABLE prior to the tests to aid the monitoring and protection of the plant during these tests.

Insert A

REFERENCES

1. 10 CFR 50, Appendix B, Section XI.
 2. 10 CFR 50, Appendix A, GDC 1, 1988.
-
-

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.
AVERAGE PLANAR LINEAR HEAT GENERATION RATE (APLHGR)	The APLHGR shall be applicable to a specific planar height and is equal to the sum of the [LHGRs] [heat generation rate per unit length of fuel rod] for all the fuel rods in the specified bundle at the specified height divided by the number of fuel rods in the fuel bundle [at the height].
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 the entire channel, including the required sensor, alarm, display, and trip functions, and shall include the CHANNEL FUNCTIONAL TEST. Calibration of instrument channels with resistance temperature detector (RTD) or thermocouple sensors may consist of an in-place qualitative assessment of sensor behavior and normal calibration of the remaining adjustable devices in the channel. The CHANNEL CALIBRATION may be performed by means of any series of sequential, overlapping, or total channel steps, so that the entire channel is calibrated.
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

(continued)

1.1 Definitions

CHANNEL CHECK
(continued)

status derived from independent instrument channels measuring the same parameter.

CHANNEL FUNCTIONAL TEST

A CHANNEL FUNCTIONAL TEST shall be the injection of a simulated or actual signal into the channel as close to the sensor as practicable to verify OPERABILITY, including required alarm, interlock, display, and trip functions, and channel failure trips. The CHANNEL FUNCTIONAL TEST may be performed by means of any series of sequential, overlapping, or total channel steps, so that the entire channel is tested.

of all devices in the channel required for channel OPERABILITY.

CORE ALTERATION

CORE ALTERATION shall be the movement of any fuel, sources, or reactivity control components, within the reactor vessel with the vessel head removed and fuel in the vessel. The following exceptions are not considered to be CORE ALTERATIONS:

- a. Movement of source range monitors, local power range monitors, intermediate range monitors, traversing incore probes, or special movable detectors (including undervessel replacement); and
- b. Control rod movement, provided there are no fuel assemblies in the associated core cell.

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 current reload cycle. These cycle specific limits shall be determined for each reload cycle in accordance with Specification 5.6.5. 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

(continued)

1.1 Definitions (continued)

LOGIC SYSTEM FUNCTIONAL TEST

required for OPERABILITY

A LOGIC SYSTEM FUNCTIONAL TEST shall be a test of all required logic components (~~i.e., all required relays and contacts, trip units, solid state logic elements, etc.~~) of a logic circuit, from as close to the sensor as practicable up to, but not including, the actuated device, to verify OPERABILITY. The LOGIC SYSTEM FUNCTIONAL TEST may be performed by means of any series of sequential, overlapping, or total system steps so that the entire logic system is tested.

MAXIMUM FRACTION OF LIMITING POWER DENSITY (MFLPD)

The MFLPD shall be the largest value of the fraction of limiting power density in the core. The fraction of limiting power density shall be the LHGR existing at a given location divided by the specified LHGR limit for that bundle type.

MINIMUM CRITICAL POWER RATIO (MCPR)

The MCPR shall be the smallest critical power ratio (CPR) that exists in the core [for each class of fuel]. The CPR is that power in the assembly that is calculated by application of the appropriate correlation(s) to cause some point in the assembly to experience boiling transition, divided by the actual assembly operating power.

MODE

A MODE shall correspond to any one inclusive combination of mode switch position, 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

A system, subsystem, division, 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, division, component, or device to perform its specified safety function(s) are also capable of performing their related support function(s).

PHYSICS TESTS

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

(continued)

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SR 3.3.1.1.3 (continued)

accurately reflects the required setpoint as a function of flow. Each flow signal from the respective flow unit must be $\leq 105\%$ of the calibrated flow signal. If the flow unit signal is not within the limit, one required APRM that receives an input from the inoperable flow unit must be declared inoperable.

The Frequency of 7 days is based on engineering judgment, operating experience, and the reliability of this instrumentation.

SR 3.3.1.1.4

A CHANNEL FUNCTIONAL TEST is performed on each required channel to ensure that the entire channel will perform the intended function.

Insert A

Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology.

As noted, SR 3.3.1.1.4 is not required to be performed when entering MODE 2 from MODE 1, since testing of the MODE 2 required IRM and APRM Functions cannot be performed in MODE 1 without utilizing jumpers, lifted leads, or movable links. This allows entry into MODE 2 if the 7 day Frequency is not met per SR 3.0.2. In this event, the SR must be performed within 12 hours after entering MODE 2 from MODE 1. Twelve hours is based on operating experience and in consideration of providing a reasonable time in which to complete the SR.

A Frequency of 7 days provides an acceptable level of system average unavailability over the Frequency interval and is based on reliability analysis (Ref. 9).

SR 3.3.1.1.5

A CHANNEL FUNCTIONAL TEST is performed on each required channel to ensure that the entire channel will perform the intended function. A Frequency of 7 days provides an acceptable level of system average availability over the

Insert B

(continued)

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.3.1.1.6 and SR 3.3.1.1.7 (continued)

A Frequency of 7 days is reasonable based on engineering judgment and the reliability of the IRMs and APRMs.

SR 3.3.1.1.8

LPRM gain settings are determined from the local flux profiles measured by the Traversing Incore Probe (TIP) System. This establishes the relative local flux profile for appropriate representative input to the APRM System. The 1000 MWD/T Frequency is based on operating experience with LPRM sensitivity changes.

SR 3.3.1.1.9 and SR 3.3.1.1.12

A CHANNEL FUNCTIONAL TEST is performed on each required channel to ensure that the entire channel will perform the intended function. Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology. The 92 day Frequency of SR 3.3.1.1.9 is based on the reliability analysis of Reference 9.

Insert A

The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillance when performed at the 18 month Frequency.

SR 3.3.1.1.10

Calibration of trip units provides a check of the actual trip setpoints. The channel must be declared inoperable if the trip setting is discovered to be less conservative than the Allowable Value specified in Table 3.3.1.1-1. If the trip setting is discovered to be less conservative than accounted for in the appropriate setpoint methodology, but is not beyond the Allowable Value, the channel performance is still within the requirements of the plant safety analysis. Under these conditions, the setpoint must be

(continued)

BASES

SURVEILLANCE
REQUIREMENTS
(continued)

SR 3.3.1.2.4

This Surveillance consists of a verification of the SRM instrument readout to ensure that the SRM reading is greater than a specified minimum count rate, which ensures that the detectors are indicating count rates indicative of neutron flux levels within the core. With few fuel assemblies loaded, the SRMs will not have a high enough count rate to satisfy the SR. Therefore, allowances are made for loading sufficient "source" material, in the form of irradiated fuel assemblies, to establish the minimum count rate.

To accomplish this, the SR is modified by a Note that states that the count rate is not required to be met on an SRM that has less than or equal to four fuel assemblies adjacent to the SRM and no other fuel assemblies are in the associated core quadrant. With four or less fuel assemblies loaded around each SRM and no other fuel assemblies in the associated core quadrant, even with a control rod withdrawn, the configuration will not be critical.

The Frequency is based upon channel redundancy and other information available in the control room, and ensures that the required channels are frequently monitored while core reactivity changes are occurring. When no reactivity changes are in progress, the Frequency is relaxed from 12 hours to 24 hours.

SR 3.3.1.2.5 and SR 3.3.1.2.6

Insert A

Performance of a CHANNEL FUNCTIONAL TEST demonstrates the associated channel will function properly. SR 3.3.1.2.5 is required in MODE 5, and the 7 day Frequency ensures that the channels are OPERABLE while core reactivity changes could be in progress. This Frequency is reasonable, based on operating experience and on other Surveillances (such as a CHANNEL CHECK), that ensure proper functioning between CHANNEL FUNCTIONAL TESTS.

SR 3.3.1.2.6 is required in MODE 2 with IRMs on Range 2 or below, and in MODES 3 and 4. Since core reactivity changes do not normally take place, the Frequency has been extended from 7 days to 31 days. The 31 day Frequency is based on operating experience and on other Surveillances (such as

(continued)

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BASES (continued)

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Reviewer's Note: Certain Frequencies are based on approved topical reports. In order for a licensee to use these Frequencies, the licensee must justify the Frequencies as required by the staff SER for the topical report.

As noted at the beginning of the SRs, the SRs for each Control Rod Block instrumentation Function are found in the SRs column of Table 3.3.2.1-1.

The Surveillances are modified by a Note to indicate that when an RBM channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains control rod block capability. Upon completion of the Surveillance, or expiration of the 6 hour allowance, the channel must be returned to OPERABLE status or the applicable Condition entered and Required Actions taken. This Note is based on the reliability analysis (Ref. 9) assumption of the average time required to perform channel Surveillance. That analysis demonstrated that the 6 hour testing allowance does not significantly reduce the probability that a control rod block will be initiated when necessary.

SR 3.3.2.1.1

A CHANNEL FUNCTIONAL TEST is performed for each RBM channel to ensure that the entire channel will perform the intended function. It includes the Reactor Manual Control Multiplexing System input.

Insert A

Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology. The Frequency of 92 days is based on reliability analyses (Ref. 8).

SR 3.3.2.1.2 and SR 3.3.2.1.3

Insert A

A CHANNEL FUNCTIONAL TEST is performed for the RWM to ensure that the entire system will perform the intended function. The CHANNEL FUNCTIONAL TEST for the RWM is performed by attempting to withdraw a control rod not in compliance with

(continued)

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.3.2.1.5 (continued)

setpoint must be verified periodically to be \leq [10]% RTP. If the RWM low power setpoint is nonconservative, then the RWM is considered inoperable. Alternately, the low power setpoint channel can be placed in the conservative condition (nonbypass). If placed in the nonbypassed condition, the SR is met and the RWM is not considered inoperable. The Frequency is based on the trip setpoint methodology utilized for the low power setpoint channel.

SR 3.3.2.1.6

Insert A

A CHANNEL FUNCTIONAL TEST is performed for the Reactor Mode Switch—Shutdown Position Function to ensure that the entire channel will perform the intended function. ✓ The CHANNEL FUNCTIONAL TEST for the Reactor Mode Switch—Shutdown Position Function is performed by attempting to withdraw any control rod with the reactor mode switch in the shutdown position and verifying a control rod block occurs.

As noted in the SR, the Surveillance is not required to be performed until 1 hour after the reactor mode switch is in the shutdown position, since testing of this interlock with the reactor mode switch in any other position cannot be performed without using jumpers, lifted leads, or movable links. This allows entry into MODES 3 and 4 if the 18 month Frequency is not met per SR 3.0.2. The 1 hour allowance is based on operating experience and in consideration of providing a reasonable time in which to complete the SRs.

The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown these components usually pass the Surveillance when performed at the 18 month Frequency.

SR 3.3.2.1.7

A CHANNEL CALIBRATION is a complete check of the instrument loop and the sensor. This test verifies the channel responds to the measured parameter within the necessary range and accuracy. CHANNEL CALIBRATION leaves the channel

(continued)

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SR 3.3.2.2.1 (continued)

indicated on one channel to a similar parameter on other channels. It is based on the assumption that instrument channels monitoring the same parameter should read approximately the same value. Significant deviations between instrument channels could be an indication of excessive instrument drift in one of the channels, or something even more serious. A CHANNEL CHECK will detect gross channel failure; thus, it is key to verifying the instrumentation continues to operate properly between each CHANNEL CALIBRATION.

Agreement criteria are determined by the plant staff based on a combination of the channel instrument uncertainties, including indication and readability. If a channel is outside the criteria, it may be an indication that the instrument has drifted outside its limits.

The Frequency is based on operating experience that demonstrates channel failure is rare. The CHANNEL CHECK supplements less formal, but more frequent, checks of channel status during normal operational use of the displays associated with the channels required by the LCO.

SR 3.3.2.2.2

A CHANNEL FUNCTIONAL TEST is performed on each required channel to ensure that the entire channel will perform the intended function. Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology.

Insert
A

The Frequency of 92 days is based on reliability analysis (Ref. 2).

SR 3.3.2.2.3

CHANNEL CALIBRATION is a complete check of the instrument loop and the sensor. This test verifies the channel responds to the measured parameter within the necessary range and accuracy. CHANNEL CALIBRATION leaves the channel adjusted to account for instrument drifts between successive

(continued)

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REQUIREMENTS
(continued)

analysis demonstrated that the 6 hour testing allowance does not significantly reduce the probability that the recirculation pumps will trip when necessary.

SR 3.3.4.1.1

A CHANNEL FUNCTIONAL TEST is performed on each required channel to ensure that the entire channel will perform the intended function. Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology.

Insert A

The Frequency of 92 days is based on reliability analysis of Reference 5.

SR 3.3.4.1.2

Calibration of trip units provides a check of the actual trip setpoints. The channel must be declared inoperable if the trip setting is discovered to be less conservative than the Allowable Value specified in SR 3.3.4.1.3. If the trip setting is discovered to be less conservative than accounted for in the appropriate setpoint methodology, but is not beyond the Allowable Value, the channel performance is still within the requirements of the plant safety analysis. Under these conditions, the setpoint must be readjusted to be equal to or more conservative than accounted for in the appropriate setpoint methodology.

The Frequency of 92 days is based on assumptions of the reliability analysis (Ref. 5) and on the methodology included in the determination of the trip setpoint.

SR 3.3.4.1.3

CHANNEL CALIBRATION is a complete check of the instrument loop and the sensor. This test verifies the channel responds to the measured parameter within the necessary range and accuracy. CHANNEL CALIBRATION leaves the channel adjusted to account for instrument drifts between successive calibrations consistent with the plant specific setpoint methodology.

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SR 3.3.4.2.1 (continued)

something even more serious. A CHANNEL CHECK will detect gross channel failure; thus, it is key to verifying the instrumentation continues to operate properly between each CHANNEL CALIBRATION.

Agreement criteria are determined by the plant staff based on a combination of the channel instrument uncertainties, including indication and readability. If a channel is outside the criteria, it may be an indication that the instrument has drifted outside its limit.

The Frequency is based upon operating experience that demonstrates channel failure is rare. The CHANNEL CHECK supplements less formal, but more frequent, checks of channels during normal operational use of the displays associated with the required channels of this LCO.

SR 3.3.4.2.2

A CHANNEL FUNCTIONAL TEST is performed on each required channel to ensure that the entire channel will perform the intended function.

Insert
A

Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology.

The Frequency of 92 days is based on the reliability analysis of Reference 2.

SR 3.3.4.2.3

Calibration of trip units provides a check of the actual trip setpoints. The channel must be declared inoperable if the trip setting is discovered to be less conservative than the Allowable Value specified in SR 3.3.4.2.4. If the trip setting is discovered to be less conservative than the setting accounted for in the appropriate setpoint methodology, but is not beyond the Allowable Value, the

(continued)

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(continued)

SR 3.3.5.1.1

Performance of the CHANNEL CHECK once every 12 hours ensures that a gross failure of instrumentation has not occurred. A CHANNEL CHECK is normally a comparison of the parameter indicated on one channel to a similar parameter on other channels. It is based on the assumption that instrument channels monitoring the same parameter should read approximately the same value. Significant deviations between the instrument channels could be an indication of excessive instrument drift in one of the channels or something even more serious. A CHANNEL CHECK guarantees that undetected outright channel failure is limited to 12 hours; thus, it is key to verifying the instrumentation continues to operate properly between each CHANNEL CALIBRATION.

Agreement criteria are determined by the plant staff, based on a combination of the channel instrument uncertainties, including indication and readability. If a channel is outside the criteria, it may be an indication that the instrument has drifted outside its limit.

The Frequency is based upon operating experience that demonstrates channel failure is rare. The CHANNEL CHECK supplements less formal, but more frequent, checks of channels during normal operational use of the displays associated with the channels required by the LCO.

SR 3.3.5.1.2

A CHANNEL FUNCTIONAL TEST is performed on each required channel to ensure that the entire channel will perform the intended function.↑

Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology.

The Frequency of 92 days is based on the reliability analyses of Reference 5.

Insert
A

(continued)

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REQUIREMENTS

SR 3.3.5.2.1 (continued)

something even more serious. A CHANNEL CHECK will detect gross channel failure; thus, it is key to verifying the instrumentation continues to operate properly between each CHANNEL CALIBRATION.

Agreement criteria are determined by the plant staff based on a combination of the channel instrument uncertainties, including indication and readability. If a channel is outside the criteria, it may be an indication that the instrument has drifted outside its limit.

The Frequency is based upon operating experience that demonstrates channel failure is rare. The CHANNEL CHECK supplements less formal, but more frequent, checks of channels during normal operational use of the displays associated with the channels required by the LCO.

SR 3.3.5.2.2

A CHANNEL FUNCTIONAL TEST is performed on each required channel to ensure that the entire channel will perform the intended function.

Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology.

Insert
A

The Frequency of 92 days is based on the reliability analysis of Reference 1.

SR 3.3.5.2.3

The calibration of trip units provides a check of the actual trip setpoints. The channel must be declared inoperable if the trip setting is discovered to be less conservative than the Allowable Value specified in Table 3.3.5.2-1. If the trip setting is discovered to be less conservative than the setting accounted for in the appropriate setpoint methodology, but is not beyond the Allowable Value, the channel performance is still within the requirements of the plant safety analysis. Under these conditions, the setpoint

(continued)

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SR 3.3.6.1.1 (continued)

CHANNEL CHECK is normally a comparison of the parameter indicated on one channel to a similar parameter on other channels. It is based on the assumption that instrument channels monitoring the same parameter should read approximately the same value. Significant deviations between the instrument channels could be an indication of excessive instrument drift in one of the channels or of something even more serious. A CHANNEL CHECK will detect gross channel failure; thus, it is key to verifying the instrumentation continues to operate properly between each CHANNEL CALIBRATION.

Agreement criteria are determined by the plant staff based on a combination of the channel instrument uncertainties, including indication and readability. If a channel is outside the criteria, it may be an indication that the instrument has drifted outside its limit.

The Frequency is based on operating experience that demonstrates channel failure is rare. The CHANNEL CHECK supplements less formal, but more frequent, checks of channels during normal operational use of the displays associated with the channels required by the LCO.

SR 3.3.6.1.2 and SR 3.3.6.1.5

A CHANNEL FUNCTIONAL TEST is performed on each required channel to ensure that the entire channel will perform the intended function.↑

Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology.

Insert
A

The 92 day Frequency of SR 3.3.6.1.2 is based on the reliability analysis described in References 6 and 7. The 184 day Frequency of SR 3.3.6.1.5 is based on engineering judgment and the reliability of the components (time delay relays exhibit minimal drift).

(continued)

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BASES

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SR 3.3.6.2.1 (continued)

channels. It is based on the assumption that instrument channels monitoring the same parameter should read approximately the same value. Significant deviations between the instrument channels could be an indication of excessive instrument drift in one of the channels or something even more serious. A CHANNEL CHECK will detect gross channel failure; thus, it is key to verifying the instrumentation continues to operate properly between each CHANNEL CALIBRATION.

Agreement criteria are determined by the plant staff based on a combination of the channel instrument uncertainties, including indication and readability. If a channel is outside the criteria, it may be an indication that the instrument has drifted outside its limit.

The Frequency is based on operating experience that demonstrates channel failure is rare. The CHANNEL CHECK supplements less formal, but more frequent, checks of channel status during normal operational use of the displays associated with channels required by the LCO.

SR 3.3.6.2.2

A CHANNEL FUNCTIONAL TEST is performed on each required channel to ensure that the entire channel will perform the intended function.↑

Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology.

Insert
A

The Frequency of 92 days is based on the reliability analysis of References 5 and 6.

SR 3.3.6.2.3

Calibration of trip units provides a check of the actual trip setpoints. The channel must be declared inoperable if the trip setting is discovered to be less conservative than the Allowable Value specified in Table 3.3.6.2-1. If the trip setting is discovered to be less conservative than

(continued)

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REQUIREMENTS
(continued)

SR 3.3.6.3.2, SR 3.3.6.3.3, and SR 3.3.6.3.4

A CHANNEL FUNCTIONAL TEST is performed on each required channel to ensure that the entire channel will perform the intended function. Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology.

Insect
A

The 92 day Frequency is based on the reliability analysis of Reference 3.

A portion of the S/RV tailpipe pressure switch instrument channels are located inside the primary containment. The Note for SR 3.3.6.3.3, "Only required to be performed prior to entering MODE 2 during each scheduled outage > 72 hours when entry is made into primary containment," is based on the location of these instruments, ALARA considerations, and compatibility with the Completion Time of the associated Required Action (Required Action B.1).

SR 3.3.6.3.5

The calibration of trip units provides a check of the actual trip setpoints. The channel must be declared inoperable if the trip setting is discovered to be less conservative than the Allowable Value. If the trip setting is discovered to be less conservative than accounted for in the appropriate setpoint methodology, but is not beyond the Allowable Value, the channel performance is still within the requirements of the plant safety analysis. Under these conditions, the setpoint must be readjusted to be equal to or more conservative than the setting accounted for in the appropriate setpoint methodology. The Frequency of every 92 days for SR 3.3.6.3.5 is based on the reliability analysis of Reference 3.

SR 3.3.6.3.6

CHANNEL CALIBRATION is a complete check of the instrument loop and sensor. This test verifies the channel responds to the measured parameter within the necessary range and accuracy. CHANNEL CALIBRATION leaves the channel adjusted to account for instrument drifts between successive

(continued)

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SR 3.3.7.1.1 (continued)

outside the criteria, it may be an indication that the instrument has drifted outside its limit.

The Frequency is based upon operating experience that demonstrates channel failure is rare. The CHANNEL CHECK supplements less formal, but more frequent, checks of channel status during normal operational use of the displays associated with channels required by the LCO.

SR 3.3.7.1.2

A CHANNEL FUNCTIONAL TEST is performed on each required channel to ensure that the entire channel will perform the intended function.

Insert
A

Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology.

The Frequency of 92 days is based on the reliability analyses of References 5 and 6.

SR 3.3.7.1.3

The calibration of trip units provides a check of the actual trip setpoints. Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology. The channel must be declared inoperable if the trip setting is discovered to be less conservative than the Allowable Value specified in Table 3.3.7.1-1. If the trip setting is discovered to be less conservative than accounted for in the appropriate setpoint methodology, but is not beyond the Allowable Value, the channel performance is still within the requirements of the plant safety analysis. Under these conditions, the setpoint must be readjusted to be equal to or more conservative than the setting accounted for in the appropriate setpoint methodology.

The Frequency of 92 days is based on the reliability analyses of References 5 and 6.

(continued)

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BASES

SURVEILLANCE
REQUIREMENTS
(continued)

returned to OPERABLE status or the applicable Condition entered and Required Actions taken.

SR 3.3.8.1.1

Performance of the CHANNEL CHECK once every 12 hours ensures that a gross failure of instrumentation has not occurred. A CHANNEL CHECK is normally a comparison of the parameter indicated on one channel to a similar parameter on other channels. It is based on the assumption that instrument channels monitoring the same parameter should read approximately the same value. Significant deviations between the instrument channels could be an indication of excessive instrument drift in one of the channels or something even more serious. A CHANNEL CHECK will detect gross channel failure; thus, it is key to verifying the instrumentation continues to operate properly between each CHANNEL CALIBRATION.

Agreement criteria are determined by the plant staff based on a combination of the channel instrument uncertainties, including indication and readability. If a channel is outside the criteria, it may be an indication that the instrument has drifted outside its limit.

The Frequency is based upon operating experience that demonstrates channel failure is rare. The CHANNEL CHECK supplements less formal, but more frequent, checks of channels during normal operational use of the displays associated with channels required by the LCO.

SR 3.3.8.1.2

A CHANNEL FUNCTIONAL TEST is performed on each required channel to ensure that the entire channel will perform the intended function. Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology.

Insert
A

The Frequency of 31 days is based on operating experience with regard to channel OPERABILITY and drift, which demonstrates that failure of more than one channel of a given function in any 31 day interval is a rare event.

(continued)

BASES

ACTIONS

D.1, D.2.1, and D.2.2 (continued)

In addition, action must be immediately initiated to either restore one electric power monitoring assembly to OPERABLE status for the inservice power source supplying the required instrumentation powered from the RPS bus (Required Action D.2.1) or to isolate the RHR Shutdown Cooling System (Required Action D.2.2). Required Action D.2.1 is provided because the RHR Shutdown Cooling System may be needed to provide core cooling. All actions must continue until the applicable Required Actions are completed.

SURVEILLANCE
REQUIREMENTS

SR 3.3.8.2.1

Insert A

A CHANNEL FUNCTIONAL TEST is performed on each overvoltage, undervoltage, and underfrequency channel to ensure that the entire channel will perform the intended function. Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology.

As noted in the Surveillance, the CHANNEL FUNCTIONAL TEST is only required to be performed while the plant is in a condition in which the loss of the RPS bus will not jeopardize steady state power operation (the design of the system is such that the power source must be removed from service to conduct the Surveillance). The 24 hours is intended to indicate an outage of sufficient duration to allow for scheduling and proper performance of the Surveillance.

The 184 day Frequency and the Note in the Surveillance are based on guidance provided in Generic Letter 91-09 (Ref. 2).

SR 3.3.8.2.2

CHANNEL CALIBRATION is a complete check of the instrument loop and the sensor. This test verifies that the channel responds to the measured parameter within the necessary range and accuracy. CHANNEL CALIBRATION leaves the channel adjusted to account for instrument drifts between successive calibrations consistent with the plant specific setpoint methodology.

(continued)

BASES (continued)

SURVEILLANCE
REQUIREMENTS

SR 3.4.6.1

This SR is for the performance of a CHANNEL CHECK of the required primary containment atmospheric monitoring system. The check gives reasonable confidence that the channel is operating properly. The Frequency of 12 hours is based on instrument reliability and is reasonable for detecting off normal conditions.

SR 3.4.6.2

This SR is for the performance of a CHANNEL FUNCTIONAL TEST of the required RCS leakage detection instrumentation. The test ensures that the monitors can perform their function in the desired manner. The test also verifies the alarm setpoint and relative accuracy of the instrument string. The Frequency of 31 days considers instrument reliability, and operating experience has shown it proper for detecting degradation.

Insert A

SR 3.4.6.3

This SR is for the performance of a CHANNEL CALIBRATION of required leakage detection instrumentation channels. The calibration verifies the accuracy of the instrument string, including the instruments located inside containment. The Frequency of [18] months is a typical refueling cycle and considers channel reliability. Operating experience has proven this Frequency is acceptable.

REFERENCES

1. 10 CFR 50, Appendix A, GDC 30.
 2. Regulatory Guide 1.45, May 1973.
 3. FSAR, Section [5.2.7.2.1].
 4. GEAP-5620, April 1968.
 5. NUREG-75/067, October 1975.
 6. FSAR, Section [5.2.7.5.2].
-

BASES

ACTIONS

A.1 and A.2 (continued)

fuel assemblies. Action must continue until all such control rods are fully inserted. Control rods in core cells containing no fuel assemblies do not affect the reactivity of the core and, therefore, do not have to be inserted.

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SR 3.9.2.1

Proper functioning of the refueling position one-rod-out interlock requires the reactor mode switch to be in Refuel. During control rod withdrawal in MODE 5, improper positioning of the reactor mode switch could, in some instances, allow improper bypassing of required interlocks. Therefore, this Surveillance imposes an additional level of assurance that the refueling position one-rod-out interlock will be OPERABLE when required. By "locking" the reactor mode switch in the proper position (i.e., removing the reactor mode switch key from the console while the reactor mode switch is positioned in refuel), an additional administrative control is in place to preclude operator errors from resulting in unanalyzed operation.

The Frequency of 12 hours is sufficient in view of other administrative controls utilized during refueling operations to ensure safe operation.

SR 3.9.2.2

Performance of a CHANNEL FUNCTIONAL TEST on each channel demonstrates the associated refuel position one-rod-out interlock will function properly when a simulated or actual signal indicative of a required condition is injected into the logic. The CHANNEL FUNCTIONAL TEST may be performed by any series of sequential, overlapping, or total channel steps so that the entire channel is tested. The 7 day Frequency is considered adequate because of demonstrated circuit reliability, procedural controls on control rod withdrawals, and visual and audible indications available in the control room to alert the operator to control rods not fully inserted. To perform the required testing, the applicable condition must be entered (i.e., a control rod

Insert A

(continued)

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.
AVERAGE PLANAR LINEAR HEAT GENERATION RATE (APLHGR)	The APLHGR shall be applicable to a specific planar height and is equal to the sum of the [LHGRs] [heat generation rate per unit length of fuel rod] for all the fuel rods in the specified bundle at the specified height divided by the number of fuel rods in the fuel bundle [at the height].
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 the entire channel, including the required sensor, alarm, display, and trip functions, and shall include the CHANNEL FUNCTIONAL TEST. Calibration of instrument channels with resistance temperature detector (RTD) or thermocouple sensors may consist of an in-place qualitative assessment of sensor behavior and normal calibration of the remaining adjustable devices in the channel. The CHANNEL CALIBRATION may be performed by means of any series of sequential, overlapping, or total channel steps, so that the entire channel is calibrated.
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

all devices in the channel required for channel OPERABILITY and

(continued)

1.1 Definitions

CHANNEL CHECK
(continued)

status derived from independent instrument channels measuring the same parameter.

CHANNEL FUNCTIONAL TEST

of all devices in the channel required for channel OPERABILITY.

A CHANNEL FUNCTIONAL TEST shall be the injection of a simulated or actual signal into the channel as close to the sensor as practicable to verify OPERABILITY, including required alarm, interlock, display, and trip functions, and channel failure trips. The CHANNEL FUNCTIONAL TEST may be performed by means of any series of sequential, overlapping, or total channel steps, so that the entire channel is tested.

CORE ALTERATION

CORE ALTERATION shall be the movement of any fuel, sources, or reactivity control components, within the reactor vessel with the vessel head removed and fuel in the vessel. The following exceptions are not considered to be CORE ALTERATIONS:

- a. Movement of source range monitors, local power range monitors, intermediate range monitors, traversing incore probes, or special movable detectors (including undervessel replacement);
- b. Control rod movement, provided there are no fuel assemblies in the associated core cell.

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 current reload cycle. These cycle specific limits shall be determined for each reload cycle in accordance with Specification 5.6.5. 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

(continued)

1.1 Definitions (continued)

LOGIC SYSTEM FUNCTIONAL TEST

Required for OPERABILITY

A LOGIC SYSTEM FUNCTIONAL TEST shall be a test of all required logic components (~~i.e., all required relays and contacts, trip units, solid state logic elements, etc.~~) of a logic circuit, from as close to the sensor as practicable up to, but not including, the actuated device, to verify OPERABILITY. The LOGIC SYSTEM FUNCTIONAL TEST may be performed by means of any series of sequential, overlapping, or total system steps so that the entire logic system is tested.

MAXIMUM FRACTION OF LIMITING POWER DENSITY (MFLPD)

The MFLPD shall be the largest value of the fraction of limiting power density in the core. The fraction of limiting power density shall be the LHGR existing at a given location divided by the specified LHGR limit for that bundle type.

MINIMUM CRITICAL POWER RATIO (MCPR)

The MCPR shall be the smallest critical power ratio (CPR) that exists in the core [for each class of fuel]. The CPR is that power in the assembly that is calculated by application of the appropriate correlation(s) to cause some point in the assembly to experience boiling transition, divided by the actual assembly operating power.

MODE

A MODE shall correspond to any one inclusive combination of mode switch position, 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

A system, subsystem, division, 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, division, component, or device to perform its specified safety function(s) are also capable of performing their related support function(s).

(continued)

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SR 3.3.1.1.3 (continued)

the total loop drive flow signals from the flow unit used to vary the setpoint are appropriately compared to a calibrated flow signal and therefore the APRM Function accurately reflects the required setpoint as a function of flow. Each flow signal from the respective flow unit must be $\leq 105\%$ of the calibrated flow signal. If the flow unit signal is not within the limit, the APRMs that receive an input from the inoperable flow unit must be declared inoperable.

The Frequency of 7 days is based on engineering judgment, operating experience, and the reliability of this instrumentation.

SR 3.3.1.1.4

A CHANNEL FUNCTIONAL TEST is performed on each required channel to ensure that the entire channel will perform the intended function.↑

Insert
A

Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology..

As noted, SR 3.3.1.1.4 is not required to be performed when entering MODE 2 from MODE 1 since testing of the MODE 2 required IRM and APRM Functions cannot be performed in MODE 1 without utilizing jumpers, lifted leads, or movable links. This allows entry into MODE 2 if the 7 day Frequency is not met per SR 3.0.2. In this event, the SR must be performed within 12 hours after entering MODE 2 from MODE 1. Twelve hours is based on operating experience and in consideration of providing a reasonable time in which to complete the SR.

A Frequency of 7 days provides an acceptable level of system average unavailability over the Frequency interval and is based on reliability analysis (Ref. 9).

SR 3.3.1.1.5

A CHANNEL FUNCTIONAL TEST is performed on each required channel to ensure that the entire channel will perform the

(continued)

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.3.1.1.5 (continued)

Insert B

intended Function. A Frequency of 7 days provides an acceptable level of system average availability over the Frequency and is based on the reliability analysis of Reference 9. (The Manual Scram Function's CHANNEL FUNCTIONAL TEST Frequency was credited in the analysis to extend many automatic scram Functions' Frequencies.)

SR 3.3.1.1.6 and SR 3.3.1.1.7

These Surveillances are established to ensure that no gaps in neutron flux indication exist from subcritical to power operation for monitoring core reactivity status.

The overlap between SRMs and IRMs is required to be demonstrated to ensure that reactor power will not be increased into a region without adequate neutron flux indication. This is required prior to withdrawing SRMs from the fully inserted position since indication is being transitioned from the SRMs to the IRMs.

The overlap between IRMs and APRMs is of concern when reducing power into the IRM range. On power increases, the system design will prevent further increases (initiate a rod block) if adequate overlap is not maintained. Overlap between IRMs and APRMs exists when sufficient IRMs and APRMs concurrently have onscale readings such that the transition between MODE 1 and MODE 2 can be made without either APRM downscale rod block, or IRM upscale rod block. Overlap between SRMs and IRMs similarly exists when, prior to withdrawing the SRMs from the fully inserted position, IRMs are above mid-scale on range 1 before SRMs have reached the upscale rod block.

As noted, SR 3.3.1.1.7 is only required to be met during entry into MODE 2 from MODE 1. That is, after the overlap requirement has been met and indication has transitioned to the IRMs, maintaining overlap is not required (APRMs may be reading downscale once in MODE 2).

If overlap for a group of channels is not demonstrated (e.g., IRM/APRM overlap), the reason for the failure of the Surveillance should be determined and the appropriate channel(s) declared inoperable. Only those appropriate

(continued)

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SURVEILLANCE
REQUIREMENTS

SR 3.3.1.1.6 and SR 3.3.1.1.7 (continued)

channel(s) that are required in the current MODE or condition should be declared inoperable.

A Frequency of 7 days is reasonable based on engineering judgment and the reliability of the IRMs and APRMs.

SR 3.3.1.1.8

LPRM gain settings are determined from the local flux profiles measured by the Traversing Incore Probe (TIP) System. This establishes the relative local flux profile for appropriate representative input to the APRM System. The 1000 MWD/T Frequency is based on operating experience with LPRM sensitivity changes.

SR 3.3.1.1.9 and SR 3.3.1.1.12

A CHANNEL FUNCTIONAL TEST is performed on each required channel to ensure that the entire channel will perform the intended function. Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology. The 92 day Frequency of SR 3.3.1.1.9 is based on the reliability analysis of Reference 9.

Insert A

The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillance when performed at the 18 month Frequency.

SR 3.3.1.1.10

The calibration of trip units provides a check of the actual trip setpoints. The channel must be declared inoperable if the trip setting is discovered to be less conservative than the Allowable Value specified in Table 3.3.1.1-1. If the trip setting is discovered to be less conservative than accounted for in the appropriate setpoint methodology, but

(continued)

BASES

SURVEILLANCE
REQUIREMENTS
(continued)

SR 3.3.1.2.4

This Surveillance consists of a verification of the SRM instrument readout to ensure that the SRM reading is greater than a specified minimum count rate. This ensures that the detectors are indicating count rates indicative of neutron flux levels within the core. With few fuel assemblies loaded, the SRMs will not have a high enough count rate to satisfy the SR. Therefore, allowances are made for loading sufficient "source" material, in the form of irradiated fuel assemblies, to establish the minimum count rate.

To accomplish this, the SR is modified by a Note that states that the count rate is not required to be met on an SRM that has less than or equal to four fuel assemblies adjacent to the SRM and no other fuel assemblies are in the associated core quadrant. With four or less fuel assemblies loaded around each SRM and no other fuel assemblies in the associated quadrant, even with a control rod withdrawn the configuration will not be critical.

The Frequency is based upon channel redundancy and other information available in the control room, and ensures that the required channels are frequently monitored while core reactivity changes are occurring. When no reactivity changes are in progress, the Frequency is relaxed from 12 hours to 24 hours.

SR 3.3.1.2.5 and SR 3.3.1.2.6

Insert A

Performance of a CHANNEL FUNCTIONAL TEST demonstrates the associated channel will function properly. ✓ SR 3.3.1.2.5 is required in MODE 5, and the 7 day Frequency ensures that the channels are OPERABLE while core reactivity changes could be in progress. This 7 day Frequency is reasonable, based on operating experience and on other Surveillances (such as a CHANNEL CHECK) that ensure proper functioning between CHANNEL FUNCTIONAL TESTS.

SR 3.3.1.2.6 is required in MODE 2 with IRMs on Range 2 or below and in MODES 3 and 4. Since core reactivity changes do not normally take place, the Frequency has been extended from 7 days to 31 days. The 31 day Frequency is based on operating experience and on other Surveillances (such as

(continued)

BASES

SURVEILLANCE
REQUIREMENTS
(continued)

associated Conditions and Required Actions may be delayed for up to 6 hours, provided the associated Function maintains control rod block capability. Upon completion of the Surveillance, or expiration of the 6 hour allowance, the channel must be returned to OPERABLE status or the applicable Condition entered and Required Actions taken. This Note is based on the reliability analysis (Ref. 8) assumption of the average time required to perform channel Surveillance. That analysis demonstrated that the 6 hour testing allowance does not significantly reduce the probability that a control rod block will be initiated when necessary.

SR 3.3.2.1.1, SR 3.3.2.1.2, SR 3.3.2.1.3, and
SR 3.3.2.1.4

The CHANNEL FUNCTIONAL TESTS for the RPC and RWL are performed by attempting to withdraw a control rod not in compliance with the prescribed sequence and verifying that a control rod block occurs. Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology. As noted, the SRs are not required to be performed until 1 hour after specified conditions are met (e.g., after any control rod is withdrawn in MODE 2). This allows entry into the appropriate conditions needed to perform the required SRs. The Frequencies are based on reliability analysis (Ref. 7).

Insert A

SR 3.3.2.1.5

The LPSP is the point at which the RPCS makes the transition between the function of the RPC and the RWL. This transition point is automatically varied as a function of power. This power level is inferred from the first stage turbine pressure (one channel to each trip system). These power setpoints must be verified periodically to be within the Allowable Values. If any LPSP is nonconservative, then the affected Functions are considered inoperable. Since this channel has both upper and lower required limits, it is not allowed to be placed in a condition to enable either the RPC or RWL Function. Because main turbine bypass steam flow can affect the LPSP nonconservatively for the RWL, the RWL is considered inoperable with any main turbine bypass valves

(continued)

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SR 3.3.2.1.8 (continued)

Insert A

withdraw any control rod with the reactor mode switch in the shutdown position and verifying a control rod block occurs.

As noted in the SR, the Surveillance is not required to be performed until 1 hour after the reactor mode switch is in the shutdown position, since testing of this interlock with the reactor mode switch in any other position cannot be performed without using jumpers, lifted leads, or movable limits. This allows entry into MODES 3 and 4 if the 18 month Frequency is not met per SR 3.0.2. The 1 hour allowance is based on operating experience and in consideration of providing a reasonable time in which to complete the SRs.

The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown these components usually pass the Surveillance when performed at the 18 month Frequency.

SR 3.3.2.1.9

LCO 3.1.3 and LCO 3.1.6 may require individual control rods to be bypassed in RACS to allow insertion of an inoperable control rod or correction of a control rod pattern not in compliance with BPWS. With the control rods bypassed in the RACS, the RPC will not control the movement of these bypassed control rods. To ensure the proper bypassing and movement of those affected control rods, a second licensed operator or other qualified member of the technical staff must verify the bypassing and movement of these control rods. Compliance with this SR allows the RPC to be OPERABLE with these control rods bypassed.

REFERENCES

1. FSAR, Section [7.6.1.7.3].
2. FSAR, Section [15.4.2].

(continued)

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BASES

ACTIONS

C.1 and C.2 (continued)

experience, to reduce THERMAL POWER to < 40% RTP from full power conditions in an orderly manner and without challenging plant systems.

SURVEILLANCE REQUIREMENTS

Reviewer's Note: Certain Frequencies are based on approved topical reports. In order for a licensee to use these Frequencies, the licensee must justify the Frequencies as required by the staff SER for the topical report.

The Surveillances are modified by a Note to indicate that when a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours, provided the associated Function maintains EOC-RPT trip capability. Upon completion of the Surveillance, or expiration of the 6 hour allowance, the channel must be returned to OPERABLE status or the applicable Condition entered and Required Actions taken. This Note is based on the reliability analysis (Ref. 5) assumption of the average time required to perform channel surveillance. That analysis demonstrated that the 6 hour testing allowance does not significantly reduce the probability that the recirculation pumps will trip when necessary.

SR 3.3.4.1.1

A CHANNEL FUNCTIONAL TEST is performed on each required channel to ensure that the entire channel will perform the intended function. Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology.

Insert
A

The Frequency of 92 days is based on reliability analysis (Ref. 5).

SR 3.3.4.1.2

The calibration of trip units provides a check of the actual trip setpoints. The channel must be declared inoperable if the setting is discovered to be less conservative than the

(continued)

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BASES

SURVEILLANCE
REQUIREMENTS

SR 3.3.4.2.1 (continued)

instrumentation continues to operate properly between each CHANNEL CALIBRATION.

Agreement criteria are determined by the plant staff based on a combination of the channel instrument uncertainties, including indication and readability. If a channel is outside the criteria, it may be an indication that the instrument has drifted outside its limit.

The Frequency is based upon operating experience that demonstrates channel failure is rare. The CHANNEL CHECK supplements less formal, but more frequent, checks of channels during normal operational use of the displays associated with the required channels of this LCO.

SR 3.3.4.2.2

A CHANNEL FUNCTIONAL TEST is performed on each required channel to ensure that the entire channel will perform the intended function. ↑

Insert
A

Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology.

The Frequency of 92 days is based on the reliability analysis of Reference 2.

SR 3.3.4.2.3

Calibration of trip units provides a check of the actual trip setpoints. The channel must be declared inoperable if the trip setting is discovered to be less conservative than the Allowable Value specified in SR 3.3.4.2.4. If the trip setting is discovered to be less conservative than the setting accounted for in the appropriate setpoint methodology, but is not beyond the Allowable Value, the channel performance is still within the requirements of the plant safety analysis. Under these conditions, the setpoint must be readjusted to be equal to or more conservative than accounted for in the appropriate setpoint methodology.

(continued)

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BASES

**SURVEILLANCE
REQUIREMENTS**
(continued)

SR 3.3.5.1.1

Performance of the CHANNEL CHECK once every 12 hours ensures that a gross failure of instrumentation has not occurred. A CHANNEL CHECK is normally a comparison of the parameter indicated on one channel to a similar parameter on other channels. It is based on the assumption that instrument channels monitoring the same parameter should read approximately the same value. Significant deviations between the instrument channels could be an indication of excessive instrument drift in one of the channels or something even more serious. A CHANNEL CHECK will detect gross channel failure; thus, it is key to verifying the instrumentation continues to operate properly between each CHANNEL CALIBRATION.

Agreement criteria are determined by the plant staff, based on a combination of the channel instrument uncertainties, including indication and readability. If a channel is outside the criteria, it may be an indication that the instrument has drifted outside its limit.

The Frequency is based upon operating experience that demonstrates channel failure is rare. The CHANNEL CHECK supplements less formal, but more frequent, checks of channels during normal operational use of the displays associated with the channels required by the LCO.

SR 3.3.5.1.2

A CHANNEL FUNCTIONAL TEST is performed on each required channel to ensure that the entire channel will perform the intended function.

Insert
A

Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology.

The Frequency of 92 days is based on the reliability analyses of Reference 4.

(continued)

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Rev 3

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.3.5.2.1 (continued)

something even more serious. A CHANNEL CHECK will detect gross channel failure; thus, it is key to verifying that the instrumentation continues to operate properly between each CHANNEL CALIBRATION.

Agreement criteria are determined by the plant staff based on a combination of the channel instrument uncertainties, including indication and readability. If a channel is outside the criteria, it may be an indication that the instrument has drifted outside its limit.

The Frequency is based upon operating experience that demonstrates channel failure is rare. The CHANNEL CHECK supplements less formal, but more frequent, checks of channel status during normal operational use of the displays associated with the channels required by the LCO.

SR 3.3.5.2.2

A CHANNEL FUNCTIONAL TEST is performed on each required channel to ensure that the entire channel will perform the intended function. Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology..

Insert
A

The Frequency of 92 days is based on the reliability analysis of Reference 1.

SR 3.3.5.2.3

The calibration of trip units provides a check of the actual trip setpoints. The channel must be declared inoperable if the trip setting is discovered to be less conservative than the Allowable Value specified in Table 3.3.5.2-1. If the trip setting is discovered to be less conservative than accounted for in the appropriate setpoint methodology, but is not beyond the Allowable Value, the channel performance is still within the requirements of the plant safety analysis. Under these conditions, the setpoint must be re-adjusted to be equal to or more conservative than accounted for in the appropriate setpoint methodology.

(continued)

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Rev 3

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.3.6.1.1 (continued)

The Frequency is based on operating experience that demonstrates channel failure is rare.

The CHANNEL CHECK supplements less formal, but more frequent, checks of channels during normal operational use of the displays associated with the channels required by the LCO.

SR 3.3.6.1.2

A CHANNEL FUNCTIONAL TEST is performed on each required channel to ensure that the entire channel will perform the intended function.

Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology.

Insert
A

The Frequency is based on reliability analysis described in References 5 and 6.

SR 3.3.6.1.3

The calibration of trip units consists of a test to provide a check of the actual trip setpoints. The channel must be declared inoperable if the trip setting is discovered to be less conservative than the Allowable Value specified in Table 3.3.6.1-1. If the trip setting is discovered to be less conservative than accounted for in the appropriate setpoint methodology, but is not beyond the Allowable Value, the channel performance is still within the requirements of the plant safety analysis. Under these conditions, the setpoint must be readjusted to be equal to or more conservative than accounted for in the appropriate setpoint methodology.

The Frequency of 92 days is based on the reliability analysis of References 5 and 6.

(continued)

BASES

SURVEILLANCE
REQUIREMENTS
(continued)

This Note is based on the reliability analysis (Refs. 3 and 4) assumption of the average time required to perform channel surveillance. That analysis demonstrated that the 6 hour testing allowance does not significantly reduce the probability that the SCIVs will isolate the associated penetration flow paths and the SGT System will initiate when necessary.

SR 3.3.6.2.1

Performance of the CHANNEL CHECK once every 12 hours ensures that a gross failure of instrumentation has not occurred. A CHANNEL CHECK is normally a comparison of the indicated parameter for one instrument channel to a similar parameter on other channels. It is based on the assumption that instrument channels monitoring the same parameter should read approximately the same value. Significant deviations between the instrument channels could be an indication of excessive instrument drift in one of the channels or something even more serious. A CHANNEL CHECK will detect gross channel failure; thus, it is key to verifying the instrumentation continues to operate properly between each CHANNEL CALIBRATION.

Agreement criteria are determined by the plant staff, based on a combination of the channel instrument uncertainties, including indication and readability. If a channel is outside the criteria, it may be an indication that the instrument has drifted outside its limit.

The Frequency is based on operating experience that demonstrates channel failure is rare. The CHANNEL CHECK supplements less formal, but more frequent, checks of channels during normal operational use of the displays associated with the channels required by the LCO.

SR 3.3.6.2.2

A CHANNEL FUNCTIONAL TEST is performed on each required channel to ensure that the entire channel will perform the intended function. ←

Insert A

(continued)

TSTF 205
Rev 3

BASES

SURVEILLANCE
REQUIREMENTS
(continued)

SR 3.3.6.3.2

A CHANNEL FUNCTIONAL TEST is performed on each required channel to ensure the entire channel will perform the intended function.

Insert
A

Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology.

The Frequency of 92 days is based upon the reliability analysis of Reference 3.

SR 3.3.6.3.3

The calibration of trip units provides a check of the actual trip setpoints. The channel must be declared inoperable if the trip setting is discovered to be less conservative than the Allowable Value specified in Table 3.3.6.3-1. If the trip setting is discovered to be less conservative than accounted for in the appropriate setpoint methodology, but is not beyond the Allowable Value, the channel performance is still within the requirements of the plant safety analysis. Under these conditions, the setpoint must be readjusted to be equal to or more conservative than accounted for in the appropriate setpoint methodology.

The Frequency of 92 days is based upon the reliability analysis of Reference 3.

SR 3.3.6.3.4 and SR 3.3.6.3.5

A CHANNEL CALIBRATION is a complete check of the instrument loop and the sensor. This test verifies that the channel responds to the measured parameter within the necessary range and accuracy. CHANNEL CALIBRATION leaves the channel adjusted to account for instrument drifts between successive calibrations consistent with the plant specific setpoint methodology.

The Frequency of SR 3.3.6.3.4 is based on the assumption of a 92 day calibration interval in the determination of the magnitude of equipment drift in the setpoint analysis.

(continued)

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BASES

SURVEILLANCE
REQUIREMENTS

SR 3.3.6.4.1 (continued)

something even more serious. A CHANNEL CHECK will detect gross channel failure; thus it is key to verifying the instrumentation continues to operate properly between each CHANNEL CALIBRATION.

Agreement criteria are determined by the plant staff, based on a combination of the channel instrument uncertainties, including indication and readability. If a channel is outside the criteria, it may be an indication that the instrument has drifted outside its limit.

The Frequency is based upon operating experience that demonstrates channel failure is rare. The CHANNEL CHECK supplements less formal, but more frequent, checks of channels during normal operational use of the displays associated with the required channels of the LCO.

SR 3.3.6.4.2

A CHANNEL FUNCTIONAL TEST is performed on each required channel to ensure the entire channel will perform the intended function.

Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology.

The Frequency of 92 days is based on the reliability analysis of Reference 3.

SR 3.3.6.4.3

The calibration of trip units provides a check of the actual trip setpoints. The channel must be declared inoperable if the trip setting is discovered to be less conservative than the Allowable Value specified in Table 3.3.6.4-1. If the trip setting is discovered to be less conservative than accounted for in the appropriate setpoint methodology but is not beyond the Allowable Value, the channel performance is still within the requirements of the plant safety analysis. Under these conditions, the setpoint must be readjusted to

(continued)

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Rev 3

BASES

ACTIONS
(continued)

B.1 and B.2

If the inoperable trip system is not restored to OPERABLE status within 7 days, per Condition A, or if two trip systems are inoperable, then the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 12 hours and to MODE 4 within 36 hours.

The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

SURVEILLANCE
REQUIREMENTS

Reviewer's Note: Certain Frequencies are based on approved topical reports. In order for a licensee to use these Frequencies, the licensee must justify the Frequencies as required by the staff SER for the topical report.

The Surveillances are modified by a Note to indicate that when a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours, provided the associated Function maintains relief or LLS initiation capability, as applicable. Upon completion of the Surveillance, or expiration of the 6 hour allowance, the channel must be returned to OPERABLE status or the applicable Condition entered and Required Actions taken. This Note is based on the reliability analysis (Ref. 3) assumption of the average time required to perform channel surveillance. That analysis demonstrated the 6 hour testing allowance does not significantly reduce the probability that the relief and LLS valves will initiate when necessary.

SR 3.3.6.5.1

A CHANNEL FUNCTIONAL TEST is performed on each required channel to ensure that the entire channel will perform the intended function. Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology.

Insert
A

(continued)

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BASES

SURVEILLANCE
REQUIREMENTS

SR 3.3.7.1.1 (continued)

Agreement criteria are determined by the plant staff based on a combination of the channel instrument uncertainties, including indication and readability. If a channel is outside the criteria, it may be an indication that the instrument has drifted outside its limit.

The Frequency is based upon operating experience that demonstrates channel failure is rare. The CHANNEL CHECK supplements less formal, but more frequent, checks of channel status during normal operational use of the displays associated with channels required by the LCO.

SR 3.3.7.1.2

A CHANNEL FUNCTIONAL TEST is performed on each required channel to ensure that the entire channel will perform the intended function. Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology.

Insert
A

The Frequency of 92 days is based on the reliability analyses of References 4, 5, and 6.

SR 3.3.7.1.3

The calibration of trip units provides a check of the actual trip setpoints. Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology. The channel must be declared inoperable if the trip setting is discovered to be less conservative than the Allowable Value. If the trip setting is discovered to be less conservative than accounted for in the appropriate setpoint methodology, but is not beyond the Allowable Value, the channel performance is still within the requirements of the plant safety analysis. Under these conditions, the setpoint must be readjusted to be equal to or more conservative than accounted for in the appropriate setpoint methodology.

The Frequency of 92 days is based on the reliability analyses of References 4, 5, and 6.

(continued)

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REV 3

BASES

SURVEILLANCE
REQUIREMENTS
(continued)

or expiration of the 2 hour allowance, the channel must be returned to OPERABLE status or the applicable Condition entered and Required Actions taken.

SR 3.3.8.1.1

Performance of the CHANNEL CHECK once every 12 hours ensures that a gross failure of instrumentation has not occurred. A CHANNEL CHECK is normally a comparison of the parameter indicated on one channel to a similar parameter on other channels. It is based on the assumption that instrument channels monitoring the same parameter should read approximately the same value. Significant deviations between the instrument channels could be an indication of excessive instrument drift in one of the channels or something even more serious. A CHANNEL CHECK will detect gross channel failure; thus, it is key to verifying the instrumentation continues to operate properly between each CHANNEL CALIBRATION.

Agreement criteria are determined by the plant staff based on a combination of the channel instrument uncertainties, including indication and readability. If a channel is outside the criteria, it may be an indication that the instrument has drifted outside its limit.

The Frequency is based on operating experience that demonstrates channel failure is rare. The CHANNEL CHECK supplements less formal, but more frequent, checks of channels during normal operational use of the displays associated with the required channels of the LCO.

SR 3.3.8.1.2

A CHANNEL FUNCTIONAL TEST is performed on each required channel to ensure that the entire channel will perform the intended function. Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology.

Insert
A

The Frequency of 31 days is based on plant operating experience with regard to channel OPERABILITY and drift that demonstrates that failure of more than one channel of a given Function in any 31 day interval is rare.

(continued)

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BASES

ACTIONS

D.1, D.2.1, and D.2.2 (continued)

In addition, action must be immediately initiated to either restore one electric power monitoring assembly to OPERABLE status for the inservice power source supplying the required instrumentation powered from the RPS bus (Required Action D.2.1) or to isolate the RHR Shutdown Cooling System (Required Action D.2.2). Required Action D.2.1 is provided because the RHR Shutdown Cooling System may be needed to provide core cooling. All actions must continue until the applicable Required Actions are completed.

SURVEILLANCE
REQUIREMENTS

SR 3.3.8.2.1

Insert A

A CHANNEL FUNCTIONAL TEST is performed on each overvoltage, undervoltage, and underfrequency channel to ensure that the entire channel will perform the intended function. Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology.

As noted in the Surveillance, the CHANNEL FUNCTIONAL TEST is only required to be performed while the plant is in a condition in which the loss of the RPS bus will not jeopardize steady state power operation (the design of the system is such that the power source must be removed from service to conduct the Surveillance). The 24 hours is intended to indicate an outage of sufficient duration to allow for scheduling and proper performance of the Surveillance. The 184 day Frequency and the Note in the Surveillance are based on guidance provided in Generic Letter 91-09 (Ref. 2).

SR 3.3.8.2.2

CHANNEL CALIBRATION is a complete check of the instrument loop and the sensor. This test verifies that the channel responds to the measured parameter within the necessary range and accuracy. CHANNEL CALIBRATION leaves the channel adjusted to account for instrument drifts between successive calibrations consistent with the plant specific setpoint methodology.

(continued)

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.4.7.1 (continued)

properly. The Frequency of 12 hours is based on instrument reliability and is reasonable for detecting off normal conditions.

SR 3.4.7.2

Insert A

This SR requires the performance of a CHANNEL FUNCTIONAL TEST of the required RCS leakage detection instrumentation. The test ensures that the monitors can perform their function in the desired manner. The test also verifies the alarm setpoint and relative accuracy of the instrument string. ~~The Frequency of 31 days considers instrument reliability, and operating experience has shown it proper for detecting degradation.~~

SR 3.4.7.3

This SR requires the performance of a CHANNEL CALIBRATION of the required RCS leakage detection instrumentation channels. The calibration verifies the accuracy of the instrument string, including the instruments located inside the drywell. The Frequency of [18] months is a typical refueling cycle and considers channel reliability. Operating experience has proven this Frequency is acceptable.

REFERENCES

1. 10 CFR 50, Appendix A, GDC 30.
 2. Regulatory Guide 1.45, May 1973.
 3. FSAR, Section [5.2.5.2].
 4. GEAP-5620, April 1968.
 5. NUREG-75/067, October 1975.
 6. FSAR, Section [5.2.5.5.3].
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BASES

LCO
(continued) blocks to prevent operations that could result in criticality during refueling operations.

APPLICABILITY In MODE 5, a prompt reactivity excursion could cause fuel damage and subsequent release of radioactive material to the environment. The refueling equipment interlocks protect against prompt reactivity excursions during MODE 5. The interlocks are only required to be OPERABLE during in-vessel fuel movement with refueling equipment associated with the interlocks.

In MODES 1, 2, 3, and 4, the reactor pressure vessel head is on, and no fuel loading activities are possible. Therefore, the refueling interlocks are not required to be OPERABLE in these MODES.

ACTIONS

A.1

With one or more of the required refueling equipment interlocks inoperable, the unit must be placed in a condition in which the LCO does not apply. In-vessel fuel movement with the affected refueling equipment must be immediately suspended. This action ensures that operations are not performed with equipment that would potentially not be blocked from unacceptable operations (e.g., loading fuel into a cell with a control rod withdrawn). Suspension of in-vessel fuel movement shall not preclude completion of movement of a component to a safe position.

SURVEILLANCE
REQUIREMENTS

SR 3.9.1.1

Performance of a CHANNEL FUNCTIONAL TEST demonstrates each required refueling equipment interlock will function properly when a simulated or actual signal indicative of a required condition is injected into the logic. The CHANNEL FUNCTIONAL TEST may be performed by any series of sequential, overlapping, or total channel steps so that the entire channel is tested.

Insert A

(continued)

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BASES

ACTIONS

A.1 and A.2 (continued)

containing no fuel assemblies do not affect the reactivity of the core and, therefore, do not have to be inserted.

SURVEILLANCE
REQUIREMENTS

SR 3.9.2.1

Proper functioning of the refueling position one-rod-out interlock requires the reactor mode switch to be in Refuel. During control rod withdrawal in MODE 5, improper positioning of the reactor mode switch could, in some instances, allow improper bypassing of required interlocks. Therefore, this Surveillance imposes an additional level of assurance that the refueling position one-rod-out interlock will be OPERABLE when required. By "locking" the reactor mode switch in the proper position (i.e., removing the reactor mode switch key from the console while the reactor mode switch is positioned in refuel), an additional administrative control is in place to preclude operator errors from resulting in unanalyzed operation.

The Frequency of 12 hours is sufficient in view of other administrative controls utilized during refueling operations to ensure safe operation.

SR 3.9.2.2

Performance of a CHANNEL FUNCTIONAL TEST on each channel demonstrates the associated refuel position one-rod-out interlock will function properly when a simulated or actual signal indicative of a required condition is injected into the logic. The CHANNEL FUNCTIONAL TEST may be performed by any series of sequential, overlapping, or total channel steps so that the entire channel is tested. The 7 day Frequency is considered adequate because of demonstrated circuit reliability, procedural controls on control rod withdrawals, and visual and audible indications available in the control room to alert the operator of control rods not fully inserted. To perform the required testing, the applicable condition must be entered (i.e., a control rod must be withdrawn from its full-in position). Therefore, SR 3.9.2.1 has been modified by a Note that states the

Insert A

(continued)
