Technical Requirements Manual

Brunswick Steam Electric Plant, Unit No. 2
Renewed Facility Operating License DPR-62

Revision 63

Page No.	Revision No.	Page No.	Revision No.
Title Page	63	3.0-1	23
		3.0-2	23
List of Effective Pages		3.0-3	23
LOEP-1	63	3.1-1	23
LOEP-2	62	3.1-2	23
LOEP-3	58		
LOEP-4	63	3.2-1	23
LOEP-5	26		
		3.3-1	23
0.0-1	55	3.3-2	23
0.0-2	23	3.3-3	23
0.0-3	45	3.3-4	36
0.0-4	23		
0.0-5	23	3.4-1	60
0.0-6	23	3.4-2	29
		3.4-3	60
1.1-1	23		
1.1-2	23	3.5-1	32
1.1-3	23	3.5-2	23
		3.5-3	23
1.2-1	23		
1.2-2	23	3.6-1	31
1.2-3	23	3.6-2	23
		3.6-3	23
1.3-1	23		
1.3-2	23	3.7-1	23
1.3-3	23		
1.3-4	23	3.8-1	31
1.3-5	23	3.8-2	23
1.3-6	23		
1.3-7	23	3.9-1	47
1.3-8	23	3.9-2	47
1.3-9	23	3.9-3	47
1.3-10	23		
1.3-11	23	3.10-1	31
1.3-12	23		
		3.11-1	23
1.4-1	23	3.11-2	51
1.4-2	23	3.11-3	51
1.4-3	23		
1.4-4	23	3.12-1	23
1.4-5	23	3.12-2	57
2.0-1	23		

(continued)

Page No.	Revision No.	Page No.	Revision No.
3.12-3	23	3.22-1	23
3.12-4	57	3.22-2	23
		3.22-3	23
3.13-1	23		
3.13-2	23	3.23-1	23
3.13-3	23		
3.13-4	23	3.24-1	23
3.14-1	23	3.25-1	23
3.14-2	23	3.25-2	23
		3.25-3	23
3.15-1	23	3.25-4	23
3.16-1	58	3.26-1	23
3.16-2	58		
3.16-3	33	4.0-1	23
		5.0-1	45
3.17-1	23	5.0-2	41
3.17-2	23	5.0-3	45
3.17-3	23	5.0-4	45
		5.0-5	62
3.18-1	23	5.0-6	45
3.18-2	23		
		B 3.0-1	23
3.19-1	23	B 3.0-2	26
3.19-2	23	B 3.0-3	23
		B 3.0-4	23
3.20-1	23	B 3.0-5	23
		B 3.0-6	23
3.21-1	40	B 3.0-7	23
3.21-2	37	B 3.0-8	23
3.21-3	23	B 3.0-9	23
3.21-4	23	B 3.0-10	23
3.21-5	23		
3.21-6	23	B 3.1-1	23
3.21-7	23		
3.21-8	23	B 3.2-1	23
3.21-9	23		
3.21-10	23	B 3.3-1	23
3.21-11	23		
3.21-12	23	B 3.4-1	60

(continued)

Page No.	Revision No.
B 3.5-1	23
B 3.6-1	31
B 3.7-1	23
B 3.8-1	31
B 3.9-1	47
B 3.9-2	47
B 3.9-3	47
B 3.9-4	47
B 3.9-5	47
B 3.9-6	47
B 3.10-1	31
B 3.11-1	23
B 3.12-1	57
B 3.12-2	23
B 3.12-3	57
B 3.12-4	23
B 3.13-1	23
B 3.14-1	23
B 3.15-1	23
B 3.16-1	58
B 3.16-2	58
B 3.16-3	58
B 3.17-1	23
B 3.18-1	23
B 3.18-2	23
B 3.18-3	23
B 3.19-1	23
B 3.19-2	23
B 3.19-3	23
B 3.20-1	23
B 3.21-1	23
B 3.21-2	37
B 3.21-3	37
B 3.22-1	23
B 3.23-1	23
B 3.24-1	23
B 3.25-1	23
B 3.26-1	23
APPENDIX A	23
A-1	23
A-2	23
A-3	23
A-4	23
A-5	23
A-6	23
A-7	23
A-8	23
A-9	27
A-10	23
A-11	23
A-12	23
A-13	23
A-14	23
A-15	23
A-16	25
A-17	25
A-18	25
A-19	23
APPENDIX B	23
B-1	23
B-2	44
B-3	23
B-4	44
B-5	23
B-6	23
B-7	39
B-8	23

(continued)

Page No.	Revision No.
B-9	23
B-10	23
B-11	23
B-12	24
B-13	23
B-14	23
B-15	23
B-16	23
B-17	23
B-18	28
B-19	23
B-20	23
B-21	23
B-22	48
B-23	23
B-24	34
B-25	23
B-26	43
B-27	53
B-28	23
B-29	23
APPENDIX C	23
C-1	23
C-2	44
C-3	61
C-4	28
C-5	23
C-6	23
C-7	23
C-8	47
C-9	52
C-10	51
C-11	57
APPENDIX D	23
D-1	23
D-2	26
D-3	23
D-4	30
D-5	26
D-6	26
D-7	26
D-8	23
D-9	42
D-10	26
D-11	26
D-12	26
D-13	23
D-14	49
D-15	49
D-16	23
D-17	59
D-18	23
D-19	23
D-20	23
D-21	24
APPENDIX E	23
E-1	23
E-2	23
APPENDIX F	23
SFDP-1	23
SFDP-2	23
SFDP-3	23
SFDP-4	23
SFDP-5	23
SFDP-6	23
SFDP-7	23
SFDP-8	23
SFDP-9	23
SFDP-10	23
SFDP-11	23
SFDP-12	23
SFDP-13	23
SFDP-14	23
SFDP-15	23
SFDP-16	23
SFDP-17	23
SFDP-18	23
SFDP-19	23
SFDP-20	23

(continued)

Page No.	Revision No.
B-9	23
B-10	23
B-11	23
B-12	24
B-13	23
B-14	23
B-15	23
B-16	23
B-17	23
B-18	28
B-19	23
B-20	23
B-21	23
B-22	48
B-23	23
B-24	34
B-25	23
B-26	63
B-27	53
B-28	23
B-29	23
APPENDIX C	23
C-1	23
C-2	44
C-3	61
C-4	28
C-5	23
C-6	23
C-7	23
C-8	47
C-9	52
C-10	51
C-11	57
APPENDIX D	23
D-1	23
D-2	26
D-3	23
D-4	30
D-5	26
D-6	26
D-7	26
D-8	23
D-9	42
D-10	26
D-11	26
D-12	26
D-13	23
D-14	49
D-15	49
D-16	23
D-17	59
D-18	23
D-19	23
D-20	23
D-21	24
APPENDIX E	23
E-1	23
E-2	23
APPENDIX F	23
SFDP-1	23
SFDP-2	23
SFDP-3	23
SFDP-4	23
SFDP-5	23
SFDP-6	23
SFDP-7	23
SFDP-8	23
SFDP-9	23
SFDP-10	23
SFDP-11	23
SFDP-12	23
SFDP-13	23
SFDP-14	23
SFDP-15	23
SFDP-16	23
SFDP-17	23
SFDP-18	23
SFDP-19	23
SFDP-20	23

(continued)

Page No.	Revision No.
SFDP-21	23
SFDP-22	23
SFDP-23	23
SFDP-24	23
SFDP-25	23
SFDP-26	23
B SFDP-1	23
B SFDP-2	23
B SFDP-3	23
B SFDP-4	23
B SFDP-5	23
B SFDP-6	23
B SFDP-7	23
B SFDP-8	23
B SFDP-9	23
B SFDP-10	23
B SFDP-11	23
B SFDP-12	23
B SFDP-13	23
B SFDP-14	23
B SFDP-15	23

Carolina Power & Light Company

Brunswick Unit 2

TITLE: Technical Requirements Manual Purpose, Control, and Contents

PURPOSE: Provides information and guidance on requirements for various plant conditions, actions, and testing similar to the Technical Specifications, which is mainly required to support appropriate operation of the station in accordance with commitments. The Technical Requirements Manual (TRM) is under the control of Carolina Power & Light (CP&L) Company and all changes are to be evaluated for acceptance by performing 10 CFR 50.59 review.

SCOPE: This manual contains a wide variety of information on and requirements for various systems and processes, most of which existed in the Technical Specifications at some previous point in time.

INTENDED USE: The TRM is intended to be used primarily by Operations to provide operating guidance for various plant equipment (similar to the Technical Specifications) and as an aid for the Technical Specifications (e.g., valve and instrument lists). The format of the requirements in the TRM is in accordance with NUMARC 93-03, "Writers Guide for Restructured Standard Technical Specifications".

Noncompliance with TRM requirements (i.e., Technical Requirements Manual Specification (TRMS) and associated Required Compensatory Measures not met or failure to perform a Test Requirement (TR) in accordance with TR 3.0.2) requires the generation of a condition report since the TRM requirements were violated, and other potential consequences exist.

This manual is controlled in accordance with AD-LS-ALL-0015, “License Amendment Request and Changes to SLC, TRM, and TS Bases.” Changes previously initiated under 0AP-057 (prior to October 7, 2013) may be completed using that process. The technical information in each section, including the associated Bases, and the Appendices is the responsibility of the group(s) identified in the responsibility matrix on the following page. All changes to TRM sections shall be reviewed by the Licensing Unit prior to approval. In addition, all changes shall be reviewed and approved by the Plant Nuclear Safety Committee prior to implementation. Changes to this manual may be made by CP&L Company as long as the changes are reviewed in accordance with 10 CFR 50.59 requirements and do not constitute a change to the Technical Specifications or require a license amendment. The responsibility for the administrative control of the manual is assigned to the Licensing Unit.

Matrix of
Responsible Group(s) for
TRM Sections, associated Bases, and Appendices

SECTION	TITLE	RESPONSIBLE GROUP
3.0	Technical Requirements Manual Specifications (TRM) and Test Requirements (TR) Applicability	Licensing / Regulatory Programs
3.1	Control Rod Drive Housing Support	BESS - MECH
3.2	Not used.	
3.3	Control Rod Block Instrumentation	BESS – MECH ELEC/I&C
3.4	Accident Monitoring Instrumentation	BESS - ELEC/I&C
3.5	Chloride Intrusion Monitors	BESS - ELEC/I&C
3.6	Bus Power Monitors	BESS - ELEC/I&C
3.7	Automatic Depressurization System (ADS) Inhibit Switch	BESS - ELEC/I&C
3.8	Suppression Chamber Water Temperature Instrumentation	BESS - ELEC/I&C
3.9	Seismic Monitoring Instrumentation	BESS - ELEC/I&C
3.10	Intake Canal High Water Level Instrumentation	BESS - ELEC/I&C
3.11	Primary Containment Isolation Instrumentation	BESS - ELEC/I&C
3.12	Control Room Emergency Ventilation (CREV) System Instrumentation	BESS - ELEC/I&C
3.13	Reactor Coolant System (RCS) Chemistry	E&RC
3.14	Structural Integrity	BESS - TECHNICAL SERVICES
3.15	Not used.	
3.16	Service Water System Operability - Shutdown	BESS - MECH
3.17	Service Water System - Shutdown Operations	BESS - MECH
3.18	Control Room Emergency Ventilation (CREV) System - Smoke Protection Mode	BESS - MECH
3.19	Control Room Emergency Ventilation (CREV) System - Chlorine Protection Mode	BESS - MECH
3.20	Flood Protection	OPERATIONS
3.21	Snubbers	BESS - TECHNICAL SERVICES
3.22	Sealed Source Contamination	E&RC
3.23	Decay Time	BESS - MECH
3.24	Communications	OPERATIONS
3.25	Crane and Hoist Operability	BESS - MECH
3.26	Crane Travel - Spent Fuel Storage Pool	BESS - MECH
5.5.1	Offsite Dose Calculation Manual	E&RC
5.5.2	Primary Coolant Sources Outside Containment	BESS - TECHNICAL SERVICES
5.5.3	Deleted.	
5.5.4	Radioactive Effluent Controls Program	E&RC
5.5.5	Component Cyclic or Transient Limit Program	BESS - MECH

Matrix of
Responsible Group(s) for
TRM Sections, associated Bases, and Appendices

SECTION	TITLE	RESPONSIBLE GROUP
5.5.6	Inservice Testing Program	BESS - TECHNICAL SERVICES
5.5.7	Ventilation Filter Testing Program	BESS - MECH
5.5.8	Explosive Gas and Storage Tank Radioactivity Monitoring Program	E&RC
5.5.9	Diesel Fuel Oil Testing Program	E&RC
5.5.10	Technical Specification Bases Control Program	LICENSING / REGULATORY PROGRAMS
5.5.11	Safety Function Determination Program	OPERATIONS
5.5.12	Primary Containment Leakage Rate Testing Program	BESS - TECHNICAL SERVICES
5.5.13	Control Room Envelope Habitability Program	BESS – SYSTEMS ENGINEERING
5.5.14	Configuration Risk Management Program	OUTAGE & SCHEDULING
5.5.15	Inservice Inspection Program	BESS - TECHNICAL SERVICES
APPENDIX A	Relocated Items Matrix	LICENSING / REGULATORY PROGRAMS
APPENDIX B	Technical Specifications Instrumentation Numbers and Trip Setpoints List	BESS - ELEC/I&C
APPENDIX C	Technical Requirements Manual Instrumentation Numbers and Trip Setpoints List	BESS - ELEC/I&C
APPENDIX D	Primary Containment Isolation Valve List	BESS - TECHNICAL SERVICES
APPENDIX E	Secondary Containment Isolation Damper List	BESS - MECH
APPENDIX F	Safety Function Determination Program	OPERATIONS

(continued)

(continued)

1.0 USE AND APPLICATION

TRMS 1.1 Definitions

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

Term	Definition
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 inplace 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 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.

(continued)

TRMS 1.1 Definitions (continued)

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 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.
LOGIC SYSTEM FUNCTIONAL TEST	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.
MODE	A MODE shall be as required by Technical Specifications.
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)

TRMS 1.1 Definitions (continued)

RATED THERMAL POWER (RTP)	RTP shall be a total reactor core heat transfer rate to the reactor coolant of 2923 MWt.
THERMAL POWER	THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant.

1.0 USE AND APPLICATION

TRMS 1.2 Logical Connectors

PURPOSE	The purpose of this section is to explain the meaning of logical connectors. Logical connectors are used in Technical Requirements Manual Specifications (TRMS) to discriminate between, and yet connect, discrete Conditions, Required Compensatory Measures, Completion Times, Tests, and Frequencies. The only logical connectors that appear in TRMS are AND and OR. The physical arrangement of these connectors constitutes logical conventions with specific meanings.
BACKGROUND	Several levels of logic may be used to state Required Compensatory Measures. These levels are identified by the placement (or nesting) of the logical connectors and by the number assigned to each Required Compensatory Measure. The first level of logic is identified by the first digit of the number assigned to a Required Compensatory Measure and the placement of the logical connector in the first level of nesting (i.e., left justified with the number of the Required Compensatory Measure). The successive levels of logic are identified by additional digits of the Required Compensatory Measure number and by successive indentions of the logical connectors. When logical connectors are used to state a Condition, Completion Time, Test, or Frequency, only the first level of logic is used, and the logical connector is left justified with the statement of the Condition, Completion Time, Test, or Frequency.
EXAMPLES	The following examples illustrate the use of logical connectors.

(continued)

EXAMPLES (continued)

EXAMPLE 1.2-1

COMPENSATORY MEASURES

CONDITION	REQUIRED COMPENSATORY MEASURE	COMPLETION TIME
A. TRMS not met.	A.1 Verify . . . AND A.2 Restore . . .	

In this example the logical connector AND is used to indicate that when in Condition A, both Required Compensatory Measures A.1 and A.2 must be completed.

(continued)

EXAMPLES (continued)

EXAMPLE 1.2-2

COMPENSATORY MEASURES

CONDITION	REQUIRED COMPENSATORY MEASURE	COMPLETION TIME
A. TRMS not met.	A.1 Trip . . . OR A.2.1 Verify . . . AND A.2.2.1 Reduce . . . OR A.2.2.2 Perform . . . OR A.3 Align . . .	

This example represents a more complicated use of logical connectors. Required Compensatory Measures A.1, A.2, and A.3 are alternative choices, only one of which must be performed as indicated by the use of the logical connector OR and the left justified placement. Any one of these three Compensatory Measures may be chosen. If A.2 is chosen, then both A.2.1 and A.2.2 must be performed as indicated by the logical connector AND. Required Compensatory Measure A.2.2 is met by performing A.2.2.1 or A.2.2.2. The indented position of the logical connector OR indicates that A.2.2.1 and A.2.2.2 are alternative choices, only one of which must be performed.

1.0 USE AND APPLICATION

TRMS 1.3 Completion Times

PURPOSE

The purpose of this section is to establish the Completion Time convention and to provide guidance for its use.

BACKGROUND

Technical Requirements Manual Specifications (TRMS) specify minimum requirements for unit systems or variables. The COMPENSATORY MEASURES associated with a TRMS state Conditions that typically describe the ways in which the requirements of the TRMS can fail to be met. Specified with each stated Condition are Required Compensatory Measure(s) and Completion Times(s).

DESCRIPTION

The Completion Time is the amount of time allowed for completing a Required Compensatory Measure. It is referenced to the time of discovery of a situation (e.g., inoperable equipment or variable not within limits) that requires entering a COMPENSATORY MEASURES Condition unless otherwise specified, providing the unit is in a MODE or specified condition stated in the Applicability of the TRMS. Required Compensatory Measures must be completed prior to the expiration of the specified Completion Time. A COMPENSATORY MEASURES Condition remains in effect and the Required Compensatory Measures apply until the Condition no longer exists or the unit is not within the TRMS Applicability.

If situations are discovered that require entry into more than one Condition at a time within a single TRMS (multiple Conditions), the Required Compensatory Measures for each Condition must be performed within the associated Completion Time. When in multiple Conditions, separate Completion Times are tracked for each Condition starting from the time of discovery of the situation that required entry into the Condition.

Once a Condition has been entered, subsequent divisions, subsystems, components, or variables expressed in the Condition, discovered to be inoperable or not within limits, will not result in separate entry into the Condition unless specifically stated. The Required Compensatory Measures of the Condition continue to apply to each additional failure, with Completion Times based on initial entry into the Condition.

(continued)

DESCRIPTION (continued)

However, when a subsequent division, subsystem, component, or variable expressed in the Condition is discovered to be inoperable or not within limits, the Completion Time(s) may be extended. To apply this Completion Time extension, two criteria must first be met. The subsequent inoperability:

a. Must exist concurrent with the first inoperability; and

b. Must remain inoperable or not within limits after the first inoperability is resolved.

The total Completion Time allowed for completing a Required Compensatory Measure to address the subsequent inoperability shall be limited to the more restrictive of either:

a. The stated Completion Time, as measured from the initial entry into the Condition, plus an additional 24 hours; or

b. The stated Completion Time as measured from discovery of the subsequent inoperability.

The above Completion Time extension does not apply to those TRMS that have exceptions that allow completely separate re-entry into the Condition (for each division, subsystem, component or variable expressed in the Condition) and separate tracking of Completion Times based on this re-entry. These exceptions are stated in individual TRMS.

The above Completion Time extension does not apply to a Completion Time with a modified "time zero." This modified "time zero" may be expressed as a repetitive time (i.e., "once per 8 hours," where the Completion Time is referenced from a previous completion of the Required Compensatory Measures versus the time of Condition entry) or as a time modified by the phrase "from discovery . . ." Example 1.3-3 illustrates one use of this type of Completion Time. The 10 day Completion Time specified for Condition A and B in Example 1.3-3 may not be extended.

(continued)

TRMS 1.3 Completion Times (continued)

EXAMPLES The following examples illustrate the use of Completion Times with different types of Conditions and changing Conditions.

EXAMPLE 1.3-1

COMPENSATORY MEASURES

CONDITION	REQUIRED COMPENSATORY MEASURE		COMPLETION TIME
B. Required Compensatory Measure and associated Completion Time not met.	B.1	Be in MODE 3.	12 hours
	AND		
	B.2	Be in MODE 4.	36 hours

Condition B has two Required Compensatory Measures. Each Required Compensatory Measure has its own separate Completion Time. Each Completion Time is referenced to the time that Condition B is entered.

The Required Compensatory Measures of Condition B are to be in MODE 3 within 12 hours AND in MODE 4 within 36 hours. A total of 12 hours is allowed for reaching MODE 3 and a total of 36 hours (not 48 hours) is allowed for reaching MODE 4 from the time that Condition B was entered. If MODE 3 is reached within 6 hours, the time allowed for reaching MODE 4 is the next 30 hours because the total time allowed for reaching MODE 4 is 36 hours.

If Condition B is entered while in MODE 3, the time allowed for reaching MODE 4 is the next 36 hours.

(continued)

EXAMPLES (continued)

EXAMPLE 1.3-2

COMPENSATORY MEASURES

CONDITION	REQUIRED COMPENSATORY MEASURE		COMPLETION TIME
A. One pump inoperable.	A.1	Restore pump to OPERABLE status.	7 days
B. Required Compensatory Measure and associated Completion Time not met.	B.1	Be in MODE 3.	12 hours
	AND		
	B.2	Be in MODE 4.	36 hours

When a pump is declared inoperable, Condition A is entered. If the pump is not restored to OPERABLE status within 7 days, Condition B is also entered and the Completion Time clocks for Required Compensatory Measures B.1 and B.2 start. If the inoperable pump is restored to OPERABLE status after Condition B is entered, Condition A and B are exited, and therefore, the Required Compensatory Measures of Condition B may be terminated.

(continued)

EXAMPLES (continued)

EXAMPLE 1.3-3

COMPENSATORY MEASURES

CONDITION	REQUIRED COMPENSATORY MEASURE	COMPLETION TIME
A. One Function X subsystem inoperable.	A.1 Restore Function X subsystem to OPERABLE status.	7 days AND 10 days from discovery of failure to meet the TRMS
B. One Function Y subsystem inoperable.	B.1 Restore Function Y subsystem to OPERABLE status.	72 hours AND 10 days from discovery of failure to meet the TRMS
C. One Function X subsystem inoperable. AND One Function Y subsystem inoperable.	C.1 Restore Function X subsystem to OPERABLE status. OR C.2 Restore Function Y subsystem to OPERABLE status.	72 hours 72 hours

(continued)

EXAMPLES

EXAMPLE 1.3-3 (continued)

When one Function X subsystem and one Function Y subsystem are inoperable, Condition A and Condition B are concurrently applicable. The Completion Times for Condition A and Condition B are tracked separately for each subsystem, starting from the time each subsystem was declared inoperable and the Condition was entered. A separate Completion Time is established for Condition C and tracked from the time the second subsystem was declared inoperable (i.e., the time the situation described in Condition C was discovered).

If Required Compensatory Measure C.2 is completed within the specified Completion Time, Conditions B and C are exited. If the Completion Time for Required Compensatory Measure A.1 has not expired, operation may continue in accordance with Condition A. The remaining Completion Time in Condition A is measured from the time the affected subsystem was declared inoperable (i.e., initial entry into Condition A).

The Completion Times of Conditions A and B are modified by a logical connector, with a separate 10 day Completion Time measured from the time it was discovered the TRMS was not met. In this example, without the separate Completion Time, it would be possible to alternate between Conditions A, B, and C in such a manner that operation could continue indefinitely without ever restoring systems to meet the TRMS. The separate Completion Time modified by the phrase "from discovery of failure to meet the TRMS" is designed to prevent indefinite continued operation while not meeting the TRMS. This Completion Time allows for an exception to the normal "time zero" for beginning the Completion Time "clock". In this instance, the Completion Time "time zero" is specified as commencing at the time the TRMS was initially not met, instead of at the time the associated Condition was entered.

(continued)

EXAMPLES (continued)

EXAMPLE 1.3-4

COMPENSATORY MEASURES

CONDITION	REQUIRED COMPENSATORY MEASURE		COMPLETION TIME
A. One or more valves inoperable.	A.1	Restore valve(s) to OPERABLE status.	4 hours
B. Required Compensatory Measure and associated Completion Time not met.	B.1	Be in MODE 3.	12 hours
	AND		
	B.2	Be in MODE 4.	36 hours

A single Completion Time is used for any number of valves inoperable at the same time. The Completion Time associated with Condition A is based on the initial entry into Condition A and is not tracked on a per valve basis. Declaring subsequent valves inoperable, while Condition A is still in effect, does not trigger the tracking of separate Completion Times.

Once one of the valves has been restored to OPERABLE status, the Condition A Completion Time is not reset, but continues from the time the first valve was declared inoperable. The Completion Time may be extended if the valve restored to OPERABLE status was the first inoperable valve. The Condition A Completion Time may be extended for up to 4 hours provided this does not result in any subsequent valve being inoperable for > 4 hours.

If the Completion Time of 4 hours (plus the extension) expires while one or more valves are still inoperable, Condition B is entered.

(continued)

EXAMPLES (continued)

EXAMPLE 1.3-5

COMPENSATORY MEASURES

----------NOTE----------
Separate Condition entry is allowed for each inoperable valve.

CONDITION	REQUIRED COMPENSATORY MEASURE		COMPLETION TIME
A. One or more valves inoperable.	A.1	Restore valve to OPERABLE status.	4 hours
B. Required Compensatory Measure and associated Completion Time not met.	B.1	Be in MODE 3.	12 hours
	AND		
	B.2	Be in MODE 4.	36 hours

The Note above the COMPENSATORY MEASURES Table is a method of modifying how the Completion Time is tracked. If this method of modifying how the Completion Time is tracked was applicable only to a specific Condition, the Note would appear in that Condition rather than at the top of the COMPENSATORY MEASURES Table.

The Note allows Condition A to be entered separately for each inoperable valve, and Completion Times tracked on a per valve basis. When a valve is declared inoperable, Condition A is entered and its Completion Time starts. If subsequent valves are declared inoperable, Condition A is entered for each valve and separate Completion Times start and are tracked for each valve.

(continued)

EXAMPLES

EXAMPLE 1.3-5 (continued)

If the Completion Time associated with a valve in Condition A expires, Condition B is entered for that valve. If the Completion Times associated with subsequent valves in Condition A expire, Condition B is entered separately for each valve and separate Completion Times start and are tracked for each valve. If a valve that caused entry into Condition B is restored to OPERABLE status, Condition B is exited for that valve.

Since the Note in this example allows multiple Condition entry and tracking of separate Completion Times, Completion Time extensions do not apply.

EXAMPLE 1.3-6

COMPENSATORY MEASURES

CONDITION	REQUIRED COMPENSATORY MEASURE		COMPLETION TIME
A. One channel inoperable.	A.1	Perform TR 3.x.x.x.	Once per 8 hours
	OR		
	A.2	Reduce THERMAL POWER to ≤ 50% RTP.	8 hours
B. Required Compensatory Measure and associated Completion Time not met.	B.1	Be in MODE 3.	12 hours

(continued)

EXAMPLES

EXAMPLE 1.3-6 (continued)

Entry into Condition A offers a choice between Required Compensatory Measure A.1 or A.2. Required Compensatory Measure A.1 has a "once per" Completion Time, which qualifies for the 25% extension, per TR 3.0.2, to each performance after the initial performance. The initial 8 hour interval of Required Compensatory Measure A.1 begins when Condition A is entered and the initial performance of Required Compensatory Measure A.1 must be completed within the first 8 hour interval. If Required Compensatory Measure A.1 is followed and the Required Compensatory Measure is not met within the Completion Time (plus the extension allowed by TR 3.0.2), Condition B is entered. If Required Compensatory Measure A.2 is followed and the Completion Time of 8 hours is not met, Condition B is entered.

If after entry into Condition B, Required Compensatory Measure A.1 or A.2 is met, Condition B is exited and operation may then continue in Condition A.

(continued)

EXAMPLES (continued)

EXAMPLE 1.3-7

COMPENSATORY MEASURES

CONDITION	REQUIRED COMPENSATORY MEASURE		COMPLETION TIME
A. One subsystem inoperable.	A.1	Verify affected subsystem isolated.	1 hour AND Once per 8 hours thereafter
	AND		
	A.2	Restore subsystem to OPERABLE status.	72 hours
B. Required Compensatory Measure and associated Completion Time not met.	B.1	Be in MODE 3.	12 hours
	AND		
	B.2	Be in MODE 4.	36 hours

Required Compensatory Measure A.1 has two Completion Times. The 1 hour Completion Time begins at the time the Condition is entered and each "Once per 8 hours thereafter" interval begins upon performance of Required Compensatory Measure A.1.

If after Condition A is entered, Required Compensatory Measure A.1 is not met within either the initial 1 hour or any subsequent 8 hour interval from the previous performance (plus the extension allowed by TR 3.0.2), Condition B is entered. The Completion Time clock for Condition A does not stop after Condition B is entered, but continues from the

(continued)

EXAMPLES

EXAMPLE 1.3-7 (continued)

time Condition A was initially entered. If Required Compensatory Measure A.1 is met after Condition B is entered, Condition B is exited and operation may continue in accordance with Condition A, provided the Completion Time for Required Compensatory Measure A.2 has not expired.

IMMEDIATE COMPLETION TIME

When "Immediately" is used as a Completion Time, the Required Compensatory Measure should be pursued without delay and in a controlled manner.

1.0 USE AND APPLICATION

TRMS 1.4 Frequency

PURPOSE

The purpose of this section is to define the proper use and application of Frequency requirements.

DESCRIPTION

Each Test Requirement (TR) has a specified Frequency in which the Test must be met in order to meet the associated Technical Requirements Manual Specification (TRMS). An understanding of the correct application of the specified Frequency is necessary for compliance with the TR.

The "specified Frequency" is referred to throughout this section and each of the Specifications of Section 3.0, Test Requirement (TR) Applicability. The "specified Frequency" consists of the requirements of the Frequency column of each TR, as well as certain Notes in the Test column that modify performance requirements.

Sometimes special situations dictate when the requirements of a Test are to be met. They are "otherwise stated" conditions allowed by TR 3.0.1. They may be stated as clarifying Notes in the Test, as part of the Test, or both. Example 1.4-4 discusses these special situations.

Situations where a Test could be required (i.e., its Frequency could expire), but where it is not possible or not desired that it be performed until sometime after the associated TRMS is within its Applicability, represent potential TR 3.0.4 conflicts. To avoid these conflicts, the TR (i.e., the Test or the Frequency) is stated such that it is only "required" when it can be and should be performed. With a TR satisfied, TR 3.0.4 imposes no restriction.

The use of "met or "performed" in these instances conveys specific meanings. A Test is "met" only when the acceptance criteria are satisfied. Known failure of the requirements of a Test, even without a Test specifically being "performed," constitutes a Test not "met." "Performance" refers only to the requirement to specifically determine the

(continued)

DESCRIPTION (continued)

ability to meet the acceptance criteria. TR 3.0.4 restrictions would not apply if both the following conditions are satisfied:

a. The Test is not required to be performed; and

b. The Test is not required to be met or, even if required to be met, is not known to be failed.

EXAMPLES

The following examples illustrate the various ways that Frequencies are specified. In these examples, the Applicability of the TRMS (TRMS not shown) is MODES 1, 2, and 3.

EXAMPLE 1.4-1

TEST REQUIREMENTS

TEST	FREQUENCY
Perform CHANNEL CHECK.	12 hours

Example 1.4-1 contains the type of TR most often encountered in the TRMS. The Frequency specifies an interval (12 hours) during which the associated Test must be performed at least one time. Performance of the Test initiates the subsequent interval. Although the Frequency is stated as 12 hours, an extension of the time interval to 1.25 times the interval specified in the Frequency is allowed by TR 3.0.2 for operational flexibility. The measurement of this interval continues at all times, even when the TR is not required to be met per TR 3.0.1 (such as when the equipment is inoperable, a variable is outside specified limits, or the unit is outside the Applicability of the TRMS). If the interval specified by TR 3.0.2 is exceeded while the unit is in a MODE or other specified condition in the Applicability of the TRMS, and the performance of the Test is not otherwise modified (refer to Examples 1.4-3 and 1.4-4), then TR 3.0.3 becomes applicable.

(continued)

EXAMPLES

EXAMPLE 1.4-1 (continued)

If the interval as specified by TR 3.0.2 is exceeded while the unit is not in a MODE or other specified condition in the Applicability of the TRMS for which performance of the TR is required, the Test must be performed within the Frequency requirements of TR 3.0.2 prior to entry into the MODE or other specified condition. Failure to do so would result in a violation of TR 3.0.4.

EXAMPLE 1.4-2

TEST REQUIREMENTS

TEST	FREQUENCY
Verify flow is within limits.	Once within 12 hours after ≥ 25% RTP AND 24 hours thereafter

Example 1.4-2 has two Frequencies. The first is a one time performance Frequency, and the second is of the type shown in Example 1.4-1. The logical connector "AND" indicates that both Frequency requirements must be met. Each time reactor power is increased from a power level < 25% RTP to ≥ 25% RTP, the Test must be performed within 12 hours.

The use of "once" indicates a single performance will satisfy the specified Frequency (assuming no other Frequencies are connected by "AND"). This type of Frequency does not qualify for the extension allowed by TR 3.0.2.

(continued)

EXAMPLES

EXAMPLE 1.4-2 (continued)

"Thereafter" indicates future performances must be established per TR 3.0.2, but only after a specified condition is first met (i.e., the "once" performance in this example). If reactor power decreases to < 25% RTP, the measurement of both intervals stops. New intervals start upon reactor power reaching 25% RTP.

EXAMPLE 1.4-3

TEST REQUIREMENTS

TEST	FREQUENCY
----------NOTE---------- Not required to be performed until 12 hours after ≥ 25% RTP. ----------	
Perform channel adjustment.	7 days

The interval continues whether or not the unit operation is < 25% RTP between performances.

As the Note modifies the required performance of the Test, it is construed to be part of the "specified Frequency." Should the 7 day interval be exceeded while operation is < 25% RTP, this Note allows 12 hours after power reaches ≥ 25% RTP to perform the Test. The Test is still considered to be within the "specified Frequency." Therefore, if the Test were not performed within the 7 day interval (plus the extension allowed by TR 3.0.2), but operation was < 25% RTP, it would not constitute a failure of the TR or failure to meet the TRMS. Also, no violation of TR 3.0.4 occurs when changing MODES, even with the 7 day Frequency not met, provided operation does not exceed 12 hours with power ≥ 25% RTP.

(continued)

EXAMPLES

EXAMPLE 1.4-3 (continued)

Once the unit reaches 25% RTP, 12 hours would be allowed for completing the Test. If the Test were not performed within this 12 hour interval, there would then be a failure to perform a Test within the specified Frequency, and the provisions of TR 3.0.3 would apply.

EXAMPLE 1.4-4

TEST REQUIREMENTS

TEST	FREQUENCY
----------NOTE---------- Only required to be met in MODE 1. ----------	
Verify leakage rates are within limits.	24 hours

Example 1.4-4 specifies that the requirements of this Test do not have to be met until the unit is in MODE 1. The interval measurement for the Frequency of this Test continues at all times, as described in Example 1.4-1. However, the Note constitutes an "otherwise stated" exception to the Applicability of this Test. Therefore, if the Test were not performed within the 24 hour (plus the extension allowed by TR 3.0.2) interval, but the unit was not in MODE 1, there would be no failure of the TR nor failure to meet the TRMS. Therefore, no violation of TR 3.0.4 occurs when changing MODES, even with the 24 hour Frequency exceeded, provided the MODE change was not made into MODE 1. Prior to entering MODE 1 (assuming again that the 24 hour Frequency were not met), TR 3.0.4 would require satisfying the TR.

2.0 Not used.

3.0 TECHNICAL REQUIREMENTS MANUAL SPECIFICATION (TRMS) APPLICABILITY

TRMS 3.0.1	TRMSs shall be met during the MODES or other specified conditions in the Applicability, except as provided in TRMS 3.0.2.
TRMS 3.0.2	Upon discovery of a failure to meet a TRMS, the Required Compensatory Measures of the associated Conditions shall be met, except as provided in TRMS 3.0.5. If the TRMS is met or is no longer applicable prior to the expiration of the specified Completion Times(s), completion of the Required Compensatory Measure(s) is not required, unless otherwise stated.
TRMS 3.0.3	Not used.
TRMS 3.0.4	When a TRMS is not met, entry into a MODE or other specified condition in the Applicability shall not be made except when the associated COMPENSATORY MEASURES to be entered permit continued operation in the MODE or other specified condition in the applicability for an unlimited period of time. This TRMS shall not prevent changes in MODES or other specified conditions in the Applicability that are required to comply with COMPENSATORY MEASURES, or that are part of a shutdown of the unit. Exceptions to this TRMS are stated in the individual TRMSs. These exceptions allow entry into MODES or other specified conditions in the Applicability when the associated COMPENSATORY MEASURES to be entered allow unit operation in the MODE or other specified condition in the Applicability only for a limited period of time.
TRMS 3.0.5	Equipment removed from service or declared inoperable to comply with COMPENSATORY MEASURES 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 TRMS 3.0.2 for the system returned to service under administrative control to perform the required testing.

3.0 TEST REQUIREMENT (TR) APPLICABILITY

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

TR 3.0.2 The specified Frequency for each TR is met if the Test 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 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 TRMS are stated in the individual TRMSs.

TR 3.0.3 If it is discovered that a Test was not performed within its specified Frequency, then compliance with the requirement to declare the TRMS 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 Test.

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

When the Test is performed within the delay period and the Test is not met, the TRMS must immediately be declared not met, and the applicable Condition(s) must be entered.

(continued)

3.0 TR APPLICABILITY (continued)

TR 3.0.4	Entry into a MODE or other specified condition in the Applicability of a TRMS shall not be made unless the TRMS's Tests have been met within their specified Frequency. This provision shall not prevent entry into MODES or other specified conditions in the Applicability that are required to comply with COMPENSATORY MEASURES or that are part of a shutdown of the unit.

3.1 CONTROL ROD DRIVE HOUSING SUPPORT

TRMS 3.1 The control rod drive housing support shall be in place.

APPLICABILITY: MODES 1, 2, and 3.

COMPENSATORY MEASURES

CONDITION	REQUIRED COMPENSATORY MEASURE		COMPLETION TIME
A. Control rod drive housing support not in place.	A.1	Be in MODE 3	12 hours
	AND		
	A.2	Be in MODE 4.	36 hours

TEST REQUIREMENTS

	TEST	FREQUENCY
TR 3.1.1	Verify the control rod drive housing support is in place by inspection after reassembly.	Once prior to startup any time control rod drive housing support has been disassembled AND Once prior to startup any time maintenance has been performed in the control rod drive housing support area

3.2 Not used.

3.3 CONTROL ROD BLOCK INSTRUMENTATION

TRMS 3.3 The control rod block instrumentation for each Function in Table 3.3-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.3-1.

COMPENSATORY MEASURES

---NOTE---
Separate Condition entry is allowed for each channel.

CONDITION	REQUIRED COMPENSATORY MEASURE	COMPLETION TIME
A. ----------NOTE---------- Only applicable for Functions 1, 2 and 3. ---------- One or more functions with one or more required channels inoperable.	A.1 Restore channel(s) to OPERABLE status.	24 hours
B. One or more functions with control rod block capability not maintained. OR Required Compensatory Measures and associated Completion Time of Condition A not met.	B.1 Place one channel in trip.	1 hour`

TEST REQUIREMENTS

---NOTES---

1. Refer to Table 3.3-1 to determine which TRs apply for each Control Rod Block Instrumentation Function.
2. When a channel is placed in an inoperable status solely for performance of required Tests, entry into associated Conditions and Required Compensatory Measures may be delayed for up to 6 hours provided the associated Function maintains control rod block capability.

	TEST	FREQUENCY
TR 3.3.1	---NOTE--- Not required to be performed when entering MODE 2 from MODE 1 until 12 hours after entering MODE 2. --- Perform CHANNEL FUNCTIONAL TEST.	7 days
TR 3.3.2	Perform CHANNEL FUNCTIONAL TEST.	92 days
TR 3.3.3	---NOTES--- Neutron detectors are excluded. --- Perform CHANNEL CALIBRATION.	24 months
TR 3.3.4	Adjust recirculation drive flow to conform to reactor flow.	Once within 7 days after reaching equilibrium conditions following refueling outage

(continued)

TEST REQUIREMENTS (continued)

TEST		FREQUENCY
TR 3.3.5	----------NOTE---------- For Function 1.d, not required to be performed when entering MODE 2 from MODE 1 until 12 hours after entering MODE 2. ---------- Perform CHANNEL FUNCTIONAL TEST.	184 days

Table 3.3-1 (page 1 of 1)
Control Rod Block Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	TEST REQUIREMENTS	ALLOWABLE VALUE
1. Average Power Range Monitors				
a. Upscale (Flow Biased)	1	3	TR 3.3.3 TR 3.3.4 TR 3.3.5	≤ 0.55W + 55.0%RTP[a] and ≤ 109.3% RTP
b. Inoperative	1,2	3	TR 3.3.5	NA
c. Downscale	1	3	TR 3.3.5	≥ 1.1% APRM power
d. Upscale (Fixed)	2	3	TR 3.3.3 TR 3.3.5	≤ 14% RTP
2. Source Range Monitors				
a. Detector Not Full In	2[b],5	2	TR 3.3.1	NA
b. Upscale	2[c],5	2	TR 3.3.1	≤ 5 x 10^5cps
c. Inoperative	2[c],5	2	TR 3.3.1	NA
d. Downscale	2[b],5	2	TR 3.3.1	≥ 3 cps
3. Intermediate Range Monitors				
a. Detector Not Full In	2,5	6	TR 3.3.1	NA
b. Upscale	2,5	6	TR 3.3.1	≤ 108/125 of full scale
c. Inoperable	2,5	6	TR 3.3.1	NA
d. Downscale	2[e],5	6	TR 3.3.1	≥ 3/125 of full scale
4. Scram Discharge Volume Water Level—High	1,2,5[f]	1[g]	TR 3.3.2 TR 3.3.3	≤ 73 gallons

(a) ≤[0.55(W – ΔW) + 55.0% RTP] when Technical Specification 3.3.1.1, Function 2.b, is reset for single loop operation per LCO 3.4.1, "Recirculation Loops Operating." The value of ΔW is defined in plant procedures.
(b) Bypassed when detector is reading > 100 cps or Intermediate Range Monitor (IRM) channels are on Range 3 or higher.
(c) Bypassed when associated IRM channels are on Range 8 or higher.
(d) Deleted.
(e) Bypassed when IRM channels are on Range 1.
(f) With any control rod withdrawn from a core cell containing one or more fuel assemblies. Not applicable to control rods removed per Technical Specification 3.10.5, "Single Control Rod Drive (CRD) Removal—Refueling," or 3.10.6, "Multiple Control Rod Withdrawal—Refueling."
(g) Signal is contained in Channel A logic only.

3.4 ACCIDENT MONITORING INSTRUMENTATION

TRMS 3.4 The accident monitoring instrumentation for each Function in Table 3.4-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.4-1.

COMPENSATORY MEASURES

---NOTES---

1. TRMS 3.0.4 is not applicable.
2. Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED COMPENSATORY MEASURE	COMPLETION TIME
A. ----------NOTE---------- Only applicable to Functions 1, 2, 3, 6, and 7. ---------- One or more Functions with one required channel inoperable.	A.1 Restore required channel to OPERABLE status.	31 days
B. One or more Functions with two required channels inoperable. OR ----------NOTE---------- Only applicable to Functions 4 and 5. ---------- One or more Functions with one required channel inoperable.	B.1 Restore one required channel to OPERABLE status.	7 days

(continued)

COMPENSATORY MEASURES (continued)

CONDITION	REQUIRED COMPENSATORY MEASURE		COMPLETION TIME
C. Required Compensatory Measure and associated Completion Time not met.	C.1	Submit a Special Report to the NRC outlining the preplanned alternate monitoring method, the cause of the inoperability, and plans for restoring the instrumentation to OPERABLE status.	14 days

TEST REQUIREMENTS

TEST		FREQUENCY
TR 3.4.1	Perform CHANNEL CHECK.	31 days
TR 3.4.2	Perform CHANNEL CALIBRATION except for Drywell and Suppression Chamber H_2 and O_2 Analyzers.	24 months
TR 3.4.3	Perform CHANNEL CALIBRATION of the Drywell and Suppression Chamber H_2 and O_2 Analyzers.	92 days

Table 3.4-1 (page 1 of 1)
Accident Monitoring Instrumentation

	FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS
1.	Suppression Chamber Atmosphere Temperature	1,2	2
2.	Drywell Radiation	1,2,3	2
3.	Safety/Relief Valve Position Indication	1,2	1 per valve
	a. Primary-Sonic		
	b. Secondary-Temperature		
4.	Turbine Building Ventilation Monitor	1,2,3	1
5.	Offgas Stack Ventilation Monitor	1,2,3	1
6.	Drywell and Suppression Chamber H_2 Analyzer	1,2	1
7.	Drywell and Suppression Chamber O_2 Analyzer	1,2	1

3.5 CHLORIDE INTRUSION MONITORS

TRMS 3.5 The chloride intrusion monitor channels for each Function in Table 3.5-1 shall be OPERABLE.

APPLICABILITY: MODE 1 and 2.

COMPENSATORY MEASURES

---NOTE---
Operation may continue with one or two Functions inoperable.

CONDITION	REQUIRED COMPENSATORY MEASURE	COMPLETION TIME
A. Three or four Functions with one or more required channels inoperable.	A.1 Sample one parameter monitored by the inoperable Function(s).	4 hours AND Once per 4 hours thereafter

TEST REQUIREMENTS

---NOTE---
Refer to Table 3.5-1 to determine which TRs apply for each Chloride Intrusion Monitor Function.

	TEST	FREQUENCY
TR 3.5.1	Perform CHANNEL CHECK.	24 hours
TR 3.5.2	Perform CHANNEL FUNCTIONAL TEST.	31 days
TR 3.5.3	Perform CHANNEL CALIBRATION.	184 days
TR 3.5.4	Perform CHANNEL CALIBRATION.	24 months

Table 3.5-1 (page 1 of 1)
Chloride Intrusion Monitors

	FUNCTION	REQUIRED CHANNELS	TEST REQUIREMENTS	ALLOWABLE VALUE
1.	Chloride Leak Detectors in the Condenser Hotwell Outlet Headers	4	TR 3.5.1 TR 3.5.2 TR 3.5.4	≤ 2.0 µmhos/cm
2.	Chloride Leak Detector in the Condensate Pump Discharge (Wide Range or Narrow Range)	1	TR 3.5.1 TR 3.5.2 TR 3.5.3	
	a. Wide Range			≤ 10 µmhos/cm
	b. Narrow Range			≤ 0.5 µmhos/cm
3.	Chloride Leak Detector in the Inlet to the Condensate Filter Demineralizer	1	TR 3.5.1 TR 3.5.2 TR 3.5.3	≤ 0.5 µmhos/cm
4.	Chloride Leak Detector in the Inlet to the Deep Bed Demineralizer	1	TR 3.5.1 TR 3.5.2 TR 3.5.3	≤ 0.5 µmhos/cm

3.6 BUS POWER MONITORS

TRMS 3.6 The alarm function of the Emergency Core Cooling System (ECCS) and Reactor Core Isolation Cooling (RCIC) System actuation instrumentation bus power monitors in Table 3.6-1 shall be OPERABLE.

----------NOTE----------
The annunciator function may be removed from operation for performance of troubleshooting for up to 30 minutes provided no work on the associated power supplies is in progress.

APPLICABILITY: According to Table 3.6-1.

COMPENSATORY MEASURES

----------NOTE----------
Separate Condition entry is allowed for each channel.

CONDITION	REQUIRED COMPENSATORY MEASURE	COMPLETION TIME
A. One or more channels inoperable.	A.1 Verify bus power availability to the system's logic.	12 hours AND Once per 12 hours thereafter
B. Required Compensatory Measure and associated Completion Time not met.	B.1 Declare associated supported equipment inoperable.	Immediately

TEST REQUIREMENTS

TEST		FREQUENCY
TR 3.6.1	Perform LOGIC SYSTEM FUNCTIONAL TEST.	24 months

Table 3.6-1 (page 1 of 1)
Bus Power Monitors

	FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER BUS
1.	Core Spray System Bus Power Monitor	1,2,3 4(a),5(a)	1
2.	Low Pressure Coolant Injection (Residual Heat Removal System) Bus Power Monitor	1,2,3 4(a),5(a)	1
3.	High Pressure Cooling Injection System Bus Power Monitor	1,2,3	1
4.	Automatic Depressurization System Bus Power Monitor	1,2(a),3(a)	1
5.	RCIC System Bus Power Monitor	1,2,3	1

(a) When associated subsystems are required to be OPERABLE.

3.7 AUTOMATIC DEPRESSURIZATION SYSTEM (ADS) INHIBIT SWITCH

TRMS 3.7 Two channels of the ADS Inhibit Switch Function shall be OPERABLE.

APPLICABILITY: MODE 1,
MODES 2 and 3 with reactor steam dome pressure > 150 psig.

COMPENSATORY MEASURES

CONDITION	REQUIRED COMPENSATORY MEASURE		COMPLETION TIME
A. One or both ADS Inhibit Switches not in the automatic position.	A.1	Place both ADS Inhibit Switches in the automatic position.	1 hour
	AND		
	A.2	Declare ADS inoperable.	1 hour
B. One or both ADS Inhibit Switch channels inoperable.	B.1	Declare ADS inoperable.	1 hour

TEST REQUIREMENTS

TEST		FREQUENCY
TR 3.7.1	Verify ADS Inhibit Switches are in the automatic position.	24 hours
TR 3.7.2	Perform LOGIC SYSTEM FUNCTIONAL TEST.	24 months

3.8 SUPPRESSION CHAMBER WATER TEMPERATURE INSTRUMENTATION

TRMS 3.8 Two suppression chamber water temperature instrumentation channels shall be OPERABLE with 11 OPERABLE RTD inputs per channel.

----------NOTE----------
The annunciator function may be removed from operation for performance of troubleshooting for up to 30 minutes provided the associated function maintains monitoring capability.

APPLICABILITY: MODE 1, 2 and 3.

COMPENSATORY MEASURES

CONDITION	REQUIRED COMPENSATORY MEASURE	COMPLETION TIME
A. One suppression chamber water temperature instrumentation channel inoperable.	A.1 Restore channel to OPERABLE status.	7 days
B. Two suppression chamber water temperature instrumentation channels inoperable.	B.1 Restore one channel to OPERABLE status.	8 hours
C. Required Compensatory Measure and associated Completion Time not met.	C.1 Verify suppression chamber water temperature is within required limits.	12 hours AND Once per 12 hours thereafter

TEST REQUIREMENTS

TEST		FREQUENCY
TR 3.8.1	Perform CHANNEL CHECK.	24 hours
TR 3.8.2	Perform CHANNEL FUNCTIONAL TEST.	31 days
TR 3.8.3	Perform CHANNEL CALIBRATION. The Allowable Value of the alarm shall be ≤ 95°F.	24 months

3.9 SEISMIC MONITORING INSTRUMENTATION

TRMS 3.9 Seismic monitoring instrumentation in Table 3.9-1 shall be OPERABLE.

APPLICABILITY: At all times.

COMPENSATORY MEASURES

---NOTE---
Separate Condition entry is allowed for each instrument.

CONDITION	REQUIRED COMPENSATORY MEASURE		COMPLETION TIME
A. One or more seismic monitoring instruments inoperable.	A.1	Restore seismic monitoring instrument to OPERABLE status.	31 days
B. Required Compensatory Measure A.1 and associated Completion Time not met.	B.1	Submit a Special Report to the NRC outlining the cause of the malfunction and plans for restoring the instrument to OPERABLE status.	14 days
C. ----------NOTE---------- Required Compensatory Measures C.2 and C.3 shall be completed whenever Condition C is entered. ---------- OBE exceedance light is energized.	C.1	Restore seismic monitoring instrument to OPERABLE status.	24 hours
	AND		
	C.2	Perform TR 3.9.3.	10 days
	AND		
	C.3	Submit a Special Report to the NRC describing the magnitude and frequency spectrum and effect upon facility features important to safety. The magnitude and frequency spectrum of the event shall be based upon data retrieved and analyzed from the actuated instruments.	14 days

TEST REQUIREMENTS

---NOTE---
Refer to Table 3.9-1 to determine which TRs apply to each seismic monitoring instrument.

	TEST	FREQUENCY
TR 3.9.1	Perform CHANNEL CHECK.	31 days
TR 3.9.2	Perform CHANNEL FUNCTIONAL TEST.	184 days
TR 3.9.3	Perform CHANNEL CALIBRATION.	24 months

Table 3.9-1 (page 1 of 1)
Seismic Monitoring Instrumentation

	INSTRUMENTS AND SENSOR LOCATIONS	MEASUREMENT RANGE	REQUIRED INSTRUMENTS	TEST REQUIREMENTS
1.	Passive Triaxial Peak Shock Recorders			
	a. Reactor Building Basement/Equipment Drain Tank (-17' level)	2-25 Hz	1	TR 3.9.3
	b. Reactor Building RHR Heat Exchanger Support (+20' level)	2-25 Hz	1	TR 3.9.3
	c. Reactor Building Refueling Area (+117' level)	2-25 Hz	1	TR 3.9.3
2.	Active Triaxial Accelerometers			
	a. Reactor Building (+89’4” level)	0-1.0g	1	TR 3.9.1 TR 3.9.2 TR 3.9.3
	b. Reactor Building (-17' level)	0-1.0g	1	TR 3.9.1 TR 3.9.2 TR 3.9.3
3.	Active Seismic Recording System			
	a. Control Room	0-1.0g	1	TR 3.9.1 TR 3.9.2 TR 3.9.3

3.10 INTAKE CANAL HIGH WATER LEVEL INSTRUMENTATION

TRMS 3.10 The intake canal high water level instrumentation shall be OPERABLE.

----------NOTE----------
The annunciator function may be removed from operation for performance of troubleshooting for up to 30 minutes provided a method to monitor water level is maintained.

APPLICABILITY: At all times.

COMPENSATORY MEASURES

CONDITION	REQUIRED COMPENSATORY MEASURE	COMPLETION TIME
A. Intake canal high water level instrumentation inoperable.	A.1 Verify intake canal water level is ≤ 17'6" mean sea level USGS datum.	Immediately AND Once per 2 hours thereafter

TEST REQUIREMENTS

TEST		FREQUENCY
TR 3.10.1	Perform CHANNEL FUNCTIONAL TEST.	92 days
TR 3.10.2	Perform CHANNEL CALIBRATION.	24 months

3.11 PRIMARY CONTAINMENT ISOLATION INSTRUMENTATION

TRMS 3.11 The primary containment instrumentation for each Function in Table 3.11-1 shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

COMPENSATORY MEASURES

---NOTE---
Separate Condition entry is allowed for each channel.

CONDITION	REQUIRED COMPENSATORY MEASURE	COMPLETION TIME
A. One or more required channels inoperable.	A.1 ----------NOTE---------- An inoperable channel need not be placed in trip where this would cause the isolation to occur. In this case, if the channel is not restored to OPERABLE status within the 24 hour Completion Time, Condition B must be entered. ---------- Place channel in trip.	24 hours

(continued)

COMPENSATORY MEASURES (continued)

CONDITION	REQUIRED COMPENSATORY MEASURE		COMPLETION TIME
B. Required Compensatory Measure and associated Completion Time not met. OR One or more functions with isolation capability not maintained.	B.1	Restore isolation capability.	1 hour
	OR		
	B.2.1	Prepare a plan to restore channel(s) to OPERABLE status and assign a responsible individual to ensure the restoration plan is carried out.	1 hour
	AND		
	B.2.2	Initiate a condition report.	1 hour

TEST REQUIREMENTS

----------NOTE----------
When a channel is placed in an inoperable status solely for performance of required Tests, entry into associated Conditions and Required Compensatory Measures may be delayed for up to 6 hours provided the associated Function maintains isolation capability.

TEST		FREQUENCY
TR 3.11.1	Perform CHANNEL FUNCTIONAL TEST.	184 days
TR 3.11.2	Perform CHANNEL CALIBRATION.	24 months
TR 3.11.3	Perform LOGIC SYSTEM FUNCTIONAL TEST and simulated automatic operation.	24 months

Table 3.11-1 (page 1 of 1)
Primary Containment Isolation Instrumentation

	FUNCTION	REQUIRED CHANNELS PER TRIP SYSTEM	ALLOWABLE VALUE
1.	Main Steam Line Tunnel Temperature—High (except for Main Steam Isolation Valve Pit instruments)	2[(a)]	≤ 197°F
2.	Turbine Building Area Temperature—High	4[(b)]	≤ 197°F

(a) A channel is OPERABLE if 2 of 3 instruments in the channel are OPERABLE.

(b) A channel is OPERABLE if 2 of 4 instruments in the channel are OPERABLE.

3.12 CONTROL ROOM EMERGENCY VENTILATION (CREV) SYSTEM INSTRUMENTATION

TRMS 3.12 The CREV System instrumentation for each Function in Table 3.12-1 shall be OPERABLE.

APPLICABILITY: According to Table 3.12-1.

COMPENSATORY MEASURES

---NOTE---
Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED COMPENSATORY MEASURE		COMPLETION TIME
A. One or both Chlorine Isolation Functions with one chlorine detector inoperable in one or both associated trip subsystems.	A.1	Restore detector(s) to OPERABLE status.	7 days
B. Required Compensatory Measure and associated Completion Time of Condition A not met.	B.1	Place the CREV System in the chlorine protection mode of operation.	6 hours
C. One or both Chlorine Isolation Functions with two chlorine detectors inoperable in one or both associated trip subsystems.	C.1	Place the CREV System in the chlorine protection mode of operation.	1 hour

(continued)

COMPENSATORY MEASURES (continued)

CONDITION	REQUIRED COMPENSATORY MEASURE		COMPLETION TIME
D. One Control Building Intake Air Duct Detector Inoperable	D.1	Restore detector(s) to OPERABLE status.	7 days
E. Required Compensatory Measure and associated Completion Time of Condition D not met.	E.1	Place CREV System in the radiation/smoke protection mode of operation.	6 hours
F. Both Control Building Intake Air Duct Detectors Inoperable	F.1	Place the CREV System in the radiation/smoke protection mode of operation.	1 hour

TEST REQUIREMENTS

---NOTE---
Refer to Table 3.12-1 to determine which TRs apply for each CREV System Instrumentation Function.

	TEST	FREQUENCY
TR 3.12.1	Perform CHANNEL FUNCTIONAL TEST.	31 days
TR 3.12.2	Perform CHANNEL FUNCTIONAL TEST.	184 days
TR 3.12.3	Perform CHANNEL CALIBRATION.	12 months

Table 3.12-1 (page 1 of 1)
CREV System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED DETECTORS PER TRIP SYSTEM	TEST REQUIREMENTS	ALLOWABLE VALUE
1. Chlorine Isolation				
a. Control Building Air Intake (Local)	(a)	4[(b)]	TR 3.12.1 TR 3.12.3	≤5 ppm
b. Chlorine Tank Car Area (Remote)	(a)	4[(b)]	TR 3.12.1 TR 3.12.3	≤5 ppm
2. Control Room Envelope Smoke Protection				
a. Control Building Intake Air Duct Smoke Detectors	1,2,3,4 5, [(c)]	1	TR 3.12.2	NA

(a) With chlorine tank car within the exclusion area.

(b) Four OPERABLE detectors per Trip System, consisting of two detectors per trip subsystem.

(c) During movement of irradiated fuel assemblies in secondary containment.

3.13 REACTOR COOLANT SYSTEM (RCS) CHEMISTRY

TRMS 3.13 The chemistry of the RCS shall be maintained within the limits of Table 3.13-1.

APPLICABILITY: According to Table 3.13-1.

COMPENSATORY MEASURES

CONDITION	REQUIRED COMPENSATORY MEASURE		COMPLETION TIME
A. Conductivity greater than the limit of Table 3.13-1 but < 10µmhos/cm at 25°C in MODE 1, 2, or 3. OR Chloride concentration greater than the limit of Table 3.13-1 but < 0.5 ppm in MODE 1, 2, or 3.	A.1	Verify by administrative means that operation under this condition shall not exceed 336 hours per year. AND	Immediately
	A.2	----------NOTE---------- TRMS 3.0.4 is not applicable. ---------- Restore chemistry parameter(s) to within limit(s).	24 hours
B. Required Compensatory Measure A.1 and associated Completion Time not met.	B.1	Submit a Special Report to the NRC outlining the cause of the non-compliance, plans for restoring the parameter to within limit, and the impact of the non-compliance on RCS integrity.	14 days

(continued)

COMPENSATORY MEASURES (continued)

CONDITION	REQUIRED COMPENSATORY MEASURE	COMPLETION TIME
C. Required Compensatory Measure A.2 and associated Completion Time not met. OR Conductivity ≥ 10μmhos/cm @ 25°C in MODE 1, 2, or 3. OR Chloride concentration ≥ 0.5 ppm in MODE 1, 2, or 3.	C.1 Be in MODE 3. AND C.2 Be in MODE 4.	12 hours 36 hours
D. Conductivity greater than the limit of Table 3.13-1 in MODE 4 or 5. OR Chloride concentration greater than the limit of Table 3.13-1 in MODE 4 or 5.	D.1 Restore chemistry parameter to within limit.	48 hours

TEST REQUIREMENTS

	TEST	FREQUENCY
TR 3.13.1	----------NOTE---------- Not required to be met if all continuous recording conductivity monitors are inoperable and TR 3.13.2 is satisfied. ---------- Record RCS conductivity.	Continuously
TR 3.13.2	----------NOTE---------- Not required to be met if TR 3.13.1 is satisfied. ---------- Analyze an RCS sample for conductivity.	24 hours
TR 3.13.3	Analyze an RCS sample for conductivity.	72 hours
TR 3.13.4	Analyze an RCS sample for chloride concentration.	72 hours

Table 3.13-1 (page 1 of 1)
RCS Chemistry Limits

	CHEMISTRY PARAMETER	APPLICABLE MODES OR OTHER SPECIFIED CONDITION	LIMIT
1.	Chlorides	1	< 0.5 ppm
		2,3,4,5	< 0.2 ppm
2.	Conductivity	1,2	< 2.0 µmhos/cm @ 25°C
		3,4,5	< 10.0 µmhos/cm @ 25°C

3.14 STRUCTURAL INTEGRITY

TRMS 3.14 The structural integrity of the ASME Code Class 1, 2, 3, MC, and CC components shall be maintained at the level required by applicable acceptance standards.

APPLICABILITY: 1, 2, 3, 4, and 5.

COMPENSATORY MEASURES

CONDITION	REQUIRED COMPENSATORY MEASURE		COMPLETION TIME
A. Requirements of TRMS not met in MODE 1, 2, or 3.	A.1	Determine that the structural integrity non-compliance has not adversely impacted the OPERABILITY of the affected component(s).	48 hours
	OR		
	A.2	Isolate the affected component(s) from service.	48 hours
B. Required Compensatory Measure and associated Completion Time of Condition A not met.	B.1	Be in MODE 3.	12 hours
	AND		
	B.2	Be in MODE 4.	36 hours

(continued)

COMPENSATORY MEASURES (continued)

CONDITION	REQUIRED COMPENSATORY MEASURE		COMPLETION TIME
C. Requirements of TRMS not met in MODE 4 or 5.	C.1	Initiate action to determine that the structural integrity non-compliance has not adversely impacted the OPERABILITY of the affected component(s).	Immediately
	AND		
	C.2.1	Determine that the structural integrity non-compliance has not adversely impacted the OPERABILITY of the affected component(s).	Prior to entering MODE 2 or 3
	OR		
	C.2.2	Isolate the affected component(s) from service.	Prior to entering MODE 2 or 3

TEST REQUIREMENTS

TEST		FREQUENCY
TR 3.14.1	Perform inservice inspection of ASME Section XI Code Class 1, 2, 3, MC, and CC components.	In accordance with the Inservice Inspection Program

3.15 Not used.

3.16 SERVICE WATER SYSTEM OPERABILITY—SHUTDOWN

TRMS 3.16 The Service Water System shall be OPERABLE with:

a. Three OPERABLE site Nuclear Service Water (NSW) pumps and

b. Two OPERABLE Service Water (SW) pumps (any combination of NSW or Conventional Service Water (CSW) pumps) powered from separate emergency buses and capable of supplying the nuclear service water header.

APPLICABILITY: MODES 4 and 5.

COMPENSATORY MEASURES

CONDITION	REQUIRED COMPENSATORY MEASURE		COMPLETION TIME
A. One required NSW pump inoperable due to inoperable Unit 2 nuclear service water header.	----------NOTE---------- TRMS 3.0.4 is not applicable. ----------		
	A.1	Verify by administrative means that two Unit 1 NSW pumps are OPERABLE.	Immediately
	AND		
	A.2	Administratively control nuclear service water header valves to ensure cooling water to the required diesel generators.	Immediately
	AND		
	A.3	Verify two Unit 2 SW pumps are OPERABLE on the conventional service water header.	Immediately
	AND		

(continued)

COMPENSATORY MEASURES (continued)

CONDITION	REQUIRED COMPENSATORY MEASURE		COMPLETION TIME
A. (continued)	A.4	Administratively control valves to isolate OPERABLE CSW pumps and required loads from the inoperable nuclear header. AND	Immediately
	A.5	Restore required NSW pump.	14 days
B. One required NSW pump inoperable for reasons other than Condition A.	B.1	Restore required NSW pump.	7 days
C. Required Compensatory Measure and associated Completion Time of Condition A or B not met. OR Two or more required NSW pumps inoperable.	C.1	Declare required diesel generators inoperable.	Immediately
D. One required SW pump inoperable.	D.1	Restore required SW pump.	7 days
E. Required Compensatory Measure and associated Completion Time of Condition D not met. OR Two required SW pumps inoperable.	E.1	Declare required supported equipment inoperable.	Immediately

TEST REQUIREMENTS

	TEST	FREQUENCY
TR 3.16.1	----------NOTE---------- Isolation of flow to individual components does not render the Service Water System inoperable. ----------	
	Verify each Service Water System manual, power operated, and automatic valve in the flow paths servicing safety related systems or components, that is not locked, sealed, or otherwise secured in position, is in the correct position.	31 days
TR 3.16.2	----------NOTES---------- 1. A single test at the specified Frequency will satisfy this test for both units. 2. Isolation of flow to individual components does not render the Service Water System inoperable. ----------	
	Verify automatic transfer of each diesel generator cooling water supply from the normal service water supply to the alternate service water supply on low diesel generator jacket cooling water supply pressure.	92 days
TR 3.16.3	----------NOTE---------- Isolation of flow to individual components does not render the Service Water System inoperable. ----------	
	Verify each required Service Water System automatic component actuates on an actual or simulated initiation signal.	24 months

TEST REQUIREMENTS (continued)

3.17 SERVICE WATER SYSTEM-SHUTDOWN OPERATIONS

TRMS 3.17 The conventional service water header may be removed from operation by stopping the service water pumps to permit isolating and draining the nuclear service water header for maintenance provided:

a. The conventional service water header is lined up to supply cooling to required ECCS loads;

b. The draining/maintenance on the nuclear service water header will not affect the Conventional Service Water System or the lineup described in TRMS 3.17.a above;

c. Average Reactor Coolant System (RCS) coolant temperature is $\leq 100°F$ at the start of the evolution and the heatup rate is $\leq 10°F$ per hour; and

d. Two dedicated, qualified members of the unit operational staff are assigned to manually initiate the conventional service water pumps in response to:

1. Any event which requires ECCS actuation, or
2. RCS coolant temperature > 180°F, or
3. A loss of offsite power.

APPLICABILITY: MODES 4 and 5 with the nuclear service water header inoperable.

COMPENSATORY MEASURES

CONDITION	REQUIRED COMPENSATORY MEASURE		COMPLETION TIME
A. Requirements of TRMS not met.	A.1	Initiate action to restore conventional service water header to operation.	Immediately
	OR		
	A.2	Initiate action to restore nuclear service water header to OPERABLE status.	Immediately

TEST REQUIREMENTS

TEST		FREQUENCY
TR 3.17.1	Verify the conventional service water header is lined up to supply cooling water for ECCS by verifying that each valve servicing safety related equipment that is not locked in the proper position is administratively controlled in the proper position.	Prior to securing all service water pumps
TR 3.17.2	Verify two way communications between the control room and the service water building.	Prior to securing all service water pumps AND 8 hours thereafter

(continued)

TEST REQUIREMENTS (continued)

TEST		FREQUENCY
TR 3.17.3	Verify RCS coolant temperature is ≤ 180°F.	4 hours

3.18 CONTROL ROOM EMERGENCY VENTILATION (CREV) SYSTEM-SMOKE PROTECTION MODE

TRMS 3.18 The smoke protection mode of the CREV System shall be OPERABLE with two OPERABLE control room emergency filtration subsystems.

APPLICABILITY: MODES 1, 2, 3, 4, and 5,
During movement of irradiated fuel assemblies in the secondary containment.

COMPENSATORY MEASURES

---NOTE---
Required Compensatory Measures to initiate condition reports need not be completed when control room emergency filtration subsystem inoperability is due solely to planned maintenance or surveillance testing.

CONDITION	REQUIRED COMPENSATORY MEASURE		COMPLETION TIME
A. One control room emergency filtration subsystem inoperable.	A.1	Restore control room emergency filtration subsystem to OPERABLE status.	7 days
	OR		
	A.2.1	Prepare a plan to return the control room emergency filtration subsystem to OPERABLE status and assign a responsible individual to ensure the restoration plan is carried out.	7 days
	AND		
	A.2.2	Initiate a condition report.	7 days

(continued)

COMPENSATORY MEASURES (continued)

CONDITION	REQUIRED COMPENSATORY MEASURE		COMPLETION TIME
B. Two control room emergency filtration subsystems inoperable.	B.1	Prepare a plan to return the control room emergency filtration subsystems to OPERABLE status and assign a responsible individual to ensure the restoration plan is carried out.	1 hour
	AND		
	B.2	Initiate a condition report.	1 hour

TEST REQUIREMENTS

TEST		FREQUENCY
TR 3.18.1	Verify the CREV System automatically diverts its inlet flow through the HEPA filters and charcoal adsorber banks of the Control Room Emergency Filtration System on an actual or simulated smoke detection signal.	24 months

3.19 CONTROL ROOM EMERGENCY VENTILATION (CREV) SYSTEM-CHLORINE PROTECTION MODE

TRMS 3.19 The chlorine protection mode of the CREV System shall be OPERABLE.

APPLICABILITY: When the chlorine tank car is located within the exclusion area.

COMPENSATORY MEASURES

CONDITION	REQUIRED COMPENSATORY MEASURE		COMPLETION TIME
A. Chlorine protection mode of the CREV System inoperable for reasons other than inoperable chlorine isolation instrumentation.	A.1	Remove the chlorine tank car from the exclusion area.	8 hours
	OR		
	A.2.1	Prepare a plan to return the chlorine protection mode of the CREV System to OPERABLE status and assign a responsible individual to ensure the restoration plan is carried out.	8 hours
	AND		
	A.2.2	----------NOTE---------- Condition report need not be generated when inoperability is due solely to planned maintenance or surveillance testing. ---------- Initiate a condition report.	8 hours

TEST REQUIREMENTS

	TEST	FREQUENCY
TR 3.19.1	Verify the CREV System automatically isolates on an actual or simulated chlorine detection signal and the Control Room Emergency Filtration System cannot be started by an actual or simulated smoke or radiation detection signal.	24 months

3.20 FLOOD PROTECTION

TRMS 3.20 Intake canal water level shall be ≤ 17'6" Mean Sea Level USGS datum.

APPLICABILITY: At all times.

COMPENSATORY MEASURES

CONDITION	REQUIRED COMPENSATORY MEASURE		COMPLETION TIME
A. Intake canal water not within limit.	A.1	Initiate applicable emergency procedure to mitigate consequences of flooding vital equipment.	Immediately
	AND		
	A.2.	Be in MODE 3.	12 hours
	AND		
	A.3	Be in MODE 4.	36 hours

TEST REQUIREMENTS

TEST		FREQUENCY
TR 3.20.1	----------NOTE---------- Not required to be performed when intake canal water level is < 15'0" mean sea level USGS datum. ----------	
	Verify intake canal water level is ≤ 17'6" mean sea level USGS datum.	2 hours

3.21 SNUBBERS

TRMS 3.21 All hydraulic and mechanical snubbers shall be OPERABLE.

APPLICABILITY: When associated systems are required to be OPERABLE.

COMPENSATORY MEASURES

CONDITION	REQUIRED COMPENSATORY MEASURE		COMPLETION TIME
A. ----------NOTE---------- Required Compensatory Measure A.1 shall be completed if this Condition is entered. ---------- One or more snubbers inoperable that are associated with only one train or subsystem of a multiple train or subsystem supported system or are associated with a single train or subsystem supported system.	A.1	Determine snubber failure mode and that supported system is acceptable for continued operation.	72 hours
	AND		
	A.2	Restore snubber to OPERABLE status.	72 hours
B. ----------NOTE---------- Required Compensatory Measure B.1 shall be completed if this Condition is entered. ---------- One or more snubbers inoperable that are associated with more than one train or subsystem of a multiple train or subsystem supported system.	B.1	Determine snubber failure mode and that supported system is acceptable for continued operation.	72 hours
	AND		
	B.2	Restore snubber to OPERABLE status.	12 hours
C. Required Compensatory Measure and associated Completion Time not met.	C.1	Declare associated system(s) inoperable.	Immediately

TEST REQUIREMENTS

	TEST	FREQUENCY
TR 3.21.1	Perform snubber testing in accordance with the snubber test program portion of the ISI Program.	In accordance with the ISI Program
TR 3.21.2	----------NOTE---------- The first inspection interval determined using Table 3.21-1 criteria shall be based on the previous inspection intervals established by the requirements in effect before Technical Specification Amendment 182 was issued. ---------- Perform visual inspection of snubbers based on the criteria for each category in Table 3.21-1 to verify: a. No indications of damage or impaired OPERABILITY; b. Attachments to foundations or supporting structure are functional; and c. Fasteners for the snubber attachment to the component and to the snubber anchorage are functional.	In accordance with Table 3.21-1

(continued)

TEST REQUIREMENTS (continued)

TEST	FREQUENCY
TR 3.21.3 ----------NOTES---------- 1. This Test shall not be performed in MODE 1 or 2. 2. The representative sample selected for functional testing shall include various configurations, operating environment, sizes, and capacities of snubbers. 3. The sample to be used to perform TR 3.21.3 shall be randomly selected from the snubbers of each type prior to the test and cannot be changed during the test. 4. The NRC Regional Administrator shall be notified in writing of the sample plan selected prior to the test or the sample plan used for the previous test shall be implemented. ---------- a. Perform an in-place or bench functional test of a representative sample of each type (snubbers of the same design and manufacturer, irrespective of capacity) of snubber using one of the following sample plans (1, 2, or 3). 1) At least 10% of the total of each type of snubber shall be functionally tested. For each snubber of a type that does not meet the required functional test acceptance criteria, an additional 10% of that type of snubber shall be tested until no more failures are found or until all snubbers of that type have been functionally tested.	24 months

(continued)

TEST REQUIREMENTS

TEST			FREQUENCY
TR 3.21.3	(continued)		
		2) A representative sample of each type of snubber shall be functionally tested in accordance with Figure 3.21-1. "C" is the total number of snubbers of a type found not meeting the required functional test acceptance criteria. The cumulative number of snubbers of a type tested is denoted by "N". Subsequent to the first functional test failure, at the end of each day's testing, the new values of "N" and "C" (previous day's total plus current day's increments) shall be plotted on Figure 3.21-1. If at any time the point plotted falls in the "Reject" region, all snubbers of that type shall be functionally tested. If at any time the point plotted falls in the "Accept" region, testing of snubbers of that type may be terminated. When the point plotted lies in the "Continue Testing" region, additional snubbers of that type shall be tested until the point falls in the "Accept" region or the "Reject" region, or all the snubbers of that type have been tested. Testing equipment failure during functional testing may invalidate that day's testing and allow that day's testing to resume anew at a later time providing all snubbers tested with the failed equipment are retested.	
			(continued)

TEST REQUIREMENTS

TEST	FREQUENCY
TR 3.21.3 (continued) 3) An initial representative sample of 55 snubbers shall be functionally tested. For each snubber type which does not meet the required functional test acceptance criteria, another sample of at least 1/2 the size of the initial sample shall be tested until the total number tested is equal to the initial sample size multiplied by the factor, 1 + C/2, where "C" is the number of snubbers found which do not meet the required functional test acceptance criteria. The results from this sample plan shall be plotted using an "Accept" line which follows the equation N = 55 (1 + C/2). Each snubber point should be plotted as soon as the snubber is tested. If the point falls above the "Accept" line, testing must continue until the point falls in the "Accept" region, or all the snubbers of that type have been tested. If additional sampling is required due to functional test failure of only one type of snubber, the test results shall be reviewed to determine if additional samples should be limited only to the type of snubber which has failed the functional testing.	(continued)

TEST REQUIREMENTS

TEST		FREQUENCY
TR 3.21.3	(continued) b. An engineering evaluation shall be made of each failure to meet the functional test acceptance criteria to determine the cause of the failure. The results of this evaluation shall be used, if applicable, in selecting snubbers to be tested in an effort to determine the OPERABILITY of other snubbers, irrespective of type, which may be subject to the same failure mode. c. Snubber functional test acceptance criteria shall be: 1) Activation (restraining action) achieved within the specified range in both tension and compression; 2) Snubber bleed, or release rate where required, present in both tension and compression, within the specified range; 3) Where required, the force required to initiate or maintain motion of the snubber within the specified range in both directions of travel; and 4) For snubbers specifically required not to displace under continuous load, the ability of the snubber to withstand load without displacement. Testing methods may be used to measure parameters indirectly or parameters other than those specified, if those results can be correlated to the specified parameters through established methods.	

(continued)

TEST REQUIREMENTS (continued)

	TEST	FREQUENCY
TR 3.21.4	----------NOTES---------- 1. Only required to be performed if a snubber either fails to lock up or move and the failure is determined to be caused by manufacturing or design deficiency. 2. This testing is independent of the requirements of TR 3.21.3. ---------- Perform in-place or bench functional test of all snubbers subject to the same design deficiency. The functional test acceptance criteria shall be as specified in TR 3.21.3.	24 months
TR 3.21.5	----------NOTE---------- This testing is independent of the requirements of TR 3.21.3. ---------- Perform in-place or bench functional test of all snubbers in the same location as snubbers which failed during the previous testing cycle. The functional test acceptance criteria shall be as specified in TR 3.21.3.	24 months

(continued)

TEST REQUIREMENTS (continued)

	TEST	FREQUENCY
TR 3.21.6	----------NOTES---------- 1. The maximum expected service life for various snubber seals, springs, and other critical parts shall be determined and established based on engineering information and shall be extended or shortened based on monitored test results and failure history. 2. Parts replacements shall be documented and documentation retained in accordance with Quality Assurance recordkeeping requirements. ----------	
	Verify no snubber service life shall be exceeded in the next 24 month cycle by monitoring of snubber service life. OR Replace the snubber critical parts or re-evaluate the snubber service life so the service life will not be exceeded in the next 24 month cycle.	24 months

(continued)

TEST REQUIREMENTS (continued)

	TEST	FREQUENCY
TR 3.21.7	----------NOTE---------- Only required to be performed for snubbers attached to sections of systems that have experienced unexpected, potentially damaging transients as determined by review of operational data and visual inspection. ---------- Perform a visual inspection of all affected hydraulic and mechanical snubbers and verify freedom of motion of mechanical snubbers using one of the following methods (a, b, or c): a. Manually induced snubber movement; b. Evaluation of in-place snubber piston setting; or c. Stroking the mechanical snubber through its full range of travel. The visual inspection acceptance criteria shall be as specified in TR 3.21.2.	Once within 6 months following an unexpected, potentially damaging transient as determined from operational data review and visual inspection

Table 3.21-1 (Page 1 of 2)
Snubber Visual Inspection Interval

POPULATION OR CATEGORY (a)(b)	NUMBER OF UNACCEPTABLE SNUBBERS COLUMN A EXTEND INTERVAL (c)(f)(g)	NUMBER OF UNACCEPTABLE SNUBBERS COLUMN B REPEAT INTERVAL (d)(f)(g)	NUMBER OF UNACCEPTABLE SNUBBERS COLUMN C REDUCE INTERVAL (e)(f)(g)
1	0	0	1
80	0	0	2
100	0	1	4
150	0	3	8
200	2	5	13
300	5	12	25
400	8	18	36
500	12	24	48
750	20	40	78
1000 or greater	29	56	109

(a) The next visual inspection interval for a snubber population or category size shall be determined based upon the previous inspection interval and the number of unacceptable snubbers found during that interval. Snubbers may be categorized, based upon their accessibility during power operation, as accessible or inaccessible. These categories may be examined separately or jointly. However, the licensee must make and document that decision before any inspection and shall use that decision as the basis upon which to determine the next inspection interval for that category.

(b) Interpolation between population or category sizes and the number of unacceptable snubbers is permissible. Use next lower integer for the value of the limit for Columns A, B, or C if that integer includes a fractional value of unacceptable snubbers as determined by interpolation.

Table 3.21-1 (Page 2 of 2)
Snubber Visual Inspection Interval

(c) If the number of unacceptable snubbers is equal to or less than the number in Column A, the next inspection interval may be twice the previous interval but not greater than 48 months.

(d) If the number of unacceptable snubbers is equal to or less than the number in Column B but greater than the number in Column A, the next inspection interval shall be the same as the previous interval.

(e) If the number of unacceptable snubbers is equal to or greater than the number in Column C, the next inspection interval shall be two-thirds of the previous interval. However, if the number of unacceptable snubbers is less than the number in Column C but greater than the number in Column B, the next interval shall be reduced proportionally by interpolation, that is, the previous interval shall be reduced by a factor that is one-third of the ratio of the difference between the number of unacceptable snubbers found during the previous interval and the number in Column B to the difference in the numbers in Columns B and C.

(f) The provisions of TR 3.0.2 are applicable for all inspection intervals up to and including 48 months.

(g) Snubbers which appear to be inoperable as a result of visual inspections shall be classified as unacceptable and may be reclassified acceptable for the purpose of establishing the next visual inspection interval, providing that 1) the cause of the rejection is clearly established and remedied for that particular snubber and for other generically susceptible snubbers and 2) the affected snubber is functionally tested in the as found condition and determined OPERABLE per TR 3.21.3.c. All snubbers found connected to an inoperable common hydraulic fluid reservoir shall be counted as unacceptable for determining the next interval. A review and evaluation shall be performed and documented to justify continued operation with an unacceptable snubber. If continued operation can not be justified, the snubber shall be declared inoperable.

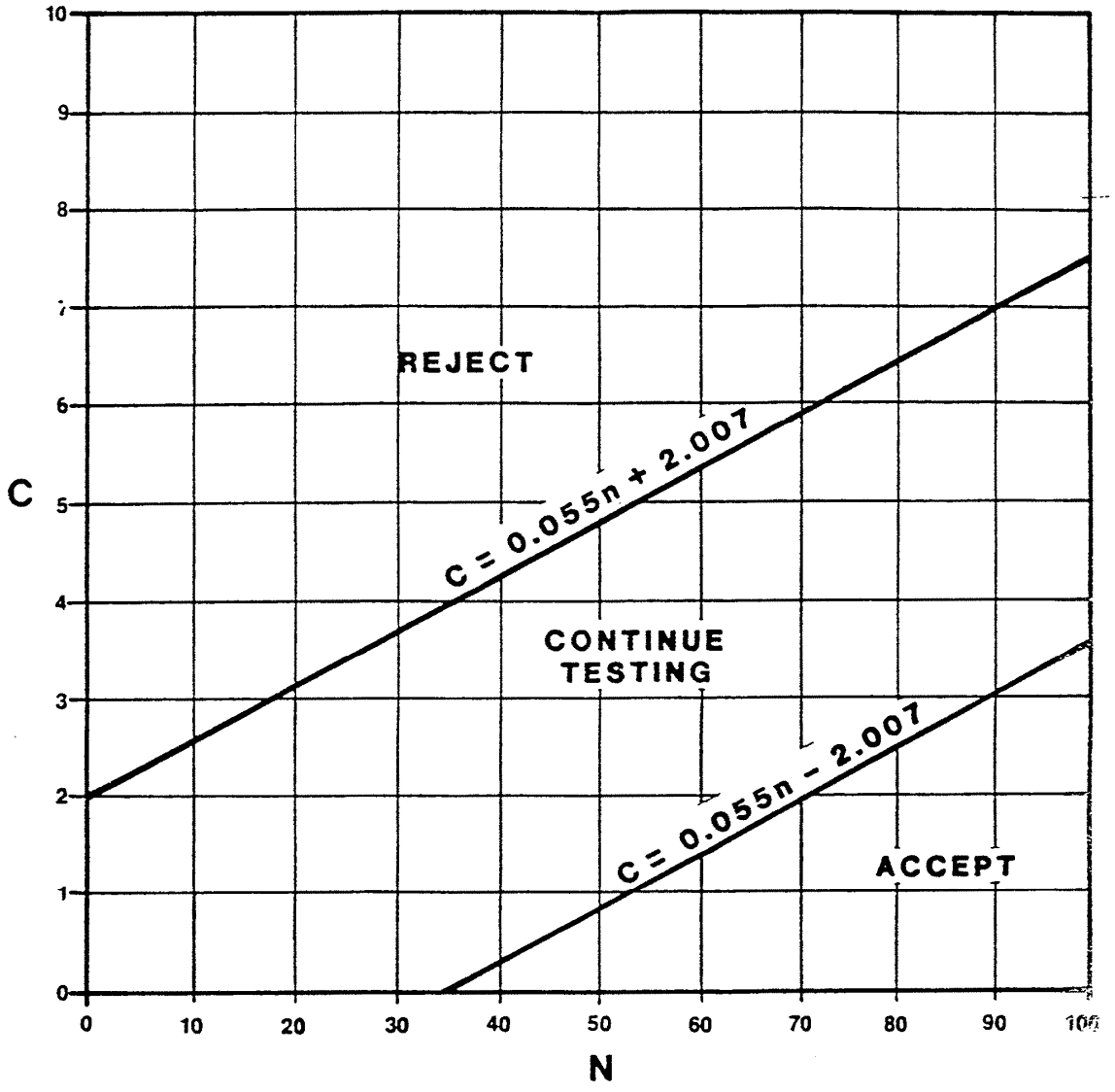


Figure 3.21-1 (page 1 of 1)
Snubber Functional Test Sample Plan 2

3.22 SEALED SOURCE CONTAMINATION

TRMS 3.22 Each sealed source containing radioactive material in excess of 100µCi of beta and/or gamma emitting material or in excess of 5µCi of alpha emitting material shall have < 0.005µCi of removable contamination.

APPLICABILITY: At all times.

COMPENSATORY MEASURES

---NOTE---
Separate Condition entry is allowed for each sealed source.

CONDITION	REQUIRED COMPENSATORY MEASURE		COMPLETION TIME
A. One or more sealed sources with removable contamination ≥ 0.005µCi.	A.1	Withdraw the sealed source from use.	Immediately
	AND		
	A.2.1	Initiate action to decontaminate and repair the sealed source.	Immediately
	OR		
	A.2.2	Initiate action to dispose of the sealed source in accordance with NRC regulations.	Immediately
	AND		
	A.3	Submit a Special Report to the NRC.	12 months

TEST REQUIREMENTS

----------NOTES----------

1. Tests for leakage and/or contamination shall be performed by the licensee or other persons specifically authorized by the NRC or an Agreement State.
2. The test method shall have a detection sensitivity of ≤ 0.005µCi per test sample.

	TEST	FREQUENCY
TR 3.22.1	----------NOTES---------- 1. Startup sources and fission detectors previously subjected to core flux are excluded. 2. Sealed sources and fission detector sources that are stored and not being used are excluded. ---------- Perform testing for leakage and/or contamination for each sealed source containing radioactive material with a half-life > 30 days and in any form other than gas, excluding hydrogen 3.	184 days
TR 3.22.2	----------NOTE---------- Not required to be performed if performed within the previous 184 days. ---------- Perform testing for leakage for each sealed source and fission detector source that is stored and not in use.	Prior to use or transfer to another licensee
TR 3.22.3	Perform testing of sealed sources transferred without a certificate indicating the last test date.	Prior to use

(continued)

TEST REQUIREMENTS (continued)

	TEST	FREQUENCY
TR 3.22.4	----------NOTE---------- Not required to be performed for sealed startup sources or fission detectors that are continuously enclosed within a shielded mechanism. ----------	
	Perform leak testing of each sealed startup source and fission detector.	Once within 31 days prior to being subjected to core flux AND Once within 31 days prior to being installed in the core following any repair or maintenance

3.23 DECAY TIME

TRMS 3.23 The reactor shall be subcritical for ≥ 24 hours.

APPLICABILITY: During movement of irradiated fuel in the reactor pressure vessel.

COMPENSATORY MEASURES

CONDITION	REQUIRED COMPENSATORY MEASURE	COMPLETION TIME
A. Reactor subcritical < 24 hours.	A.1 Suspend movement of irradiated fuel in the reactor pressure vessel.	Immediately

TEST REQUIREMENTS

TEST		FREQUENCY
TR 3.23.1	Determine the reactor has been subcritical for ≥ 24 hours by verification of the date and time of subcriticality.	Prior to movement of irradiated fuel in the reactor pressure vessel

3.24 COMMUNICATIONS

TRMS 3.24 Direct communications shall be maintained between the control room and refueling platform personnel.

APPLICABILITY: During CORE ALTERATIONS, except normal control rod movement.

COMPENSATORY MEASURES

CONDITION	REQUIRED COMPENSATORY MEASURE	COMPLETION TIME
A. Direct communications between control room and refueling platform personnel not maintained.	A.1 Suspend CORE ALTERATIONS except for normal control rod movement.	Immediately

TEST REQUIREMENTS

TEST		FREQUENCY
TR 3.24.1	Verify the availability of direct communications between the control room and refueling platform personnel.	12 hours

3.25 CRANE AND HOIST OPERABILITY

TRMS 3.25 All cranes and hoists used for handling fuel assemblies and control rods within the reactor pressure vessel (RPV) shall be OPERABLE.

APPLICABILITY: During movement of fuel assemblies or control rods within the RPV using cranes or hoists.

COMPENSATORY MEASURES

CONDITION	REQUIRED COMPENSATORY MEASURE	COMPLETION TIME
A. Requirements of TRMS not met.	A.1 Suspend use of any inoperable crane and hoist from operations involving movement of fuel assemblies or control rods in the RPV after placing the load in a safe location.	Immediately

TEST REQUIREMENTS

	TEST	FREQUENCY
TR 3.25.1	Demonstrate operation of the overload cutoff of each crane or hoist to be used for movement of fuel assemblies or control rods within the RPV: a. When the load is ≤ 1600 lbs for the mast fuel gripper; and b. When the load is ≤ 1050 lbs for all other cranes and hoists.	Once within 7 days prior to start of movement of fuel assemblies or control rods within the RPV using the associated crane or hoist, if not performed within the previous 30 days.
TR 3.25.2	Demonstrate operation of the loaded interlock of each crane or hoist to be used for movement of fuel assemblies or control rods within the RPV: a. When the load is ≤ 750 lbs for the mast fuel gripper; and b. When the load is ≤ 350 lbs for all other cranes and hoists.	Once within 7 days prior to start of movement of fuel assemblies or control rods within the RPV using the associated crane or hoist, if not performed within the previous 30 days.

(continued)

TEST REQUIREMENTS (continued)

	TEST	FREQUENCY
TR 3.25.3	Demonstrate operation of the slack cable cutoff of the mast fuel gripper when the load is < 50 ± 25 lbs.	Once within 7 days prior to start of movement of fuel assemblies or control rods within the RPV using the mast fuel gripper, if not performed within the previous 30 days.
TR 3.25.4	Perform a load test of ≥ 1000 lbs of each crane or hoist to be used for movement of fuel assemblies or control rods within the RPV.	Once within 7 days prior to start of movement of fuel assemblies or control rods within the RPV using the associated crane or hoist, if not performed within the previous 30 days.

(continued)

TEST REQUIREMENTS (continued)

	TEST	FREQUENCY
TR 3.25.5	Demonstrate operation of the uptravel stop of each crane or hoist (other than the mast fuel gripper) to be used for movement of fuel assemblies or control rods within the RPV when uptravel would bring the top of active fuel to 7 ft below the normal spent fuel pool water level.	Once within 7 days prior to start of movement of fuel assemblies or control rods within the RPV using the associated crane or hoist, if not performed within the previous 30 days.

3.26 CRANE TRAVEL—SPENT FUEL STORAGE POOL

TRMS 3.26 Loads > 1600 lbs shall be prohibited from travel over fuel assemblies in the spent fuel pool storage racks.

APPLICABILITY: When fuel assemblies are in the spent fuel pool storage racks.

COMPENSATORY MEASURES

CONDITION	REQUIRED COMPENSATORY ACTION	COMPLETION TIME
A. Requirements of TRMS not met.	A.1 Place the load in a safe condition.	Immediately

TEST REQUIREMENTS

TEST	FREQUENCY
TR 3.26.1 Verify loads, other than fuel assemblies, are ≤ 1600 lbs.	Prior to movement of loads over fuel assemblies in the spent fuel pool storage racks

4.0 Not used.

5.0 PROGRAMS AND MANUALS

5.5.1 Offsite Dose Calculation Manual

Technical Specification 5.5.1, "Offsite Dose Calculation Manual," is implemented by the Brunswick Steam Electric Plant Off-Site Dose Calculation Manual.

5.5.2 Primary Coolant Sources Outside Containment

Technical Specification 5.5.2, "Primary Coolant Sources Outside Containment," requires controls be provided to minimize leakage from those portions of systems outside containment that could contain highly radioactive fluids during a serious transient or accident to levels as low as practicable. The program is implemented by the following procedures:

0PT-07.2.4A,
0PT-07.2.4B,
0PT-08.2.2C,
0PT-08.2.2B,
0PT-09.2,
0PT-10.1.1, and
0PT-14.6.

5.5.3 Deleted.

(continued)

5.0 PROGRAMS AND MANUALS (continued)

5.5.4 Radioactive Effluent Controls Program

Technical Specification 5.5.4, "Radioactive Effluent Controls Program," requires controls be established to conform with 10 CFR 50.36a for control of radioactive effluents and for maintaining doses to members of the public from radioactive effluents as low as reasonably achievable. This program is implemented through Section 7.0 of the Brunswick Steam Electric Plant Off-Site Dose Calculation Manual.

5.5.5 Component Cyclic or Transient Limit Program

Technical Specification 5.5.5, "Component Cyclic or Transient Limit," requires controls be provided to track the UFSAR, Table 5.3.3-2 cyclic and transient occurrences to ensure that components are maintained within design limits. The program is implemented by the following procedure:

0ENP-44.

5.5.6 Inservice Testing Program

Technical Specification 5.5.6, "Inservice Testing Program," requires controls be established for inservice testing of ASME Code Class 1, 2, and 3, components. This program is implemented by the following:

0ENP-17 and the applicable procedures that implement ASME OM Code requirements.

5.5.7 Ventilation Filter Testing Program (VFTP)

Technical Specification 5.5.7, "Ventilation Filter Testing Program (VFTP)," requires testing of the Engineered Safety Feature filter ventilation systems for the following Technical Specification systems:

Control Room Emergency Ventilation System and Standby Gas Treatment System.

(continued)

5.0 PROGRAMS AND MANUALS

5.5.7 Ventilation Filter Testing Program (VFTP) (continued)

The program is implemented by the following procedures:

2PT-15.1.1A,
2PT-15.1.1B,
2PT-15.1.2A,
2PT-15.1.2B,
0PT-17.0, and
0PT-21.1

In addition, laboratory analysis required by Technical Specification 5.5.7.c must be completed within 31 days after removal of a representative carbon sample.

5.5.8 Explosive Gas and Storage Tank Radioactivity Monitoring Program

Technical Specification 5.5.8, "Explosive Gas and Storage Tank Radioactivity Monitoring Program," requires controls be provided for potentially explosive gas mixtures contained in the Main Condenser Offgas Treatment System and the quantity of radioactivity contained in the unprotected outdoor storage tanks. The program is implemented by ODCMS 7.3.6, "Liquid Holdup Tanks," ODCMS 7.3.12, "Explosive Gas Mixtures," and procedures 0E&RC-1000 and 0E&RC-1222.

5.5.9 Diesel Fuel Oil Testing Program

Technical Specification 5.5.9, "Diesel Fuel Oil Testing Program," requires testing requirements be provided for new fuel oil and stored fuel oil and includes sampling requirements and acceptance criteria. The program is implemented by the following procedures:

0E&RC-1010,
0E&RC-1142,
0E&RC-1141,
0E&RC-1138, and
0E&RC-1020.

(continued)

5.0 PROGRAMS AND MANUALS (continued)

5.5.10 Technical Specification Bases Control Program

Technical Specification 5.5.10, "Technical Specification Bases Control Program," requires means be provided for processing changes to the Bases of the Technical Specifications. The program is implemented by the following procedure:

0AP-019.

5.5.11 Safety Function Determination Program

Technical Specification 5.5.11, "Safety Function Determination Program," requires means be provided to ensure a loss of function is detected and appropriate actions taken. The program is implemented by Appendix F of the Technical Requirements Manual.

5.5.12 Primary Containment Leakage Rate Testing Program

Technical Specification 5.5.12, "Primary Containment Leakage Rate Testing Program," requires implementation of leakage rate testing of the primary containment as required by 10 CFR 50.54(o) and 10 CFR 50, Appendix J, Option B as modified by approved exemptions. The program is implemented by the following:

0PT-20.3,
0PT-20.3b,
0PT-20.3c,
0PT-20.5,
0PT-20.5.1,
0ENP-16.4, and
0ENP-16.8.

(continued)

5.0 PROGRAMS AND MANUALS (continued)

5.5.13 Control Room Envelope Habitability Program

Technical Specification 5.5.13, "Control Room Envelope Habitability Program," requires controls be established and testing performed to ensure habitability of the control room envelope is maintained following a radiological event, hazardous chemical release, or a smoke challenge. The program is implemented by the following:

0ENP-54
0MST-CREV22
0OI-01.01
0PT-23.1
0PT-23.1.1
0PT-23.1.2
0PT-23.1.3
0PT-46.5
0PT-34.2.2.1
0PT-46.4
0PT-26.0

5.5.14 Configuration Risk Management Program

The Configuration Risk Management Program (CRMP) provides a proceduralized risk-informed assessment to manage the risk associated with equipment inoperability. The program applies to Technical Specification structures, systems, or components for which a risk-informed allowed outage time has been granted (i.e., Technical Specification 3.8.1, Condition B). The program shall include the following elements:

a. Provisions for the control and implementation of a Level 1 at-power internal events PRA-informed methodology. The assessment shall be capable of evaluating the applicable plant configuration. (0AP-025)

b. Provisions for performing an assessment prior to entering the Limiting Condition for Operation (LCO) Action for preplanned activities. (0AP-025)

c. Provisions for performing an assessment after entering the LCO Action for unplanned entry into the LCO Action. (0AP-025)

(continued)

5.0 PROGRAMS AND MANUALS

5.5.14 Configuration Risk Management Program (continued)

d. Provision for assessing the need for additional actions after the discovery of additional equipment out of service conditions while in the LCO Action. (0AP-025)

e. Provisions for considering other applicable risk significant contributors such as Level 2 issues and external events, qualitatively or quantitatively. (0AP-025, ADM-NGGC-0101, 0AI-068, and 0PEP-02.6)

5.5.15 Inservice Inspection Program

This program provides controls for inservice inspection of ASME Code Class 1, 2, and 3 components and their supports, and Class MC (i.e., metal containment) and CC (i.e., concrete containment) components. This program is implemented by the following:

0ENP-16 and the applicable procedures that implement ASME Section XI requirements.

B 3.0 TECHNICAL REQUIREMENTS MANUAL SPECIFICATION (TRMS) APPLICABILITY

BASES

TRMSs

TRMS 3.0.1 through TRMS 3.0.5 establish the general requirements applicable to all Specifications and apply at all times, unless otherwise stated.

TRMS 3.0.1

TRMS 3.0.1 establishes the Applicability statement within each individual TRMS as the requirement for when the TRMS is required to be met (i.e., when the unit is in the MODES or other specified conditions of the Applicability statement of each TRMS).

TRMS 3.0.2

TRMS 3.0.2 establishes that upon discovery of a failure to meet a TRMS, the associated COMPENSATORY MEASURES shall be met. The Completion Time of each Required Compensatory Measure for a COMPENSATORY MEASURES Condition is applicable from the point in time that a COMPENSATORY MEASURES Condition is entered. The Required Compensatory Measures establish those remedial measures that must be taken within specified Completion Times when the requirements of a TRMS are not met. This TRMS establishes that:

a. Completion of the Required Compensatory Measures within the specified Completion Times constitutes compliance with a TRMS; and

b. Completion of the Required Compensatory Measures is not required when a TRMS is met within the specified Completion Time, unless otherwise specified.

There are two basic types of Required Compensatory Measures. The first type of Required Compensatory Measure specifies a time limit in which the TRMS must be met. This time limit is the Completion Time to restore an inoperable system or component to OPERABLE status or to restore variables to within specified limits. If this type of Required Compensatory Measure is not completed within the specified Completion Time, a shutdown may be required to place the unit in a MODE or condition in which the TRMS is not applicable. (Whether stated as a Required Compensatory

(continued)

TRMS 3.0.2 (continued)

Measure or not, correction of the entered Condition is a compensatory measure that may always be considered upon entering COMPENSATORY MEASURES.) The second type of Required Compensatory Measure specifies the remedial measures that permit continued operation of the unit that is not further restricted by the Completion Time. In this case, compliance with the Required Compensatory Measures provides an acceptable level of safety for continued operation.

Completing the Required Compensatory Measures is not required when a TRMS is met or is no longer applicable, unless otherwise stated in the individual TRMSs.

The nature of some Required Compensatory Measures of some Conditions necessitates that, once the Condition is entered, the Required Compensatory Measures must be completed even though the associated Condition no longer exists. The individual TRMS's COMPENSATORY MEASURES specify the Required Compensatory Measures where this is the case. An example of this is in TRMS 3.21, "Snubbers."

The Completion Times of the Required Compensatory Measures are also applicable when a system or component is removed from service intentionally. The reasons for intentionally relying on the COMPENSATORY MEASURES include, but are not limited to, performance of Tests, preventive maintenance, corrective maintenance, or investigation of operational problems. Entering COMPENSATORY MEASURES for these reasons must be done in a manner that does not compromise safety. Intentional entry into COMPENSATORY MEASURES should not be made for operational convenience. Alternatives that would not result in redundant equipment being inoperable should be used instead. Doing so limits the time both subsystems/divisions of a safety function are inoperable. Individual TRMSs may specify a time limit for performing a TR when equipment is removed from service or bypassed for testing. In this case, the Completion Times of the Required Compensatory Measures are applicable when this time limit expires, if the equipment remains removed from service or bypassed.

When a change in MODE or other specified condition is required to comply with Required Compensatory Measures, the unit may enter a MODE or other specified condition in which another TRMS becomes applicable. In this case, the

(continued)

BASES

TRMS 3.0.2 (continued)

Completion Times of the associated Required Compensatory Measures would apply from the point in time that the new TRMS becomes applicable and the COMPENSATORY MEASURES Condition(s) are entered.

TRMS 3.0.3

Not used.

TRMS 3.0.4

TRMS 3.0.4 establishes limitations on changes in MODES or other specified conditions in the Applicability when a TRMS is not met. It precludes placing the unit in a MODE or other specified condition stated in that Applicability (e.g., Applicability desired to be entered) when the following exist:

a. Unit conditions are such that the requirements of the TRMS would not be met in the Applicability desired to be entered; and

b. Continued noncompliance with the TRMS requirements, if the Applicability were entered, would result in the unit being required to exit the Applicability desired to be entered to comply with the Required Compensatory Measures.

Compliance with Required Compensatory Measures that permit continued operation of the unit for an unlimited period of time in a MODE or other specified condition provides an acceptable level of safety for continued operation. This is without regard to the status of the unit before or after the MODE change. Therefore, in such cases, entry into a MODE or other specified condition in the Applicability may be made in accordance with the provisions of the Required Compensatory Measures. The provisions of this Specification should not be interpreted as endorsing the failure to exercise the good practice of restoring systems or components to OPERABLE status before unit startup.

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

(continued)

BASES

TRMS 3.0.4 (continued)

Exceptions to TRMS 3.0.4 are stated in the individual Tests. Exceptions may apply to all the COMPENSATORY MEASURES or to a specific Required Compensatory Measure of a TRMS.

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

TRMS 3.0.5

TRMS 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 COMPENSATORY MEASURES. The sole purpose of this TRMS is to provide an exception to TRMS 3.0.2 (e.g., to not comply with the applicable Required Compensatory Measure(s)) to allow the performance of TRs to demonstrate:

a. The OPERABILITY of the equipment being returned to service; or

b. The OPERABILITY of other equipment.

The administrative controls ensure the time the equipment is returned to service in conflict with the requirements of the COMPENSATORY MEASURES is limited to the time absolutely necessary to perform the allowed TRs. This TRMS does not provide time to perform any other preventive or corrective maintenance.

An example of demonstrating the OPERABILITY of the equipment being returned to service is taking an inoperable channel or trip system out of the tripped condition after it has been tripped to comply with Required Compensatory Measures since it must be untripped to perform the TRs.

An example of demonstrating the OPERABILITY of other equipment is taking an inoperable channel or trip system out of the tripped condition to prevent the trip function from

(continued)

TRMS 3.0.5 (continued)

occurring during the performance of a TR on another channel in the other trip system. A similar example of demonstrating the OPERABILITY of other equipment is taking an inoperable channel or trip system out of the tripped condition to permit the logic to function and indicate the appropriate response during the performance of a TR on another channel in the same trip system.

B 3.0 TEST REQUIREMENT (TR) APPLICABILITY

BASES

TRs

TR 3.0.1 through TR 3.0.4 establish the general requirements applicable to all TRMSs and apply at all times, unless otherwise stated.

TR 3.0.1

TR 3.0.1 establishes the requirement that TRs must be met during the MODES or other specified conditions in the Applicability for which the requirements of the TRMS apply, unless otherwise specified in the individual TRs. This TRMS is to ensure that Tests are performed to verify the OPERABILITY of systems and components, and that variables are within specified limits. Failure to meet a Test within the specified Frequency, in accordance with TR 3.0.2, constitutes a failure to meet a TRMS.

Systems and components are assumed to be OPERABLE when the associated TRs have been met. Nothing in this TRMS, however, is to be construed as implying that systems or components are OPERABLE when:

a. The systems or components are known to be inoperable, although still meeting the TRs; or

b. The requirements of the Test(s) are known to be not met between required Test performances.

Tests do not have to be performed when the unit is in a MODE or other specified condition for which the requirements of the associated TRMS are not applicable, unless otherwise specified.

Tests, including Tests invoked by Required Compensatory Measures, do not have to be performed on inoperable equipment because the COMPENSATORY MEASURES define the remedial measures that apply. Tests have to be met and performed in accordance with TR 3.0.2, prior to returning equipment to OPERABLE status.

(continued)

BASES

TR 3.0.1 (continued)

Upon completion of maintenance, appropriate post maintenance testing is required to declare equipment OPERABLE. This includes ensuring applicable Tests are not failed and their most recent performance is in accordance with TR 3.0.2. Post maintenance testing may not be possible in the current MODE or other specified conditions in the Applicability due to the necessary unit parameters not having been established. In these situations, the equipment may be considered OPERABLE provided testing has been satisfactorily completed to the extent possible and the equipment is not otherwise believed to be incapable of performing its function. This will allow operation to proceed to a MODE or other specified condition where other necessary post maintenance tests can be completed.

TR 3.0.2

TR 3.0.2 establishes the requirements for meeting the specified Frequency for Tests and any Required Compensatory Measure with a Completion Time that requires the periodic performance of the Required Compensatory Measure on a "once per..." interval.

TR 3.0.2 permits a 25% extension of the interval specified in the Frequency. This extension facilitates Test scheduling and considers plant operating conditions that may not be suitable for conducting the Test (e.g., transient conditions or other ongoing Test or maintenance activities).

The 25% extension does not significantly degrade the reliability that results from performing the Test at its specified Frequency. This is based on the recognition that the most probable result of any particular Test being performed is the verification of conformance with the TRs.

As stated in TR 3.0.2, the 25% extension also does not apply to the initial portion of a periodic Completion Time that requires performance on a "once per..." basis. The 25% extension applies to each performance after the initial performance. The initial performance of the Required Compensatory Measure, whether it is a particular Test or some other remedial action, is considered a single compensatory measure with a single Completion Time. One reason for not allowing the 25% extension to this Completion

(continued)

TR 3.0.2 (continued)

Time is that such a compensatory measure may verify that no loss of function has occurred by checking the status of redundant or diverse components or accomplishes the function of the inoperable equipment in an alternative manner.

The provisions of TR 3.0.2 are not intended to be used repeatedly merely as an operational convenience to extend Test intervals (other than those consistent with refueling intervals) or periodic Completion Time intervals beyond those specified.

TR 3.0.3

TR 3.0.3 establishes the flexibility to defer declaring affected equipment inoperable or an affected variable outside the specified limits when a Test has not been completed within the specified Frequency. A delay period of up to 24 hours or up to the limit of the specified Frequency, whichever is less, applies from the point in time that it is discovered that the Test has not been performed in accordance with TR 3.0.2, and not at the time that the specified Frequency was not met.

This delay period provides adequate time to complete Tests that have been missed. This delay period permits the completion of a Test before complying with Required Compensatory Measures or other remedial measures that might preclude completion of the Test.

The basis for this delay period includes consideration of unit conditions, adequate planning, availability of personnel, the time required to perform the Test, the safety significance of the delay in completing the required Test, and the recognition that the most probable result of any particular Test being performed is the verification of conformance with the requirements.

When a Test with a Frequency based not on time intervals, but upon specified unit conditions or operational situations, is discovered not to have been performed when specified, TR 3.0.3 allows the full delay period of 24 hours to perform the Test.

TR 3.0.3 also provides a time limit for completion of Tests that become applicable as a consequence of MODE changes imposed by Required Compensatory Measures.

(continued)

BASES

TR 3.0.3 (continued)

Failure to comply with specified Frequencies for TRs is expected to be an infrequent occurrence. Use of the delay period established by TR 3.0.3 is a flexibility which is not intended to be used as an operational convenience to extend Test intervals.

If a Test is not completed within the allowed delay period, then the equipment is considered inoperable or the variable is considered outside the specified limits and the Completion Times of the Required Compensatory Measures for the applicable TRMS Conditions begin immediately upon expiration of the delay period. If a Test is failed within the delay period, then the equipment is inoperable, or the variable is outside the specified limits and the Completion Times of the Required Compensatory Measures for the applicable TRMS Conditions begin immediately upon the failure of the Test.

Completion of the Test within the delay period allowed by this TRMS, or within the Completion Time of the COMPENSATORY MEASURES, restores compliance with TR 3.0.1.

TR 3.0.4

TR 3.0.4 establishes the requirement that all applicable TRs must be met before entry into a MODE or other specified condition in the Applicability. This TRMS ensures that system and component OPERABILITY requirements and variable limits are met before entry into MODES or other specified conditions in the Applicability for which these systems and components ensure safe operation of the unit.

However, in certain circumstances failing to meet a TR will not result in TR 3.0.4 restricting a MODE change or other specified condition change. When a system, subsystem, division, component, device, or variable is inoperable or outside its specified limits, the associated TR(s) are not required to be performed, per TR 3.0.1, which states that Tests do not have to be performed on inoperable equipment. When equipment is inoperable, TR 3.0.4 does not apply to the associated TR(s) since the requirement for the TR(s) to be performed is removed. Therefore, failing to perform the Test(s) within the specified Frequency does not result in a

(continued)

TR 3.0.4 (continued)

TR 3.0.4 restriction to changing MODES or other specified conditions of the Applicability. However, since the TRMS is not met in this instance, TRMS 3.0.4 will govern any restrictions that may (or may not) apply to MODE or other specified condition changes.

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

The precise requirements for performance of TRs are specified such that exceptions to TR 3.0.4 are not necessary. The specific time frames and conditions necessary for meeting the TRs are specified in the Frequency, in the Test, or both. This allows performance of Tests when the prerequisite condition(s) specified in a Test procedure require entry into the MODE or other specified condition in the Applicability of the associated TRMS prior to the performance or completion of a Test. A Test that could not be performed until after entering the TRMS Applicability would have its Frequency specified such that it is not "due" until the specific conditions needed are met. Alternately, the Test may be stated in the form of a Note as not required (to be met or performed) until a particular event, condition, or time has been reached. Further discussion of the specific formats of TRs' annotation is found in TRMS Section 1.4, Frequency.

B 3.1 CONTROL ROD DRIVE HOUSING SUPPORT

BASES

The control rod housing support restricts the outward movement of a control rod to less than 3 inches in the event of a housing failure. The amount of rod reactivity which could be added by this small amount of rod withdrawal is less than a normal withdrawal increment and will not contribute to any damage to the primary coolant system. The support is not required when there is no pressure to act as a driving force to rapidly eject a drive housing.

B 3.2 Not used.

B 3.3 CONTROL ROD BLOCK INSTRUMENTATION

BASES

The Control Rod Block Functions are provided with the trip logic arranged so that a trip in any one of the inputs will result in a rod block.

Specified test intervals and allowed out-of-service times were established based on the reliability analyses documented in GE reports NEDC-30851P-A, Supplement 1, "Technical Specification Improvement Analysis for BWR Control Rod Block Instrumentation," October 1988, NEDC-32410P-A, "Nuclear Measurement Analysis and Control Power Range Neutron Monitor (NUMAC-PRNM) Retrofit Plus Option III Stability Trip Function," October 1995, and NEDC-32410P-A, Supplement 1, "Nuclear Measurement Analysis and Control Power Range Neutron Monitor (NUMAC PRNM) Plus Option III Stability Trip Function," November 1997.

CHANNEL CALIBRATIONS of the Average Power Range Monitors Functions 1.a and 1.d are electronic.

B 3.4 ACCIDENT MONITORING INSTRUMENTATION

BASES

The OPERABILITY of the post-accident monitoring instrumentation ensures that sufficient information is available on selected plant parameters to monitor and assess important variables following an accident. This capability is consistent with the recommendations of Regulatory Guide 1.97, "Instrumentation for Light Water-Cooled Nuclear Power Plants to Assess Plant Conditions During and Following an Accident," December 1975, and NUREG-0578, "TMI-2 Lessons Learned Task Force Status Report and Short-Term Recommendations."

To support removal to the Drywell and Suppression Chamber H_2 and O_2 Analyzer from the Technical Specifications, the H_2 portion of the analyzer will be maintained as Regulatory Guide 1.97, Category 3, instrumentation. The O_2 portion of the analyzer will be maintained as Regulatory Guide 1.97, Category 2, instrumentation. However, consistent with the rulemaking to revise 10 CFR 50.44 (i.e., the final rule published in 68 FR 54123) neither the H_2 portion or the O_2 portion of the analyzer need to be qualified in accordance with 10 CFR 50.49. Rather, as committed to in Reference 1 and approved in Reference 2, the Drywell and Suppression Chamber H_2 and O_2 Analyzer will be capable of diagnosing beyond design-basis accidents.

The H_2 and O_2 portions of each overall Drywell and Suppression Chamber H_2 and O_2 Analyzer are primarily separate from one another such that there are many failure modes that would only result in either the H_2 or O_2 portion of the system being inoperable and not affect the operability of the other portion of the overall analyzer. Each portion has a dedicated analyzer such that each overall Drywell and Suppression Chamber H_2 and O_2 Analyzer has internal to it an H_2 analyzer and an O_2 analyzer. TRM Table 3.4-2 lists the Analyzers as applicable instruments; each of these analyzers provides an output to both a front panel display on the analyzer and to a recorder. Either of these indications may be used to satisfy the monitoring criteria should the other experience a failure, assuming accuracy is maintained.

One channel of Turbine Building or Stack Ventilation Monitoring consists of all three ranges (low, mid, and high) of the monitoring system.

REFERENCES

1. Letter from Cornelius J. Gannon to the U. S. Nuclear Regulatory Commission (Serial: BSEP 04-0098), "Request for License Amendments - Deletion of Hydrogen and Oxygen Analyzer Requirements Consolidated Line Item Improvement Process (TSTF-447, Revision 1)," dated July 26, 2004.

2. Letter from U.S. Nuclear Regulator Commission to Mr. C. J. Gannon, "Issuance of Amendments RE: Elimination of Requirements for Hydrogen and Oxygen Monitors Using The Consolidated Line Item Improvement Process (TAC Nos. MC3866 and MC3867)," dated February 2, 2005.

B 3.5 CHLORIDE INTRUSION MONITORS

BASES

The chloride intrusion monitors provide adequate warning of any leakage in the condenser or hotwell so that actions can be taken to mitigate the consequences of such intrusion in the reactor coolant system. With only a minimum number of instruments available, increased sampling frequency provides adequate information for the same purpose. Chloride intrusion can be detected if any of the Functions in Table 3.5-1 have their required channels OPERABLE.

B 3.6 BUS POWER MONITORS

BASES

The Emergency Core Cooling System (ECCS) and Reactor Core Isolation Cooling (RCIC) System Bus Power Monitors are provided to monitor the availability of power to logic system. The bus power monitors are required to be OPERABLE when the instrumentation they support is required to be OPERABLE (e.g., bus power monitors associated with High Pressure Coolant Injection (HPCI) System and RCIC System instrumentation are required to be OPERABLE in MODE 1 and MODES 2 and 3 with reactor steam dome pressure > 150 psig to support the HPCI and RCIC functions and are also required to be OPERABLE in MODES 1, 2, and 3 to support the primary containment isolation functions associated with HPCI and RCIC instrumentation). The RHR, Core Spray System, Low Pressure Coolant Injection (Residual Heat Removal System), HPCI and RCIC System Bus Power Monitors each consist of one instrument channel per bus. This instrumentation provides a monitoring/alarm function only. The ECCS and RCIC System Bus Power Monitors will be tested at regularly scheduled intervals.

The TRMS is modified by a Note to indicate that the annunciator function may be removed from operation for performance of troubleshooting for up to 30 minutes provided no work is being performed on the associated power supplies. Upon completion of the troubleshooting, or expiration of the 30 minute allowance, the annunciator must be returned to operation or the applicable Condition entered and Required Compensatory Measures taken. Appropriate compensatory actions should be determined and implemented during the loss of annunciator function. Since the loss of detection capability is of short duration, no work is allowed on the associated power supplies, and appropriate compensatory actions are determined and implemented, there is a minimal increase in the probability of an undetected loss of ECCS power during the 30 minute troubleshooting allowance.

B 3.7 AUTOMATIC DEPRESSURIZATION SYSTEM (ADS) INHIBIT SWITCH

BASES

ADS Inhibit Switches are provided to permit the operator to prevent automatic actuation of the ADS. Both switches must be actuated to prevent automatic blowdown. Automatic depressurization may not be appropriate if reactor vessel level is recovering or during ATWS events. During ATWS events, depressurization would lead to power increases from cold water injection, void collapse, and boron dilution. In MODE 1 and in MODES 2 and 3 with reactor steam dome pressure > 150 psig, the ADS Inhibit Switches must be in the automatic position to ensure that ADS automatic actuation capability is maintained.

B 3.8 SUPPRESSION CHAMBER WATER TEMPERATURE INSTRUMENTATION

BASES

The suppression chamber water temperature monitoring system performs a dual function. It provides for accident monitoring as recommended by Regulatory Guide 1.97. This system is also designed to meet the acceptance criteria of NUREG-0661, Appendix A in monitoring average suppression chamber water temperature during normal operating conditions.

The TRMS is modified by a Note to indicate that the annunciator function may be removed from operation for performance of troubleshooting for up to 30 minutes provided the associated function maintains monitoring capability. Upon completion of the troubleshooting, or expiration of the 30 minute allowance, the annunciator must be returned to operation or the applicable Condition entered and Required Compensatory Measures taken. Appropriate compensatory actions should be determined and implemented during the loss of annunciator function. This Note is based on the availability of the associated monitor and appropriate compensatory actions to identify changes in suppression pool temperature. The monitor availability and compensatory actions ensure that the 30 minute troubleshooting allowance does not significantly reduce the probability of identifying changing conditions to allow appropriate response.

B 3.9 SEISMIC MONITORING INSTRUMENTATION

BASES

BACKGROUND

Seismic Monitoring Instrumentation is required to promptly determine the response to nuclear power plant features important to safety in the event of an earthquake. This capability is required to allow for a comparison of the measured response to that used in the design basis of the plant. Comparison of this data is needed to determine whether the plant can continue to be operated safely as required by 10 CFR 100, Appendix A (Ref. 2).

Reference 2 requires that two earthquake levels be considered in the design of safety related structures, systems and components (SSCs). Consequently, the Seismic Monitoring Instrumentation is designed to monitor for vibratory ground motions exceeding either of these levels. One of these levels, the Operating Basis Earthquake (OBE), is that earthquake which could reasonably be expected to occur at the site during the operating life of the plant. SSCs necessary for continued plant operation without undue risk to the health and safety of the public are designed to remain functional following an OBE. The other earthquake level, the Safe Shutdown Earthquake (SSE), is that earthquake which is based upon the maximum (i.e., most severe) earthquake potential for the area in which the plant is sited. SSCs necessary to assure the integrity of the reactor pressure boundary, the capability to shutdown the reactor (and maintain it in a shutdown condition), and the capability to prevent or mitigate the consequences of accidents which could result in potential offsite exposures are designed to remain functional following an SSE.

The Seismic Monitoring Instrumentation consists of passive peak shock recorders, triaxial accelerometers, and a central recording panel. The central recorder panel is located in the Main Control Room and has a central recorder for seismic data acquisition and storage, a personal computer, monitor, a printer for display of recorded data, an annunciator instrument that provides local indicator lights and control room indication, and a 25 minute uninterruptible power supply. Lights on the panel identify system triggering and indicate if the OBE has been exceeded based on an analysis of the data collected in the basement of the Reactor Building (elevation -17 feet).

The earthquake data is collected in three orthogonal directions which coincide with the major axes of the analytical model used in the seismic analysis of the plant structures. The central recorder is connected to the triaxial accelerometers.

(continued)

BASES

BACKGROUND (continued)

When a very low "g" level threshold (0.01 g) has been exceeded at the reactor building accelerometer (elevation -17 foot), the system alerts the operator by actuating an event indication annunciator in the main control room and initiates the recording functions of all the accelerometers until termination of the event.

There are two triaxial accelerometers which input to the central recorder, each of which measures the absolute acceleration as a function of time in three orthogonal directions. These accelerometers are located in the reactor building (elevation -17 feet) and near the top of the containment structure (elevation +89 feet).

During a ground motion event, where the acceleration exceeds the seismic threshold, seismic data is stored in the central recorder which can be later viewed and printed by means of the personal computer, monitor, and printer located at the panel. The recorded seismic data is then used to facilitate the analysis of structural loads during the seismic event.

Passive monitoring is provided by three triaxial peak shock recorders which record the absolute peak acceleration in three orthogonal directions coinciding with the major axes of the analytical model of the structure. These peak shock recorders are located in the equipment drain tank area of reactor building basement (elevation -17 feet), the reactor building RHR heat exchanger support (elevation +20 feet), and the reactor building refueling area (elevation +117 feet).

APPLICABLE DESIGN BASES

The function of the Seismic Monitoring Instrumentation is to monitor seismic activity above a low "g" level, and to record seismic data for comparison to design bases spectra. The Brunswick Plant was originally constructed with seismic monitoring instrumentation which corresponded with the recommendations of NRC Safety Guide 12. Although the Brunswick Plant's licensing basis remains Safety Guide 12, the current instrumentation is designed to meet the requirements of 10 CFR 100, Appendix A (Ref. 2) and is consistent with specific portions of the recommendations of Regulatory Guide 1.12, "Instrumentation for Earthquakes" (Ref. 3).

For Brunswick Plant, the site ground response spectra are based on earthquakes with peak horizontal ground accelerations of 0.08 g and 0.16 g, for an OBE and an SSE respectively. The vertical ground acceleration is assumed to be two-thirds of the respective horizontal acceleration. SSCs designated Seismic Category I are designed to remain functional following an SSE.

(continued)

BASES

APPLICABLE DESIGN BASES (continued)

When an earthquake occurs, it may not be known immediately how severe the effects of the earthquake are on plant equipment. The triaxial accelerometers provide time-history data on the seismic input to containment. The passive triaxial peak shock recorders record peak event acceleration information that can be used to supplement the data gathered by the triaxial accelerometers. Response spectra are generated from the time-history data at the control station in the main control room for comparison to design basis data.

The Seismic Monitoring Instrumentation only provides information regarding seismic activity during a seismic event and is not considered in any design basis accident or transient nor does it provide any function to mitigate an accident or its consequences.

TRMS

Seismic Monitoring Instrumentation is required to promptly determine the magnitude of a seismic event and evaluate the response of those features important to safety. The Seismic Monitoring Instrumentation listed in Table 3.9-1, including the associated main control room alarm, must be OPERABLE to ensure that the capability of detecting and comparing the observed spectra response of a seismic event to that used in the design basis for the plant is maintained.

APPLICABILITY

The potential for a seismic event exists at all times. For example, an earthquake could occur while moving irradiated fuel in the secondary containment with the core fully offloaded. Therefore, this TRMS is applicable even when fuel is not loaded in the core.

COMPENSATORY MEASURES

A Note has been provided to modify the COMPENSATORY MEASURES related to seismic monitoring instruments. Section 1.3, Completion Times, specifies that once a Condition has been entered, subsequent divisions, subsystems, components, or variables expressed in the Condition discovered to be inoperable or not within limits will not result in separate entry into the Condition. Section 1.3 also specifies that Required Compensatory Measures of the Condition continue to apply for each additional failure, with Completion Times based on initial entry into the Condition. However, the Required Compensatory Measures for inoperable seismic monitoring instrumentation provide appropriate compensatory measures for separate inoperable instruments. As such, a Note has been provided that allows separate Condition entry for each inoperable seismic monitoring instrument.

(continued)

COMPENSATORY MEASURES (continued)

A.1

With one or more seismic monitoring instruments inoperable, the ability to monitor vibratory ground motion and determine its effects on safety related SSCs is degraded. Because of the diversity of sensor locations available to provide monitoring signals, an allowable out of service time of 31 days is acceptable to permit restoration of any inoperable instrument to OPERABLE status.

B.1

If the seismic monitoring instrument is not restored to OPERABLE status, plant operation may continue provided a Special Report outlining the cause of the inoperability and the plans for restoring the instrument to OPERABLE status is prepared and submitted to the NRC within 14 days. The 14 day Completion Time provides an appropriate period of time to develop the recovery plan and is consistent with the original licensing basis reporting requirements for the seismic monitoring instrumentation.

C.1, C.2, and C.3

If a seismic event having a vibratory ground motion of 0.08 g or greater occurs at the site, actuated instruments must be restored to a ready status to permit monitoring of any subsequent ground motion. Additionally, the data collected from the instruments must be reviewed against the dynamic stress assumptions in the plant design basis.

Some seismic instruments (i.e., the passive triaxial peak shock recorders), once actuated, are not capable of recording a subsequent event, rendering them inoperable until they have been reset or replaced (i.e., replacement of the recording plates). Since seismic events are typically followed by several aftershocks, it is necessary to return actuated instruments to an OPERABLE status within 24 hours (Required Compensatory Measure C.1) to assure that the severity of subsequent aftershocks can be evaluated. Seismic monitoring instrument calibration may also be affected by the sudden ground motion of an earthquake. An instrument's calibration may have shifted outside of allowable limits, depending on the severity of the seismic event. Therefore, Required Compensatory Measure C.2 requires that a CHANNEL CALIBRATION per TR 3.9.3 be performed on each actuated instrument within 10 days following the initiating event (e.g., the initiating seismic event and associated aftershocks) to verify that the affected instruments are still properly calibrated.

(continued)

BASES

COMPENSATORY MEASURES (continued)

C.1, C.2, and C.3 (continued)

In order to validate the analytical model and to determine the magnitude of the stresses that were applied to safety related SSCs during the event, the data from the seismic monitoring instruments must be retrieved and analyzed. The information derived from this analysis must be incorporated into a Special Report per Required Compensatory Measure C.3. The Special Report shall describe the magnitude and frequency spectrum of the event and describe the effect of the event on safety related SSCs at the station. The data analysis and Special Report must be completed within 14 days of the initiating event.

Condition C is modified by a Note requiring Required Compensatory Measures C.2 and C.3 to be completed whenever the Condition is entered. The Note emphasizes the need to perform the evaluation of the effects of the seismic event. Restoration of instrument OPERABILITY alone per Required Compensatory Measure C.1 is insufficient because higher than analyzed stresses may have occurred and may have affected safety-related SSCs. Additionally, the Note ensures that the calibration of actuated seismic instrumentation has not been affected by the event.

TEST REQUIREMENTS

As noted at the beginning of the TRs, the TRs for each Seismic Monitoring Instrumentation Function are located in the TRs column of Table 3.9-1.

TR 3.9.1

Performance of the CHANNEL CHECK once every 31 days ensures that a gross failure of instrumentation has not occurred. A CHANNEL CHECK is normally a comparison of the parameter indicated on one instrument to a similar parameter on other instruments. It is based on the assumption that instruments monitoring the same parameter should read approximately the same value. Significant deviations between the instruments could be an indication of excessive instrument drift or something even more serious. A CHANNEL CHECK will detect gross instrument failure; thus, it is key to verifying the instrumentation continues to operate properly between each CHANNEL CALIBRATION. This CHANNEL CHECK is fulfilled by the absence of a system health warning indication.

Agreement criteria are determined by the plant staff, based on a combination of the instrument uncertainties, including indication and readability. If an instrument is outside the criteria, it may be an indication that the instrument has drifted outside its limit.

(continued)

BASES

TEST REQUIREMENTS (continued)

TR 3.9.1 (continued)

The Frequency is based on operating experience that demonstrates instrument failure is rare and is consistent with the recommendations of Reference 3. The CHANNEL CHECK supplements less formal, but more frequent, checks of instruments during normal operational use of the displays associated with the instruments required by the TRMS.

TR 3.9.2

A CHANNEL FUNCTIONAL TEST is performed on each required instrument to ensure that the instrument channel will perform the intended function. A successful test of the required contact(s) of an instrument 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. Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology.

The Frequency of 184 days is consistent with the recommendations of Reference 3.

TR 3.9.3

CHANNEL CALIBRATION is a complete check of the instrument loop and the sensor. This test verifies the instrument responds to the measured parameter within the necessary range and accuracy. CHANNEL CALIBRATION leaves the instrument adjusted to account for instrument drifts between successive calibrations, consistent with the plant specific setpoint methodology.

The Frequency of 24 months is consistent with the recommendations of Reference 3.

REFERENCES

1. UFSAR Section 3.7.4.

2. 10 CFR 100, Appendix A.

3. Regulatory Guide 1.12, “Instrumentation for Earthquakes.”

B 3.10 INTAKE CANAL HIGH WATER LEVEL INSTRUMENTATION

BASES

To ensure that operators are alerted to a rising water level in the intake canal, a level indicator is provided with a sensor installed in the Class I service water intake structure and a recording indicator in the control room. The level indicator will provide an alarm in the control room when water in the intake canal reaches elevation 14.5 ft.

The TRMS is modified by a Note to indicate that the annunciator function may be removed from operation for performance of troubleshooting for up to 30 minutes provided a method to monitor water level is maintained. Upon completion of the troubleshooting, or expiration of the 30 minute allowance, the annunciator must be returned to operation or the applicable Condition entered and Required Compensatory Measures taken. Appropriate compensatory actions should be determined and implemented during the loss of annunciator function. This Note is based upon appropriate compensatory actions being taken to identify changes in the intake canal level during the 30 minute troubleshooting allowance.

B 3.11 PRIMARY CONTAINMENT ISOLATION INSTRUMENTATION

BASES

This specification ensures the effectiveness of the instrumentation by prescribing the trip settings for isolation of the reactor systems. When necessary, one channel may be inoperable for brief intervals to conduct required testing. The setpoints are established at a level away from the normal operating range to prevent inadvertent actuation of the systems involved. Specified test intervals and allowed out-of-service times were established based on the reliability analysis documented in GE report NEDC-31677P-A, "Technical Specification Improvement Analysis for BWR Isolation Actuation Instrumentation," July 1990, as modified by 0G90-579-32A, Letter to Millard L. Wohl (NRC) from W. P Sullivan and J. F. Klapproth (GE), "Implementation Enhancements to Technical Specification Changes Given in Isolation Actuation Instrumentation Analysis," June 25, 1990 and supplemented by GE letter report GENE-A31-00001-02, "assessment of Brunswick Nuclear Plant Isolation Actuation Instrumentation Against NEDC-31677P-A Bounding Analyses," August 1994.

The Main Steam Line Tunnel Temperature—High (except for Main Steam Isolation Valve Pit instruments) Function and the Turbine Building Area Temperature—High Function are each capable of isolating valves in Group 1 except for valves B32-F019 and B32-F020.

B 3.12 CONTROL ROOM EMERGENCY VENTILATION (CREV) SYSTEM INSTRUMENTATION

BASES

BACKGROUND

One of the principal design objectives of the Control Building Heating, Ventilation and Air Conditioning (CBHVAC) System is to permit continuous occupancy of the control room emergency zone under normal operating conditions and under the postulated design basis events throughout the life of the plant. The Control Building HVAC System must function to provide protection to the operators for three type events: a radiation event, up to and including a Design Basis Accident (e.g., Main Steam Line Break [MSLB] Accident, Refueling Accident, Control Rod Drop Accident, or Loss of Coolant Accident [LOCA]), a toxic gas event (complete rupture of the 55 ton chlorine tank car located near the service water building, or a slow leak lasting for an extended period of time), and an external smoke event. These events form the basis for the design of the Control Room Emergency Ventilation (CREV) System function of the CBHVAC System. The radiation protection function of the CREV System is addressed in Technical Specifications.

During an external smoke event, the CBHVAC System is required to automatically isolate and enter the radiation/smoke protection mode on a smoke detection signal from one of the two Control Building Intake air duct smoke detectors. Upon receipt of a smoke detection signal, the CBHVAC System is automatically realigned to the emergency mode of operation. The normal fresh air inlet closes, and, at approximately the same time, the emergency air filtration units begin operation, recirculating control room air and providing filtered makeup air to minimize smoke build-up and provide positive pressure in the control room envelope.

In the event of a chlorine release, the CBHVAC System enters a full recirculation mode (chlorine protection mode), with no outdoor air intake. The emergency filtration trains do not start, since they do not effectively remove chlorine and may be damaged by the presence of chlorine. Protection for chlorine gas events "overrides" any concurrent, ongoing, and any subsequent radiation or smoke initiation signals. The override design offers protection to operations personnel in the control room by providing protection against potentially fatal chlorine gas releases. This protection is required at any time the chlorine tank car is within the exclusion area.

The CREV System is designed to meet the criteria of General Design Criterion (GDC) 19 (Reference 1). In addition, the system is designed using the guidance of Regulatory Guide 1.95, Revision 1 (Reference 2). Commitments have also been made to design chlorine detection and isolation logic to single failure criteria, with approved exceptions (Reference 3, Section 3.6).

(continued)

BASES (continued)

TRMS

OPERABILITY of the CREV System instrumentation ensures that the control room operators will be protected from hazards external to the control room, consistent with the assumptions in the various analyses, through the prompt detection and initiation of the necessary protective actions of the system.

APPLICABILITY

The instrumentation associated with the chlorine protection mode of the CREV System is required to be OPERABLE to automatically detect and initiate the internal recirculation mode of operation any time the chlorine tank car is within the exclusion area.

The instrumentation associated with the external smoke protection function of the CREV System is required to be OPERABLE to automatically detect and initiate the radiation/smoke protection mode of operation during the same conditions as the radiation protection function. This ensures that habitability of the control room is maintained during times when a radiological release could potentially occur.

COMPENSATORY MEASURES

Chlorine Protection

The chlorine detection/isolation instrumentation is organized into two trip systems, with one trip system (remote) located near the chlorine tank car and the other located in the control building intake plenum (local). Each trip system contains two trip subsystems, with two detectors (one from each division) in each trip subsystem. Both trip subsystems in each trip system are required to be OPERABLE any time the chlorine tank car is within the exclusion area to ensure adequate protection for the control room under postulated toxic gas events.

The chlorine detectors in each trip system are arranged in a one-out-of-two taken-twice configuration. One detector from each of the trip subsystems in a trip system must actuate to initiate the automatic detection/isolation function. The loss of a single chlorine detector means that the CREV System reliability is reduced because a single failure in the remaining OPERABLE trip subsystem detector could result in reduced or lost system capability. The 7 day out of service time is based on the low probability of a design basis chlorine gas event and a single active failure occurring during this time period, and the capability of the remaining detectors to provide the required isolation capabilities. The out of service time is consistent with the out of service time allowed for loss of redundancy at the system level.

(continued)

BASES

COMPENSATORY MEASURES (continued)

The loss of both detectors in any trip subsystem means that the automatic protection function of the chlorine detection/isolation system is lost. Placing the CBHVAC System in the chlorine protection mode, through the use of control switches (as opposed to injection of a chlorine injection signal) to close the appropriate dampers, ensures that the control room envelope is protected, while at the same time allowing a valid radiation or smoke signal to initiate appropriate protective actions. Operation in this mode is not limited in duration provided that either trip system remains functional to ensure that the override function of the chlorine protection mode is not lost.

Smoke Protection

Automatic detection/isolation of the control room envelope in response to an external smoke event is dependent on the response of one of two Control Building Intake air duct smoke detectors.

With both of the Control Building Intake air duct smoke detectors inoperable, the automatic detection/isolation function of the external smoke protection system is lost. Placing the CBHVAC System in the radiation/smoke protection mode is a suitable compensatory action to ensure that the automatic external smoke protection function is not lost.

TEST REQUIREMENTS

Chlorine Protection

The CHANNEL FUNCTIONAL TEST is performed on each required channel to ensure that the entire channel will perform the intended function. The Control Building HVAC DBD (Reference 3) defines the specific actions to be satisfied by the chlorine isolation instrumentation. The monthly frequency of the CHANNEL FUNCTIONAL TEST is consistent with the testing frequencies performed by other utilities with this type of instrumentation.

(continued)

BASES

TEST REQUIREMENTS (continued)

The CHANNEL CALIBRATION of the trip units provides a check of the instrument loop and the sensor when the sensor is replaced. The test verifies the calibration of the existing sensor prior to removal and performs an installation calibration of the new sensor, including a complete CHANNEL CALIBRATION with the new sensor installed, to verify the channel responds to the measured parameter within the necessary range and accuracy. The CHANNEL CALIBRATION leaves the channel adjusted to ensure consistency with the system assumptions (Reference 3).

The chlorine detectors use an amperometric sensor consisting of a platinum cathode and silver anode joined by an electrolytic salt bridge, all enclosed in a permeable membrane. This design eliminates the majority of the maintenance required on previous detectors. The detectors have been in service at other facilities and have provided reliable service. The annual replacement and calibration are based on a manufacturer recommendation. The adequacy of the replacement interval has been confirmed through discussions with other utilities.

Smoke Protection

The CHANNEL FUNCTIONAL TEST for the Smoke protection instrumentation is consistent with the testing performed in accordance with the existing fire detection instrumentation requirements.

REFERENCES

1. 10 CFR 50, Appendix A, General Design Criterion 19, Control Room.

2. Regulatory Guide 1.95, Revision 1, Protection of Nuclear Power Plant Control Room Operators Against an Accidental Chlorine Release.

3. BNP Design Basis Document (DBD)-37, Control Building Heating, Ventilation, and Air Conditioning System.

B 3.13 REACTOR COOLANT SYSTEM (RCS) CHEMISTRY

BASES

The reactor water chemistry limits are established to prevent damage to the reactor materials in contact with the coolant. Chloride limits are specified to prevent stress corrosion cracking of the stainless steel. The effect of chloride is not as great when the oxygen concentration in the coolant is low; thus, the higher limit on chlorides is permitted during full power operation. During shutdown and refueling operations, the temperature necessary for stress corrosion to occur is not present.

Conductivity measurements are required on a continuous basis since changes in this parameter are an indication of abnormal conditions. When the conductivity is within limits, the pH, chlorides, and other impurities affecting conductivity must also be within their acceptable limits. With the conductivity outside the limits, additional samples must be examined to ensure that the chlorides are not exceeding the limits.

The Test Requirements provide adequate assurance that concentrations in excess of the limits will be detected in sufficient time to take corrective action.

In order to reduce personnel radiation exposure, chemical decontamination of portions of the Reactor Coolant System may be performed during shutdown. During the chemical decontamination process, the injection of chemical solvents may cause the Reactor Coolant System conductivity and chloride measurements to increase above the limits. The solvents that are selected for use in performing the chemical decontamination process are selected and evaluated to ensure their chemical reactivity will not adversely impact components or the structural integrity of the Reactor Coolant System. Because decontamination activities are performed at temperatures and pressures significantly less than normal operating temperatures, the chemical reactivity of these solvents will not increase the likelihood of stress corrosion occurring nor affect those stress corrosion cracks that may already be present.

B 3.14 STRUCTURAL INTEGRITY

BASES

The inspection programs for ASME Code Class 1, 2, 3, MC, and CC components ensure that the structural integrity of these components will be maintained at an acceptable level throughout the life of the plant. To the extent applicable, the inspection program for these components is in compliance with Section XI of the ASME Boiler and Pressure Vessel Code.

A Containment Inspection Program has been developed in accordance with the applicable requirements of Subsections IWE and IWL of the ASME Boiler and Pressure Vessel Code. Subsection IWE, "Requirements for Class MC and Metallic Liners of Class CC Components of Light-Water Cooled Power Plants," provides rules for inservice inspection, repair, and replacement of pressure-retaining components classified as Class MC (e.g., the metallic liner of the drywell and suppression chamber, vent system, etc.) and their integral attachments. Subsection IWL, "Requirements for Class CC Concrete Components of Light-Water Cooled Power Plants," provides rules for inservice inspection and repair of the reinforced concrete and the post-tensioning systems of Class CC components.

B 3.15 Not used.

B 3.16 SERVICE WATER SYSTEM OPERABILITY—SHUTDOWN

BASES

For Mode 4 and 5 conditions, the Service Water System is designed to provide cooling water for the removal of heat from equipment such as the emergency diesel generators, the Reactor Building Closed Cooling Water (RBCCW) System and the Residual Heat Removal Service Water (RHRSW) System. The Service Water System provides cooling water for the service water pump motors. During the initial stage (0 - 10 minutes) of an event (DBA on the opposite unit, loss of shutdown cooling, a loss of coolant inventory, etc.) potentially combined with a Loss of Offsite Power (LOOP), the Service Water System must automatically provide cooling water to the emergency diesel generators. Following the first 10 minute period, shutdown cooling loads must be supplied. The Service Water System also provides flow to the Turbine Building Closed Cooling Water System, the Chlorination System, lube water to the Circulating Water Pumps, and fill to the Circulating Water System.

The Service Water System design allows either (or both) unit's nuclear header to supply diesel generator cooling water when required. The phrase "site nuclear service water pump" refers to any nuclear service water pump on either unit. Other pump designations refer to the specific unit under discussion. The four nuclear service water pumps on site, two per unit, are each on a separate emergency bus so that a single failure could prevent only one nuclear service water pump from operating.

The OPERABILITY requirements are structured to ensure that the Service Water System is capable of automatically supplying sufficient cooling water for the diesel generators assuming no operator action for the first 10 minutes following an event, and that at least one service water pump for the shutdown unit is available to supply the shutdown cooling loads after the first ten minutes following an event. The event includes consideration of a LOOP and/or a single active failure. For the specific alignments associated with header maintenance, plant procedures document required administrative controls and valve operability requirements needed to ensure that these objectives are met.

The four nuclear service water pumps are powered from separate emergency buses. The three conventional service water pumps on each unit are on separate emergency buses. For each unit, two of the conventional pumps are on the same emergency buses as the two unit nuclear service water pumps. The loss of one nuclear pump and one conventional pump on the unit due to a single failure of one emergency bus has been accounted for in the OPERABILITY requirements. However, conventional service water pump OPERABILITY will be more strictly defined in cases where only one nuclear pump and one conventional pump are available for operation. Therefore, with one unit nuclear service water pump and one conventional service water pump available, the conventional service water pump must be powered from a separate emergency bus to be considered OPERABLE.

(continued)

BASES (continued)

In MODES 4 and 5, a conventional pump may be considered OPERABLE when only the applicable header discharge valve is OPERABLE. This allows maintenance on the conventional and nuclear headers without reducing Service Water System OPERABILITY. However, a conventional pump aligned to the nuclear header is not considered to meet the requirements for an OPERABLE nuclear pump since it is not automatically powered and restarted on the diesel generators following an accident signal.

In MODES 4 and 5, with a DBA in the opposite unit, two nuclear service water pumps from one or both units are capable of supplying sufficient flow to cool all four emergency diesel generators under worst-case scenarios while also supplying flow to other potential flow paths (vital header loads, cross-header leakage, and pump strainer backwash flow). To prohibit any single failure from preventing the supply of service water to the diesel generators during the first 10 minutes following a DBA, at least three nuclear service water pumps per site are required while in MODE 4 or 5.

In MODES 4 and 5, one unit service water pump, nuclear or conventional, is capable of supplying additional required safety-related and shutdown equipment. To prohibit any single failure from preventing the supply of service water after the first 10 minutes following an event, at least two OPERABLE unit service water pumps, nuclear or conventional, are required while in MODES 4 or 5. When only one header is available, an event with failure of one division of emergency power can result in the need for manual actions in the reactor building to reposition valves as the decay heat removal function is being restored.

The allowed out-of service times and Compensatory Measures established are conservative. Although the probability and consequences of an event are reduced in MODES 4 and 5, the Compensatory Measures for the nuclear service water pumps for a unit in MODE 4 or 5 are based on the assumption that the other unit is in MODE 1, 2, or 3. Specific Compensatory Measures have not been established for both units in MODES 4 or 5 since the COMPENSATORY MEASURES for one unit in MODE 4 or 5 are more conservative.

In MODES 4 and 5, a LOCA is not considered credible and core decay heat loads are reduced. As such, availability of service water for vital header loads is not needed. However, in MODES 4 and 5, the availability of service water is required to support cooling for decay heat removal systems. Therefore, the OPERABILITY requirements for the unit service water pumps apply for nuclear or conventional pumps. With one OPERABLE unit service water pump, the applicable decay heat removal systems remain OPERABLE. However, to minimize the possibility of loss of these systems due to loss of the single pump, the out of service time for one OPERABLE unit service water pump is set at 7 days. For no OPERABLE unit service water pumps, the applicable decay heat removal systems must be declared inoperable.

(continued)

BASES (continued)

In MODES 4 and 5, Condition A allows one unit to operate with the nuclear service water header inoperable for up to 14 days provided that:

a) two nuclear service water pumps are OPERABLE on the other unit,

b) both units' nuclear service water header valves are administratively controlled as required to ensure cooling water to the diesel generators,

c) the Service Water System conventional header is OPERABLE with two unit conventional service water pumps OPERABLE, and

d) administrative controls are established to isolate OPERABLE conventional service water pumps and required loads from the inoperable nuclear header.

Considering any additional single failure, this requirement ensures at least one OPERABLE nuclear service water pump to supply the diesel generators during the first 10 minutes after an event and one OPERABLE conventional service water pump to supply the unit shutdown cooling loads. By requiring administrative control of applicable valves, the Required Compensatory Measure minimizes the risk of inadvertent valve action that could reduce cooling water flow to the diesel generators or result in flow diversion that could affect CSW flow to essential loads.

B 3.17 SERVICE WATER SYSTEM—SHUTDOWN OPERATIONS

BASES

This Specification permits securing the Service Water System conventional header when the nuclear header is out of service and is required to permit flange installation in Service Water System header cross-connect piping.

B 3.18 CONTROL ROOM EMERGENCY VENTILATION (CREV) SYSTEM—SMOKE PROTECTION MODE

BASES

BACKGROUND

One of the principal design objectives of the Control Building Heating, Ventilation and Air Conditioning (CBHVAC) System is to permit continuous occupancy of the control room emergency zone under normal operating conditions and under the postulated design basis events throughout the life of the plant. The Control Building HVAC System must function to provide protection to the operators for three type events: a radiation event, up to and including a Design Basis Accident (e.g., Main Steam Line Break [MSLB] Accident, Refueling Accident, Control Rod Drop Accident, or Loss of Coolant accident [LOCA]), a toxic gas event (complete rupture of the 55 ton chlorine tank car located near the service water building, or a slow leak lasting for an extended period of time), and an external smoke event. These events form the basis for the design of the Control Room Emergency Ventilation (CREV) System function of the CBHVAC System. The radiation protection function of CREV System is addressed in Technical Specifications.

The CREV System is designed to meet General Design Criterion (GDC) 19 (Reference 1). In addition, the system is designed using the guidance of Regulatory Guide 1.95, Revision 1 (Reference 2).

TRMS

OPERABILITY of the CREV System ensures that the control room will remain habitable for operations personnel during and following all credible hazard event scenarios external to the control room, consistent with the assumptions in the various analyses. Two redundant subsystems of the CREV System are required to be OPERABLE to ensure that at least one is available, assuming a single failure disables the other subsystem. The CREV System is considered OPERABLE when the individual components necessary to control operator exposure are OPERABLE in both subsystems. For the smoke protection mode, a subsystem is considered OPERABLE when its associated:

1. Fan is OPERABLE,

2. HEPA filter and charcoal adsorbers are not excessively restricting flow and are capable of performing their filtration functions, and

3. Ductwork and dampers are OPERABLE, and when air circulation exists (as required in Reference 3, Section 3.1).

(continued)

BASES

TRMS (continued)

Two additional OPERABILITY requirements apply to all modes of CREV System operation. The CBHVAC Control Air System must be OPERABLE to support damper operation. In addition, the control room envelope must be maintained, including the integrity of the walls, floors, ceilings, ductwork, and access doors. The control room envelope includes the electronic equipment rooms, the central control room area, computer rooms, kitchen, restrooms, and the supply and return ductwork up to and including the isolation dampers.

The following components, including their associated logic trains, actuation devices, and power supplies, are non-redundant. Their OPERABILITY affects both trains of the CREV System. These components are: control room (washroom) exhaust isolation damper, control room normal make-up damper, and the control room emergency recirculation damper. In addition, the control room is not equipped with redundant outdoor air intakes (References 4 and 5).

The radiation/smoke protection mode of operation provides protection to the control room operators in the event of an external smoke event.

During an external smoke event, the CBHVAC System is required to automatically isolate and enter the radiation/smoke protection mode on a smoke detection signal from the Control Room Envelope Smoke Protection Zone Function. Upon receipt of a smoke detection signal, the CBHVAC System is automatically realigned to the emergency mode of operation. The normal fresh air inlet closes, and, at approximately the same time, the emergency air filtration units begin operation, recirculating control room air and providing filtered makeup air to minimize smoke build-up and provide positive pressure in the control room envelope.

APPLICABILITY

The applicabilities ensure that system is capable of performing the required smoke protection function when the potential for external hazards exist.

COMPENSATORY MEASURES

With one emergency filtration subsystem inoperable, the inoperable subsystem must be restored to OPERABLE status within 7 days. With the unit in this condition, the remaining subsystem is adequate to perform control room smoke protection. The loss of a single emergency filtration unit means that the CREV System reliability is reduced because a single failure in the OPERABLE subsystem could result in reduced or lost system capability. The 7 day out of service time is based on the low probability of an external smoke event and a single failure in the OPERABLE subsystem occurring during this time period, and the capability of the remaining subsystem to provide the required capabilities.

(continued)

BASES

COMPENSATORY MEASURES (continued)

If the inoperable subsystem cannot be restored to OPERABLE status within the required 7 days, Required Compensatory Measures must be taken to return the subsystem to OPERABLE status and initiate a Condition Report.

The loss of both emergency filtration subsystems means that the smoke protection function is lost. In this Condition, Required Compensatory Measures must be taken to return the subsystems to OPERABLE status and initiate a Condition Report.

The Required Compensatory Measures are modified by a Note which eliminates the requirement to initiate a Condition Report when equipment inoperability is due solely to planned maintenance or performance of surveillance. The intent of initiation of a Condition Report is to ensure that proper corrective actions are taken to restore inoperable equipment. When equipment is inoperable due to planned maintenance or performance of surveillance testing, such corrective actions are not required. If, however, unexpected failures are identified during performance of the maintenance or surveillance testing, a Condition Report shall be initiated.

TEST REQUIREMENTS

The Test Requirement demonstrates functional capability of the system by verifying automatic emergency system initiation upon receipt of a smoke detection signal.

REFERENCES

1. 10 CFR 50, Appendix A, General Design Criterion 19, Control Room.

2. Regulatory Guide 1.95, Revision 1, Protection of Nuclear Power Plant Control Room Operators Against an Accidental Chemical Release.

3. DBD-37, Design Basis Document for Control Building Heating, Ventilation, and Air Conditioning System.

4. NUS-3697, Revision 2, February 1983, Control Room Habitability Analysis.

5. NLU-83-673, TMI Action Item III.D.3.4-Control Room Habitability, NRC Safety Evaluation dated October 18, 1983.

B 3.19 CONTROL ROOM EMERGENCY VENTILATION (CREV) SYSTEM—CHLORINE PROTECTION MODE

BASES

BACKGROUND

One of the principal design objectives of the Control Building Heating, Ventilation and Air Conditioning (CBHVAC) System is to permit continuous occupancy of the control room emergency zone under normal operating conditions and under the postulated design basis events throughout the life of the plant. The Control Building HVAC System must function to provide protection to the operators for three type events: a radiation event, up to and including a Design Basis Accident (e.g., Main Steam Line Break [MSLB] Accident, Refueling Accident, Control Rod Drop Accident, or Loss of Coolant Accident [LOCA]), a toxic gas event (complete rupture of the 55 ton chlorine tank car located near the service water building, or a slow leak lasting for an extended period of time), and an external smoke event. These events form the basis for the design of the Control Room Emergency Ventilation (CREV) System function of the CBHVAC System. The radiation protection function of CREV System is addressed in Technical Specifications.

The CREV System is designed to meet General Design Criterion (GDC) 19 (Reference 1). In addition, the system is designed using the guidance of Regulatory Guide 1.95, Revision 1 (Reference 2). Commitments have also been made to design the chlorine detection and isolation logic to single failure criteria, with approved exceptions (Reference 3, Section 3.6).

TRMS

OPERABILITY of the CREV System ensures that the control room will remain habitable for operations personnel during and following all credible hazard event scenarios external to the control room, consistent with the assumptions in the various analyses. Two redundant subsystems of the CREV System are required to be OPERABLE to ensure that at least one is available, assuming a single failure disables the other subsystem. The CREV System is considered OPERABLE when the individual components necessary to control operator exposure are OPERABLE in both subsystems. For the chlorine protection mode, a subsystem is considered OPERABLE when:

1. The isolation dampers are OPERABLE, and

2. The logic components necessary to achieve automatic isolation are functional, as described in Reference 3, Section 3.1.

(continued)

BASES (continued)

TRMS (continued)

Two additional OPERABILITY requirements apply to all modes of CREV System operation. The CBHVAC Control Air System must be OPERABLE to support damper operation. In addition, the control room envelope must be maintained, including the integrity of the walls, floors, ceilings, ductwork, and access doors. The control room envelope includes the electronic equipment rooms, the central control room area, computer rooms, kitchen, restrooms, and the supply and return ductwork up to and including the isolation dampers.

The following components, including their associated logic trains, actuation devices, and power supplies, are non-redundant. Their OPERABILITY affects both trains of the CREV System. These components are: control room (washroom) exhaust isolation damper, control room normal make-up damper, and the control room emergency recirculation damper. In addition, the control room is not equipped with redundant outdoor air intakes (References 4 and 5).

In the event of a chlorine release, the CBHVAC System enters a full recirculation mode (chlorine protection mode), with no outdoor air intake. The emergency filtration trains do not start, since they do not effectively remove chlorine and may be damaged by the presence of chlorine. Protection for chlorine gas events "overrides" any concurrent, ongoing, or subsequent radiation or smoke initiation signals. The override design offers protection to operations personnel in the control room by providing protection against potentially fatal chlorine gas releases. This protection is required any time the chlorine tank car is within the exclusion area.

APPLICABILITY

OPERABILITY of the chlorine protection mode of the CREV System is required any time the chlorine tank car is within the exclusion area. Analyses demonstrate that movement of the tank car outside the exclusion area sufficiently reduces the threat of control room operator incapacitation from a release of this chemical.

COMPENSATORY MEASURES

With the chlorine protection mode inoperable for reasons other than inoperable chlorine isolation instrumentation, the chlorine tank car must be removed from the exclusion area within the next eight hours to ensure adequate protection for the operators. Chlorine gas protection is not required with the tank car outside of the exclusion area. Eight hours is considered adequate time to perform the necessary system alignments and to allow plant personnel to remove the chlorine tank car from the site in an orderly manner.

(continued)

BASES

COMPENSATORY MEASURES (continued)

With the plant physically unable to remove the chlorine tank car from the site, Required Compensatory Measures must be taken to return the chlorine protection mode to OPERABLE status and initiate a Condition Report.

Compensatory Measure A.2.2 is modified by a Note which eliminates the requirement to initiate a Condition Report when equipment inoperability is due solely to planned maintenance or performance of surveillance. The intent of initiation of a Condition Report is to ensure that proper corrective actions are taken to restore inoperable equipment. When equipment is inoperable due to planned maintenance or performance of surveillance testing, such corrective actions are not required. If, however, unexpected failures are identified during performance of the maintenance or surveillance testing, a Condition Report shall be initiated.

TEST REQUIREMENTS

The Test Requirement demonstrates functional capability of the system by verifying the override function of the chlorine protection function. Testing of the chlorine override function ensures OPERABILITY of the chlorine protection mode of the CREV System by demonstrating the capability of the system to prevent the emergency filtration units from initiating during a chlorine event.

REFERENCES

1. 10 CFR 50, Appendix A, General Design Criterion 19, Control Room.

2. Regulatory Guide 1.95, Revision 1, Protection of Nuclear Power Plant Control Room Operators Against an Accidental Chemical Release.

3. DBD-37, Design Basis Document for Control Building Heating, Ventilation, and Air Conditioning System.

4. NUS-3697, Revision 2, February 1983, Control Room Habitability Analysis.

5. NLU-83-673, TMI Action Item III.D.3.4-Control Room Habitability, NRC Safety Evaluation dated October 18, 1983.

B 3.20 FLOOD PROTECTION

BASES

The limitation on flood protection ensures that facility protective actions will be taken and operation will be terminated in the event of flood conditions. The limit of elevation 17'6" Mean Sea Level is based on the maximum elevation at which facility flood control measures provide protection to safety-related structures, systems, components, and equipment.

B 3.21 SNUBBERS

BASES

All snubbers are required OPERABLE to ensure that the structural integrity of the Reactor Coolant System and all other safety-related systems is maintained during and following a seismic or other event initiating dynamic loads. Snubbers excluded from this inspection program are those installed on nonsafety-related systems and then only if their failure or failure of the systems which they are installed, would have no adverse effect on any safety-related system.

Snubbers are classified and grouped by design and manufacturer but not by size (i.e., "type of snubber" shall mean snubbers of the same design and manufacturer, irrespective of capacity). For example, mechanical snubbers utilizing the same design features of the 2-kip, 10-kip, and 100-kip capacity manufactured by Company "A" are of the same type. The same design mechanical snubbers manufactured by Company "B" for the purposes of this Specification would be of a different type, as would hydraulic snubbers from either manufacturer.

A list of all required individual snubbers necessary for structural integrity, with detailed information of snubber location and size and of system affected, shall be available at the plant in accordance with Section 50.71(c) of 10 CFR Part 50. The accessibility of each snubber shall be determined and approved by the Plant Nuclear Safety Committee. The determination shall be based upon the existing radiation levels and the expected time to perform a visual inspection in each snubber location as well as other factors associated with accessibility during plant operations (e.g., temperature, atmosphere, locations, etc.), and the recommendations of Regulatory Guides 8.8 and 8.10. The addition or deletion of any hydraulic or mechanical snubber shall be made in accordance with Section 50.59 of 10 CFR Part 50.

The visual inspection frequency is based upon maintaining a constant level of snubber protection to each safety-related system. Therefore, the required inspection interval varies inversely with the observed snubber failures on a given system and is determined by the number of inoperable snubbers found during an inspection of each system. In order to establish the inspection frequency for each type of snubber on a safety-related system, it was assumed that the frequency of snubber failures and initiating events are constant with time and that the failure of any snubber on that system could cause the system to be unprotected and to result in failures during an assumed initiating event. Inspections performed before that interval has elapsed may be used as a new reference point to determine the next inspection. However, the result of such early inspections performed before the original required time interval has elapsed (nominal time less 25%) may not be used to lengthen the required inspection interval. Any inspection whose results require a shorter inspection interval will override the previous schedule.

(continued)

BASES (continued)

The acceptance criteria are to be used in the visual inspection to determine OPERABILITY of the snubbers. For example, if a fluid port of a hydraulic snubber is found to be uncovered, the snubber shall be declared inoperable and shall not be determined OPERABLE via functional testing.

To provide assurance of snubber functional reliability one of three functional testing methods are used with the stated acceptance criteria:

1. Functionally test 10% of a type of snubber with an additional 10% tested for each functional testing failure, or

2. Functionally test a sample size and determine sample acceptance or rejection using Figure 3.21-1, or

3. Functionally test a representative sample size and determine sample acceptance or rejection using the stated equation.

Figure 3.21-1 was developed using "Wald's Sequential Probability Ratio Plan" as described in "Quality Control and Industrial Statistics" by Acheson J. Duncan.

Permanent or other exemptions from the test program for individual snubbers may be granted if a justifiable basis for exemption is presented and, if applicable, snubber life destructive testing was performed to qualify the snubbers for the applicable design conditions at either the completion of their fabrication or at a subsequent date. Snubbers so exempted shall be listed in the list of individual snubbers indicating the extent of the exemptions.

The service life of a snubber is established via manufacturer input and information through consideration of the snubber service conditions and associated installation ad maintenance records (newly installed snubber, seal replaced, spring replaced, in high radiation area, in high temperature area, etc.). The requirement to monitor the snubber service life is included to ensure that the snubbers periodically undergo a performance evaluation in view of their age and operating conditions. These records will provide statistical bases for future consideration of snubber service life.

Amendments 241 and 269 (Reference 1) to Renewed Facility Operating Licenses DPR-71 and DPR-62 for Units 1 and 2, respectively, approved the addition of Technical Specification Limiting Condition for Operation (LCO) 3.0.8 for snubbers. LCO 3.0.8 establishes conditions under which systems are considered to remain capable of performing their intended safety function when associated snubbers are not capable of providing their associated support function(s). LCO 3.0.8 states that the supported system is not considered to be inoperable solely due to one or more snubbers not capable of performing their associated support function(s).

BASES (continued)

Compensatory Measure A applies when one or more snubbers are not capable of providing their associated support function(s) to a single train or subsystem of a multiple train or subsystem supported system or to a single train or subsystem supported system. TRMS, Compensatory Measure A.1 requires an engineering evaluation to be performed on the attached component to determine if the component is acceptable for continued operation. The Completion Time of 72 hours is based on the original licensing basis for snubbers and is considered acceptable based on the amount of time required to perform the required engineering evaluation.

Compensatory Measure A.2 allows 72 hours to restore the snubber(s) before declaring the supported system inoperable. The 72 hour Completion Time is reasonable based on the low probability of a seismic event concurrent with an event that would require operation of the supported system occurring while the snubber(s) are not capable of performing their associated support function and due to the availability of the redundant train of the supported system.

Compensatory Measure B applies when one or more snubbers are not capable of providing their associated support function(s) to more than one train or subsystem of a multiple train or subsystem supported system. Compensatory Measure B.1 requires an engineering evaluation to be performed on the attached component to determine if the component is acceptable for continued operation. The Completion Time of 72 hours is based on the original licensing basis for snubbers and is considered acceptable based on the amount of time required to perform the required engineering evaluation.

Compensatory Measure B.2 allows 12 hours to restore the snubber(s) before declaring the supported system inoperable. The 12 hour Completion Time is reasonable based on the low probability of a seismic event concurrent with an event that would require operation of the supported system occurring while the snubber(s) are not capable of performing their associated support function.

REFERENCES

1. Letter from Stewart N. Bailey (USNRC) to James Scarola (CP&L) dated February 15, 2007, Issuance of Amendment to Adopt TSTF-372 (TAC Nos. MD1371 and MD1372).

B 3.22 SEALED SOURCE CONTAMINATION

BASES

The limitation on removable contamination for sources requiring leak testing, including alpha emitters, is based on 10 CFR 70.39(c) limits for plutonium. This limitation will ensure that leakage from by-product, source, and special nuclear material sources will not exceed allowable intake values. Sealed sources are classified into three groups according to their damage to a source in that group. Those sources which are frequently handled are required to be tested more often than those which are not. Sealed sources that are continuously enclosed within a shielded mechanism, i.e., sealed sources with radiation monitoring or boron measuring devices, are considered to be stored and need not be tested unless they are removed from the shielding mechanism. Fission detectors associated with Local Power Range Monitors are considered to be stored and continuously enclosed within a shielded mechanism when the fission detector is enclosed in the associated detector housing tube provided the detector housing tube is not breached.

B 3.23 DECAY TIME

BASES

The minimum requirement for reactor subcriticality prior to fuel movement ensures that sufficient time has elapsed to allow the radioactive decay of the short lived fission products. This decay time is consistent with the assumptions used in the accident analyses.

B 3.24 COMMUNICATIONS

BASES

The requirement for communications capability ensures that refueling station personnel can be promptly informed of significant changes in the facility status or core reactivity condition during movement of fuel within the reactor pressure vessel.

B 3.25 CRANE AND HOIST OPERABILITY

BASES

The OPERABILITY requirements of the cranes and hoists used for movement of fuel assemblies ensures that: 1) each has sufficient load capacity to lift a fuel element, and 2) the core internals and pressure vessel are protected from excessive lifting force in the event they are inadvertently engaged during lifting operations.

The fuel grapple hoist overload cutoff demonstration load of 1600 pounds is based on the submerged fuel bundle loads of 650 pounds, the highest unloaded hoist cable-supported load of approximately 660 pounds, and a tolerance for fuel bundle friction and load spikes of 290 pounds.

The fuel grapple hoist loaded interlock demonstration load of 750 pounds is based on the highest unloaded hoist cable-supported load of approximately 660 pounds plus a tolerance for load spikes of 90 pounds as sections are raised and lowered.

B 3.26 CRANE TRAVEL—SPENT FUEL STORAGE POOL

BASES

The restriction on movement of loads in excess of the weight specified provides some assurance that with the failure of the lifting device the fuel pool would not be damaged to such a degree that the irradiated fuel would be subjected to a loss-of-coolant.

APPENDIX A

RELOCATED ITEMS MATRIX

ITS	CTS	Description	General Location	Specific Location
2.0 LA.2	6.7.1.b, 6.7.1.c, and 6.7.1.d	Safety Limit Violations and the notification of the Vice President-Brunswick Nuclear Plant along with submittal of a report.	UFSAR	Section 13.5.1
3.0 LA.1	3.0.4	Discussion of intent of CTS 3.0.4 phrase "Exceptions to this Specification are stated in individual Specifications."	Bases	B 3.0: LCO 3.0.4
3.1.1 LA.1	4.1.1.a	Detail of the method for performing the surveillance.	Bases	B 3.1.1: SR 3.1.1.1
3.1.2 LA.1	3.1.2 Action a	Perform an analysis to determine and explain the cause of the reactivity difference.	Bases	B 3.1.2: Action A.1
3.1.3 LA.1	3.1.3.1 Actions a.1.b	Details for method of disarming stuck control rods.	Bases	B 3.1.3: Actions A.1, A.2, A.3, and A.4
3.1.3 LA.1	3.1.3.1 Actions b.1.c and b.2.a. 3.1.3.6 Action a.2	Details for method of disarming non-stuck control rods.	Bases	B 3.1.3: Actions C.1 and C.2
3.1.3 LA.2	4.1.3.6	Details of method of performing the control rod coupling integrity checks.	Bases	B 3.1.3: SR 3.1.3.5
3.1.3 LA.3	3.1.3.7 Action a	Methods for determining the position of a control rod and details of which control rod position switches are required.	Bases	B 3.1.3: SR 3.1.3.1
3.1.3 LA.4	3.1.3.6 Action a.2	Method of coupling a control rod.	Bases	B 3.1.3: Actions C.1 and C.2
3.1.3 LA.5	4.1.1.b Unit 2	Detail of method of performing SDM.	Bases	B 3.1.3: Actions A.1, A.2, A.3, and A.4
3.1.4 LA.1	4.1.3.2, 4.1.3.3, and 4.1.3.4	Details of the method for performing control rod scram time testing.	Bases	B 3.1.4: SR 3.1.4.1, SR 3.1.4.2, and SR 3.1.4.4
3.1.4 LA.2	4.1.3.2.c	Details of what constituted a representative sample of control rods to be tested.	Bases	B 3.1.4: SR 3.1.4.2

ITS	CTS	Description	General Location	Specific Location
3.1.5 LA.1	4.1.3.5	Details of the method of verifying OPERABILITY of control rod scram accumulators (not in alarmed condition).	Bases	B 3.1.5: SR 3.1.5.1
3.1.5 LC.1	4.1.3.5.a and 4.1.3.5.b	Control rod scram accumulators, leak detectors, and pressure detectors testing.	UFSAR	Section 3.9.4.1.2.4
3.1.7 LA.1	3.1.5	Details of what constitutes an OPERABLE Standby Liquid Control (SLC) System.	Bases	B 3.1.7: Background and LCO
3.1.7 LA.2	4.1.5.b.3	Details of the method for performing test that verifies SLC boron concentration.	Bases	B 3.1.7: SR 3.1.7.5
3.1.7 LA.2	4.1.5.c.1	Details of the method for performing test that verifies SLC flow of system to reactor.	Bases	B 3.1.7: SR 3.1.7.7
3.1.7 LA.3	4.1.5.c.3	SLC System relief valve setting.	UFSAR	Section 9.3.4.4
3.1.7 LA.5	Figure 3.1.5-1	Statement that boron concentration range in Figure 3.1.5-1 supports a boron concentration of 660 ppm.	Bases	B 3.1.7: Applicable Safety Analysis
3.1.8 LA.1	4.1.3.1.1 Note *	Allowance for scram discharge volume vent and drain valves to be closed intermittently under administrative control during testing.	Bases	B 3.1.8: SR 3.1.8.1
None	3/4.1.3.8 LA.1	Requirement for CRD housing support to be in place.	TRM	TRMS 3.1
3.2.1 LA.1	3.2.1	The types of APLHGR limits, the methodology used to determine the limits, and the COLR location of the limits to be used when hand calculations are required.	Bases	B 3.2.1: LCO
3.2.1 LA.2	3.2.1 Action	Requirement to "initiate corrective action within 15 minutes and continue corrective action" to restore limit.	Bases	B 3.2.1: Action A.1
3.2.2 LA.1	3.2.2.1	Details that MPCR limits in the COLR are provided as a function of core flow, core power, and cycle average exposure.	Bases	B 3.2.2: LCO
3.2.2 LA.2	3.2.2.1 Action	Requirement to "initiate corrective action within 15 minutes and continue corrective action" to restore limit.	Bases	B 3.2.2: Action A.1

ITS	CTS	Description	General Location	Specific Location
3.2.2 LA.3	3.2.2.2	Details related to the determination of average control rod scram time (Tau) and the use of Tau in determining the operating limits of MCPRs.	UFSAR	Section 4.4.1.5
3.3.1.1 LA.1	Table 2.2.1-1	Trip setpoints for associated instrumentation.	TRM	Appendix B: TRM Table 3.3.1.1-1
3.3.1.1 LA.2	Table 2.2.1-1 Note (a)	Design details of IRM RPS instrumentation.	Bases	B 3.3.1.1: ASA/ LCO/ APP of Function 1.a
3.3.1.1 LA.2	Table 2.2.1-1 Notes (c) and (d)	Design details of APRM RPS instrumentation.	Bases	B 3.3.1.1: ASA/ LCO/ APP of Functions 2.b and 2.c
3.3.1.1 LA.3	Table 2.2.1-1 Note (b)	Note (b): APRM Neutron Flux - High, Startup Function is a fixed point and is increased when the reactor mode switch is placed in run position.	UFSAR	Section 7.6.1.1.4
3.3.1.1 LA.3	Table 2.2.1-1 Notes (e) and (f)	Note (e): Main Steam Line Isolation Valve - Closure Function is bypassed when not in the run mode. Note (f): TSV - Closure and TCV Fast Closure Functions are bypassed < 30% rated thermal power.	UFSAR	Section 7.2.1.1.4
3.3.1.1 LA.4	Table 2.2.1-1 Note (g)	Vessel water levels are referenced to REFERENCE LEVEL ZERO.	Bases	B 3.3.1.1: ASA/ LCO/ APP of Function 4
3.3.1.1 LA.5	3.3.1 Actions * and ** Notes	Details relating to placing channels in trip.	Bases	B 3.3.1.1: Actions A.1 and A.2; B.1 and B.2
3.3.1.1 LA.6	4.3.1.2	Details of the method for performing surveillances.	Bases	B 3.3.1.1: SR 3.3.1.1.15
3.3.1.1 LA.6	Table 4.3.1-1 Note (e)	Details of the method for performing surveillances.	Bases	B 3.3.1.1: SR 3.3.1.1.3
3.3.1.1 LA.6	Table 4.3.1-1 Note (g)	Details of the method for performing surveillances.	Bases	B 3.3.1.1: SR 3.3.1.1.8

ITS	CTS	Description	General Location	Specific Location
3.3.1.1 LA.7	Table 3.3.1-1 Note (b)	Requirements associated with the removal of shorting links.	UFSAR	Section 7.6.1.1.1.2.d
3.3.1.1 LA.8	Table 3.3.1-1 Note (c)	Number of LPRM inputs for APRM OPERABILITY.	Bases	B 3.3.1.1: ASA/LCO/APP of APRM.
3.3.1.1 LA.9	Table 4.3.1-1 Note (h)	Details on how to perform calibration of position switches.	Bases	B 3.3.1.1: SR 3.3.1.1.13
3.3.1.2 LA.1	4.3.5.4.b	Details of the method for performing the surveillance.	Bases	B 3.3.1.2: LCO
3.3.1.2 LA.2	3/4.9.2	Details relating to SRM OPERABILITY.	Bases	B 3.3.1.2: LCO; SR 3.3.1.2.4
3.3.1.2 LA.3	3.9.2.c	Removal of RPS shorting links.	UFSAR	Section 7.6.1.1.1.2.d
3.3.2.1 LA.1	Table 3.3.4-2	Trip setpoints for associated instrumentation.	TRM	Appendix B: TRM Table 3.3.2.1-1
3.3.2.1 LA.2	Table 4.3.1-1 Note (a)	Details of the methods for performing the RBM CHANNEL CALIBRATION.	Bases	B 3.3.2.1: SR 3.3.2.1.7
3.3.2.1 LA.3	3.1.4.1 Action d.2	Details relating to actions when an individual control rod is bypassed on the RWM.	Bases	B 3.3.2.1: Actions C.1, C.2.1.1, C.2.1.2, and C.2.2
3.3.2.1 LA.4	4.1.4.1.1	Details of the methods for performing RWM CHANNEL FUNCTIONAL TEST.	Bases	B 3.3.2.1: SR 3.3.2.1.2 and SR 3.3.2.1.3
3.3.2.1 R.1	3/4.3.4.1 3/4.3.4.3 3/4.3.4.4 3/4.3.4.5	Control Rod Block Instrumentation for APRM, IRM, SRM, and SDV LCO's and Surveillance Requirements.	TRM	TRMS 3.3 and Appendix C: TRM Table 3.3-2
3.3.3.1 LA.1	Table 3.3.5.3-1 ACTION 81	The use of alternate methods of post accident monitoring.	Bases	B 3.3.3.1: Action B.1

ITS	CTS	Description	General Location	Specific Location
3.3.3.1 LA.2	Table 4.3.5.3-1 Note (a)	Details of the method for performing the surveillance.	Bases	B 3.3.3.1: SR 3.3.3.1.2 and SR 3.3.3.1.3
3.3.3.1 LA.3	3.6.6.4	Details relating to system design.	Bases	B 3.3.3.1: LCO for Function 9
3.3.3.1 LA.4	4.6.6.4	Details of the method for performing the surveillance.	Bases	B 3.3.3.1: SR 3.3.3.1.2 and SR 3.3.3.1.3
3.3.3.1 R.1	3/4.3.5.3	Accident Monitoring Instrumentation; Suppression Chamber Atmosphere Temperature,Drywell Radiation (Airborne radiation monitors),Safety/Relief Valve Position Indication,Turbine Building Ventilation Monitor, Offgas Stack Ventilation Monitor LCO's and Surveillance Requirements.	TRM	TRMS 3.4
3.3.3.2 LA.1	3/4.3.5.2	Details relating to system design and operation.	Bases	B 3.3.3.2: LCO and Table B 3.3.3.2-1
3.3.4.1 LA.1	3/4.3.6.1	Trip setpoints for associated instrumentation.	TRM	Appendix B: TRM Table 3.3.4.1-1
3.3.4.1 LA.2	Table 3.3.6.1-2 Note (a)	Vessel water levels are referenced to REFERENCE LEVEL ZERO.	Bases	B 3.3.4.1: ASA/ LCO/ APP of Function a
3.3.5.1 LA.1	3/4.3.3	Trip setpoints for associated instrumentation.	TRM	Appendix B: TRM Table 3.3.5.1-1
3.3.5.1 LA.2	4.3.3.2	Details of methods of performing the LOGIC SYSTEM FUNCTIONAL TESTS.	Bases	B 3.3.5.1: SR 3.3.5.1.5
3.3.5.1 LA.3	Table 3.3.3-1 Function 2.c	Reactor Vessel Shroud Level Function is a permissive for drywell spray.	Bases	B 3.3.5.1: ASA/ LCO/ APP of Function 2.e
3.3.5.1 LA.3	Table 3.3.3-1 Functions 4.e and 4.f	CS and RHR Pump Discharge Pressure-High Functions are permissives for ADS.	Bases	B 3.3.5.1: ASA/ LCO/ APP of Functions 4.d, 4.e, 5.d, and 5.e
3.3.5.1 LA.4	Table 3.3.3-1 Function 2.d.1	Details associated with equipment started by the LPCI Reactor Steam Dome Pressure-Low Function.	Bases	B 3.3.5.1: ASA/ LCO/ APP of Functions 1.c and 2.c

ITS	CTS	Description	General Location	Specific Location
3.3.5.1 LA.5	Table 3.3.3-1 Note (c)	Detail which describes what equipment receives the HPCI pump suction swap over signals.	Bases	B 3.3.5.1: ASA/ LCO/ APP of Functions 3.d and 3.e
3.3.5.1 LA.6	Table 3.3.3-1 ACTION 30, item b	Requirement to place all inoperable channels that do not cause the trip function to occur in the tripped condition.	Bases	B 3.3.5.1: Actions B.1, B.2, and B.3
3.3.5.1 LA.7	Table 3.3.3-2 Note (b)	Note (b): Reactor vessel water levels are referenced to REFERENCE LEVEL ZERO.	Bases	B 3.3.5.1: ASA/ LCO/ APP of Functions 1.a and 2.a, 2.e, 3.a, 3.c, 4.a and 5.a, and 4.c and 5.c
3.3.5.1 LA.7	Table 3.3.3-2 Note (c)	Note (c): Suppression chamber water level zero is the torus centerline minus 1 inch.	Bases	B 3.3.5.1: ASA/ LCO/ APP of Function 3.e
3.3.5.1 R.1	3/4.3.3.1.e 3/4.3.3.2.f 3/4.3.3.3.e 3/4.3.3.4.g	ECCS Actuation Instrumentation LCO and Surveillances associated with: Core Spray Bus Power Monitor; LPCI Bus Power Monitor; HPCI Bus Power Monitor; and ADS Bus Power Monitor.	TRM	TRMS 3.6
3.3.5.1 R.2	3/4.3.3.4.a	ADS Inhibit Switch LCO and Surveillance Requirements.	TRM	TRMS 3.7
3.3.5.2 LA.1	3/4.3.7	Trip setpoints for associated instrumentation.	TRM	Appendix B: TRM Table 3.3.5.2-1
3.3.5.2 LA.2	4.3.7.2	Details relating to the methods for performing the LOGIC SYSTEM FUNCTIONAL TEST.	Bases	B 3.3.5.2: SR 3.3.5.2.5
3.3.5.2 LA.3	Table 3.3.7-1 Notes (b) and (c)	RCIC System design and operational details.	Bases	B 3.3.5.2: Background
3.3.5.2 LA.3	Table 3.3.7-1 Note (d)	RCIC System design and operational details.	Bases	B 3.3.5.2: ASA/ LCO/ APP of Function 3
3.3.5.2 LA.4	Table 3.3.7-2 Note (a)	Reactor vessel water levels are referenced to REFERENCE LEVEL ZERO.	Bases	B 3.3.5.2: ASA/ LCO/ APP of Functions 1 and 2

ITS	CTS	Description	General Location	Specific Location
3.3.6.1 LA.1	3/4.3.2	Trip setpoints for associated instrumentation.	TRM	Appendix B: TRM Table 3.3.6.1-1
3.3.6.1 LA.2	4.3.2.2	Details relating to the method for performing LOGIC SYSTEM FUNCTIONAL TEST.	Bases	B 3.3.6.1: SR 3.3.6.1.7
3.3.6.1 LA.3	* Note to 3.3.2 Actions	Details of the method for performing Required Actions of which trip system to trip.	Bases	B 3.3.6.1: Action A.1
3.3.6.1 LA.4	Table 3.3.2-1	Details relating to system design and operation.	Bases	B 3.3.6.1: ASA/LCO/APP of all Functions
3.3.6.1 LA.4	Table 3.3.2-1 Note (k)	Details relating to system design and operation.	Bases	B 3.3.6.1: ASA/LCO/APP of Functions 3.e and 4.e
3.3.6.1 LA.5	Table 3.3.2-1 Function 1.e	Requirement for bypassing the Condenser Vacuum-Low Function when <500 psig.	UFSAR	Section 7.3.1.1.6.20
3.3.6.1 LA.7	Table 3.3.2-2 Note (a)	Reactor vessel water levels are referenced to REFERENCE LEVEL ZERO.	Bases	B 3.3.6.1: ASA/LCO/APP of Functions 1.a, 2.a, 5.g, and 6.b
3.3.6.1 R.1	3/4.3.2.4.a.5 3/4.3.2.4.b.5	HPCI and RCIC Bus Power Monitoring.	TRM	TRMS 3.6
3.3.6.1 R.2	3/4.3.2.1.d and 3/4.3.2.1.f	Main Steam Line Tunnel and Turbine Bldg Area Temperature Instrumentation for MSIV isolation function (except for MSIV pit).	TRM	TRMS 3.11 and Appendix C: TRM Table 3.11-2
3.3.6.2 LA.1	3/4.3.2	Trip setpoints for associated instrumentation.	TRM	Appendix B: TRM Table 3.3.6.2-1
3.3.6.2 LA.2	4.3.2.2	Details relating to the method for performing the LOGIC SYSTEM FUNCTIONAL TEST.	Bases	B 3.3.6.2: SR 3.3.6.2.5
3.3.6.2 LA.3	* Note to 3.3.2 Actions	Details of the method for performing Required Actions of which trip system to trip.	Bases	B 3.3.6.2: Action A.1
3.3.6.2 LA.4	Table 3.3.2-1	Details relating to system design and operation.	Bases	B 3.3.6.2: Background

ITS	CTS	Description	General Location	Specific Location
3.3.6.2 LA.5	Table 3.3.2-2 Note (a)	Reactor vessel water levels are referenced to REFERENCE LEVEL ZERO.	Bases	B 3.3.6.2: ASA/LCO/APP of Function 1
3.3.7.1 LA.1	3/4.3.5.5	Trip setpoints for associated instrumentation.	TRM	Appendix B: TRM Table 3.3.7.1-1
3.3.7.1 R.1	3/4.3.5.5.1 3/4.3.5.5.3	CREV System Chlorine Protection Instrumentation and Smoke Protection Mode Instrumentation requirements.	TRM	TRMS 3.12 and Appendix C: TRM Table 3.12-2
3.3.7.2 LA.1	3.3.8	Details relating to instrumentation OPERABILITY.	Bases	B 3.3.7.2: LCO
3.3.8.1 LA.1	3/4.3.3	Trip setpoints for associated instrumentation.	TRM	Appendix B: TRM Table 3.3.8.1-1
3.3.8.1 LA.2	4.3.3.2	Details relating to the methods for performing the LOGIC SYSTEM FUNCTIONAL TEST.	Bases	B 3.3.8.1: SR 3.3.8.1.4
3.3.8.1 LA.3	Table 3.3.3-1 Table 3.3.3-2	Details relating to system design (i.e number of channels provided, etc.).	Bases	B 3.3.8.1: Background
3.3.8.1 LA.4	Table 3.3.3-2	Bases for 120V loss of power instrumentation trip setpoints and Allowable Values.	TRM	Appendix B: TRM Table 3.3.8.1-1
None	3/4.3.5.1 R.1	Seismic Monitoring Instrumentation Technical Specification.	TRM	TRMS 3.9
None	3/4.3.5.6 R.1	Chlorine Intrusion Monitors Technical Specification.	TRM	TRMS 3.5 and Appendix C: TRM Table 3.5-2
None	3/4.3.5.8 R.1	Radioactive Liquid Effluent Monitoring Instrumentation Technical Specification.	ODCM	ODCMS 7.3.1
None	3/4.3.5.9 LC.1	Requirements for the Main Condenser Off-Gas Treatment System Explosive Gas Monitoring System (Function G).	ODCM	ODCMS 7.3.2
None	3/4.3.5.9 R.1	Radioactive Gaseous Effluent Monitoring Instrumentation Technical Specification.	ODCM	ODCMS 7.3.2

ITS	CTS	Description	General Location	Specific Location
3.4.2 LA.1	4.4.1.2.2	Requirements that each jet pump be operable prior to entering OPERATIONAL CONDITION 2 and at least once per 24 hours thereafter with THERMAL POWER less than or equal to 25% of RTP.	UFSAR	Deleted in Section 3.9.5.4 per LDCR 04FSAR-038.
3.4.3 LA.1	* footnote to 3.4.2	Details relating to lift setting pressures of the safety/relief valves.	Bases	B 3.4.3: SR 3.4.3.1
3.4.4 LA.1	4.4.3.2	Details of the methods for performing the Reactor Coolant System leakage surveillance.	Bases	B 3.4.4: SR 3.4.4.1
3.4.6 LA.1	Table 4.4.5-1 Item 5	Requirements for isotopic analysis for xenon and krypton.	UFSAR	Section 11.1.2
3.4.9 LA.1	3.4.6.1.c	Limitations on the maximum RCS temperature change in any one hour period during inservice leak and hydrostatic testing operations above the heatup and cooldown limit curves.	Bases	B 3.4.9: Actions C.1 and C.2
3.4.9 LA.2	4.4.6.1.3	Requirements for reactor material irradiation surveillance specimen location, removal and examination.	UFSAR	Section 5.3.1.6
3.4.9 LA.2	Table 4.4.6.1.3-1	Requirements for reactor material irradiation surveillance specimen location, removal and examination.	UFSAR	Table 5-8
3.4.9 LA.3	3.4.1.3.c and 3.4.1.3 Action	Operational limits during single recirculation loop operation.	UFSAR	Section 5.4.1.2.2
3.4.9 LA.4	3.4.6.1 Action	Details of method for determining RCS is acceptable for continued operation.	Bases	B 3.4.9: Actions A.1 and A.2; C.1 and C.2
3.4.9 LA.5	3.4.1.3.a	Details of method for performing the recirculation pump startup temperature differential verification (specific RCS location to monitor temperature).	Bases	B 3.4.9: SR 3.4.9.4 and SR 3.4.9.5
None	3/4.4.4 R.1	Reactor Coolant System Chemistry Technical Specification.	TRM	TRMS 3.13
None	3/4.4.8 R.1	Reactor Coolant System Structural Integrity Technical Specification.	TRM	TRMS 3.14

ITS	CTS	Description	General Location	Specific Location
3.5.1 LA.1	3.5.1, 3.5.3.1 and 3.5.3.2	Details relating to system OPERABILITY.	Bases	B 3.5.1: Background
3.5.1 LA.2	4.5.1.c.1, 4.5.3.1.d, and 4.5.3.2.c	Details of methods for performing Surveillances.	Bases	B 3.5.1: SR 3.5.1.9
3.5.1 LA.2	4.5.2.a	Details of methods for performing Surveillances.	Bases	B 3.5.1: SR 3.5.1.10
3.5.1 LA.2	4.5.2.b	Details of methods for performing Surveillances.	Bases	B 3.5.1: SR 3.5.1.11
3.5.1 LA.2	4.5.3.1.c.1 and 4.5.3.2.d	Details of methods for performing Surveillances.	Bases	B 3.5.1: SR 3.5.1.6, SR 3.5.1.7, and SR 3.5.1.8
3.5.1 LA.3	4.5.1.c.3	Verification of automatic transfer of HPCI suction valves.	Bases	B 3.5.1: SR 3.5.1.9
3.5.1 LA.4	4.5.1.c.2	Lower value of the HPCI turbine steam pressure range.	Bases	B 3.5.1: SR 3.5.1.6, SR 3.5.1.7, and SR 3.5.1.8
3.5.1 LC.1	4.5.3.1.c.2	Core Spray Header Delta Pressure Alarm Instrumentation Surveillance Requirements.	UFSAR	Section 7.3.3.1.3.7
3.5.2 LA.1	3.5.3.1, 3.5.3.2, and 3.5.4	Details relating to system OPERABILITY.	Bases	B 3.5.2: LCO
3.5.2 LA.2	4.5.3.1.c.1, 4.5.3.1.d. 4.5.3.2.b, and 4.5.3.2.c	Details relating to methods for performing surveillances.	Bases	B 3.5.2: SR 3.5.2.3, SR 3.5.2.5, SR 3.5.2.6, and SR 3.5.2.7
3.5.3 LA.1	3.7.4	Details relating to system OPERABILITY.	Bases	B 3.5.3: Background
3.5.3 LA.2	4.7.4.a.1	Details relating to methods for performing surveillances.	Bases	B 3.5.3: SR 3.5.3.1
3.5.3 LA.2	4.7.4.c.1 (including Note +)	Details relating to methods for performing surveillances.	Bases	B 3.5.3: SR 3.5.3.5

ITS	CTS	Description	General Location	Specific Location
3.5.3 LA.2	4.7.4.b and 4.7.4.c.2	Details relating to methods for performing surveillances.	Bases	B 3.5.3: SR 3.5.3.3 and SR 3.5.3.4
3.5.3 LA.3	4.7.4.c.3	Verification of automatic transfer of the RCIC pump suction.	Bases	B 3.5.3: SR 3.5.3.5
3.6.1.1 LA.1	1.0	Details of Primary Containment Integrity definition.	Bases	B 3.6.1.1: Background
3.6.1.2 LA.1	3.6.1.3.a	Details comprising OPERABILITY of the air lock.	Bases	B 3.6.1.2: LCO
3.6.1.3 LA.1	4.6.3.4	Details relating to methods for performing surveillances.	Bases	B 3.6.1.3: SR 3.6.1.3.7
3.6.1.3 LA.2	4.6.6.2.b.2	Details of the methods for performing surveillances.	Bases	B 3.6.1.3: SR 3.6.1.3.6
3.6.1.4 LA.1	4.6.1.6	Details of the methods for performing the drywell average air temperature surveillance.	Bases	B 3.6.1.4: SR 3.6.1.4.1
3.6.1.5 LA.1	3.6.4.2.b	Details relating to the OPERABILITY of the Nitrogen Backup System.	Bases	B 3.6.1.5: Background
3.6.1.5 LA.2	4.6.4.2.1.a.1 and 4.6.4.2.1.a.2	Details of the method for performing surveillances.	Bases	B 3.6.1.5: SR 3.6.1.5.3
3.6.1.5 LA.2	4.6.4.2.1.b.1 and 4.6.4.2.1.b.2	Details of the method for performing surveillances.	Bases	B 3.6.1.5: SR 3.6.1.5.4
3.6.1.5 LA.2	4.6.4.2.2.c	Details of the method for performing surveillances.	Bases	B 3.6.1.5: SR 3.6.1.5.6
3.6.1.5 LA.3	4.6.4.2.1.b.3	Details of visual inspection of reactor building-to-suppression chamber vacuum breakers.	UFSAR	Section 6.2.1.6.2
3.6.1.6 LA.2	4.6.4.1.b	Details of the methods for performing surveillances.	Bases	B 3.6.1.6: SR 3.6.1.6.2

ITS	CTS	Description	General Location	Specific Location
3.6.1.6 LA.2	4.6.4.1.c	Details of the methods for performing surveillances.	Bases	B 3.6.1.6: SR 3.6.1.6.1
3.6.2.3 LA.1	3.6.2.2	Details relating to system OPERABILITY.	Bases	B 3.6.2.3: Background and LCO
3.6.3.2 LA.1	3.6.6.2	Details relating to system OPERABILITY.	Bases	B 3.6.3.2: LCO
3.6.3.2 LA.2	4.6.6.2.b.1	Details of the methods for performing surveillances.	Bases	B 3.6.3.2: SR 3.6.3.2.3
3.6.4.1 LA.1	1.0	Details of Secondary Containment Integrity definition.	Bases	B 3.6.4.1: LCO B 3.6.4.2: LCO; Actions A.1 and A.2; Action B.1 B 3.6.4.3: LCO
3.6.4.2 LA.1	4.6.5.1.a and 4.6.5.2.a	Cycling of each automatic Secondary Containment Isolation Damper.	UFSAR	Section 6.2.3.4
3.6.4.2 LA.2	4.6.5.2.c.1	Details of the performance of isolation time verification.	Bases	B 3.6.4.2: SR 3.6.4.2.1
3.6.4.3 LA.1	3.6.6.1	Details relating to system design.	Bases	B 3.6.4.3: Background
3.6.4.3 LA.2	4.6.6.1.a	Details of the methods for performing standby gas treatment subsystem operating surveillance.	Bases	B 3.6.4.3: SR 3.6.4.3.1
3.6.4.3 LA.3	4.6.6.1.a	Details of performance of standby gas treatment subsystem surveillance with heaters "on automatic control."	Bases	B 3.6.4.3: SR 3.6.4.3.1
3.7.1 LA.1	3.7.1.1	Details relating to system OPERABILITY.	Bases	B 3.7.1: LCO
3.7.1 LA.2	4.7.1.1.b	Requirements for testing RHRSW pump flow.	UFSAR	Section 9.2.1.4
3.7.2 LA.1	3.7.1.2	Details relating to system OPERABILITY.	Bases	B 3.7.2: LCO

ITS	CTS	Description	General Location	Specific Location
3.7.2 LA.2	3.7.1.2	Requirements and Actions relating to system OPERABILITY in non-operating MODES (i.e., MODES 4 and 5).	Bases and TRM	B 3.4.8: LCO; B 3.9.7: LCO; B 3.9.8: LCO; TRMS 3.16
3.7.3 LA.1	3.7.2	Details relating to system OPERABILITY.	Bases	B 3.7.3: LCO
3.7.3 LA.2	4.7.2.a	Details of the methods for performing surveillances.	Bases	B 3.7.3: SR 3.7.3.1
3.7.3 LA.2	4.7.2.d.2	Details of the methods for performing surveillances.	Bases	B 3.7.3: SR 3.7.3.4
3.7.3 R.1	3/4.7.2	CREV smoke protection mode requirements.	TRM	TRMS 3.18
3.7.3 R.1	3/4.7.2	CREV chlorine protection mode requirements.	TRM	TRMS 3.19
3.7.5 LA.1	3.11.2.7 and 4.11.2.7.2	Details defining the radioactivity involved, methods for performing the surveillance, and methods for determining when an increase has occurred.	Bases	B 3.7.5: SR 3.7.5.1
3.7.5 LA.2	4.11.2.7.1	Requirements to monitor the radioactivity rate of noble gases at the main condenser.	ODCM	ODCMS Table 7.3.2-1, Function 6
3.7.7 LA.1	3.9.9 Action	Discussion of crane operation with loads.	UFSAR	Sections 9.1.4.1 and 9.1.4.2.3.2
3.7.7 LA.2	3.9.9 Action	Details of the method for performing action to place equipment in a safe condition.	Bases	B 3.7.7: Action A.1
None	3/4.7.3 R.1	Flood Protection Technical Specification.	TRM	TRMS 3.10 and TRMS 3.20
None	3/4.7.5 LA.1	Snubber Technical Specification.	TRM	TRMS 3.21
None	3/4.7.6 R.1	Sealed Source Contamination Technical Specification.	TRM	TRMS 3.22
3.8.1 LA.1	4.8.1.1.2.d.1	Requirements to inspect DGs in accordance with procedures prepared in accordance with manufacturer's recommendations.	UFSAR	Section 8.3.1.1.6.6
3.8.1 LA.2	4.8.1.1.2.a.4 Note *	Details associated with manually starting the DG for surveillances.	Bases	B 3.8.1: SR 3.8.1.2 and SR 3.8.1.7

ITS	CTS	Description	General Location	Specific Location
3.8.1 LA.3	4.8.1.1.2.d.6	Specific load value for the auto-connected loads.	UFSAR	Section 8.3.1.1.6.6 and Table 8-7
3.8.1 LA.4	3.8.1.1.a and 3.8.1.1.b	Details relating to system design.	Bases	B 3.8.1: Background
3.8.4 LA.1	3.8.2.3.a and 3.8.2.3.b	Details relating to system OPERABILITY.	Bases	B 3.8.4: Background and LCO
3.8.4 LA.3	4.8.2.3.2.d.1	Details of the DC loads and the licensed service duration for battery service test.	UFSAR	Section 8.3.2.1.4
3.8.4 LA.4	4.8.2.3.2.d.2	Details requiring battery charger to be demonstrated capable of recharging its associated battery after completion of the battery service test.	UFSAR	Section 8.3.2.1.4
3.8.7 LA.1	3.8.2.1, 4.8.2.1, 3.8.2.3, 4.8.2.3.1, 3.8.2.4.1, and 4.8.2.4.1.1	Details relating to system design and OPERABILITY.	Bases	B 3.8.7: Background; LCO; Table B 3.8.7-1
3.8.7 LA.1	3.8.2.4.1 * Note	Details relating to system design and OPERABILITY.	Bases	B 3.8.7: Actions B.1, B.2, B.3, and B.4
3.8.7 LA.2	3.8.2.4.1 Actions b.1 and b.3	Details of the methods for performing verification of power availability.	Bases	B 3.8.7: Actions B.1, B.2, B.3, and B.4
3.8.8 LA.1	3.8.2.2 and 3.8.2.4.2	Details relating to AC and DC electrical power distribution system design and OPERABILITY.	Bases	B 3.8.7: Table B 3.8.7-1
3.9.5 LA.1	4.1.3.5.a	Details of the method of verifying OPERABILITY of the control rod accumulators.	Bases	B 3.9.5: SR 3.9.5.1 and SR 3.9.5.2
3.9.5 LC.1	4.1.3.5.a and 4.1.3.5.b	Control rod scram accumulators, leak detectors, and pressure detectors testing.	UFSAR	Section 3.9.4.1.2.4
None	3/4.9.4 LA.1	Decay Time Technical Specification.	TRM	TRMS 3.23

ITS	CTS	Description	General Location	Specific Location
None	3/4.9.5 R.1	Communications Technical Specification.	TRM	TRMS 3.24
None	3/4.9.6 R.1	Crane and Hoist OPERABILITY Technical Specification.	TRM	TRMS 3.25
None	3/4.9.7 R.1	Crane Travel - Spent Fuel Storage Pool Technical Specification.	TRM	TRMS 3.26
3.10.2 LA.1	Table 1.2 Note #	Details of the method used to verify control rods remain fully inserted (by verification using a second licensed operator or other technically qualified member of the unit technical staff.).	Bases	B 3.10.2: SR 3.10.2.1 and SR 3.10.2.2
3.10.4 LA.1	3/4.9.10.1.d	Details of the recommended procedures for disarming control rods.	Bases	B 3.10.4: SR 3.10.4.1, SR 3.10.4.2, SR 3.10.4.3, and SR 3.10.4.4
3.10.5 LA.1	3/4.9.10.1.d	Details of the recommended procedures for disarming control rods.	Bases	B 3.10.5: SR 3.10.5.1, SR 3.10.5.2, SR 3.10.5.3, SR 3.10.5.4, and SR 3.10.5.5
None	3/4.10.5 LA.1	The requirements for OPERABILITY of the Plant Service Water system in non-operating MODES (i.e., MODES 4 and 5).	Bases and TRM	B 3.4.8: LCO; B 3.9.7: LCO; B 3.9.8: LCO; TRMS 3.17
None	3/4.11.1.1 R.1	Liquid Effluents Concentration Technical Specification.	ODCM	ODCMS 7.3.3
None	3/4.11.1.2 R.1	Dose Liquid Effluents Technical Specification.	ODCM	ODCMS 7.3.4
None	3/4.11.1.3 R.1	Liquid Radwaste Treatment System Technical Specification.	ODCM	ODCMS 7.3.5
None	3/4.11.2.1 R.1	Gaseous Effluents Technical Specification.	ODCM	ODCMS 7.3.7

ITS	CTS	Description	General Location	Specific Location
None	3/4.11.2.2 R.1	Dose Noble Gases Technical Specification.	ODCM	ODCMS 7.3.8
None	3/4.11.2.3 R.1	Dose Iodine-131, Iodine-133, Tritium, and Radionuclides in Particulate Form Technical Specification.	ODCM	ODCMS 7.3.9
None	3/4.11.2.4 R.1	Gaseous Radwaste Treatment System Technical Specification.	ODCM	ODCMS 7.3.10
None	3/4.11.2.5 R.1	Ventilation Exhaust Treatment System Technical Specification.	ODCM	ODCMS 7.3.11
None	3/4.11.2.8 R.1	Drywell Venting or Purging Technical Specification.	ODCM	ODCMS 7.3.13
None	3/4.11.3 R.1	Solid Radioactive Waste Technical Specification.	UFSAR	Section 12.5.3.8
None	3/4.11.4 R.1	Total Dose (40 CFR PART 190) Technical Specification.	ODCM	ODCMS 7.3.14
None	3/4.12.1 R.1	Radiological Environmental Monitoring Program Technical Specification.	ODCM	ODCMS 7.3.15
None	3/4.12.2 R.1	Land Use Census Technical Specification.	ODCM	ODCMS 7.3.16
None	3/4.12.3 R.1	Interlaboratory Comparison Program Technical Specification.	ODCM	ODCMS 7.3.17
4.0 LA.1	5.1.2 and 5.1.3	Details of the low population zone and site boundary.	UFSAR	Section 2.1.1.3
4.0 LA.2	5.2	Configurations, design temperatures and pressures, and volumes of the Primary Containment.	UFSAR	Section 6.2.1 and Table 6-3
4.0 LA.2	5.4	Configurations, design temperatures and pressures, and volumes of the Reactor Coolant System.	UFSAR	Section 5.3.3.7 and Table 6-5
4.0 LA.3	5.3.1	Details of specific fuel types that can be inserted in the reactor core.	UFSAR	Section 4.2.2

ITS	CTS	Description	General Location	Specific Location
4.0 LA.5	5.5	Location of meteorological tower.	UFSAR	Section 2.2.1.3 and Figure 2-2
4.0 LA.6	5.1.6.3	Details of uncertainties included in k_{eff} calculations associated with the fuel racks.	UFSAR	Section 9.1.2.3.2
4.0 LA.7	5.6.1.1	Corrected temperature for new fuel k-infinity values.	UFSAR	Section 9.1.1.3
4.0 LA.7	5.6.1.2.a and 5.6.1.2.b	Corrected temperature for irradiated fuel k-infinity values.	UFSAR	Section 9.1.2.3.2
5.1 LA.1	6.1.1 and 6.5.2.7	Compliance details relating to plant specific position titles.	UFSAR	Section 13.1.2.2
5.2 LA.1	Table 6.2.2-1	Details of the minimum shift crew requirements.	UFSAR	Table 13-1
5.2 LA.2	6.2.2.d	Details of operator license requirements.	UFSAR	Section 13.1.2.2
5.2 LA.3	6.2.2.g	Details that require Core Alterations to be supervised by either a licensed Senior Reactor Operator or Senior Reactor Operator Limited to Fuel Handling.	UFSAR	Section 13.1.2.2
5.2 LA.4	6.2.1.b, 6.2.1.c, 6.2.2.e, and 6.2.4.1	Compliance details relating to plant specific position titles.	UFSAR	Section 13.1.2.2
5.3 LA.1	6.3.1	Compliance details relating to plant specific position titles.	UFSAR	Section 13.1.2.2
5.4 LA.1	6.8.1.i	Guidance of procedures to be used covering Quality Assurance for effluent and environmental monitoring.	QA Program Description	UFSAR Chapter 17, Appendix A, Section 1.1.1
5.4 LA.2	6.8.2	Details of procedure reviews and approvals for temporary changes.	QA Program Description	UFSAR Chapter 17, Appendix A, Section 1.1.2
5.4 LA.3	6.8.1.h	Requirements for Process Control Program implementation procedures.	QA Program Description	UFSAR Section 17.3.1.7

ITS	CTS	Description	General Location	Specific Location
5.5 LA.1	6.8.3.2	Details of In-Plant Radiation Monitoring Program.	UFSAR	Section 12.5.3.3
5.5 LA.2	5.7	Details of the components governed by Component Cyclic or Transient Limit Program.	UFSAR	Table 5-11
5.5 LA.3	4.0.5	Details of the Inservice Inspection Program associated with Generic Letter 88-01.	UFSAR	Section 5.2.3.4.2.4
5.5 LA.3	4.0.5	Details of the Inservice Inspection Program for Class 1 components..	UFSAR	Section 5.2.4
5.5 LA.3	4.0.5	Details of the Inservice Inspection Program for Class 2 and 3 components.	UFSAR	Section 6.6
5.5 LA.4	4.0.5	Details of the Inservice Testing Program.	UFSAR	Section 3.9.6
5.5 LA.5	4.6.6.1.b.2, 4.6.6.1.c, 4.7.2.b.2,and 4.7.2.c	Details of the methods for implementing testing of the SGTS and CREV filter system laboratory analysis.	TRM	Section 5.5.7
5.5 LA.6	3/4.11.1.4	Details of the methods for implementing requirements for Liquid Holdup Tanks.	ODCM	ODCMS 7.3.6
5.5 LA.6	3/4.11.2.6	Details of the methods for implementing requirements for Explosive Gas Mixtures.	ODCM	ODCMS 7.3.12
5.5 LA.7	4.8.1.1.2.c	References to ASTM Standards and acceptance criteria for diesel fuel oil.	Bases	B 3.8.3: SR 3.8.3.2
5.6 LA.1	6.9.1.1, 6.9.1.2, and 6.9.1.3	Details associated with Startup Report.	UFSAR	Section 13.4.2.1
5.6 LA.2	6.9.3.1.a	Details associated with individual specifications addressing the Core Operating Limits Report.	Bases	B 3.2.1: ASA and LCO

ITS	CTS	Description	General Location	Specific Location
5.6 LA.2	6.9.3.1.b	Details associated with individual specifications addressing the Core Operating Limits Report.	Bases	B 3.2.2: ASA and LCO
5.7 LA.1	6.12.2	Compliance details relating to plant specific titles.	UFSAR	Section 13.1.2.2
None	6.4 LA.1	Details contained on training and replacement training for the unit staff.	UFSAR	Section 13.2.2
None	6.5 LA.1	Details of procedures, modification, or Operating License/Technical Specification reviews and approvals for changes.	QA Program Description	UFSAR Chapter 17, Appendix A, Sections 1.1.3, 1.1.4, 1.2, 1.3, 1.4, and 1.5
None	6.5 LA.2	Details of review and audit activities.	QA Program Description	UFSAR Chapter 17, Appendix A, Sections 1.6, 1.7, 1.8, and 1.9
None	6.6 LA.2	Details of reportable events reviews.	QA Program Description	UFSAR Chapter 17, Appendix A, Section 2.0
None	6.10 LA.1	Details of record retention.	QA Program Description	UFSAR Chapter 17, Appendix A, Section 3.0
None	6.11 LA.1	Details of the radiation protection program.	UFSAR	Section 12.5.3
None	6.14 LA.1	Details of the process control program.	UFSAR	Section 12.5.3.8

APPENDIX B

TECHNICAL SPECIFICATION (TS) INSTRUMENT LIST

APPENDIX B TECHNICAL SPECIFICATION (TS) INSTRUMENT LIST

PURPOSE

This appendix provides instrument tables to aid in complying with the requirements of the instrument TS (TS Section 3.3, "INSTRUMENTATION"), TS 3.4.4, "RCS Operational LEAKAGE," and TS 3.4.5, "RCS Leakage Detection Instrumentation." This appendix does not define OPERABILITY for individual channels. For OPERABILITY of instrument channels, refer to the Bases of the associated TS, the Updated Final Safety Analysis Report, or the associated Design Basis Document.

Each table in the TS Instrument List corresponds to the associated instrumentation TS. For example; TRM Table 3.3.1.1-1, "Reactor Protection System Instrumentation" corresponds to TS 3.3.1.1, "Reactor Protection System (RPS) Instrumentation." Each TS Instrument List Table includes the applicable instrument number(s) associated with each TS instrument function and the nominal trip setpoint associated with each TS instrument function, where applicable.

Each TS instrument function with a nominal trip setpoint value specified is considered to be properly adjusted when the "as left" value of the instrumentation is in compliance with the "as-left" tolerance specified in the surveillance test. Additionally, the "as-found" value must be in compliance with the Allowable Value specified in the TS. A detailed description of the methodology used to calculate each instrument nominal trip setpoint, including explicit uncertainties, is provided in the associated setpoint calculation.

For Nominal Trip Setpoints that are specified in units of inches, the zero reference value is defined in the associated TS Bases except where noted.

TRM Table 3.3.1.1-1 (page 1 of 2)
Reactor Protection System Instrumentation

TECHNICAL SPECIFICATION FUNCTION	APPLICABLE INSTRUMENT NUMBER(S)	NOMINAL TRIP SETPOINT
1. Intermediate Range Monitors		
a. Neutron Flux—High	C51-IRM-A, B, C, D, E, F, G, H C72-K14A, B, C, D, E, F, G, H	117/125 divisions of full scale
b. Inop	C51-IRM-A, B, C, D, E, F, G, H C72-K14A, B, C, D, E, F, G, H	NA
2. Average Power Range Monitors		
a. Neutron Flux—High (Setdown)	C51-APRM1-AR51 C51-APRM2-AR31 C51-APRM3-AR41 C51-APRM4-AR11	15% RTP
b. Simulated Thermal Power—High	C51-APRM1-AR51 C51-APRM2-AR31 C51-APRM3-AR41 C51-APRM4-AR11	0.55W + 61.1% RTP [(a)] and 115.8% RTP
c. Neutron Flux—High	C51-APRM1-AR51 C51-APRM2-AR31 C51-APRM3-AR41 C51-APRM4-AR11	117.4% RTP
d. Inop	C51-APRM1-AR51 C51-APRM2-AR31 C51-APRM3-AR41 C51-APRM4-AR11	NA
e. 2-Out-of-4 Voter	C51-APRM1-AR51 C51-APRM2-AR31 C51-APRM3-AR41 C51-APRM4-AR11	NA
f. OPRM Upscale	C51-APRM1-AR51 C51-APRM2-AR31 C51-APRM3-AR41 C51-APRM4-AR11	NA[(c)]
3. Reactor Vessel Steam Dome Pressure—High	B21-PT-N023A, B, C, D B21-PTM-N023A-1, B-1, C-1, D-1 C72-K14A, B, C, D, E, F, G, H	1060 psig
4. Reactor Vessel Water Level—Low Level 1	B21-LT-N017A-1, B-1, C-1, D-1 B21-LTM-N017A-1, B-1, C-1, D-1 C72-K14A, B, C, D, E, F, G, H	166 inches

(continued)

(a) [0.55 (W – ΔW) + 61.1% RTP] when reset for single loop operation per LCO 3.4.1, "Recirculation Loops Operating." The setpoint value of ΔW is defined in plant procedures.

(b) Nominal Trip Setpoint is referenced from valve full open position.

(c) See COLR for OPRM period based detection algorithm (PBDA) setpoint limits.

TRM Table 3.3.1.1-1 (page 2 of 2)
Reactor Protection System Instrumentation

	TECHNICAL SPECIFICATION FUNCTION	APPLICABLE INSTRUMENT NUMBER(S)	NOMINAL TRIP SETPOINT
5.	Main Steam Isolation Valve—Closure	B21-F022A, B, C, D B21-F028A, B, C, D C72-K14A, B, C, D, E, F, G, H	1.25 inches of stem travel[(b)]
6.	Drywell Pressure—High	C72-PT-N002A, B, C, D C72-PTM-N002A-1, B-1, C-1, D-1 C72-K14A, B, C, D, E, F, G, H	1.7 psig
7.	Scram Discharge Volume Water Level—High	C12-LSH-N013A, B, C, D C12-LSH-4516A, B, C, D C72-K14A, B, C, D, E, F, G, H	104 gallons
8.	Turbine Stop Valve—Closure	MS-ZS-SVRP-1, 2, 3, 4 C72-K14A, B, C, D, E, F, G, H	0.625 inches of stem travel[(b)]
9.	Turbine Control Valve Fast Closure, Control Oil Pressure—Low	EHC-PSL-1756, 1757, 1758, 1759 C72-K14A, B, C, D, E, F, G, H	600 psig
10.	Reactor Mode Switch—Shutdown Position	C72-CS-S1	NA
11.	Manual Scram	C72-PB-S3A, B	NA

(b) Nominal Trip Setpoint is referenced from valve full open position.

TRM Table 3.3.1.2-1 (page 1 of 1)
Source Range Monitor Instrumentation

TECHNICAL SPECIFICATION FUNCTION	APPLICABLE INSTRUMENT NUMBER(S)
1. Source Range Monitor	C51-SRM-A, B, C, D

TRM Table 3.3.2.1-1 (page 1 of 1)
Control Rod Block Instrumentation

TECHNICAL SPECIFICATION FUNCTION	APPLICABLE INSTRUMENT NUMBER(S)	NOMINAL TRIP SETPOINT
1. Rod Block Monitor		
a. Low Power Range—Upscale	C51-RBMA-AR21 C51-RBMB-AR22	(a)
b. Intermediate Power Range—Upscale	C51-RBMA-AR21 C51-RBMB-AR22	(a)
c. High Power Range—Upscale	C51-RBMA-AR21 C51-RBMB-AR22	(a)
d. Inop	C51-RBMA-AR21 C51-RBMB-AR22	NA
2. Rod Worth Minimizer	2-C12-CNV-5516	19.1% rated steam flow
3. Reactor Mode Switch—Shutdown Position	C72-CS-S1	NA

(a) Nominal Trip Setpoints specified in the COLR.

TRM Table 3.3.2.2-1 (page 1 of 1)
Feedwater and Main Turbine High Water Level Trip Instrumentation

TECHNICAL SPECIFICATION FUNCTION	APPLICABLE INSTRUMENT NUMBER(S)	NOMINAL TRIP SETPOINT
1. Feedwater Pumps		
a. Reactor Vessel Water Level—High	C32-LT-N0O4A, B, C C32-LY-K602A - A1, B1, A4 C32-LY-K602C - A1, B1, A4 C32-LY-K602E - A1, B1, A4 C32-LC-R602A, B	206 inches
2. Main Turbine		
a. Reactor Vessel Water Level—High	C32-LT-N0O4A, B, C C32-LY-K602A - A1, B1, A4 C32-LY-K602C - A1, B1, A4 C32-LY-K602E - A1, B1, A4 C32-LC-R602A, B	206 inches

TRM Table 3.3.3.1-1 (page 1 of 1)
Post Accident Monitoring Instrumentation

	TECHNICAL SPECIFICATION FUNCTION	APPLICABLE INSTRUMENT NUMBER(S)
1.	Reactor Vessel Pressure	B21-PI-R605A, B
2.	Reactor Vessel Water Level	
a.	-150 inches to +150 inches	B21-LI-R610, B21-LR-R615
b.	0 inches to +210 inches	B21-LI-R604A, B
c.	+150 inches to +550 inches	B21-LI-R605A, B
3.	Suppression Chamber Water Level	CAC-LI-2601-1, CAC-LR-2602
4.	Suppression Chamber Water Temperature	CAC-TR-4426-1A CAC-TR-4426-2A CAC-TY-4426-1, 2
5.	Suppression Chamber Pressure	CAC-PI-1257-2A, B
6.	Drywell Pressure	CAC-PI-4176, CAC-PR-1257-1
7.	Drywell Temperature	CAC-TR-4426-1A, B CAC-TR-4426-2A, B CAC-TY-4426-1, 2
8.	PCIV Position	See TRM Table 3.3.3.1-2, "Primary Containment Isolation Valve Position Indication."
9.	(Not Used.)	
10.	Drywell Area Radiation	D22-RI-4195 OR D22-RI-4196 OR D22-RR-4195 AND D22-RI-4197 OR D22-RI-4198 OR D22-RR-4197

TRM Table 3.3.3.1-2 (page 1 of 5)
Primary Containment Isolation Valve Position Indication

VALVE NUMBER	VALVE DESCRIPTION	LOCATION OF DISPLAY
2-B21-F016	MAIN STEAM LINE DRAIN INBOARD ISOLATION	H12-P601
2-B21-F019	MAIN STEAM LINE DRAIN OUTBOARD ISOLATION	H12-P601
2-B21-F022A	INBOARD MSIV A	H12-P601
2-B21-F022B	INBOARD MSIV B	H12-P601
2-B21-F022C	INBOARD MSIV C	H12-P601
2-B21-F022D	INBOARD MSIV D	H12-P601
2-B21-F028A	OUTBOARD MSIV A	H12-P601
2-B21-F028B	OUTBOARD MSIV B	H12-P601
2-B21-F028C	OUTBOARD MSIV C	H12-P601
2-B21-F028D	OUTBOARD MSIV D	H12-P601
2-B21-F032A	FEEDWATER SUPPLY LINE A ISOLATION	H12-P603
2-B21-F032B	FEEDWATER SUPPLY LINE B ISOLATION	H12-P603
2-B32-FO19	SAMPLE LINE INBOARD ISOLATION	H12-P603
2-B32-F020	SAMPLE LINE OUTBOARD ISOLATION	H12-P603
2-B32-V22	RECIRC PUMP 2A SEAL INJECTION	H12-P603
2-B32-V30	RECIRC PUMP 2B SEAL INJECTION	H12-P603
2-CAC-SV-1200B	CAC-AT-1261 INBOARD SAMPLE INLET	XU-2
2-CAC-SV-1205E	CAC-AT-4409 PRIMARY CONTAINMENT INBOARD SAMPLE	XU-2
2-CAC-SV-1209A	CAC-AT-4409 PRIMARY CONTAINMENT INBOARD SAMPLE	XU-2
2-CAC-SV-1209B	CAC-AT-4409 PRIMARY CONTAINMENT INBOARD SAMPLE	XU-2
2-CAC-SV-1211E	CAC-AT-1262 INBOARD SAMPLE RETURN	XU-2
2-CAC-SV-1211F	CAC-AT-1262 INBOARD SAMPLE INLET	XU-2
2-CAC-SV-1213A	CAC-AT-4409 TORUS INBOARD SAMPLE	XU-2
2-CAC-SV-1215E	CAC-AT-4409 INBOARD SAMPLE RETURN	XU-2
2-CAC-SV-1218A	CAC-AT-4410 TORUS INBOARD SAMPLE	XU-2
2-CAC-SV-1225B	COMMON INBOARD SAMPLE RETURN	XU-2
2-CAC-SV-1227A	CAC-AT-4410 PRIMARY CONTAINMENT INBOARD SAMPLE	XU-2
2-CAC-SV-1227B	CAC-AT-4410 PRIMARY CONTAINMENT INBOARD SAMPLE	XU-2
2-CAC-SV-1227C	CAC-AT-1260 INBOARD SAMPLE INLET	XU-2

(continued)

TRM Table 3.3.3.1-2 (page 2 of 5)
Primary Containment Isolation Valve Position Indication

VALVE NUMBER	VALVE DESCRIPTION	LOCATION OF DISPLAY
2-CAC-SV-1227E	CAC-AT-4410 PRIMARY CONTAINMENT INBOARD SAMPLE	XU-2
2-CAC-SV-1231B	CAC-AT-4410 INBOARD SAMPLE RETURN	XU-2
2-CAC-SV-1260	CAC-AT-1260 OUTBOARD SAMPLE INLET	XU-2
2-CAC-SV-1261	CAC-AT-1261 OUTBOARD SAMPLE INLET	XU-2
2-CAC-SV-1262	CAC-AT-1262 OUTBOARD SAMPLE INLET	XU-2
2-CAC-SV-3439	CAC-AT-1262 OUTBOARD SAMPLE RETURN	XU-2
2-CAC-SV-3440	COMMON OUTBOARD SAMPLE RETURN	XU-2
2-CAC-SV-4409-1	CAC-AT-4409 TORUS OUTBOARD SAMPLE	XU-51
2-CAC-SV-4409-2	CAC-AT-4409 PRIMARY CONTAINMENT OUTBOARD SAMPLE	XU-51
2-CAC-SV-4409-3	CAC-AT-4409 PRIMARY CONTAINMENT OUTBOARD SAMPLE	XU-51
2-CAC-SV-4409-4	CAC-AT-4409 PRIMARY CONTAINMENT OUTBOARD SAMPLE	XU-51
2-CAC-SV-4410-1	CAC-AT-4410 TORUS OUTBOARD SAMPLE	XU-51
2-CAC-SV-4410-2	CAC-AT-4410 PRIMARY CONTAINMENT OUTBOARD SAMPLE	XU-51
2-CAC-SV-4410-3	CAC-AT-4410 PRIMARY CONTAINMENT OUTBOARD SAMPLE	XU-51
2-CAC-SV-4410-4	CAC-AT-4410 PRIMARY CONTAINMENT OUTBOARD SAMPLE	XU-51
2-CAC-SV-4540	CAC-AT-4409 OUTBOARD SAMPLE RETURN	XU-51
2-CAC-SV-4541	CAC-AT-4410 OUTBOARD SAMPLE RETURN	XU-51
2-CAC-V4	INBOARD PRIMARY CONTAINMENT N2 INERTING INLET	XU-51
2-CAC-V5	SUPPRESSION POOL N2 INLET	XU-51
2-CAC-V6	DRYWELL N2 INLET	XU-51
2-CAC-V7	INBOARD SUPPRESSION POOL PURGE EXHAUST	XU-51
2-CAC-V8	OUTBOARD SUPPRESSION POOL PURGE EXHAUST	XU-51
2-CAC-V9	INBOARD DRYWELL PURGE EXHAUST	XU-51
2-CAC-V10	OUTBOARD DRYWELL PURGE EXHAUST	XU-51
2-CAC-V15	PRIMARY CONTAINMENT PURGE AIR INLET	XU-51
2-CAC-V16	REACTOR BUILDING TO SUPPRESSION CHAMBER VACUUM BREAKER	XU-51
2-CAC-V17	REACTOR BUILDING TO SUPPRESSION CHAMBER VACUUM BREAKER	XU-51
2-CAC-V22	SUPPRESSION POOL 2" EXHAUST	XU-51
2-CAC-V23	DRYWELL 2" EXHAUST	XU-51
2-CAC-V49	DRYWELL HEAD INBOARD PURGE EXHAUST	XU-51
2-CAC-V50	DRYWELL HEAD OUTBOARD PURGE EXHAUST	XU-51
2-CAC-V55	DRYWELL CAD N2 INJECTION SOLENOID	XU-51
2-CAC-V56	DRYWELL CAD N2 INJECTION SOLENOID	XU-51

(continued)

TRM Table 3.3.3.1-2 (page 3 of 5)
Primary Containment Isolation Valve Position Indication

VALVE NUMBER	VALVE DESCRIPTION	LOCATION OF DISPLAY
2-CAC-V160	SUPPRESSION POOL CAD N2 INJECTION INLET	XU-51
2-CAC-V161	DRYWELL CAD N2 INJECTION INLET	XU-51
2-CAC-V162	SUPPRESSION POOL CAD N2 INJECTION INLET	XU-51
2-CAC-V163	DRYWELL CAD N2 INJECTION INLET	XU-51
2-CAC-V172	SUPPRESSION POOL PURGE EXHAUST SOLENOID	XU-51
2-CAC-V216	HARDENED WETWELL VENT OUTBOARD ISOLATION	XU-51
2-C51-J004A	A TIP BALL VALVE AND SHEAR VALVE ASSEMBLY	H12-P607
2-C51-J004B	B TIP BALL VALVE AND SHEAR VALVE ASSEMBLY	H12-P607
2-C51-J004C	C TIP BALL VALVE AND SHEAR VALVE ASSEMBLY	H12-P607
2-C51-J004D	D TIP BALL VALVE AND SHEAR VALVE ASSEMBLY	H12-P607
2-E11-F007A	MINIMUM FLOW BYPASS VALVE A TO SUPPRESSION POOL	H12-P601
2-E11-F007B	MINIMUM FLOW BYPASS VALVE B TO SUPPRESSION POOL	H12-P601
2-E11-F008	SHUTDOWN COOLING OUTBOARD SUCTION	H12-P601
2-E11-F009	SHUTDOWN COOLING INBOARD SUCTION THROTTLE	H12-P601
2-E11-F011A	RHR HEAT EXCHANGER 2A DRAIN TO SUPPRESSION POOL	H12-P601
2-E11-F011B	RHR HEAT EXCHANGER 2B DRAIN TO SUPPRESSION POOL	H12-P601
2-E11-F015A	LPCI A INBOARD INJECTION	H12-P601
2-E11-F015B	LPCI B INBOARD INJECTION	H12-P601
2-E11-F016A	DRYWELL SPRAY A OUTBOARD ISOLATION	H12-P601
2-E11-F016B	DRYWELL SPRAY B OUTBOARD ISOLATION	H12-P601
2-E11-F017A	LPCI A OUTBOARD INJECTION	H12-P601
2-E11-F017B	LPCI B OUTBOARD INJECTION	H12-P601
2-E11-F020A	RHR PUMP 2A AND 2C TORUS SUCTION	H12-P601
2-E11-F020B	RHR PUMP 2B AND 2D TORUS SUCTION	H12-P601
2-E11-F021A	DRYWELL SPRAY A INBOARD ISOLATION	H12-P601
2-E11-F021B	DRYWELL SPRAY B INBOARD ISOLATION	H12-P601
2-E11-F024A	SUPPRESSION POOL COOLING A ISOLATION	H12-P601
2-E11-F024B	SUPPRESSION POOL COOLING B ISOLATION	H12-P601
2-E11-F027A	SUPPRESSION POOL SPRAY A ISOLATION	H12-P601
2-E11-F027B	SUPPRESSION POOL SPRAY B ISOLATION	H12-P601
2-E11-F028A	SUPPRESSION POOL SPRAY A ISOLATION	H12-P601
2-E11-F028B	SUPPRESSION POOL SPRAY B ISOLATION	H12-P601

(continued)

TRM Table 3.3.3.1-2 (page 4 of 5)
Primary Containment Isolation Valve Position Indication

VALVE NUMBER	VALVE DESCRIPTION	LOCATION OF DISPLAY
2-E11-F103A	RHR HEAT EXCHANGER 2A OUTBOARD VENT	H12-P601
2-E11-F103B	RHR HEAT EXCHANGER 2B OUTBOARD VENT	H12-P601
2-E21-F001A	SUPPRESSION POOL A SUCTION	H12-P601
2-E21-FO01B	SUPPRESSION POOL B SUCTION	H12-P601
2-E21-FO04A	CORE SPRAY PUMP 2A OUTBOARD INJECTION	H12-P601
2-E21-FO04B	CORE SPRAY PUMP 2B OUTBOARD INJECTION	H12-P601
2-E21-FO05A	CORE SPRAY PUMP 2A INBOARD INJECTION	H12-P601
2-E21-FO05B	CORE SPRAY PUMP 2B INBOARD INJECTION	H12-P601
2-E21-FO15A	CORE SPRAY FULL FLOW TEST BYPASS	H12-P601
2-E21-FO15B	CORE SPRAY FULL FLOW TEST BYPASS	H12-P601
2-E21-FO31A	CORE SPRAY MINIMUM FLOW BYPASS	H12-P601
2-E21-FO31B	CORE SPRAY MINIMUM FLOW BYPASS	H12-P601
2-E41-F002	HPCI STEAM SUPPLY INBOARD ISOLATION	H12-P601
2-E41-F003	HPCI STEAM SUPPLY OUTBOARD ISOLATION	H12-P601
2-E41-F006	HPCI INJECTION	H12-P601
2-E41-F012	HPCI MINIMUM FLOW BYPASS TO SUPPRESSION POOL	H12-P601
2-E41-F042	HPCI SUPPRESSION POOL SUCTION	H12-P601
2-E41-F075	HPCI TURBINE EXHAUST VACUUM BREAKER	H12-P601
2-E41-F079	HPCI TURBINE EXHAUST VACUUM BREAKER	H12-P601
2-E51-F007	RCIC STEAM SUPPLY INBOARD ISOLATION	H12-P601
2-E51-F008	RCIC STEAM SUPPLY OUTBOARD ISOLATION	H12-P601

(continued)

TRM Table 3.3.3.1-2 (page 5 of 5)
Primary Containment Isolation Valve Position Indication

VALVE NUMBER	VALVE DESCRIPTION	LOCATION OF DISPLAY
2-E51-F013	RCIC INJECTION	H12-P601
2-E51-F019	RCIC MINIMUM FLOW BYPASS TO SUPPRESSION POOL	H12-P601
2-E51-F031	RCIC SUPPRESSION POOL SUCTION	H12-P601
2-E51-F062	RCIC TURBINE EXHAUST VACUUM BREAKER	H12-P601
2-E51-F066	RCIC TURBINE EXHAUST VACUUM BREAKER	H12-P601
2-G16-F003	DRYWELL FLOOR DRAIN INBOARD ISOLATION	H12-P601
2-G16-F004	DRYWELL FLOOR DRAIN OUTBOARD ISOLATION	H12-P601
2-G16-F019	DRYWELL EQUIPMENT DRAIN INBOARD ISOLATION	H12-P601
2-G16-F020	DRYWELL EQUIPMENT DRAIN OUTBOARD ISOLATION	H12-P601
2-G31-F001	RWCU INLET INBOARD ISOLATION	H12-P601
2-G31-F004	RWCU INLET OUTBOARD ISOLATION	H12-P601
2-G31-F042	RWCU RETURN TO REACTOR	H12-P603
2-RCC-SV-1222B	RECIRC PUMP 2A COOLER OUTLET SAMPLE	XU-2
2-RCC-SV-1222C	RECIRC PUMP 2B COOLER OUTLET SAMPLE	XU-2
2-RCC-V28	RBCCW DRYWELL DISCHARGE HEADER ISOLATION	XU-2
2-RCC-V52	RBCCW DRYWELL SUPPLY HEADER ISOLATION	XU-2
2-RNA-SV-5251	BACKUP NITROGEN SUPPLY TO DRYWELL ISOLATION VALVE - DIVISION II	XU-51
2-RNA-SV-5253	BACKUP NITROGEN SUPPLY TO DRYWELL ISOLATION VALVE - DIVISION I	XU-51
2-RNA-SV-5261	NON-INTERRUPTIBLE REACTOR INSTRUMENT AIR SOLENOID	XU-51
2-RNA-SV-5262	NON-INTERRUPTIBLE REACTOR INSTRUMENT AIR SOLENOID	XU-51
2-RXS-SV-4186	LIQUID SAMPLE RETURN INBOARD ISOLATION	XU-75
2-RXS-SV-4187	LIQUID SAMPLE RETURN OUTBOARD ISOLATION	XU-79
2-RXS-SV-4188	GAS SAMPLE RETURN INBOARD ISOLATION	XU-75
2-RXS-SV-4189	GAS SAMPLE RETURN OUTBOARD ISOLATION	XU-79

TRM Table 3.3.3.2-1 (page 1 of 1)
Remote Shutdown Monitoring Instrumentation

	TECHNICAL SPECIFICATION FUNCTION	APPLICABLE INSTRUMENT NUMBER(S)
1.	Reactor Vessel Pressure	C32-PI-3332, C32-PT-3332
2.	Reactor Vessel Water Level	B21-LT-N017D-3, B21-LSH-N017D-3 B21-LI-3331, B21-LI-R604BX, B21-LT-3331, B21-LT-N026B
3.	Suppression Chamber Water Level	CAC-LI-3342, CAC-LT-3342
4.	Suppression Chamber Water Temperature	CAC-TR-778-6 or CAC-TR-778-7
5.	Drywell Pressure	CAC-PI-3341, CAC-PT-3341
6.	Drywell Temperature	CAC-TR-778-1 or CAC-TR-778-3 or CAC-TR-778-4
7.	Residual Heat Removal System Flow	E11-FT-3338, E11-FI-3338, E11-FY-3338

TRM Table 3.3.4.1-1 (page 1 of 1)
Anticipated Transient Without Scram Recirculation Pump Trip Instrumentation

	TECHNICAL SPECIFICATION FUNCTION	APPLICABLE INSTRUMENT NUMBER(S)	NOMINAL TRIP SETPOINT
1.	Reactor Vessel Water Level—Low Level 2	B21-LT-N024A-2, B-2 B21-LT-N025A-2, B-2 B21-LTM-N024A-2, B-2 B21-LTM-N025A-2, B-2	105 inches
2.	Reactor Vessel Steam Dome Pressure—High	B21-PT-N045A, B, C, D B21-PTM-N045A, B, C, D	1137.8 psig

TRM Table 3.3.5.1-1 (page 1 of 2)
Emergency Core Cooling System Instrumentation

TECHNICAL SPECIFICATION FUNCTION	APPLICABLE INSTRUMENT NUMBER(S)	NOMINAL TRIP SETPOINT
1. Core Spray System		
a. Reactor Vessel Water Level—Low Level 3	B21-LT-N031A, B, C, D B21-LTS-N031A-4, B-4, C-4, D-4	45 inches
b. Drywell Pressure—High	E11-PT-N011A, B, C, D E11-PTS-N011A-2, B-2, C-2, D-2	1.7 psig
c. Reactor Steam Dome Pressure—Low	B21-PT-N021A, B, C, D, B21-PTS-N021A-2, B-2, C-2, D-2	410 psig
d. Core Spray Pump Start—Time Delay Relay	E21-K16A, B STR/2A-1, STR/2A-2 STR/2B-1, STR/2B-2	15 seconds
2. Low Pressure Coolant Injection (LPCI) System		
a. Reactor Vessel Water Level—Low Level 3	B21-LT-N031A, B, C, D B21-LTS-N031A-4, B-4, C-4, D-4	45 inches
b. Drywell Pressure—High	E11-PT-N011A, B, C, D E11-PTM-N011A-1, B-1, C-1, D-1	1.7 psig
c. Reactor Steam Dome Pressure—Low	B21-PT-N021A, B, C, D B21-PTS-N021A-2, B-2, C-2, D-2	410 psig
d. Reactor Steam Dome Pressure—Low (Recirculation Pump Discharge Valve Permissive)	B21-PT-N021A, B, C, D B21-PTM-N021A-1, B-1, C-1, D-1	310 psig
e. Reactor Vessel Shroud Level	B21-LT-N036, B21-LT-N037 B21-LTM-N036-1, B21-LTM-N037-1	-47.4 inches
f. RHR Pump Start—Time Delay Relay	STR/2A-1, STR/2A-2, STR/2B-1, STR/2B-2, STR/1A-3, STR/1A-4, STR/1B-3, STR/1B-4	10 seconds
3. High Pressure Coolant Injection (HPCI) System		
a. Reactor Vessel Water Level—Low Level 2	B21-LT-N031A, B, C, D B21-LTS-N031A-2, B-2, C-2, D-2	105 inches
b. Drywell Pressure—High	E11-PT-N011A, B, C, D E11-PTS-N011A-2, B-2, C-2, D-2	1.7 psig

(continued)

TRM Table 3.3.5.1-1 (page 2 of 2)
Emergency Core Cooling System Instrumentation

TECHNICAL SPECIFICATION FUNCTION	APPLICABLE INSTRUMENT NUMBER(S)	NOMINAL TRIP SETPOINT
3. High Pressure Coolant Injection (HPCI) System (continued)		
c. Reactor Vessel Water Level—High	B21-LT-N017 B-2, D-2 B21-LTM-N017 B-2, D-2	206 inches
d. Condensate Storage Tank Level—Low	E41-LS-N0O2, E41-LS-N003	23 feet 5 inches
e. Suppression Chamber Water Level—High	E41-LSH-N015A, B	-25 inches
4. Automatic Depressurization System (ADS) Trip System A		
a. Reactor Vessel Water Level—Low Level 3	B21-LT-N031B, D B21-LTS-N031B-3, D-3	45 inches
b. ADS Timer	B21-TDPU-K5A	83 seconds
c. Reactor Vessel Water Level—Low Level 1	B21-LT-N042B B21-LTM-N042B-1	166 inches
d. Core Spray Pump Discharge Pressure—High	E21-PS-N008B E21-PS-N009B	115 psig
e. RHR (LPCI Mode) Pump Discharge Pressure—High	E11-PS-N016B, D E11-PS-N020B, D	115 psig
5. ADS Trip System B		
a. Reactor Vessel Water Level—Low Level 3	B21-LT-N031A, C B21-LTS-N031A-3, C-3	45 inches
b. ADS Timer	B21-TDPU-K5B	83 seconds
c. Reactor Vessel Water Level—Low Level 1	B21-LT-N042A B21-LTM-N042A-1	166 inches
d. Core Spray Pump Discharge Pressure—High	E21-PS-N008A E21-PS-N009A	115 psig
e. RHR (LPCI Mode) Pump Discharge Pressure—High	E11-PS-N016A, C E11-PS-N020A, C	115 psig

TRM Table 3.3.5.2-1 (page 1 of 1)
Reactor Core Isolation Cooling System Instrumentation

TECHNICAL SPECIFICATION FUNCTION	APPLICABLE INSTRUMENT NUMBER(S)	NOMINAL TRIP SETPOINT
1. Reactor Vessel Water Level—Low Level 2	B21-LT-N031A, B, C, D B21-LTM-N031A-1, B-1, C-1, D-1	105 inches
2. Reactor Vessel Water Level—High	B21-LT-N017A-2, C-2 B21-LTM-N017A-2, C-2	206 inches
3. Condensate Storage Tank Level—Low	E51-LSL-4463 E51-LSL-4464	23 feet 1 inch

TRM Table 3.3.6.1-1 (page 1 of 5)
Primary Containment Isolation Instrumentation

TECHNICAL SPECIFICATION FUNCTION	APPLICABLE INSTRUMENT NUMBER(S)	NOMINAL TRIP SETPOINT
1. Main Steam Line Isolation		
a. Reactor Vessel Water Level—Low Level 3	B21-LT-N024A-1, B-1 B21-LT-N025A-1, B-1 B21-LTS-N024A-1-2, B-1-2 B21-LTS-N025A-1-2, B-1-2	45 inches
b. Main Steam Line Pressure—Low	B21-PT-N015A, B, C, D B21-PTM-N015A-1, B-1, C-1, D-1	835 psig
c. Main Steam Line Flow—High	B21-PDT-N006A, B, C, D B21-PDT-N007A, B, C, D B21-PDT-N008A, B, C, D B21-PDT-N009A, B, C, D B21-PDTM-N006A-1, B-1, C-1, D-1 B21-PDTM-N007A-1, B-1, C-1, D-1 B21-PDTM-N008A-1, B-1, C-1, D-1 B21-PDTM-N009A-1, B-1, C-1, D-1	137% rated steam flow
d. Condenser Vacuum—Low	B21-PT-N056A, B, C, D B21-PTM-N056A-1, B-1, C-1, D-1	10 inches Hg vacuum
e. Main Steam Isolation Valve Pit Temperature—High	B21-TS-N010A, B, C, D	190°F
f. Main Steam Line Flow—High (Not in Run)	B21-PDTS-N006A-2 B21-PDTS-N007B-2 B21-PDTS-N008C-2 B21-PDTS-N009D-2	30% rated steam flow
2. Primary Containment Isolation		
a. Reactor Vessel Water Level—Low Level 1	B21-LT-N017A-1, B-1, C-1, D-1 B21-LTM-N017A-1, B-1, C-1, D-1	166 inches
b. Drywell Pressure—High	C72-PT-N002A, B, C, D C72-PTM-N002A-1, B-1, C-1, D-1 E11-PT-N011A, B, C, D E11-PTS-N011A-2, B-2, C-2, D-2	1.7 psig
c. Main Stack Radiation—High	2-D12-RM-80S	(a)
d. Reactor Building Exhaust Radiation—High	D12-RM-K609A, B D12-RE-N010A, B	4 mR/hr

(continued)

(a) Nominal Trip Setpoint established in accordance with the methodology in the Offsite Dose Calculation Manual.

TRM Table 3.3.6.1-1 (page 2 of 5)
Primary Containment Isolation Instrumentation

	TECHNICAL SPECIFICATION FUNCTION	APPLICABLE INSTRUMENT NUMBER(S)	NOMINAL TRIP SETPOINT
3.	High Pressure Coolant Injection (HPCI) System Isolation		
a.	HPCI Steam Line Flow—High	E41-PDTM-N004-1, E41-PDTM-N005-1 E41-PDTS-N004-2, E41-PDTS-N005-2	220% rated steam flow
b.	HPCI Steam Line Flow—High Time Delay Relay	E41-TDR-K33, E41-TDR-K43	5 seconds
c.	HPCI Steam Supply Line Pressure—Low	E41-PSL-N001A, B, C, D	115 psig
d.	HPCI Turbine Exhaust Diaphragm Pressure—High	E41-PSH-N012A, B, C, D	7 psig
e.	Drywell Pressure—High	E11-PT-N011C, D E11-PTS-N011C-2, D-2	1.7 psig
f.	HPCI Steam Line Area Temperature—High	B21-XY-5948A Ch. A5-2: E41-TE-3488 B21-XY-5948B Ch. A5-2: E41-TE-3489	165°F
g.	HPCI Steam Line Tunnel Ambient Temperature—High	B21-XY-5948A Ch. A2-2: E41-TE-3314 Ch. A5-1: E51-TE-N025C B21-XY-5948B Ch. A5-1: E51-TE-N025D	 165°F 190°F 190°F
h.	HPCI Steam Line Tunnel Differential Temperature—High	B21-XY-5948A Ch. A6-1: E51-TE-N026C and E51-TE-N027C B21-XY-5948B Ch. A6-1: E51-TE-N026D and E51-TE-N027D	47°F
i.	HPCI Equipment Area Temperature—High	B21-XY-5948A Ch. A3-2: E41-TE-3316 Ch. A4-2: E41-TE-3318 Ch. A1-1: E41-TE-N030A B21-XY-5948B Ch. A2-2: E41-TE-3315 Ch. A3-2: E41-TE-3317 Ch. A4-2: E41-TE-3354 Ch. A1-1: E41-TE-N030B	165°F

(continued)

TRM Table 3.3.6.1-1 (page 3 of 5)
Primary Containment Isolation Instrumentation

	TECHNICAL SPECIFICATION FUNCTION	APPLICABLE INSTRUMENT NUMBER(S)	NOMINAL TRIP SETPOINT
4.	Reactor Core Isolation Cooling (RCIC) System Isolation		
a.	RCIC Steam Line Flow—High	E51-PDTM-N017-1, E51-PDTM-N018-1 E51-PDTS-N017-2, E51-PDTS-N018-2	220% rated steam flow
b.	RCIC Steam Line Flow—High Time Delay Relay	E51-TDR-K32, E51-TDR-K12	5 seconds
c.	RCIC Steam Supply Line Pressure—Low	E51-PS-N019A, B, C, D	70
d.	RCIC Turbine Exhaust Diaphragm Pressure—High	E51-PS-N012A, B, C, D	5 psig
e.	Drywell Pressure—High	E11-PT-N011A, B E11-PTS-N011A-2, B-2	1.7 psig
f.	RCIC Steam Line Area Temperature—High	B21-XY-5949A Ch. A6-4: E51-TE-3487 B21-XY-5949B Ch. A4-4: E51-TE-3320	165°F
g.	RCIC Steam Line Tunnel Ambient Temperature—High	B21-XY-5949A Ch. A3-4: E51-TE-3319 Ch. A3-3: E51-TE-N025A B21-XY-5949B Ch. A3-3: E51-TE-N025B	 165°F 190°F 190°F
h.	RCIC Steam Line Tunnel and Area Temperature—High Time Delay	B21-XY-5949A Ch. A3-3: E51-TE-N025A Ch. A3-4: E51-TE-3319 Ch. A4-3: E51-TE-N026A and E51-TE-N027A Ch. A6-4: E51-TE-3487 B21-XY-5949B Ch. A3-3: E51-TE-N025B Ch. A4-3: E51-TE-N026B and E51-TE-N027B Ch. A4-4: E51-TE-3320	27 minutes
i.	RCIC Steam Line Tunnel Differential Temperature—High	B21-XY-5949A Ch. A4-3: E51-TE-N026A and E51-TE-N027A B21-XY-5949B Ch. A4-3: E51-TE-N026B and E51-TE-N027B	47°F

(continued)

TRM Table 3.3.6.1-1 (page 4 of 5)
Primary Containment Isolation Instrumentation

TECHNICAL SPECIFICATION FUNCTION	APPLICABLE INSTRUMENT NUMBER(S)	NOMINAL TRIP SETPOINT
4. RCIC System Isolation (continued)		
j. RCIC Equipment Area Temperature—High	B21-XY-5949A Ch. A4-4: E51-TE-3321 Ch. A5-4: E51-TE-3323 Ch. A1-3: E51-TE-N023A B21-XY-5949B Ch. A5-4: E51-TE-3322 Ch. A6-3: E51-TE-3355 Ch. A1-3: E51-TE-N023B	165°F
k. RCIC Equipment Area Differential Temperature—High	B21-XY-5949A Ch. A2-3: E51-TE-N021A and E51-TE-N022A B21-XY-5949B Ch. A2-3: E51-TE-N021B and E51-TE-N022B	47°F
5. Reactor Water Cleanup (RWCU) System Isolation		
a. Differential Flow—High	B21-XY-5949B G31-FT-N012 G31-FT-N041 G31-FT-N036	43 gpm
b. Differential Flow—High Time Delay	B21-XY-5949B G31-FT-N012 G31-FT-N041 G31-FT-N036	28.5 minutes
c. Area Temperature—High	B21-XY-5949A Ch. A1-1: G31-TE-N016A Ch. A2-1: G31-TE-N016C Ch. A3-1: G31-TE-N016E B21-XY-5949B Ch. A1-1: G31-TE-N016B Ch. A2-1: G31-TE-N016D Ch. A3-1: G31-TE-N016F	140°F
d. Area Ventilation Differential Temperature—High	B21-XY-5949A Ch. A4-1: G31-TE-N022A and G31-TE-N023A Ch. A5-1: G31-TE-N022C and G31-TE-N023C Ch. A6-1: G31-TE-N022E and G31-TE-N023E B21-XY-5949B Ch. A4-1: G31-TE-N022B and G31-TE-N023B Ch. A5-1: G31-TE-N022D and G31-TE-N023D Ch. A6-1: G31-TE-N022F and G31-TE-N023F	47°F

(continued)

TRM Table 3.3.6.1-1 (page 5 of 5)
Primary Containment Isolation Instrumentation

TECHNICAL SPECIFICATION FUNCTION	APPLICABLE INSTRUMENT NUMBER(S)	NOMINAL TRIP SETPOINT
5. Reactor Water Cleanup (RWCU) System Isolation (continued)		
e. Piping Outside RWCU Rooms Area Temperature—High	B21-XY-5949A Ch. A1-2: G31-TE-5931 B21-XY-5949B Ch. A1-2: G31-TE-5932	115°F
f. SLC System Initiation	C41A-S1	NA
g. Reactor Vessel Water Level—Low Level 2	B21-LT-N024A-1, B-1 B21-LT-N025A-1, B-1 B21-LTM-N024A-1-1, B-1-1 B21-LTM-N025A-1-1, B-1-1	105 inches
6. RHR Shutdown Cooling System Isolation		
a. Reactor Steam Dome Pressure—High	B32-PS-N018A-1, B	130.8 psig
b. Reactor Vessel Water Level— Low Level 1	B21-LT-N017A-1, B-1, C-1, D-1 B21-LTM-N017A-1, B-1, C-1, D-1	166 inches
7. Traversing In-Core Probe Isolation		
a. Reactor Vessel Water Level-Low Level 1	B21-LT-N017A-1, B-1 B21-LTM-N017A-1, B-1	166 inches
b. Drywell Pressure-High	C72-PT-N002A, B C72-PTM-N002A-1, B-1	1.7 psig

TRM Table 3.3.6.2-1 (page 1 of 1)
Secondary Containment Isolation Instrumentation

TECHNICAL SPECIFICATION FUNCTION	APPLICABLE INSTRUMENT NUMBER(S)	NOMINAL TRIP SETPOINT
1. Reactor Vessel Water Level—Low Level 2	B21-LT-N024A-1, B-1 B21-LT-N025A-1, B-1 B21-LTM-N024A-1-1, B-1-1 B21-LTM-N025A-1-1, B-1-1	105 inches
2. Drywell Pressure—High	C72-PT-N002A, B, C, D C72-PTM-N002A-1, B-1, C-1, D-1	1.7 psig
3. Reactor Building Exhaust Radiation—High	D12-RE-N010A, B D12-RM-K609A, B	4 mR/hr

TRM Table 3.3.7.1-1 (page 1 of 1)
Control Room Emergency Ventilation System Instrumentation

	TECHNICAL SPECIFICATION FUNCTION	APPLICABLE INSTRUMENT NUMBER(S)	NOMINAL TRIP SETPOINT
1.	Control Building Air Intake Radiation—High	1-D22-RM-K600-1-2, 1-D22-RE-N001-1-2 1-D22-RM-K600-1-3, 1-D22-RE-N001-1-3	7 mR/hr
2.	Unit 2 Secondary Containment Isolation - CREV Auto-Start		
a.	Reactor Vessel Water Level—Low Level 2	B21-LT-N024A-1, B-1 B21-LT-N025A-1, B-1 B21-LTM-N024A-1-1, B-1-1 B21-LTM-N025A-1-1, B-1-1	105 inches
b.	Drywell Pressure—High	C72-PT-N002A, B, C, D C72-PTM-N002A-1, B-1, C-1, D-1	1.7 psig

TRM Table 3.3.7.2-1 (page 1 of 1)
Condenser Vacuum Pump Isolation Instrumentation

TECHNICAL SPECIFICATION FUNCTION	APPLICABLE INSTRUMENT NUMBER(S)	NOMINAL TRIP SETPOINT
1. Main Steam Line Radiation—High	D12-RM-K603A, B, C, D	2.8 times background radiation (mR/hr)

TRM Table 3.3.8.1-1 (page 1 of 1)
Loss of Power Instrumentation

TECHNICAL SPECIFICATION FUNCTION	APPLICABLE INSTRUMENT NUMBER(S)	NOMINAL TRIP SETPOINT
1. 4.16 kV Emergency Bus Undervoltage (Loss of Voltage)		
a. Bus Undervoltage	Relay Type - IAV53K Device Number - 27/59E	3255 V[(a)] 93 V[(b)(c)]
b. Time Delay	Relay Type - IAV53K Device Number - 27/59E	1.15 seconds[(e)]
2. 4.16 kV Emergency Bus Undervoltage (Degraded Voltage)		
a. Bus Undervoltage	Device Number - 27/DV	3732 V[(a)] 106.64 V[(b)(d)]
b. Time Delay	Device Number - 27/DV	10 seconds

(a) Based on 4.16 kV bus voltage.

(b) Based on 120 V bus voltage.

(c) The Allowable Value based on 4.16 kV bus voltage is specified in the TS. The Allowable Value based on 120 V bus voltage is 89.0 V to 97.1 V.

(d) The Allowable Value based on 4.16 kV bus voltage is specified in the TS. The Allowable Value based on 120 V bus voltage is 105.9 V to 107.1 V.

(e) This is an inverse time delay relay. The time delay is inversely related to the ratio of reset voltage to setpoint voltage.

TRM Table 3.3.8.2-1 (page 1 of 1)
Reactor Protection System (RPS) Electric Power Monitoring

TECHNICAL SPECIFICATION FUNCTION	APPLICABLE INSTRUMENT NUMBER(S)	NOMINAL TRIP SETPOINT
1. RPS Motor Generator Set Electric Power Monitoring Assembly		
a. Overvoltage	2-C72-EPA1, 2, 3, 4	125 V
b. Undervoltage	2-C72-EPA1, 2, 3, 4	109 V
c. Underfrequency	2-C72-EPA1, 2, 3, 4	57.7 Hz
2. RPS Alternate Power Supply Electric Power Monitoring Assembly		
a. Overvoltage	2-C72-EPA5, 6	125 V
b. Undervoltage	2-C72-EPA5, 6	110 V
c. Underfrequency	2-C72-EPA5, 6	57.7 Hz

TRM Table 3.4.4-1 (page 1 of 1)
Reactor Coolant System Operational LEAKAGE

	TECHNICAL SPECIFICATION FUNCTION	APPLICABLE INSTRUMENT NUMBER(S)
1.	Drywell Floor Drain Sump Flow Monitor	G16-FQ-K601, G16-FYQ-K601, G16-FT-N003
2.	Drywell Equipment Drain Sump Flow Monitor	G16-FQ-K603, G16-FYQ-K603, G16-FT-N013

TRM Table 3.4.5-1 (page 1 of 1)
Reactor Coolant System Leakage Detection Instrumentation

	TECHNICAL SPECIFICATION FUNCTION	APPLICABLE INSTRUMENT NUMBER(S)
1.	Drywell Floor Drain Sump Flow Monitor	G16-FQ-K601, G16-FYQ-K601, G16-FT-N003
2.	Primary Containment Atmosphere Particulate Monitor	CAC-AQH-1260-1 CAC-AQH-1262-1
3.	Atmosphere Gaseous Radioactivity Monitor	CAC-AQH-1260-3 CAC-AQH-1262-3

APPENDIX C

TECHNICAL REQUIREMENTS MANUAL (TRM) INSTRUMENT LIST

APPENDIX C TECHNICAL REQUIREMENTS MANUAL (TRM) INSTRUMENT LIST

PURPOSE

This appendix provides instrument tables to aid in complying with the TRM instrumentation requirements. This appendix does not define OPERABILITY for individual channels. For OPERABILITY of instrument channels, refer to the Bases of the associated TRM Specification, the Updated Final Safety Analysis Report, or the associated Design Basis Document.

Each table in the TRM Instrument List corresponds to the associated TRM. For example; TRM Table 3.3-2, "Control Rod Block Instrumentation," corresponds to TRM 3.3, "Control Rod Block Instrumentation." Each TRM Instrument List Table includes the applicable instrument number(s) associated with each TRM instrument function and the trip setpoint associated with each TRM instrument function, where applicable.

Each TRM instrument function with a trip setpoint value specified is considered to be properly adjusted when the "as left" value of the instrumentation is in compliance with the trip setpoint specified in the TRM and in compliance with the "as-left" tolerance specified in the surveillance test. Additionally, the "as found" value must be in compliance with the Allowable Value specified in the TRM.

TRM Table 3.3-2 (page 1 of 1)
Control Rod Block Instrumentation

TRM FUNCTION	APPLICABLE INSTRUMENT NUMBER(S)	TRIP SETPOINT
1. Average Power Range Monitors		
a. Simulated Thermal Power - High	C51-APRM1-AR51 C51-APRM2-AR31 C51-APRM3-AR41 C51-APRM4-AR11	0.55W + 53.5% RTP [(a)] and 108.0% RTP
b. Inoperative	C51-APRM1-AR51 C51-APRM2-AR31 C51-APRM3-AR41 C51-APRM4-AR11	NA
c. Downscale	C51-APRM1-AR51 C51-APRM2-AR31 C51-APRM3-AR41 C51-APRM4-AR11	2.4% RTP
d. Simulated Thermal Power – High (Setdown)	C51-APRM1-AR51 C51-APRM2-AR31 C51-APRM3-AR41 C51-APRM4-AR11	12.0% RTP
2. Source Range Monitors		
a. Detector Not Full In	C51-SRM-A, B, C, D	NA
b. Upscale	C51-SRM-A, B, C, D	≤ 1 X 10^5 cps
c. Inoperative	C51-SRM-A, B, C, D	NA
d. Downscale	C51-SRM-A, B, C, D	≥ 3 cps
3. Intermediate Range Monitors		
a. Detector Not Full In	C51-IRM-A, B, C, D C51-IRM-E, F, G, H	NA
b. Upscale	C51-IRM-A, B, C, D C51-IRM-E, F, G, H	≤ 108/125 of full scale
c. Inoperative	C51-IRM-A, B, C, D C51-IRM-E, F, G, H	NA
d. Downscale	C51-IRM-A, B, C, D C51-IRM-E, F, G, H	≥ 3/125 of full scale
4. Scram Discharge Volume Water Level—High	C12-LSH-N013E	≤ 73 gallons

(a) [(0.55(W – ΔW) + 53.5 RTP] when Specification 3.3.1.1, Function 2.b, is reset for single loop operation per LCO 3.4.1, "Recirculation Loops Operating." The setpoint value of ΔW is defined in plant procedures.

TRM Table 3.4-2 (page 1 of 1)
Accident Monitoring Instrumentation

TRM FUNCTION	APPLICABLE INSTRUMENT NUMBER(S)
1. Suppression Chamber Atmosphere Temperature[b]	CAC-TE-1258-17 or 18 CAC-TY-4426-1 CAC-TR-4426-1A-5 or 1A-6 CAC-TE-1258-19 or 20 CAC-TY-4426-2 CAC-TR-4426-2A-5 or 2A-6
2. Drywell Radiation[c]	CAC-AR-1260 CAC-AQH-1260-1, 2, 3 CAC-AR-1262 CAC-AQH-1262-1, 2, 3
3. Safety/Relief Valve Position Indication	
a. Primary—Sonic	B21-FY-4157 Thru 4167
b. Secondary—Temperature	B21-TR-R614 Points 1 Thru 11
4. Turbine Building Ventilation Monitor[d]	D12-RE-4563, D12-RR-4548-3 D12-RE-4562, D12-RR-4548-2 D12-RE-4561, D12-RR-4548-1
5. Offgas Stack Ventilation Monitor[d]	D12-RE-4573, D12-RR-4599-2 D12-RE-4574, D12-RR-4599-1 D12-RE-4982, D12-RR-4599-3
6. Drywell and Suppression Chamber H_2 Analyzer [e]	CAC-AT-4409-38, CAC-AR-4409-41/42 (Channel 3), CAC-AI-4409-32 CAC-AT-4410-38, CAC-AR-4410-41/42 (Channel 3), CAC-AI-4410-32
7. Drywell and Suppression Chamber O_2 Analyzer [e]	CAC-AT-4409-37, CAC-AR-4409-41/42 (Channel 1), CAC-AI-4409-40 CAC-AT-4410-37, CAC-AR-4410-41/42 (Channel 1), CAC-AI-4410-40

(a) Not used
(b) Also reference TS 3.3.3.1 and TRM 3.8
(c) Also reference TS 3.4.5
(d) Also reference ODCM 7.3.2
(e) An OPERABLE instrument shall consist of the AT instrument and either the AI instrument or the AR instrument.

TRM Table 3.5-2 (page 1 of 1)
Chloride Intrusion Monitors

	TRM FUNCTION	APPLICABLE INSTRUMENT NUMBER(S)	TRIP SETPOINT
1.	Chloride Leak Detectors in the Condenser Hotwell Outlet Headers	CO-CR-24 CO-CIT-24A, CO-CIT-24B CO-CE-24-1, CO-CE-24-2, CO-CE-24-3, CO-CE-24-4	≤ 1.0 µmhos/cm
2.	Chloride Leak Detector in the Condensate Pump Discharge		
	a. Wide Range Monitor	CO-CIS-3075-1	≤ 2.0 µmhos/cm
	b. Narrow Range Monitor	TS-CIT-863-3	≤ 0.3 µmhos/cm
3.	Chloride Leak Detector in the Inlet to the Condensate Filter Demineralizer	CFD-CIT-1	≤ 0.3 µmhos/cm
4.	Chloride Leak Detector in the Inlet to the Deep Bed Demineralizer	CDD-CIT-1	≤ 0.3 µmhos/cm

TRM Table 3.6-2 (page 1 of 1)
Bus Power Monitors

	TRM FUNCTION	APPLICABLE INSTRUMENT NUMBER(S)
1.	Core Spray System Bus Power Monitor	E21-K1A, E21-K1B
2.	Low Pressure Coolant Injection (Residual Heat Removal System) Bus Power Monitor	E11-K106A, E11-K106B
3.	High Pressure Coolant Injection System Bus Power Monitor	E41-K55, E41-K56
4.	Automatic Depressurization System Bus Power Monitor	B21-K1A, B21-K1B
5.	RCIC System Bus Power Monitor	E51-K42, E51-K43

TRM Table 3.7-1 (page 1 of 1)
Automatic Depressurization System (ADS) Inhibit Switch

	TRM FUNCTION	APPLICABLE INSTRUMENT NUMBER(S)
1.	ADS Inhibit Switch A	B21-CS-S5A
2.	ADS Inhibit Switch B	B21-CS-S5B

TRM Table 3.8-1 (page 1 of 1)
Suppression Chamber Water Temperature Instrumentation

	TRM FUNCTION	APPLICABLE INSTRUMENT NUMBER(S)	TRIP SETPOINT
1.	Suppression Chamber Water Temperature	CAC-TE-4426-2 Thru 13, CAC-TY-4426-1, CAC-TR-4426-1A CAC-TE-4426-15 Thru 26, CAC-TY-4426-2, CAC-TR-4426-2A	≤ 95°F

TRM Table 3.9-2 (page 1 of 1)
Seismic Monitoring Instrumentation

	TRM FUNCTION	APPLICABLE INSTRUMENT NUMBER(S)
1.	Passive Triaxial Peak Shock Recorders	
a.	Reactor Building Basement/Equipment Drain Tank (-17' level)	2-ENV-XRH-823-1
b.	Reactor Building RHR Heat Exchanger Support (+20' level)	2-ENV-XRH-823-2
c.	Reactor Building Refueling Area (+117' level)	2-ENV-XRH-823-3
2.	Active Triaxial Accelerometers	
a.	Reactor Building (+89' 4" level)	2-ENV-XT-823-2
b.	Reactor Building (-17' level)	2-ENV-XT-823-1
3.	Active Seismic Recording System	
a.	Control Room	2-ENV-XT-823

TRM Table 3.10-1 (page 1 of 1)
Intake Canal High Water Level Instrumentation

TRM FUNCTION	APPLICABLE INSTRUMENT NUMBER(S)
1. Intake Canal High Water Level[(a)]	2-SCW-LT-285 2-SCW-LI-285 2-SCW-LR-285 2-SCW-LRA-285-1

(a) Also reference TS 3.7.2 and TRM 3.20

TRM Table 3.11-2 (page 1 of 1)
Primary Containment Isolation Instrumentation

	TRM FUNCTION	APPLICABLE INSTRUMENT NUMBER(S)	TRIP SETPOINT
1.	Main Steam Line Tunnel Temperature—High	B21-TE-N011A, B, C, D B21-TE-N012A, B, C, D B21-TE-N013A, B, C, D	≤ 190°F
2.	Turbine Building Area Temperature—High	B21-TE-3225A, B, C, D B21-TE-3226A, B, C, D B21-TE-3227A, B, C, D B21-TE-3228A, B, C, D B21-TE-3229A, B, C, D B21-TE-3230A, B, C, D B21-TE-3231A, B, C, D B21-TE-3232A, B, C, D	≤ 190°F

TRM Table 3.12-2 (page 1 of 1)
Control Room Emergency Ventilation System Instrumentation

TRM FUNCTION	APPLICABLE INSTRUMENT NUMBER(S)	TRIP SETPOINT
1. Chlorine Isolation		
a. Control Building Air Intake (Local)	1-X-AT-2977 2-X-AT-2977 1-X-AT-2977-1 2-X-AT-2977-1	≤ 5 ppm
b. Chlorine Tank Car Area (Remote)	1-X-AT-2979 2-X-AT-2979 1-X-AT-2979-1 2-X-AT-2979-1	≤ 5 ppm
2. Control Room Envelope Smoke Protection		
a. Control Building Intake Air Duct Smoke Detectors	2-FP-CB-4-22 2-FP-CB-4-23	NA

APPENDIX D

PRIMARY CONTAINMENT ISOLATION VALVE (PCIV) LIST

APPENDIX D PRIMARY CONTAINMENT ISOLATION VALVE (PCIV) LIST

PURPOSE

This appendix provides two PCIV tables to aid in complying with the requirements of Technical Specification (TS) 3.6.1.3, "Primary Containment Isolation Valves (PCIVs)."

TRM Table 3.6.1.3-1, "Primary Containment Isolation Devices - Manual Valves, Check Valves, Excess Flow Check Valves (EFCVs), and Flanges," provides a list of all isolation devices that are considered passive isolation devices and, with the exception of check valves and EFCVs, are normally closed while in MODE 1, 2, or 3. TRM Table 3.6.1.3-1 includes a reference to the applicable TS Conditions and Surveillance Requirements. Manual valves and flanges that are locked, sealed, or otherwise secured in position are not required to be verified closed to meet SR 3.6.1.3.1 or SR 3.6.1.3.2. Manual valves and flanges that are not locked, sealed, or otherwise secured in position are required to be verified closed to meet SR 3.6.1.3.1 or SR 3.6.1.3.2, as applicable.

TRM Table 3.6.1.3-2, "Power Operated and Automatic PCIVs," provides a list of all PCIVs that are considered active isolation devices. TRM Table 3.6.1.3-2 includes a reference to the applicable TS Conditions, Surveillance Requirements, the required Allowable Isolation Times, and primary containment Automatic Isolation Group, where applicable.

TRM Table 3.6.1.3-1 (Page 1 of 11)
Primary Containment Isolation Devices -
Manual Valves, Check Valves, Excess Flow Check Valves (EFCVs), and Flanges

VALVE OR FLANGE NUMBER	DESCRIPTION	APPLICABLE TS CONDITION(S)	SURVEILLANCE REQUIREMENTS
2-B21-F008	REACTOR PRESSURE RIP VALVE TO B21-PS-N002	C	SR 3.6.1.3.7
2-B21-F010A	FEEDWATER LINE 'A' RPV INLET CHECK VALVE	A, B	NA
2-B21-F010B	FEEDWATER LINE 'B' RPV INLET CHECK VALVE	A, B	NA
2-B21-F014A	EFCV TO B21-PDT-N006A & B	C	SR 3.6.1.3.7
2-B21-F014B	EFCV TO B21-PDT-N006A & B	C	SR 3.6.1.3.7
2-B21-F014C	EFCV TO B21-PDT-N006C & D	C	SR 3.6.1.3.7
2-B21-F014D	EFCV TO B21-PDT-N006C & D	C	SR 3.6.1.3.7
2-B21-F014E	EFCV TO B21-PDT-N007A & B	C	SR 3.6.1.3.7
2-B21-F014F	EFCV TO B21-PDT-N007A & B	C	SR 3.6.1.3.7
2-B21-F014G	EFCV TO B21-PDT-N007C & D	C	SR 3.6.1.3.7
2-B21-F014H	EFCV TO B21-PDT-N007C & D	C	SR 3.6.1.3.7
2-B21-F014J	EFCV TO B21-PDT-N008A & B	C	SR 3.6.1.3.7
2-B21-F014K	EFCV TO B21-PDT-N008A & B	C	SR 3.6.1.3.7
2-B21-F014L	EFCV TO B21-PDT-N008C & D	C	SR 3.6.1.3.7
2-B21-F014M	EFCV TO B21-PDT-N008C & D	C	SR 3.6.1.3.7
2-B21-F014N	EFCV TO B21-PDT-N009A & B	C	SR 3.6.1.3.7
2-B21-F014P	EFCV TO B21-PDT-N009A & B	C	SR 3.6.1.3.7
2-B21-F014R	EFCV TO B21-PDT-N009C & D	C	SR 3.6.1.3.7
2-B21-F014S	EFCV TO B21-PDT-N009C & D	C	SR 3.6.1.3.7
2-B21-F017	B21-F019 INBOARD TEST CONNECTION VALVE	A, B	NA
2-B21-F025A	OUTBOARD B21-F028A INBOARD TEST VALVE	A, B	NA
2-B21-F025B	OUTBOARD B21-F028B INBOARD TEST VALVE	A, B	NA
2-B21-F025C	OUTBOARD B21-F028C INBOARD TEST VALVE	A, B	NA
2-B21-F025D	OUTBOARD B21-F028D INBOARD TEST VALVE	A, B	NA
2-B21-F030A	FEEDWATER LINE A INBOARD TEST VALVE	A, B	NA
2-B21-F030B	FEEDWATER LINE B INBOARD TEST VALVE	A, B	NA
2-B21-F040	REACTOR LEVEL RIP VALVE TO B21-LT-3331 AND N027	C	SR 3.6.1.3.7

(continued)

TRM Table 3.6.1.3-1 (Page 2 of 11)
Primary Containment Isolation Devices -
Manual Valves, Check Valves, Excess Flow Check Valves (EFCVs), and Flanges

VALVE OR FLANGE NUMBER	DESCRIPTION	APPLICABLE TS CONDITION(S)	SURVEILLANCE REQUIREMENTS
2-B21-F042A	REACTOR LEVEL RIP VALVE TO B21-LT-N024A-1 & 2	C	SR 3.6.1.3.7
2-B21-F042B	REACTOR LEVEL INSTRUMENT EFCV (X-69A)	C	SR 3.6.1.3.7
2-B21-F044A	REACTOR LEVEL RIP VALVE TO B21-LT-N025A-1 & 2	C	SR 3.6.1.3.7
2-B21-F044B	REACTOR LEVEL INSTRUMENT EFCV (X-69B)	C	SR 3.6.1.3.7
2-B21-F046A	REACTOR LEVEL RIP VALVE TO B21-LT-N017-1 & 2	C	SR 3.6.1.3.7
2-B21-F046B	REACTOR LEVEL INSTRUMENT EFCV (X-69C)	C	SR 3.6.1.3.7
2-B21-F047C	PENETRATION X53-B EFCV	C	SR 3.6.1.3.7
2-B21-F047D	REACTOR INSTRUMENT EFCV (X-83A)	C	SR 3.6.1.3.7
2-B21-F048A	REACTOR LEVEL RIP VALVE TO B21-LT-N036, N017-1	C	SR 3.6.1.3.7
2-B21-F048B	REACTOR LEVEL INSTRUMENT EFCV (X-69D)	C	SR 3.6.1.3.7
2-B21-F049C	PENETRATION X53-A EFCV	C	SR 3.6.1.3.7
2-B21-F049D	REACTOR LEVEL EFCV B21-LT-N017A-1&2	C	SR 3.6.1.3.7
2-B21-F050A	JP-5 FLOW HI PRESSURE EFCV	C	SR 3.6.1.3.7
2-B21-F050B	JP-15 FLOW HI PRESSURE EFCV	C	SR 3.6.1.3.7
2-B21-F050C	JP-10 FLOW HI PRESSURE EFCV	C	SR 3.6.1.3.7
2-B21-F050D	JP-20 FLOW HI PRESSURE EFCV	C	SR 3.6.1.3.7
2-B21-F052A	JP-5 FLOW LO PRESSURE EFCV	C	SR 3.6.1.3.7
2-B21-F052B	JP-15 FLOW LO PRESSURE EFCV	C	SR 3.6.1.3.7
2-B21-F052C	JP-10 FLOW HI PRESSURE EFCV	C	SR 3.6.1.3.7
2-B21-F052D	JP 20 FLOW LO PRESSURE EFCV	C	SR 3.6.1.3.7
2-B21-F054	X-61B EFCV TO B21-PDT-N032	C	SR 3.6.1.3.7
2-B21-F056	X-61A EFCV HIGH	C	SR 3.6.1.3.7
2-B21-F058A	JP-1 FLOW LO PRESSURE EFCV	C	SR 3.6.1.3.7
2-B21-F058B	JP-11 FLOW LO PRESSURE EFCV	C	SR 3.6.1.3.7
2-B21-F058C	JP-2 FLOW LO PRESSURE EFCV	C	SR 3.6.1.3.7
2-B21-F058D	JP-12 FLOW LO PRESSURE EFCV	C	SR 3.6.1.3.7
2-B21-F058E	JP-3 FLOW LO PRESSURE EFCV	C	SR 3.6.1.3.7
2-B21-F058F	JP-13 FLOW LO PRESSURE EFCV	C	SR 3.6.1.3.7
2-B21-F058G	JP-4 FLOW LO PRESSURE EFCV	C	SR 3.6.1.3.7
2-B21-F058H	JP-14 FLOW LO PRESSURE EFCV	C	SR 3.6.1.3.7
2-B21-F058L	JP-6 FLOW LO PRESSURE EFCV	C	SR 3.6.1.3.7
2-B21-F058M	JP-16 FLOW LO PRESSURE EFCV	C	SR 3.6.1.3.7

(continued)

TRM Table 3.6.1.3-1 (Page 3 of 11)
Primary Containment Isolation Devices -
Manual Valves, Check Valves, Excess Flow Check Valves (EFCVs), and Flanges

VALVE OR FLANGE NUMBER	DESCRIPTION	APPLICABLE TS CONDITION(S)	SURVEILLANCE REQUIREMENTS
2-B21-F058N	JP-7 FLOW LO PRESSURE EFCV	C	SR 3.6.1.3.7
2-B21-F058P	JP-17 FLOW LO PRESSURE EFCV	C	SR 3.6.1.3.7
2-B21-F058R	JP-8 FLOW LO PRESSURE EFCV	C	SR 3.6.1.3.7
2-B21-F058S	JP-18 FLOW LO PRESSURE EFCV	C	SR 3.6.1.3.7
2-B21-F058T	JP-9 FLOW LO PRESSURE EFCV	C	SR 3.6.1.3.7
2-B21-F058U	JP-19 FLOW LO PRESSURE EFCV	C	SR 3.6.1.3.7
2-B21-F060	JP-11-20 FLOW HI PRESSURE EFCV TO CORE PLATE	C	SR 3.6.1.3.7
2-B21-IV-2149	EFCV (X-69E) CAPPED	C	SR 3.6.1.3.7
2-B21-IV-2196	E21-PDS-N004B REACTOR INSTRUMENT PENETRATION VALVE	C	SR 3.6.1.3.7
2-B21-IV-2455	EFCV TO B21-LT-N026A	C	SR 3.6.1.3.7
2-B21-IV-2456	EFCV TO B21-LT-N026B	C	SR 3.6.1.3.7
2-B21-V10	B21-F032A VALVE INBOARD BODY DRAIN VALVE	A, B	NA
2-B21-V13	B21-F032B VALVE INBOARD BODY DRAIN VALVE	A, B	NA
2-B21-V83	RPV FLANGE SEAL LEAK DETECTION TEST LINE	C	NA
2-B21-V160	B21-LT-N026B INSTRUMENT LINE INBOARD TEST VALVE	C	NA
2-B21-V161	B21-LT-N026A INSTRUMENT LINE INBOARD TEST VALVE	C	NA
2-B32-F005A	RECIRC. PUMP 2A UPPER SEAL PRESSURE RIP VALVE	C	SR 3.6.1.3.7
2-B32-F005B	RECIRC. PUMP 2B UPPER SEAL PRESSURE RIP VALVE	C	SR 3.6.1.3.7
2-B32-F006A	RECIRC. PUMP 2A LOWER SEAL PRESSURE RIP VALVE	C	SR 3.6.1.3.7
2-B32-F006B	RECIRC. PUMP 2B LOWER SEAL PRESSURE RIP VALVE	C	SR 3.6.1.3.7
2-B32-F021	SAMPLE LINE DRAIN ROOT VALVE	A, B	NA
2-B32-F039A	LO PRESSURE RIP VALVE TO B32-PDT-N015A	C	SR 3.6.1.3.7
2-B32-F039B	HI PRESSURE RIP VALVE TO B32-PDT-N015B	C	SR 3.6.1.3.7
2-B32-F039C	HI PRESSURE RIP VALVE TO B32-PDT-N015A	C	SR 3.6.1.3.7
2-B32-F039D	LO PRESSURE RIP VALVE TO B32-PDT-N015B	C	SR 3.6.1.3.7
2-B32-F041A	LO PRESSURE RIP VALVE TO B32-FT-N014A & B	C	SR 3.6.1.3.7
2-B32-F041B	LO PRESSURE RIP VALVE TO B32-FT-N024A & B	C	SR 3.6.1.3.7
2-B32-F041C	LO PRESSURE RIP VALVE TO B32-FT-N014C & D	C	SR 3.6.1.3.7
2-B32-F041D	LO PRESSURE RIP VALVE TO B32-FT-N024C & D	C	SR 3.6.1.3.7

(continued)

TRM Table 3.6.1.3-1 (Page 4 of 11)
Primary Containment Isolation Devices -
Manual Valves, Check Valves, Excess Flow Check Valves (EFCVs), and Flanges

VALVE OR FLANGE NUMBER	DESCRIPTION	APPLICABLE TS CONDITION(S)	SURVEILLANCE REQUIREMENTS
2-B32-F042A	HI PRESSURE RIP VALVE TO B32-FT-N014A & B	C	SR 3.6.1.3.7
2-B32-F042B	HI PRESSURE RIP VALVE TO B32-FT-N024A & B	C	SR 3.6.1.3.7
2-B32-F042C	HI PRESSURE RIP VALVE TO B32-FT-N014C & D	C	SR 3.6.1.3.7
2-B32-F042D	HI PRESSURE RIP VALVE TO B32-FT-N024C & D	C	SR 3.6.1.3.7
2-B32-F058A	RIP VALVE B32-PS-N018A & B32-PS-N018A-1	C	SR 3.6.1.3.7
2-B32-F058B	RIP VALVE TO B32-PS-N018B	C	SR 3.6.1.3.7
2-B32-V24	RECIRC PUMP 2A SEAL INJECTION CHECK VALVE	A, B	NA
2-B32-V32	RECIRC PUMP 2B SEAL INJECTION CHECK VALVE	A, B	NA
2-B32-V97	EFCV B32-F006B INLET TEST VALVE	C	NA
2-B32-V98	EFCV B32-F005B INLET TEST VALVE	C	NA
2-B32-V99	EFCV B32-F006A INLET TEST VALVE	C	NA
2-B32-V100	EFCV B32-F005A INLET TEST VALVE	C	NA
2-B32-V105	LLRT VALVE FOR B32-V22	A, B	NA
2-B32-V109	LLRT VALVE FOR B32-V30	A, B	NA
2-CAC-IV-695	CAC-PT-4175 INSTRUMENT DRAIN VALVE	C	NA
2-CAC-IV-696	CAC-PSH-2684 INSTRUMENT DRAIN VALVE	C	NA
2-CAC-IV-899	CAC-PT-1257-2A INSTRUMENT DRAIN VALVE	C	NA
2-CAC-IV-933	CAC-PT-4176 INSTRUMENT DRAIN VALVE	C	NA
2-CAC-IV-934	CAC-PT-2685 INSTRUMENT DRAIN VALVE	C	NA
2-CAC-IV-940	CAC-PT-3341 INSTRUMENT DRAIN VALVE	C	NA
2-CAC-IV-1368	CAC-LT-2601 LOW PRESSURE INSTRUMENT CALIBRATION VALVE	C	NA
2-CAC-IV-1369	CAC-LT-2601 HIGH PRESSURE INSTRUMENT CALIBRATION VALVE	C	NA
2-CAC-IV-1473	CAC-LT-4177 HIGH PRESSURE INSTRUMENT CALIBRATION VALVE	C	NA
2-CAC-IV-1474	CAC-LT-4177 LOW PRESSURE INSTRUMENT CALIBRATION VALVE	C	NA
2-CAC-IV-1475	CAC-LG-4336 SUPPRESSION POOL LEVEL SIGHT GLASS LINE LOWER ISOLATION VALVE	C	NA
2-CAC-IV-1476	CAC-LG-4336 SUPPRESSION POOL LEVEL SIGHT GLASS LINE UPPER ISOLATION VALVE	C	NA
2-CAC-IV-1481	SURGE VOLUME RESERVOIR LEVEL GAUGE CAC-LG-5121 UPPER ISOLATION VALVE	C	NA
2-CAC-IV-1482	SURGE RESERVOIR LEVEL GAUGE CAC-LG-5120 UPPER ISOLATION VALVE	C	NA
2-CAC-IV-1492	CAC-LT-3342 LOW PRESSURE INSTRUMENT CALIBRATION VALVE	C	NA

(continued)

TRM Table 3.6.1.3-1 (Page 5 of 11)
Primary Containment Isolation Devices -
Manual Valves, Check Valves, Excess Flow Check Valves (EFCVs), and Flanges

VALVE OR FLANGE NUMBER	DESCRIPTION	APPLICABLE TS CONDITION(S)	SURVEILLANCE REQUIREMENTS
2-CAC-IV-1493	CAC-LT-3342 HIGH PRESSURE INSTRUMENT CALIBRATION VALVE	C	NA
2-CAC-IV-1494	CAC-LT-2602 LOW PRESSURE INSTRUMENT CALIBRATION VALVE	C	NA
2-CAC-IV-1495	CAC-LT-2602 HIGH PRESSURE INSTRUMENT CALIBRATION VALVE	C	NA
2-CAC-IV-2117	SURGE VOLUME RESERVOIR LEVEL GAUGE CAC-LG-5120 LOWER ISOLATION VALVE	C	NA
2-CAC-IV-2118	SURGE VOLUME RESERVOIR LEVEL GAUGE CAC-LG-5121 LOWER ISOLATION VALVE	C	NA
2-CAC-IV-2151	CAC-PT-5113 INSTRUMENT DRAIN VALVE	C	NA
2-CAC-LT-1216-6	CAC-LT-1216 HIGH PRESSURE INSTRUMENT DRAIN VALVE	C	NA
2-CAC-LT-1216-7	CAC-LT-1216 LOW PRESSURE INSTRUMENT DRAIN VALVE	C	NA
2-CAC-PDS-4222-6	CAC-PDS-4222 INSTRUMENT DRAIN VALVE	C	NA
2-CAC-PDS-4223-6	CAC-PDS-4223 INSTRUMENT DRAIN VALVE	C	NA
2-CAC-PT-1230-10	CAC-PT-1230 INSTRUMENT TEST VALVE	C	NA
2-CAC-PT-1257-2B-6	CAC-PT-1257-2B INSTRUMENT DRAIN VALVE	C	NA
2-CAC-V28	LINE 4-18-152 DRAIN VALVE	A, B	NA
2-CAC-V34	SUPPRESSION POOL PURGE EXHAUST LINE INBOARD DRAIN VALVE	A, B	NA
2-CAC-V41	CAC-X20A BEFORE SEAT DRAIN VALVE	A, B	NA
2-CAC-V44	CAC-X20B BEFORE SEAT DRAIN VALVE	A, B	NA
2-CAC-V53	CAC-V49 BEFORE SEAT DRAIN VALVE	A, B	NA
2-CAC-V54	CAC-V49 BEFORE SEAT DRAIN VALVE	A, B	NA
2-CAC-V79	DRYWELL PURGE EXHAUST LINE INBOARD DRAIN VALVE	A, B	NA
2-CAC-V81	DRYWELL HEAD PURGE LINE INBOARD DRAIN VALVE	A, B	NA
2-CAC-V164	CAD N2 INJECTION LINE VENT VALVE	A, B	NA
2-CAC-V166	SUPP POOL PURGE EXHAUST LINE VENT VALVE	A, B	NA
2-CAC-V169	CAD N2 INJECTION LINE VENT VALVE	A, B	NA
2-CAC-V179	TEST CONNECTION VALVE ON LINE CAC-734	C	NA
2-CAC-V180	TEST CONNECTION VALVE ON LINE CAC-733	C	NA
2-CAC-V183	SURGE VOLUME RESERVOIR LEVEL GAUGE CAC-LG-5777 ISOLATION VALVE	C	NA
2-CAC-V184	SURGE VOLUME RESERVOIR LEVEL GAUGE CAC-LG-5777 ISOLATION VALVE	C	NA
2-CAC-V185	SURGE VOLUME RESERVOIR LEVEL GAUGE CAC-LG-5776 ISOLATION VALVE	C	NA

(continued)

TRM Table 3.6.1.3-1 (Page 6 of 11)
Primary Containment Isolation Devices -
Manual Valves, Check Valves, Excess Flow Check Valves (EFCVs), and Flanges

VALVE OR FLANGE NUMBER	DESCRIPTION	APPLICABLE TS CONDITION(S)	SURVEILLANCE REQUIREMENTS
2-CAC-V186	SURGE VOLUME RESERVOIR LEVEL GAUGE CAC-LG-5776 ISOLATION VALVE	C	NA
2-C12-F101 (XX-XX)	HCU INSERT HEADER VENT VALVE	C	SR 3.6.1.3.1
2-C12-F102 (XX-XX)	HCU WITHDRAW HEADER VENT VALVE	C	SR 3.6.1.3.1
2-C41-F006	SLC OUTBOARD INJECTION CHECK VALVE	A, B	NA
2-C41-F007	SLC INBOARD INJECTION CHECK VALVE	A, B	NA
2-C41-F026	C41-F006 INBOARD TEST VALVE	A, B	NA
2-C51-TIP-CHV	TIP NITROGEN PURGE LINE CHECK VALVE	C	NA
2-C72-IV-1378	C72-PT-N002C DRAIN VALVE	C	NA
2-C72-IV-1379	C72-PT-N002D INSTRUMENT DRAIN VALVE	C	NA
2-C72-IV-1414	C72-PT-N002B INSTRUMENT DRAIN VALVE	C	NA
2-C72-IV-1415	C72-PT-N002A INSTRUMENT DRAIN VALVE	C	NA
2-C72-PS-N004-6	C72-PS-N004 INSTRUMENT DRAIN VALVE	C	NA
2-C72-V5000	C72-701 FIRST SPARE INSTRUMENT ISOLATION VALVE	C	NA
2-C72-V5001	C72-701 SECOND SPARE INSTRUMENT ISOLATION VALVE	C	NA
2-C72-V5002	C72-702 FIRST SPARE INSTRUMENT ISOLATION VALVE	C	NA
2-C72-V5003	C72-702 SECOND SPARE INSTRUMENT ISOLATION VALVE	C	NA
2-E11-F025A	RHR HEAT EXCHANGER 2A OUTLET PRESSURE RELIEF VALVE	C	NA
2-E11-F025B	RHR HEAT EXCHANGER 2B OUTLET PRESSURE RELIEF VALVE	C	NA
2-E11-F029	SHUTDOWN COOLING SUCTION HEADER RELIEF	C	NA
2-E11-F036A	CONTAINMENT SPRAY INBOARD AIR TEST ISOLATION VALVE	A, B	NA
2-E11-F055A	RHR HEAT EXCHANGER 2A RELIEF VALVE BLANK FLANGE	C	NA
2-E11-F055B	RHR HEAT EXCHANGER 2B RELIEF VALVE BLANK FLANGE	C	NA
2-E11-F058A	LPCI LINE INBOARD TEST ISOLATION VALVE	A, B	NA
2-E11-F058B	LPCI LINE INBOARD TEST VALVE	A, B	NA

(continued)

TRM Table 3.6.1.3-1 (Page 7 of 11)
Primary Containment Isolation Devices -
Manual Valves, Check Valves, Excess Flow Check Valves (EFCVs), and Flanges

VALVE OR FLANGE NUMBER	DESCRIPTION	APPLICABLE TS CONDITION(S)	SURVEILLANCE REQUIREMENTS
2-E11-F063	E11-F008 UPSTREAM INBOARD DRAIN VALVE	A, B	NA
2-E11-F097	RCIC SUCTION FROM RHR SYSTEM RELIEF VALVE BLANK FLANGE	C	NA
2-E11-IV-1380	E11-PT-N019B INSTRUMENT DRAIN VALVE	C	NA
2-E11-IV-1381	E11-PT-N019D INSTRUMENT DRAIN VALVE	C	NA
2-E11-IV-1408	E11-PT-N019C INSTRUMENT DRAIN VALVE	C	NA
2-E11-IV-1409	E11-PT-N019A INSTRUMENT DRAIN VALVE	C	NA
2-E11-PT-N011A-6	E11-PT-N011A INSTRUMENT DRAIN VALVE	C	NA
2-E11-PT-N011B-6	E11-PT-N011B INSTRUMENT DRAIN VALVE	C	NA
2-E11-PT-N011C-6	E11-PT-N011C INSTRUMENT DRAIN VALVE	C	NA
2-E11-PT-N011D-6	E11-PT-N011D INSTRUMENT DRAIN VALVE	C	NA
2-E11-V20	RHR HEAT EXCHANGER 2A SHELL RELIEF VALVE	C	NA
2-E11-V21	RHR HEAT EXCHANGER 2B SHELL RELIEF VALVE	C	NA
2-E11-V74	VALVE E11-F020A INBOARD BODY DRAIN VALVE	C	NA
2-E11-V81	LPCI LINE HIGH POINT VENT VALVE	A, B	NA
2-E11-V82	VALVE E11-F015A INBOARD BODY DRAIN VALVE	A, B	NA
2-E11-V83	LPCI LINE HIGH POINT VENT VALVE	A, B	NA
2-E11-V84	VALVE E11-F021B INBOARD BODY DRAIN VALVE	A, B	NA
2-E11-V86	VALVE E11-F021B OUTBOARD BODY DRAIN VALVE	A, B	NA
2-E11-V87	VALVE E11-F024A BODY DRAIN VALVE	A, B	NA
2-E11-V91	VALVE E11-F028A BODY DRAIN VALVE	A, B	NA
2-E11-V92	VALVE E11-F015A OUTBOARD BODY DRAIN VALVE	A, B	NA
2-E11-V103	VALVE E11-F008 INBOARD BODY DRAIN VALVE	A, B	NA
2-E11-V121	VALVE E11-F021A OUTBOARD BODY DRAIN VALVE	A, B	NA

(continued)

TRM Table 3.6.1.3-1 (Page 8 of 11)
Primary Containment Isolation Devices -
Manual Valves, Check Valves, Excess Flow Check Valves (EFCVs), and Flanges

VALVE OR FLANGE NUMBER	DESCRIPTION	APPLICABLE TS CONDITION(S)	SURVEILLANCE REQUIREMENTS
2-E11-V122	VALVE E11-F021A INBOARD BODY DRAIN VALVE	A, B	NA
2-E11-V125	VALVE E11-F016B BODY DRAIN VALVE	A, B	NA
2-E11-V126	VALVE E11-F028B BODY DRAIN VALVE	A, B	NA
2-E11-V127	VALVE E11-F024B BODY DRAIN VALVE	A, B	NA
2-E11-V135	VALVE E11-F020B INBOARD BODY DRAIN VALVE	C	NA
2-E11-V169	VALVE E11-F015B INBOARD BODY DRAIN VALVE	A, B	NA
2-E11-V170	VALVE E11-F015B OUTBOARD BODY DRAIN VALVE	A, B	NA
2-E11-V189	CONTAINMENT SPRAY LINE INBOARD AIR TEST ISOLATION VALVE	A, B	NA
2-E11-V5003	E11-703 FIRST SPARE INSTRUMENT ISOLATION VALVE	C	NA
2-E11-V5004	E11-703 SECOND SPARE INSTRUMENT ISOLATION VALVE	C	NA
2-E11-V5005	E11-706 SPARE RACK ISOLATION VALVE	C	NA
2-E11-V5013	2-E11-F009 DOWNSTREAM SIDE BODY INBOARD VENT VALVE	A, B	NA
2-E21-F013A	CS INJECTION LINE INBOARD TEST VALVE	A, B	NA
2-E21-F013B	CS INJECTION LINE INBOARD TEST VALVE	A, B	NA
2-E21-F017A	E21-PDS-N004A EFCV	C	SR 3.6.1.3.7
2-E21-F017B	E21-PDS-N004B EFCV	C	SR 3.6.1.3.7
2-E21-V21	DIV I FULL FLOW BYPASS LINE DRAIN VALVE	C	NA
2-E21-V33	DIV II FULL FLOW BYPASS LINE DRAIN VALVE	C	NA
2-E21-V47	CS A MINIMUM FLOW BYPASS LINE TO SUPPRESSION POOL VENT VALVE	C	NA
2-E21-V49	CS B MINIMUM FLOW BYPASS LINE TO SUPPRESSION POOL VENT VALVE	C	NA
2-E21-V55	INBOARD BODY DRAIN VALVE (E21-F005A)	A, B	NA
2-E21-V56	OUTBOARD BODY DRAIN VALVE (E21-F005A)	A, B	NA
2-E21-V57	INBOARD BODY DRAIN VALVE (E21-F005B)	A, B	NA
2-E21-V58	OUTBOARD BODY DRAIN VALVE (E21-F005B)	A, B	NA

(continued)

TRM Table 3.6.1.3-1 (Page 9 of 11)
Primary Containment Isolation Devices -
Manual Valves, Check Valves, Excess Flow Check Valves (EFCVs), and Flanges

VALVE OR FLANGE NUMBER	DESCRIPTION	APPLICABLE TS CONDITION(S)	SURVEILLANCE REQUIREMENTS
2-E21-V77	INBOARD BODY DRAIN VALVE (E21-F001A)	C	NA
2-E21-V79	INBOARD BODY DRAIN VALVE (E21-F001B)	C	NA
2-E41-F013	HPCI TURBINE EXHAUST LINE INBOARD TEST VALVE	A, B	NA
2-E41-F014	HPCI STEAM SUPPLY LINE INBOARD TEST VALVE	A, B	NA
2-E41-F021	HPCI TURBINE EXHAUST LINE ISOLATION VALVE	A, B	NA
2-E41-F022	HPCI TURBINE EXHAUST DRAIN POT DRAIN VALVE TO TORUS	A, B	NA
2-E41-F023A	E41-PDS-N004 & PS-N001A STEAM LINE PRESSURE	C	SR 3.6.1.3.7
2-E41-F023B	HPCI STEAM LINE PRESSURE RIP VALVE	C	SR 3.6.1.3.7
2-E41-F023C	HPCI STEAM LINE PRESSURE RIP VALVE	C	SR 3.6.1.3.7
2-E41-F023D	HPCI STEAM LINE PRESSURE RIP VALVE	C	SR 3.6.1.3.7
2-E41-F040	HPCI EXHAUST DRAIN POT DRAIN TO TORUS CHECK VALVE	A, B	NA
2-E41-F047	EXHAUST DRAIN POT DRAIN LINE INBOARD TEST VALVE	A, B	NA
2-E41-F049	HPCI TURBINE EXHAUST LINE CHECK VALVE	A, B	NA
2-E41-F078	HPCI VACUUM BREAKER LINE DRAIN VALVE	A, B	NA
2-E41-F090	HPCI VACUUM BREAKER LINE DRAIN VALVE	A, B	NA
2-E41-F091	HPCI VACUUM BREAKER LINE DRAIN VALVE	A, B	NA
2-E41-IV-980	E41-LSH-N015A INSTRUMENT DRAIN VALVE	C	NA
2-E41-IV-981	E41-LSH-N015B INSTRUMENT DRAIN VALVE	C	NA
2-E41-V55	HPCI INJECTION LINE INBOARD TEST VALVE	A, B	NA
2-E41-V68	E41-F021 INBOARD BODY DRAIN VALVE	C	NA
2-E41-V70	E41-F042 INBOARD BODY DRAIN VALVE	C	NA
2-E41-V124	TEST CONNECTION VALVE ON LINE E41-716	C	NA
2-E41-V126	TEST CONNECTION VALVE ON LINE E41-714	C	NA
2-E41-V163	HPCI INJECTION LINE INBOARD DRAIN/TEST	A, B	NA
2-E41-V177	HPCI STEAM SUPPLY LINE OUTBOARD TEST VALVE (F003)	A, B	NA

(continued)

TRM Table 3.6.1.3-1 (Page 10 of 11)
Primary Containment Isolation Devices -
Manual Valves, Check Valves, Excess Flow Check Valves (EFCVs), and Flanges

VALVE OR FLANGE NUMBER	DESCRIPTION	APPLICABLE TS CONDITION(S)	SURVEILLANCE REQUIREMENTS
2-E41-V186	HPCI PUMP MINIMUM FLOW BYPASS LINE TEST VALVE	C	NA
2-E41-V188	E41-LSH-N015A TEST VENT VALVE	C	NA
2-E41-V189	E41-LSH-N015B TEST VENT VALVE	C	NA
2-E51-F001	RCIC TURBINE STEAM EXHAUST TO TORUS	A, B	NA
2-E51-F036	RCIC STEAM SUPPLY LINE INBOARD TEST VALVE	A, B	NA
2-E51-F040	RCIC TURBINE STEAM TO SUPPRESSION POOL	A, B	NA
2-E51-F041	RCIC TURBINE EXHAUST INBOARD TEST VALVE	A, B	NA
2-E51-F043A	X-61F EFCV TO E51-PDT-N017	C	SR 3.6.1.3.7
2-E51-F043B	X-72F EFCV TO E51-PDT-N018	C	SR 3.6.1.3.7
2-E51-F043C	X-61E EFCV TO E51-PDT-N017	C	SR 3.6.1.3.7
2-E51-F043D	X-72E EFCV TO E51-PDT-N018	C	SR 3.6.1.3.7
2-E51-F060	RCIC TURBINE EXHAUST VACUUM RELIEF TEST VALVE	A, B	NA
2-E51-F061	RCIC TURBINE EXHAUST VACUUM RELIEF TEST VALVE	A, B	NA
2-E51-F065	RCIC TURBINE EXHAUST VACUUM RELIEF TEST VALVE	A, B	NA
2-E51-V104	RCIC STEAM SUPPLY LINE OUTBOARD TEST VALVE (F008)	A, B	NA
2-G16-V1110	DRYWELL FLOOR DRAIN LINE INBOARD DRAIN VALVE	A, B	NA
2-G16-V1112	DRYWELL EQUIPMENT DRAIN LINE INBOARD DRAIN VALVE	A, B	NA
2-G31-F037	RWCU RETURN TO REACTOR LINE TEST VALVE	A, B	NA

(continued)

TRM Table 3.6.1.3-1 (Page 11 of 11)
Primary Containment Isolation Devices -
Manual Valves, Check Valves, Excess Flow Check Valves (EFCVs), and Flanges

VALVE OR FLANGE NUMBER	DESCRIPTION	APPLICABLE TS CONDITION(S)	SURVEILLANCE REQUIREMENTS
2-RCC-IV-2374	RECIRC PUMP 2A COOLER OUTLET SAMPLE TEST	C	NA
2-RCC-IV-2375	RECIRC PUMP 2B COOLER OUTLET SAMPLE TEST	C	NA
2-RNA-V350	DIV II NON-INTERRUPTIBLE INSTRUMENT AIR SUPPLY INBOARD CHECK VALVE	A, B	NA
2-RNA-V351	DIV I NON-INTERRUPTIBLE INSTRUMENT AIR SUPPLY INBOARD CHECK VALVE	A, B	NA
2-RNA-V5000	2-RNA-SV-5261 LLRT CONNECTION	A, B	NA
2-RNA-V5001	2-RNA-SV-5262 LLRT CONNECTION	A, B	NA
2-TD-V2	TORUS DRAIN	C	NA

TRM Table 3.6.1.3-2 (Page 1 of 9)
Power Operated and Automatic PCIVs

VALVE NUMBER	VALVE DESCRIPTION	APPLICABLE TS CONDITION(S)	SURVEILLANCE REQUIREMENTS	ALLOWABLE ISOLATION TIME (in seconds)	AUTOMATIC ISOLATION GROUP
2-B21-F016	MAIN STEAM LINE DRAIN INBOARD ISOLATION	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 30	1
2-B21-F019	MAIN STEAM LINE DRAIN OUTBOARD ISOLATION	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 30	1
2-B21-F022A	INBOARD MSIV A	A, B, D	SR 3.6.1.3.5 SR 3.6.1.3.6 SR 3.6.1.3.9	≥ 3 and ≤ 5	1
2-B21-F022B	INBOARD MSIV B	A, B, D	SR 3.6.1.3.5 SR 3.6.1.3.6 SR 3.6.1.3.9	≥ 3 and ≤ 5	1
2-B21-F022C	INBOARD MSIV C	A, B, D	SR 3.6.1.3.5 SR 3.6.1.3.6 SR 3.6.1.3.9	≥ 3 and ≤ 5	1
2-B21-F022D	INBOARD MSIV D	A, B, D	SR 3.6.1.3.5 SR 3.6.1.3.6 SR 3.6.1.3.9	≥ 3 and ≤ 5	1
2-B21-F028A	OUTBOARD MSIV A	A, B, D	SR 3.6.1.3.5 SR 3.6.1.3.6 SR 3.6.1.3.9	≥ 3 and ≤ 5	1
2-B21-F028B	OUTBOARD MSIV B	A, B, D	SR 3.6.1.3.5 SR 3.6.1.3.6 SR 3.6.1.3.9	≥ 3 and ≤ 5	1
2-B21-F028C	OUTBOARD MSIV C	A, B, D	SR 3.6.1.3.5 SR 3.6.1.3.6 SR 3.6.1.3.9	≥ 3 and ≤ 5	1
2-B21-F028D	OUTBOARD MSIV D	A, B, D	SR 3.6.1.3.5 SR 3.6.1.3.6 SR 3.6.1.3.9	≥ 3 and ≤ 5	1
2-B21-F032A	FEEDWATER SUPPLY LINE A ISOLATION	A, B	SR 3.6.1.3.4	(a)	NA
2-B21-F032B	FEEDWATER SUPPLY LINE B ISOLATION	A, B	SR 3.6.1.3.4	(a)	NA
2-B32-F019	SAMPLE LINE INBOARD ISOLATION	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 5	1
2-B32-F020	SAMPLE LINE OUTBOARD ISOLATION	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 5	1
2-B32-V22	RECIRC PUMP 2A SEAL INJECTION	A, B	SR 3.6.1.3.4	(a)	NA
2-B32-V30	RECIRC PUMP 2B SEAL INJECTION	A, B	SR 3.6.1.3.4	(a)	NA
2-CAC-SV-1200B	CAC-AT-1261 INBOARD SAMPLE INLET	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 15	6

(continued)

(a) Allowable Isolation Time specified in the Inservice Testing Program.

TRM Table 3.6.1.3-2 (Page 2 of 9)
Power Operated and Automatic PCIVs

VALVE NUMBER	VALVE DESCRIPTION	APPLICABLE TS CONDITION(S)	SURVEILLANCE REQUIREMENTS	ALLOWABLE ISOLATION TIME (in seconds)	AUTOMATIC ISOLATION GROUP
2-CAC-SV-1205E	CAC-AT-4409 PRIMARY CONTAINMENT INBOARD SAMPLE	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 15	6[(b)]
2-CAC-SV-1209A	CAC-AT-4409 PRIMARY CONTAINMENT INBOARD SAMPLE	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 15	6[(b)]
2-CAC-SV-1209B	CAC-AT-4409 PRIMARY CONTAINMENT INBOARD SAMPLE	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 15	6[(b)]
2-CAC-SV-1211E	CAC-AT-1262 INBOARD SAMPLE RETURN	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 15	6
2-CAC-SV-1211F	CAC-AT-1262 INBOARD SAMPLE INLET	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 15	6
2-CAC-SV-1213A	CAC-AT-4409 TORUS INBOARD SAMPLE	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 15	6[(b)]
2-CAC-SV-1215E	CAC-AT-4409 INBOARD SAMPLE RETURN	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 15	6[(b)]
2-CAC-SV-1218A	CAC-AT-4410 TORUS INBOARD SAMPLE	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 15	6[(b)]
2-CAC-SV-1225B	COMMON INBOARD SAMPLE RETURN	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 15	6
2-CAC-SV-1227A	CAC-AT-4410 PRIMARY CONTAINMENT INBOARD SAMPLE	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 15	6[(b)]
2-CAC-SV-1227B	CAC-AT-4410 PRIMARY CONTAINMENT INBOARD SAMPLE	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 15	6[(b)]
2-CAC-SV-1227C	CAC-AT-1260 INBOARD SAMPLE INLET	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 15	6
2-CAC-SV-1227E	CAC-AT-4410 PRIMARY CONTAINMENT INBOARD SAMPLE	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 15	6[(b)]

(continued)

(a) Allowable Isolation Time specified in the Inservice Testing Program.

(b) The PCIV receives a Group 6 isolation signal for instrument protection. The PCIV is considered OPERABLE if it is capable of closing from the control room within the specified Allowable Isolation Time.

TRM Table 3.6.1.3-2 (Page 3 of 9)
Power Operated and Automatic PCIVs

VALVE NUMBER	VALVE DESCRIPTION	APPLICABLE TS CONDITION(S)	SURVEILLANCE REQUIREMENTS	ALLOWABLE ISOLATION TIME (in seconds)	AUTOMATIC ISOLATION GROUP
2-CAC-SV-1231B	CAC-AT-4410 INBOARD SAMPLE RETURN	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 15	6[(b)]
2-CAC-SV-1260	CAC-AT-1260 OUTBOARD SAMPLE INLET	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 15	6
2-CAC-SV-1261	CAC-AT-1261 OUTBOARD SAMPLE INLET	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 15	6
2-CAC-SV-1262	CAC-AT-1262 OUTBOARD SAMPLE INLET	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 15	6
2-CAC-SV-3439	CAC-AT-1262 OUTBOARD SAMPLE RETURN	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 15	6
2-CAC-SV-3440	COMMON OUTBOARD SAMPLE RETURN	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 15	6
2-CAC-SV-4409-1	CAC-AT-4409 TORUS OUTBOARD SAMPLE	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 15	6[(b)]
2-CAC-SV-4409-2	CAC-AT-4409 PRIMARY CONTAINMENT OUTBOARD SAMPLE	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 15	6[(b)]
2-CAC-SV-4409-3	CAC-AT-4409 PRIMARY CONTAINMENT OUTBOARD SAMPLE	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 15	6[(b)]
2-CAC-SV-4409-4	CAC-AT-4409 PRIMARY CONTAINMENT OUTBOARD SAMPLE	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 15	6[(b)]
2-CAC-SV-4410-1	CAC-AT-4410 TORUS OUTBOARD SAMPLE	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 15	6[(b)]
2-CAC-SV-4410-2	CAC-AT-4410 PRIMARY CONTAINMENT OUTBOARD SAMPLE	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 15	6[(b)]
2-CAC-SV-4410-3	CAC-AT-4410 PRIMARY CONTAINMENT OUTBOARD SAMPLE	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 15	6[(b)]
2-CAC-SV-4410-4	CAC-AT-4410 PRIMARY CONTAINMENT OUTBOARD SAMPLE	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 15	6[(b)]
2-CAC-SV-4540	CAC-AT-4409 OUTBOARD SAMPLE RETURN	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 15	6[(b)]
2-CAC-SV-4541	CAC-AT-4410 OUTBOARD SAMPLE RETURN	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 15	6[(b)]

(continued)

(a) Allowable Isolation Time specified in the Inservice Testing Program.

(b) The PCIV receives a Group 6 isolation signal for instrument protection. The PCIV is considered OPERABLE if it is capable of closing from the control room within the specified Allowable Isolation Time.

TRM Table 3.6.1.3-2 (Page 4 of 9)
Power Operated and Automatic PCIVs

VALVE NUMBER	VALVE DESCRIPTION	APPLICABLE TS CONDITION(S)	SURVEILLANCE REQUIREMENTS	ALLOWABLE ISOLATION TIME (in seconds)	AUTOMATIC ISOLATION GROUP
2-CAC-V4	INBOARD PRIMARY CONTAINMENT N2 INERTING INLET	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 15	6
2-CAC-V5	SUPPRESSION POOL N2 INLET	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 15	6
2-CAC-V6	DRYWELL N2 INLET	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 15	6
2-CAC-V7	INBOARD SUPPRESSION POOL PURGE EXHAUST	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 15	6
2-CAC-V8	OUTBOARD SUPPRESSION POOL PURGE EXHAUST	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 15	6
2-CAC-V9	INBOARD DRYWELL PURGE EXHAUST	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 15	6
2-CAC-V10	OUTBOARD DRYWELL PURGE EXHAUST	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 15	6
2-CAC-V15	PRIMARY CONTAINMENT PURGE AIR INLET	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 15	6
2-CAC-V22	SUPPRESSION POOL 2" EXHAUST	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 15	6
2-CAC-V23	DRYWELL 2" EXHAUST	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 15	6
2-CAC-V49	DRYWELL HEAD INBOARD PURGE EXHAUST	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 15	6
2-CAC-V50	DRYWELL HEAD OUTBOARD PURGE EXHAUST	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 15	6
2-CAC-V55	DRYWELL CAD N2 INJECTION SOLENOID	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 15	6
2-CAC-V56	DRYWELL CAD N2 INJECTION SOLENOID	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 15	6
2-CAC-V160	SUPPRESSION POOL CAD N2 INJECTION INLET	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 15	6
2-CAC-V161	DRYWELL CAD N2 INJECTION INLET	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 15	6
2-CAC-V162	SUPPRESSION POOL CAD N2 INJECTION INLET	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 15	6
2-CAC-V163	DRYWELL CAD N2 INJECTION INLET	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 15	6
2-CAC-V172	SUPPRESSION POOL PURGE EXHAUST SOLENOID	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 15	6
2-CAC-V216	HARDENED WETWELL VENT OUTBOARD ISOLATION	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 15	6

(continued)

TRM Table 3.6.1.3-2 (Page 5 of 9)
Power Operated and Automatic PCIVs

VALVE NUMBER	VALVE DESCRIPTION	APPLICABLE TS CONDITION(S)	SURVEILLANCE REQUIREMENTS	ALLOWABLE ISOLATION TIME (in seconds)	AUTOMATIC ISOLATION GROUP
2-C51-J004A	A TIP BALL VALVE AND SHEAR VALVE ASSEMBLY	A, B	SR 3.6.1.3.3 SR 3.6.1.3.4 SR 3.6.1.3.6 SR 3.6.1.3.8	(a)	2
2-C51-J004B	B TIP BALL VALVE AND SHEAR VALVE ASSEMBLY	A, B	SR 3.6.1.3.3 SR 3.6.1.3.4 SR 3.6.1.3.6 SR 3.6.1.3.8	(a)	2
2-C51-J004C	C TIP BALL VALVE AND SHEAR VALVE ASSEMBLY	A, B	SR 3.6.1.3.3 SR 3.6.1.3.4 SR 3.6.1.3.6 SR 3.6.1.3.8	(a)	2
2-C51-J004D	D TIP BALL VALVE AND SHEAR VALVE ASSEMBLY	A, B	SR 3.6.1.3.3 SR 3.6.1.3.4 SR 3.6.1.3.6 SR 3.6.1.3.8	(a)	2
2-E11-F007A	MINIMUM FLOW BYPASS VALVE A TO SUPPRESSION POOL	C	SR 3.6.1.3.4	(a)	NA
2-E11-F007B	MINIMUM FLOW BYPASS VALVE B TO SUPPRESSION POOL	C	SR 3.6.1.3.4	(a)	NA
2-E11-F008	SHUTDOWN COOLING OUTBOARD SUCTION	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 43	8[(c)]
2-E11-F009	SHUTDOWN COOLING INBOARD SUCTION THROTTLE	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 30	8[(c)]
2-E11-F011A	RHR HEAT EXCHANGER 2A DRAIN TO SUPPRESSION POOL	C	SR 3.6.1.3.4	(a)	NA
2-E11-F011B	RHR HEAT EXCHANGER 2B DRAIN TO SUPPRESSION POOL	C	SR 3.6.1.3.4	(a)	NA
2-E11-F015A	LPCI A INBOARD INJECTION	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 30	8[(c)]
2-E11-F015B	LPCI B INBOARD INJECTION	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 30	8[(c)]
2-E11-F016A	DRYWELL SPRAY A OUTBOARD ISOLATION	A, B	SR 3.6.1.3.4	(a)	NA
2-E11-F016B	DRYWELL SPRAY B OUTBOARD ISOLATION	A, B	SR 3.6.1.3.4	(a)	NA
2-E11-F017A	LPCI A OUTBOARD INJECTION	A, B	SR 3.6.1.3.4	(a)	NA
2-E11-F017B	LPCI B OUTBOARD INJECTION	A, B	SR 3.6.1.3.4	(a)	NA
2-E11-F020A	RHR PUMP 2A AND 2C TORUS SUCTION	C	SR 3.6.1.3.4	(a)	NA

(continued)

(a) Allowable Isolation Time specified in the Inservice Testing Program.

(c) Except as noted in TS Table 3.3.6.1-1 (Note (d)), these PCIVs are also required to be OPERABLE in MODES 4 and 5 to support the OPERABILITY of Function 6.b of TS Table 3.3.6.1-1.

TRM Table 3.6.1.3-2 (Page 6 of 9)
Power Operated and Automatic PCIVs

VALVE NUMBER	VALVE DESCRIPTION	APPLICABLE TS CONDITION(S)	SURVEILLANCE REQUIREMENTS	ALLOWABLE ISOLATION TIME (in seconds)	AUTOMATIC ISOLATION GROUP
2-E11-F020B	RHR PUMP 2B AND 2D TORUS SUCTION	C	SR 3.6.1.3.4	(a)	NA
2-E11-F021A	DRYWELL SPRAY A INBOARD ISOLATION	A, B	SR 3.6.1.3.4	(a)	NA
2-E11-F021B	DRYWELL SPRAY B INBOARD ISOLATION	A, B	SR 3.6.1.3.4	(a)	NA
2-E11-F024A	SUPPRESSION POOL COOLING A ISOLATION	A, B	SR 3.6.1.3.4	(a)	NA
2-E11-F024B	SUPPRESSION POOL COOLING B ISOLATION	A, B	SR 3.6.1.3.4	(a)	NA
2-E11-F027A	SUPPRESSION POOL SPRAY A ISOLATION	A, B	SR 3.6.1.3.4	(a)	NA
2-E11-F027B	SUPPRESSION POOL SPRAY B ISOLATION	A, B	SR 3.6.1.3.4	(a)	NA
2-E11-F028A	SUPPRESSION POOL SPRAY A ISOLATION	A, B	SR 3.6.1.3.4	(a)	NA
2-E11-F028B	SUPPRESSION POOL SPRAY B ISOLATION	A, B	SR 3.6.1.3.4	(a)	NA
2-E11-F103A	RHR HEAT EXCHANGER 2A OUTBOARD VENT	C	SR 3.6.1.3.4	(a)	NA
2-E11-F103B	RHR HEAT EXCHANGER 2B OUTBOARD VENT	C	SR 3.6.1.3.4	(a)	NA

(continued)

(a) Allowable Isolation Time specified in the Inservice Testing Program.

TRM Table 3.6.1.3-2 (Page 7 of 9)
Power Operated and Automatic PCIVs

VALVE NUMBER	VALVE DESCRIPTION	APPLICABLE TS CONDITION(S)	SURVEILLANCE REQUIREMENTS	ALLOWABLE ISOLATION TIME (in seconds)	AUTOMATIC ISOLATION GROUP
2-E21-F001A	SUPPRESSION POOL A SUCTION	C	SR 3.6.1.3.4	(a)	NA
2-E21-F001B	SUPPRESSION POOL B SUCTION	C	SR 3.6.1.3.4	(a)	NA
2-E21-F004A	CORE SPRAY PUMP 2A OUTBOARD INJECTION	A, B	SR 3.6.1.3.4	(a)	NA
2-E21-F004B	CORE SPRAY PUMP 2B OUTBOARD INJECTION	A, B	SR 3.6.1.3.4	(a)	NA
2-E21-F005A	CORE SPRAY PUMP 2A INBOARD INJECTION	A, B	SR 3.6.1.3.4	(a)	NA
2-E21-F005B	CORE SPRAY PUMP 2B INBOARD INJECTION	A, B	SR 3.6.1.3.4	(a)	NA
2-E21-F015A	CORE SPRAY FULL FLOW TEST BYPASS	C	SR 3.6.1.3.4	(a)	NA
2-E21-F015B	CORE SPRAY FULL FLOW TEST BYPASS	C	SR 3.6.1.3.4	(a)	NA
2-E21-F031A	CORE SPRAY MINIMUM FLOW BYPASS	C	SR 3.6.1.3.4	(a)	NA
2-E21-F031B	CORE SPRAY MINIMUM FLOW BYPASS	C	SR 3.6.1.3.4	(a)	NA
2-E41-F002	HPCI STEAM SUPPLY INBOARD ISOLATION	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 50	4
2-E41-F003	HPCI STEAM SUPPLY OUTBOARD ISOLATION	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 50	4
2-E41-F006	HPCI INJECTION	A, B	SR 3.6.1.3.4	(a)	NA
2-E41-F012	HPCI MINIMUM FLOW BYPASS TO SUPPRESSION POOL	C	SR 3.6.1.3.4	≤ 20	NA
2-E41-F042	HPCI SUPPRESSION POOL SUCTION	C	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 80	4

(continued)

(a) Allowable Isolation Time specified in the Inservice Testing Program.

TRM Table 3.6.1.3-2 (Page 8 of 9)
Power Operated and Automatic PCIVs

VALVE NUMBER	VALVE DESCRIPTION	APPLICABLE TS CONDITION(S)	SURVEILLANCE REQUIREMENTS	ALLOWABLE ISOLATION TIME (in seconds)	AUTOMATIC ISOLATION GROUP
2-E41-F075	HPCI TURBINE EXHAUST VACUUM BREAKER	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 30	7
2-E41-F079	HPCI TURBINE EXHAUST VACUUM BREAKER	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 30	7
2-E51-F007	RCIC STEAM SUPPLY INBOARD ISOLATION	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 30	5
2-E51-F008	RCIC STEAM SUPPLY OUTBOARD ISOLATION	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 30	5
2-E51-F013	RCIC INJECTION	A, B	SR 3.6.1.3.4	(a)	NA
2-E51-F019	RCIC MINIMUM FLOW BYPASS TO SUPPRESSION POOL	C	SR 3.6.1.3.4	(a)	NA
2-E51-F031	RCIC SUPPRESSION POOL SUCTION	C	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 80	5
2-E51-F062	RCIC TURBINE EXHAUST VACUUM BREAKER	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 30	9
2-E51-F066	RCIC TURBINE EXHAUST VACUUM BREAKER	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 30	9
2-G16-F003	DRYWELL FLOOR DRAIN INBOARD ISOLATION	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 20	2
2-G16-F004	DRYWELL FLOOR DRAIN OUTBOARD ISOLATION	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 20	2
2-G16-F019	DRYWELL EQUIPMENT DRAIN INBOARD ISOLATION	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 20	2
2-G16-F020	DRYWELL EQUIPMENT DRAIN OUTBOARD ISOLATION	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 20	2
2-G31-F001	RWCU INLET INBOARD ISOLATION	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 35	3[(e)]
2-G31-F004	RWCU INLET OUTBOARD ISOLATION	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 35	3
2-G31-F042	RWCU RETURN TO REACTOR	A, B	SR 3.6.1.3.4	(a)	NA
2-RCC-SV-1222B	RECIRC PUMP 2A COOLER OUTLET SAMPLE	C	SR 3.6.1.3.4	(a)	NA

(continued)

(a) Allowable Isolation Time specified in the Inservice Testing Program.

(e) Valve does not automatically close on an isolation signal associated with Function 5.f of TS Table 3.3.6.1-1, "Primary Containment Isolation Instrumentation."

TRM Table 3.6.1.3-2 (Page 9 of 9)
Power Operated and Automatic PCIVs

VALVE NUMBER	VALVE DESCRIPTION	APPLICABLE TS CONDITION(S)	SURVEILLANCE REQUIREMENTS	ALLOWABLE ISOLATION TIME (in seconds)	AUTOMATIC ISOLATION GROUP
2-RCC-SV-1222C	RECIRC PUMP 2B COOLER OUTLET SAMPLE	C	SR 3.6.1.3.4	(a)	NA
2-RCC-V28	RBCCW DRYWELL DISCHARGE HEADER ISOLATION	C	SR 3.6.1.3.4	(a)	NA
2-RCC-V52	RBCCW DRYWELL SUPPLY HEADER ISOLATION	C	SR 3.6.1.3.4	(a)	NA
2-RNA-SV-5251	BACKUP NITROGEN SUPPLY TO DRYWELL ISOLATION VALVE - DIVISION II	C	SR 3.6.1.3.4	(a)	NA
2-RNA-SV-5253	BACKUP NITROGEN SUPPLY TO DRYWELL ISOLATION VALVE - DIVISION I	C	SR 3.6.1.3.4	(a)	NA
2-RNA-SV-5261	NON-INTERRUPTIBLE REACTOR INSTRUMENT AIR SOLENOID	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	(a)	10
2-RNA-SV-5262	NON-INTERRUPTIBLE REACTOR INSTRUMENT AIR SOLENOID	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	(a)	10
2-RXS-SV-4186	LIQUID SAMPLE RETURN INBOARD ISOLATION	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 15	6
2-RXS-SV-4187	LIQUID SAMPLE RETURN OUTBOARD ISOLATION	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 15	6
2-RXS-SV-4188	GAS SAMPLE RETURN INBOARD ISOLATION	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 15	6
2-RXS-SV-4189	GAS SAMPLE RETURN OUTBOARD ISOLATION	A, B	SR 3.6.1.3.4 SR 3.6.1.3.6	≤ 15	6

(a) Allowable Isolation Time specified in the Inservice Testing Program.

APPENDIX E

SECONDARY CONTAINMENT ISOLATION DAMPER (SCID) LIST

APPENDIX E SECONDARY CONTAINMENT ISOLATION DAMPER (SCID) LIST

PURPOSE

This appendix provides a table to aid in complying with the requirements of Technical Specification (TS) 3.6.4.2, "Secondary Containment Isolation Dampers (SCIDs)."

TRM Table 3.6.4.2-1, "Secondary Containment Automatic Isolation Dampers," provides a list of the SCIDs that are required to automatically close on a secondary containment isolation signal. TRM Table 3.6.4.2-1 includes a reference to the applicable TS Surveillance Requirements and the required Allowable Isolation Times.

TRM Table 3.6.4.2-1 (Page 1 of 1)
Secondary Containment Automatic Isolation Dampers

DAMPER NUMBER	DAMPER DESCRIPTION	SURVEILLANCE REQUIREMENTS	ALLOWABLE ISOLATION TIME (in seconds)
2-VA-2A-BFIV-RB	Reactor Building Ventilation Supply Inboard Isolation	SR 3.6.4.2.1 SR 3.6.4.2.2	≤ 4
2-VA-2B-BFIV-RB	Reactor Building Ventilation Supply Outboard Isolation	SR 3.6.4.2.1 SR 3.6.4.2.2	≤ 4
2-VA-2C-BFIV-RB	Reactor Building Ventilation Exhaust Inboard Isolation	SR 3.6.4.2.1 SR 3.6.4.2.2	≤ 4
2-VA-2D-BFIV-RB	Reactor Building Ventilation Exhaust Outboard Isolation	SR 3.6.4.2.1 SR 3.6.4.2.2	≤ 4
2-VA-2A-BFV-RB	Purge System Exhaust Outlet Valve	SR 3.6.4.2.1 SR 3.6.4.2.2	(a)
2-VA-2I-BFV-RB	Purge System Inlet Valve	SR 3.6.4.2.1 SR 3.6.4.2.2	(a)

(a) Allowable Isolation Time specified in the Inservice Testing Program.

APPENDIX F

SAFETY FUNCTION DETERMINATION PROGRAM (SFDP)

SAFETY FUNCTION DETERMINATION PROGRAM (SFDP)

1.0 SFDP DEFINITIONS

Loss of Safety Function(LOSF)	Inability to accomplish a Safety Function as defined in this program. See the definition of Safety Function below. For the performance of a Safety Function Determination (SFD), Attachment 4 identifies specific conditions which constitute a LOSF. This attachment includes any Technical Specification (TS) Condition which requires entry into LCO 3.0.3 or a unit shutdown.
Safety Function	A TS function that must be performed to mitigate the consequences of an accident, transient, or special event as defined in the current BNP licensing basis, including TS functions that have been deemed important contributors to risk reduction.
Support Feature	A TS system/subsystem/component which supports a required TS system(s) in order for the TS system to perform its required Safety Function.
Supported Feature	A TS system/subsystem/component that performs a specific Safety Function.

SAFETY FUNCTION DETERMINATION PROGRAM (SFDP)

2.0 CASCADING REQUIREMENTS

2.1 Technical Specification (TS) LCO 3.0.2 requires that the TS ACTIONS (Conditions and Required Actions) be entered and performed when an applicable LCO is not met, except as provided in LCO 3.0.5 and LCO 3.0.6.

2.2 TS LCO 3.0.6 is applicable in instances when a Supported Feature LCO is not met solely due to a Support Feature LCO not being met. Attachment 1 of this program provides a limited cross reference of Support Feature TS and associated Supported Feature TS. In the event LCO 3.0.6 is applicable, the following should be considered:

2.2.1 The applicable Conditions for the inoperable Support Feature shall be entered and the associated Required Actions performed. Document the Required Actions in accordance with Procedure No. OOI-01.08, "Control of Equipment and System Status."

2.2.2 ----------NOTE----------
For the purposes of this program, the single failure criterion is not required when determining OPERABILITY of the Supported Feature(s).

The inoperable Support Feature may impact multiple Supported Features and the inoperable Support Feature may be several support levels up from the Supported Feature. As such, OPERABILITY Determinations may be required to determine if an inoperable Support Feature does result in one or more Supported Features becoming inoperable. If an OPERABILITY Determination is required, an Engineering Service Request should be generated in accordance with Procedure No. EGR-NGGC-0005, "Engineering Service Requests." Attachments 2 and 3 of this program and Procedure No. OI-18, "Definition of Instrument Channels and Trip Systems for Selected Instruments," may be used as an aid in the OPERABILITY Determinations.

(continued)

2.0 CASCADING REQUIREMENTS (continued)

2.2.3 If the inoperable Support Feature results in a Supported Feature(s) becoming inoperable, then the Supported Feature(s) shall be considered inoperable.

2.2.4 The applicable TS Conditions for the inoperable Supported Feature(s) shall be entered and the associated Required Actions performed (i.e., "cascade" to the Supported Feature TS ACTIONS) when:

2.2.4.1 The inoperability is not associated with a Support Feature TS but does impact OPERABILITY of a Supported Feature(s);

2.2.4.2 The TS Required Actions for the inoperable Support Feature direct that the inoperable Supported Feature(s) be declared inoperable; or

2.2.4.3 Any Note to the TS Required Actions for the inoperable Support Feature that direct the Conditions and Required Actions for the inoperable Supported Feature(s) be entered.

Document the Required Actions per Procedure No. 0OI-01.08.

2.3 ----------NOTE----------
If only one Support Feature is inoperable and no other TS system/subsystem/component is inoperable, the Safety Function Determination (SFD) may be delayed until a subsequent inoperability occurs.

Unless cascading to the Supported Feature TS ACTIONS is required (as described in Section 2.2.4 of this program), it is not required to enter the TS ACTIONS for the inoperable Supported Feature(s). If the TS ACTIONS for the inoperable Supported Feature(s) are not entered, then a SFD shall be performed.

2.4 A SFD includes performing cross division checks in order to determine if redundant features are capable of performing their required Safety Function. Figure 2-1 of this program provides guidance on the process of performing a SFD. Refer to the SFDP Bases for SFD evaluation examples.

(continued)

2.0 CASCADING REQUIREMENTS (continued)

2.5	If the SFD indicates that a LOSF exists, then the appropriate Conditions in the TS where the LOSF has occurred shall be entered and the associated Required Actions performed. Attachment 4 of this program should be used to determine if a LOSF exists.

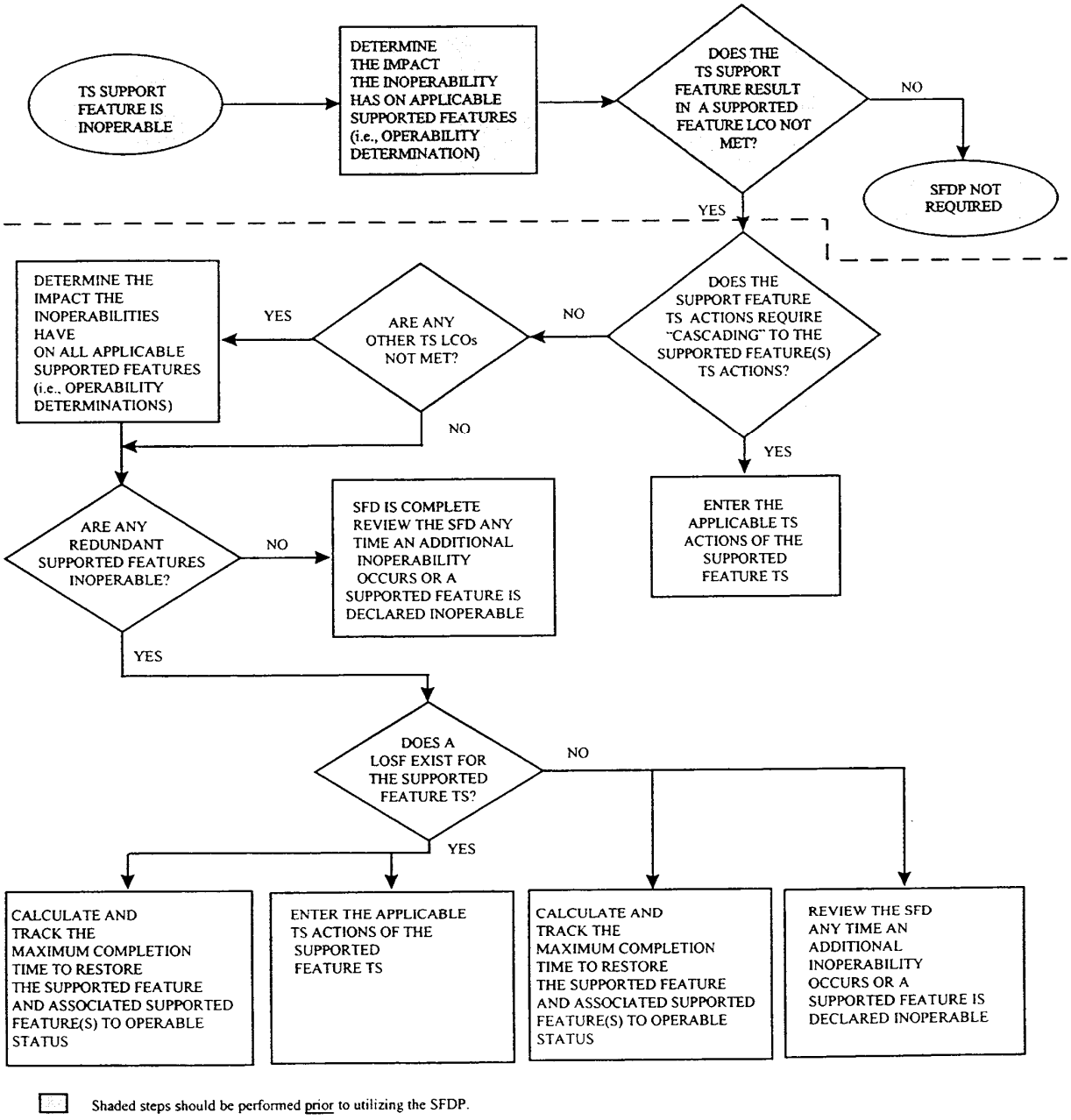


Figure 2-1 (page 1 of 1)
Safety Function Determination Program Flowchart

SAFETY FUNCTION DETERMINATION PROGRAM (SFDP)

3.0 MAXIMUM COMPLETION TIME

3.1	A Supported Feature(s) made inoperable by Support Feature inoperabilities shall be restored to OPERABLE status within the Maximum Completion Time. The Maximum Completion Time, for the purposes of this program, is the Completion Time specified in the Technical Specifications (TS) for restoring the first inoperable Support Feature to OPERABLE status plus the Completion Time specified in the TS for restoring the Supported Feature to OPERABLE status.
3.2	If the Supported Feature is not restored to OPERABLE status (by restoring the Supported Feature and all associated Support Features to OPERABLE status) within the Maximum Completion Time, the associated Condition for the inoperable Supported Feature's Completion Time not being met shall be entered and the Required Actions shall be performed.

SAFETY FUNCTION DETERMINATION PROGRAM (SFDP)

4.0 SAFETY FUNCTION DETERMINATION (SFD) REVIEW

4.1 A review of the SFD shall be performed after every subsequent inoperability. If a review of the SFD indicates a LOSF has occurred, then the appropriate Conditions in the TS where the LOSF has occurred shall be entered and the associated Required Actions performed.

SAFETY FUNCTION DETERMINATION PROGRAM (SFDP)

Support Feature/Supported Feature TS Cross Reference - Attachment 1

Support System TS Number	Support System	Supported System TS Number	Supported System
3.3.5.1	ECCS Instrumentation	3.5.1	ECCS - Operating
		3.5.2	ECCS - Shutdown
		3.6.2.3	RHR Suppression Pool Cooling
		3.8.1	AC Sources - Operating
		3.8.2	AC Sources - Shutdown
3.3.5.2	RCIC Instrumentation	3.5.3	RCIC System
3.3.6.1	Primary Containment Isolation Instrumentation	3.1.7	SLC System
		3.6.1.3	PCIVs
		3.6.1.5	Reactor Building-to-Suppression Chamber Vacuum Breakers
3.3.6.2	Secondary Containment Isolation Instrumentation	3.6.4.2	SCIDs
		3.6.4.3	SGT System
3.3.7.1	CREV System Instrumentation	3.7.3	CREV System
3.3.8.1	LOP Instrumentation	3.3.5.1	ECCS Instrumentation
		3.7.2	SW System and UHS
		3.8.1	AC Sources - Operating
		3.8.2	AC Sources - Shutdown
3.6.1.5	Reactor Building-to-Suppression Chamber Vacuum Breakers	3.6.1.1	Primary Containment
3.6.1.6	Suppression Chamber-to-Drywell Vacuum Breakers	3.6.1.1	Primary Containment

(continued)

Attachment 1 (continued)

Support System TS Number	Support System	Supported System TS Number	Supported System
3.6.4.2	SCIDs	3.6.4.1	Secondary Containment
3.6.4.3	SGT System	3.6.4.1	Secondary Containment
3.7.1	RHRSW System	3.4.7 3.6.2.3	RHR SDC System - Hot Shutdown RHR Suppression Pool Cooling
3.7.2	SW System and UHS	3.5.1 3.4.7 3.6.2.3	ECCS - Operating RHR SDC System - Hot Shutdown RHR Suppression Pool Cooling
3.8.1	AC Sources - Operating	3.8.7	Distribution Systems - Operating (AC portion only)
3.8.2	AC Sources - Shutdown	3.8.8	Distribution Systems - Shutdown (AC portion only)
3.8.4	DC Sources - Operating	3.8.7	Distribution Systems - Operating (DC portion only)
3.8.5	DC Sources - Shutdown	3.8.8	Distribution Systems - Shutdown (DC portion only)

(continued)

Attachment 1 (continued)

Support System TS Number	Support System	Supported System TS Number	Supported System
3.8.7 (AC only)	Distribution Systems - Operating (AC portion only) Attachment 2 provides a listing of equipment supported by AC distribution. Attachment 3 provides a listing of electrical power supplies supporting PCIVs.	3.1.7	SLC System
		3.3.3.1	PAM Instrumentation
		3.3.3.2	Remote Shutdown Monitoring Instrumentation
		3.3.6.1	Primary Containment Isolation Instrumentation
		3.4.5	RCS Leakage Detection Instrumentation
		3.4.7	RHR SDC System - Hot Shutdown
		3.5.1	ECCS - Operating
		3.5.3	RCIC System
		3.6.1.3	PCIVs
		3.6.2.3	RHR Suppression Pool Cooling
		3.6.4.2	SCIDs
		3.6.4.3	SGT System
		3.7.1	RHRSW System
		3.7.2	SW System and UHS
		3.7.3	CREV System
		3.7.4	Control Building AC System
		3.8.1	AC Sources - Operating
		3.8.3	Diesel Fuel Oil
		3.8.4	DC Sources - Operating

(continued)

Attachment 1 (continued)

Support System TS Number	Support System	Supported System TS Number	Supported System
3.8.7 (DC only)	Distribution Systems - Operating (DC portion only) Attachment 3 provides a listing of electrical power supplies supporting PCIVs.	3.3.3.1	PAM Instrumentation
		3.3.3.2	Remote Shutdown System
		3.3.5.1	ECCS Instrumentation
		3.3.5.2	RCIC System Instrumentation
		3.3.6.1	Primary Containment Isolation Instrumentation
		3.3.8.1	LOP Instrumentation
		3.4.7	RHR SDC System - Hot Shutdown
		3.5.1	ECCS - Operating
		3.5.3	RCIC System
		3.6.1.3	PCIVs
		3.6.2.3	RHR Suppression Pool Cooling
		3.7.1	RHRSW System
		3.7.2	SW System and UHS
		3.8.1	AC Sources - Operating

(continued)

Attachment 1 (continued)

Support System TS Number	Support System	Supported System TS Number	Supported System
3.8.8 (AC only)	Distribution Systems - Shutdown (AC portion only) Attachment 2 provides a listing of equipment supported by AC distribution. Attachment 3 provides a listing of electrical power supplies supporting PCIVs.	3.3.6.1	Primary Containment Isolation Instrumentation
		3.4.8	RHR SDC System - Cold Shutdown
		3.5.2	ECCS - Shutdown
		3.6.1.3	PCIVs
		3.6.4.2	SCIDs
		3.6.4.3	SGT System
		3.7.3	CREV System
		3.7.4	Control Building AC System
		3.8.2	AC Sources - Shutdown
		3.8.3	Diesel Fuel Oil
		3.8.5	DC Sources - Shutdown
		3.9.7	RHR - High Water Level
		3.9.8	RHR - Low Water Level

(continued)

Attachment 1 (continued)

Support System TS Number	Support System	Supported System TS Number	Supported System
3.8.8 (DC only)	Distribution Systems - Shutdown (DC portion only) Attachment 3 provides a listing of electrical power supplies supporting PCIVs.	3.3.5.1	ECCS Instrumentation
		3.3.6.1	Primary Containment Isolation Instrumentation
		3.3.8.1	LOP Instrumentation
		3.4.8	RHR SDC System - Cold Shutdown
		3.5.2	ECCS - Shutdown
		3.6.1.3	PCIVs
		3.8.2	AC Sources - Shutdown
		3.9.7	RHR - High Water Level
		3.9.8	RHR - Low Water Level

SAFETY FUNCTION DETERMINATION PROGRAM (SFDP)

Unit 2 AC Electrical Supported Equipment - Attachment 2

		SUPPORT SYSTEM AC ELECTRICAL LOAD GROUPS LCO 3.8.7, 3.8.8			
LCO	SUPPORTED SUBSYSTEM	E1	E2	E3	E4
3.1.7	2A SLC			X	
	2B SLC				X
3.3.3.1	2A PAM INST. (FUNC. 1)			X[1]	X[1]
	2B PAM INST. (FUNC. 1)			X[1]	X[1]
	2A PAM INST. (FUNC. 2)			X	
	2B PAM INST. (FUNC. 2)				X[1]
	2A PAM INST. (FUNC. 3-7,9,10)			X	
	2B PAM INST. (FUNC. 3-7,9,10)				X
	PAM PCIV POSITION (FUNC. 8)[3]	X	X	X	X
3.3.3.2	REMOTE SHUTDOWN MON. INST.				X
3.3.6.1	2A HPCI/RCIC INST.			X	
	2B HPCI/RCIC INST.				X
3.4.5	U2 RCS LEAKAGE DETECTION			X	X
3.4.7, 3.4.8	2A RHR SDC		X[2]	X	
3.9.7, 3.9.8	2B RHR SDC		X[2]		X
	2C RHR SDC	X	X[2]		
	2D RHR SDC	X[1]	X		
3.5.1, 3.5.3	U2 HPCI			X[1]	X[1]
	U2 RCIC			X[1]	
	2A RECIRC. DISC. VALVE	X			
	2B RECIRC. DISC. VALVE		X		
3.5.1, 3.5.2	2A LPCI SUBSYSTEM	X		X[2]	
	2A LPCI PUMP			X	
	2C LPCI PUMP	X			
	2B LPCI SUBSYSTEM		X		X[2]
	2B LPCI PUMP				X
	2D LPCI PUMP		X		
	2A CORE SPRAY SUBSYSTEM			X	
	2B CORE SPRAY SUBSYSTEM				X
3.6.1.3	U2 PCIVs (MOVs) [3]	X	X	X	X

1 Provides one of two power supplies. If the affected subsystem(s)/component(s) is not capable of performing its required function, the subsystem or instrument channel is inoperable. An OPERABILITY determination may be required.

2 Provides power to an MOV. If the affected supported subsystem(s)/component(s) is not capable of performing its required function, the subsystem is inoperable. An OPERABILITY determination may be required.

3 See Attachment 3 for specific valves and indication affected.

(continued)

Attachment 2 (continued)

		SUPPORT SYSTEM AC ELECTRICAL LOAD GROUPS LCO 3.8.7, 3.8.8			
LCO	SUPPORTED SUBSYSTEM	E1	E2	E3	E4
3.6.2.3	2A SP COOL (A or C)	X		X	
	2B SP COOL (B or D)		X		X
3.6.4.2	U2 SCIDs			X	X
3.6.4.3	2A SGT TRAIN			X	
	2B SGT TRAIN				X
3.7.1	2A RHRSW LOOP (A or C)	X		X	
	2B RHRSW LOOP (B or D)		X		X
3.7.2	U2 NSW			X	X
	U2 CSW	X		X	X
	U1 NSW	X	X		
3.7.3	A CREV FAN			X	
	B CREV FAN				X
3.7.4	1D CONTROL ROOM AC	X			
	2D CONTROL ROOM AC			X	
	2E CONTROL ROOM AC				X
3.8.1, 3.8.2 3.8.3	DG 1	X			
	DG 2		X		
	DG 3			X	
	DG 4				X
3.8.4, 3.8.5	U-2 DIV I DC			X	
	U-2 DIV II DC				X
	U-1 DIV I DC	X			
	U-1 DIV II DC		X		

SAFETY FUNCTION DETERMINATION PROGRAM (SFDP)

Unit 2 TS LCO 3.6.1.3 "PCIVs" Electrical Power Supporting PCIVs - Attachment 3

		SUPPORT SYSTEM ELECTRICAL POWER DISTRIBUTION SYSTEM LCO 3.8.7, 3.8.8					
		AC 480 VAC EMERGENCY BUSES				250 VDC	
SYSTEM	PCIV - MOTOR OPERATED	E-5	E-6	E-7	E-8	DIV I	DIV II
FW	2-B21-F032A			X			
	2-B21-F032B				X		
MAIN STEAM	2-B21-F016			X			
	2-B21-F019						X
RESIDUAL HEAT REMOVAL	2-E11-F007A			X			
	2-E11-F007B				X		
	2-E11-F008						X
	2-E11-F009			X			
	2-E11-F011A			X			
	2-E11-F011B				X		
	2-E11-F015A	X					
	2-E11-F015B		X				
	2-E11-F016A			X			
	2-E11-F016B				X		
	2-E11-F017A	X					
	2-E11-F017B		X				
	2-E11-F020A			X			
	2-E11-F020B				X		
	2-E11-F021A			X			
	2-E11-F021B				X		
	2-E11-F024A			X			
	2-E11-F024B				X		
	2-E11-F027A			X			
	2-E11-F027B				X		
	2-E11-F028A	X					
	2-E11-F028B		X				

(continued)

Attachment 3 (continued)

		SUPPORT SYSTEM ELECTRICAL POWER DISTRIBUTION SYSTEM LCO 3.8.7, 3.8.8					
		AC 480 VAC EMERGENCY BUSES				250 VDC	
SYSTEM	PCIV - MOTOR OPERATED	E-5	E-6	E-7	E-8	DIV I	DIV II
RESIDUAL HEAT REMOVAL	2-E11-F103A			X			
	2-E11-F103B				X		
RWCU	2-G31-F001			X			
	2-G31-F004						X
	2-G31-F042				X		
REACTOR RECIRC.	2-B32-V22			X			
	2-B32-V30				X		
RCIC	2-E51-F007			X			
	2-E51-F008						X
	2-E51-F013						X
	2-E51-F019						X
	2-E51-F031						X
	2-E51-F062			X			
	2-E51-F066				X		
CORE SPRAY	2-E21-F001A			X			
	2-E21-F001B				X		
	2-E21-F004A			X			
	2-E21-F004B				X		
	2-E21-F005A			X			
	2-E21-F005B				X		
	2-E21-F015A			X			
	2-E21-F015B				X		
	2-E21-F031A			X			
	2-E21-F031B				X		

(continued)

Attachment 3 (continued)

		SUPPORT SYSTEM ELECTRICAL POWER DISTRIBUTION SYSTEM LCO 3.8.7, 3.8.8					
		AC 480 VAC EMERGENCY BUSES				250 VDC	
SYSTEM	PCIV - MOTOR OPERATED	E-5	E-6	E-7	E-8	DIV I	DIV II
HPCI	2-E41-F002				X		
	2-E41-F003					X	
	2-E41-F006					X	
	2-E41-F012					X	
	2-E41-F042					X	
	2-E41-F075			X			
	2-E41-F079				X		
CAC	2-CAC-V22				X		
	2-CAC-V23				X		
RBCCW	2-RCC-V28			X			
	2-RCC-V52			X			

SAFETY FUNCTION DETERMINATION PROGRAM (SFDP)

LOSF Table - Attachment 4

NOTE

In addition to the TS system being a Supported Feature, the TS systems denoted with an asterisk are also Support Features.

LCO No.	TECHNICAL SPECIFICATION SECTION
3.1.7	Standby Liquid Control (SLC) System Two SLC subsystems inoperable.
3.3.3.1	Post Accident Monitoring (PAM) Instrumentation For each Function, a loss of all required channels.
3.3.3.2	Remote Shutdown System For each Function (listed in Tech. Spec. Bases B 3.3.3.2), a loss of the required channel.
3.3.4.1	ATWS-RPT Instrumentation For each Function, a loss of both channels in a trip system OR the inability of a Recirc. pump to trip on reactor LL2 or reactor high pressure.
*3.3.5.1	Emergency Core Cooling System (ECCS) Instrumentation For each Function, a loss of initiation capability as a result of a loss of one or more required channels.
*3.3.5.2	Reactor Core Isolation Cooling (RCIC) System Instrumentation 1. For Function 1, a loss of initiation capability as a result of a loss of two or more required channels. 2. For Function 2, a loss of one required channel. 3. For Function 3, a loss of both required channels.
*3.3.6.1	Primary Containment Isolation Instrumentation For each Function, loss of all required channels in a trip system such that the associated Function cannot be accomplished.

(continued)

Attachment 4 (continued)

*3.3.8.1	Loss of Power (LOP) Instrumentation For each Function, the loss of one or more channels on a 4.16 kV emergency bus.
*3.4.5	RCS Leakage Detection Instrumentation Loss of the Floor Monitoring Systems and the Primary Containment Atmospheric Gaseous Monitoring System.
3.4.7	RHR Shutdown Cooling System—Hot Shutdown Both required SDC subsystems inoperable, Recirc. pumps not in operation, and no alternate method of decay heat removal.
3.4.8	RHR Shutdown Cooling System—Cold Shutdown Both required SDC subsystems inoperable, Recirc. pumps not in operation, and no alternate method of decay heat removal.
3.5.1	ECCS—Operating 1. Two or more required ADS valves inoperable. OR 2. HPCI and RCIC inoperable. OR 3. HPCI and two or more required ADS valves inoperable. OR 4. Three or more low pressure ECCS pumps (LPCI and/or Core Spray (CS)) inoperable. OR 5. The following combinations of two or more low pressure ECCS injection/spray subsystems inoperable: a. One CS subsystem and one LPCI subsystem (except one inoperable LPCI pump in the LPCI subsystem). b. Two CS subsystems. c. Two LPCI subsystems (except one inoperable LPCI pump in each subsystem).

(continued)

Attachment 4 (continued)

3.5.2	ECCS—Shutdown Both required low pressure ECCS injection/spray subsystems inoperable.
3.5.3	RCIC System RCIC and HPCI inoperable.
3.6.1.1	Primary Containment 1. Determination that a breach in Primary Containment exists such that leakage exceeds the limit specified in the Primary Containment Leakage Rate Testing Program. OR 2. Drywell to suppression chamber differential pressure decreases > 0.25 inch of water gauge per minute.
*3.6.1.3	Primary Containment Isolation Valves (PCIVs) 1. For penetrations with two PCIVs, two valves inoperable on a single penetration and the penetration is not isolated. OR 2. For penetrations with one PCIV, one valve inoperable on a single penetration and the penetration is not isolated.
3.6.2.3	Residual Heat Removal (RHR) Suppression Pool Cooling (SPC) Two RHR SPC subsystems inoperable.
3.6.4.1	Secondary Containment 1. An equipment hatch or combination of hatches that results in a breach of Secondary Containment. OR 2. Both SGT subsystems inoperable such that neither subsystem can draw and maintain ≥ 0.25" vacuum on Secondary Containment in accordance with SR 3.6.4.1.3.

(continued)

Attachment 4 (continued)

*3.6.4.2	Secondary Containment Isolation Dampers (SCIDs) Two dampers inoperable on a single penetration and the penetration is not isolated.
3.6.4.3	Standby Gas Treatment (SGT) System Both SGT subsystems inoperable.
*3.7.1	Residual Heat Removal Service Water (RHRSW) System 1. One RHRSW pump inoperable in each RHRSW loop. OR 2. Both RHRSW subsystems inoperable. OR 3. All four RHRSW pumps inoperable.
*3.7.2	Service Water (SW) System and Ultimate Heat Sink (UHS) 1. Two <u>required</u> unit CSW pumps and one or both unit NSW pumps inoperable. OR 2. Two or more <u>required</u> site NSW pumps. OR 3. SW System inoperable such that SW cannot be provided to the vital header, RHR SW header, or the DGs. OR 4. SW System inoperable such that SW cannot be provided to the A vital header and the B RHRSW header. OR 5. SW System inoperable such that SW cannot be provided to the B vital header and the A RHRSW header. OR 6. UHS > 92°F or level less than -6 ft. mean sea level.

(continued)

Attachment 4 (continued)

3.7.3	Control Room Emergency Ventilation (CREV) System	
	1. Two CREV subsystems inoperable for reasons other than CREV System instrumentation.	
	OR	
	2. Two CREV subsystems inoperable due to CREV System instrumentation and no CREV subsystems operating in the radiation protection mode.	
*3.7.4	Control Room Air Conditioning (AC) System	
	Three Control Room AC subsystems inoperable.	
*3.8.1	AC Sources—Operating	
	1. Two or more DGs inoperable.	
	OR	
	2. Two offsite circuits inoperable to two or more 4.16 kV emergency buses.	
	OR	
	3. One DG inoperable and two or more 4.16 kV offsite circuits inoperable.	
	OR	
	4. Two or more DGs inoperable and one or more 4.16 kV offsite circuits inoperable.	
*3.8.2	AC Sources—Shutdown	
	All offsite circuits and the DG associated with a 4.16 kV emergency bus required by LCO 3.8.8 are inoperable.	

(continued)

Attachment 4 (continued)

*3.8.3	Diesel Fuel Oil	
	1.	One or more DGs with day fuel oil tank level < 22,650 gal. and main fuel oil storage tank level < 20,850 gal. per DG.
		OR
	2.	One or more DGs with day fuel oil tank level < 17,000 gal.
		OR
	3.	One or more DGs with main fuel oil storage tank level < 13,900 gal. per DG.
*3.8.4	DC Sources—Operating	
	Two or more DC divisions (Unit 1 and 2) inoperable.	
*3.8.5	DC Sources—Shutdown	
	A DC subsystem (Unit 1 or 2) required to support the shutdown unit is inoperable.	

(continued)

Attachment 4 (continued)

*3.8.7 Distribution Systems—Operating

1. Two or more 4.16 kV emergency buses are inoperable.

OR

2. A Division I 480 VAC emergency bus is inoperable concurrent with a Division II 4.16 kV emergency bus inoperability.

OR

3. A Division II 480 VAC emergency bus is inoperable concurrent with a Division I 4.16 kV emergency bus inoperability.

OR

4. Two or more DC divisions (Unit 1 and 2) inoperable.

OR

5. Any emergency bus (4.16 kV or 480 VAC) is inoperable concurrent with any other emergency bus (4.16 kV or 480 VAC) inoperability such that one of the following occurs on the subject unit:

a. Loss of SDC capability when no recirc pumps are running.
b. Two or more ECCS subsystems are inoperable.
c. Two or more RHR SPC subsystems are inoperable.
d. Both SGT subsystems are inoperable.
e. Both RHRSW subsystems are inoperable.
f. Two or more DGs are inoperable.
g. SW System is inoperable due to a loss of two or more required NSW pumps.
h. Two CREV subsystems are inoperable.
i. Three Control Room AC subsystems inoperable.

(continued)

Attachment 4 (continued)

*3.8.8	Distribution Systems—Shutdown	
	1.	Any 4.16 kV emergency bus that is required to support the shutdown unit is inoperable.
		OR
	2.	Any 480 VAC emergency bus that is required to support the shutdown unit is inoperable.
		OR
	3.	A DC subsystem (Unit 1 or 2) that is required to support the shutdown unit is inoperable.
3.9.7	Residual Heat Removal (RHR)—High Water Level	
	One required SDC subsystem inoperable and no alternate method of decay heat removal.	
3.9.8	Residual Heat Removal (RHR)—Low Water Level	
	Two required SDC subsystems inoperable and no alternate method of decay heat removal.	

SAFETY FUNCTION DETERMINATION PROGRAM (SFDP) BASES

Program Use and Application

PURPOSE AND SCOPE

The purpose of a Safety Function Determination (SFD) evaluation is to detect a loss of a required Safety Function associated with systems in the Technical Specifications (TS) which could exist when an inoperable Support Feature(s) results in a Supported Feature(s) becoming inoperable.

TS 5.5.11, "Safety Function Determination Program (SFDP)," requires implementation of a SFDP and specifies the provisions which must be included in the SFDP.

The purpose of the SFDP is to ensure that SFD evaluations:

1. are performed when required;

2. include the required provisions in order to detect a LOSF;

3. ensure that the unit is placed in a safe condition if a LOSF exists; and

4. limit the time that inoperable Support Features result in Supported Features being inoperable.

One example of the Support/Supported Feature relationship is the HPCI System initiation instrumentation/logic. This instrumentation logic is a Support Feature for the HPCI System. The HPCI System is the Supported Feature. Another example of the Support/Supported Feature relationship is the DC Electrical Distribution System. This Support Feature is several support "levels" from the Supported Feature that performs the primary Safety Function. The DC Electrical Distribution System is a Support Feature for the Loss of Power (LOP) Instrumentation since DC electrical distribution subsystems provide DC control power to the LOP instrumentation functions. The LOP Instrumentation is, in turn, the Support Feature for the AC Electrical Distribution System since the LOP instruments support the 4.16 kV emergency buses. Finally, the AC Electrical Distribution System supports the Emergency Core Cooling Systems (ECCS) since the AC emergency buses supply power to the low pressure ECCS subsystems. Note that each support level has a corresponding Safety Function. For example, the Safety

(continued)

PURPOSE AND SCOPE (continued)

Function of the LOP Instrumentation is to monitor and actuate, if required, to ensure the AC Electrical Distribution System is powered (from offsite or onsite AC power sources) during assumed accidents or transients. The Support/Supported Feature relationship is generally identified in the associated TS Bases. Attachment 1 also provides a limited listing of Support/Supported Feature relationships.

TS LCO 3.0.6 establishes an exception to TS LCO 3.0.2 for Support Features that have an LCO specified in the TS. This exception is provided because TS LCO 3.0.2 would require that the Conditions and Required Actions of the associated inoperable Supported Feature TS be entered solely due to the inoperability of Support Features. This exception is justified because the remedial actions that are required to ensure the plant is maintained in a safe condition are specified in the Support Feature's TS ACTIONS. The TS Required Actions may include entering the Supported Feature's Conditions and Required Actions. TS LCO 3.0.6 specifies when a SFD must be performed.

Upon entry into TS LCO 3.0.6, the SFDP shall be used to determine if LOSF exists. Additionally, other limitations, remedial actions, or compensatory actions may be identified as a result of the Support Feature inoperability.

When a Support Feature is inoperable and there is an LCO specified for the feature in TS, the Supported Feature(s) LCO may be not met as a result of the Support Feature inoperability. However, it is not necessary to enter the Supported Features' TS ACTIONS unless directed to do so by the Support Feature's TS ACTIONS provided the associated Safety Function is retained.

Definitions in the SFDP are initially capitalized throughout the SFDP and Bases.

(continued)

Program Use and Application (continued)

CASCADING REQUIREMENTS

A SFD is only required during specific instances when TS LCO 3.0.6 is entered and two or more Support or Supported Features are inoperable. Therefore, it is important to know when TS LCO 3.0.6 is applicable. TS LCO 3.0.6 is applicable in instances when a Supported Feature LCO is not met solely due to a Support Feature LCO not being met (i.e., a Supported Feature is inoperable due to a Support Feature being inoperable).

Per TS LCO 3.0.2, the applicable Conditions for the inoperable Support Feature shall be entered and the associated Required Actions performed. The TS ACTIONS are documented in accordance with Procedure No. 0OI-01.08, "Control of Equipment and System Status."

It may not be obvious that an associated Supported Feature is inoperable when a Support Feature is inoperable. Therefore, an OPERABILITY Determination should be performed to determine if the inoperable Support Feature does result in a Supported Feature becoming inoperable. If the inoperable Support Feature does not result in any Supported Features becoming inoperable, then TS LCO 3.0.6 is not applicable and a SFD is not required. However, if the inoperable Support Feature does result in a Supported Feature(s) becoming inoperable, then the Supported Feature(s) shall be considered inoperable and LCO 3.0.6 applies.

Typically, TS LCO 3.0.6 does not require "cascading" to the associated Supported Feature TS since the Support Feature TS ACTIONS are considered sufficient (e.g., the Support Feature allowable out of service time is the same or more restrictive than the allowable out of service time of the Supported Features). In some cases, the TS ACTIONS of the Support Feature require cascading to the Supported Feature TS ACTIONS. Cascading to the Supported Feature TS ACTIONS is required if the feature is not controlled by a TS (e.g., ECCS room coolers) since the TS definition of OPERABILITY applies and the requirements of LCO 3.0.6 are not applicable to non-TS support features. Cascading to the Supported Feature TS ACTIONS is also required if the Support Feature TS ACTIONS require cascading. If cascading is required, a SFD is not required.

(continued)

CASCADING REQUIREMENTS (continued)

Unless cascading is required, TS LCO 3.0.6 does not require entry into the TS ACTIONS for the inoperable Supported Feature(s) unless a LOSF exists. Therefore, a SFD must be performed to ensure Safety Function is maintained. The TS ACTIONS of the inoperable Supported Feature may be entered even if the Safety Function is retained. However, this is a conservative decision. If a decision is made to cascade to the Supported Feature(s) TS, a SFD evaluation is not required.

The SFDP requires cross division checks to identify a LOSF for those Support Features that support safety systems. The SFD evaluation should include an administrative cross divisional check to verify that the Supported Features of the redundant OPERABLE Support Features are OPERABLE, thereby ensuring Safety Function is retained. The evaluation should also include a conclusion as to the status of the Safety Function (i.e., Safety Function maintained or lost). The SFD should be performed by a licensed Senior Reactor Operator or another qualified member of the technical staff. If this SFD evaluation determines that a LOSF exists, the appropriate Conditions and Required Actions of the TS in which the LOSF exists are required to be entered. Attachment 4 of the SFDP provides all known combinations of Supported Feature inoperabilities where a LOSF exists.

In addition, since the TS ACTIONS associated with the Support Feature restricts plant operation, the single failure criterion does not have to be considered when determining OPERABILITY of the Supported Feature(s).

MAXIMUM COMPLETION TIME

A Supported Feature(s) made inoperable by Support Feature inoperabilities may only remain inoperable for a limited period of time (without entering the Supported Feature TS ACTIONS). This time limit is defined as the Maximum Completion Time. The Maximum Completion Time for restoring the Supported Feature(s) to OPERABLE status is the Completion Time specified in TS for restoring the first inoperable Support Feature to OPERABLE status plus the Completion Time specified in TS for restoring the inoperable Supported Feature to OPERABLE status. This Maximum Completion Time requirement includes restoring all Support Features to OPERABLE status.

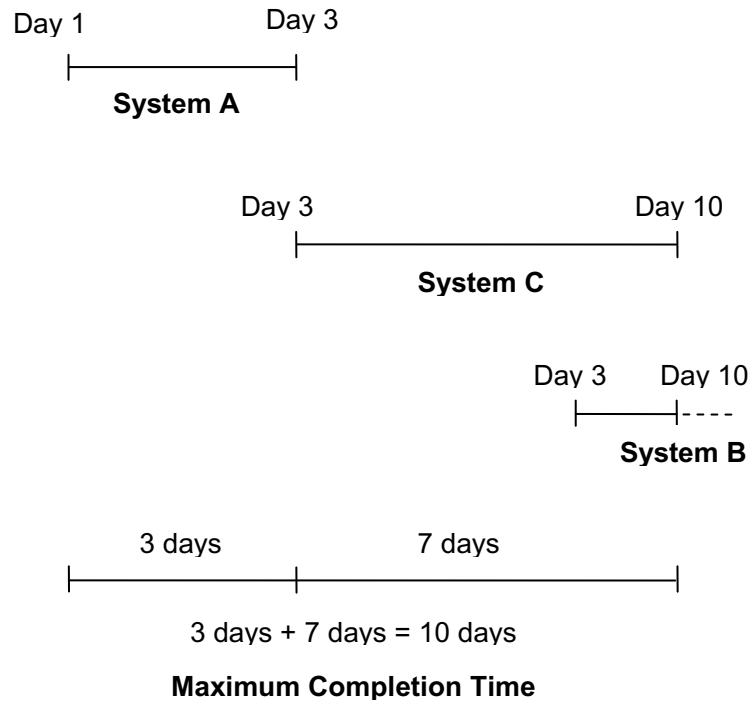
(continued)

MAXIMUM COMPLETION TIME (continued)	The Maximum Completion Time establishes a limit on the maximum time allowed for any combination of Support Features and Supported Features being inoperable during a single contiguous occurrence of failing to meet the Supported Feature's TS LCO. This "Maximum Completion Time" philosophy is similar to that of TS Section 1.3, Completion Times.

(continued)

MAXIMUM COMPLETION TIME (continued)

EXAMPLE 3.1-1



Maximum Completion Time

Assume that Systems A and B are TS systems and they Support System C. The Completion Times for restoring the systems to OPERABLE status are; 3 days for System A, 7 days for System B, and 7 days for System C.

If System A becomes inoperable and makes System C inoperable, then the maximum Completion Time for restoring System C to OPERABLE status is 10 days (3 days plus 7 days).

(continued)

MAXIMUM COMPLETION TIME

Example 3.1-1 (continued)

If System C should then become inoperable for reasons other than the support system being inoperable on Day 3 (time from System A inoperability; System A is restored to OPERABLE status later on Day 3), then System C must be restored to OPERABLE status by Day 10 (within 7 days). Subsequently, if System B should become inoperable on Day 8 (time from System A inoperability), then System B must also be restored to OPERABLE status by Day 10 (within 2 days instead of 7 days) in order to restore System C to OPERABLE status within its 10-day Maximum Completion Time.

The Maximum Completion Time is considered an acceptable limitation on the potential to fail to meet the Supported Feature's TS LCO indefinitely.

If System C is not restored to OPERABLE status within 10 days (by restoring Systems A and B to OPERABLE status), then the Condition in TS for System C which states, "Required Action and associated Completion Time not met," shall be entered and the associated Required Actions shall be performed.

SFD REVIEW

For every subsequent inoperability, a review of the SFD is required to ensure that the SFD remains valid and a LOSF has not occurred. This includes inoperabilities as a result of surveillance testing or maintenance. This also includes inoperabilities as a result of declaring a Supported Feature inoperable per TS ACTIONS.

A complete re-evaluation of all redundant supported subsystems and associated support subsystems should be performed to ensure the Safety Function is maintained with the additional inoperabilities.

SAFETY FUNCTION DETERMINATION PROGRAM (SFDP) BASES

Safety Function Determination (SFD) Evaluation Examples

SFD EVALUATION EXAMPLE 1

The plant is operating in MODE 3 with reactor pressure at < 75 psig. The "A" RHR-SDC subsystem is in operation and the "C" and "D" RHR-SDC subsystems are OPERABLE. The "B" RHR pump has been removed from service for maintenance on the motor. Condition A of both TS 3.6.2.3, "RHR Suppression Pool Cooling," and TS 3.5.1, "ECCS-Operating," were entered at 1500 on 1/1/98.

At 2100 on 1/2/98, the breaker for the "C" RHRSW pump tripped on overload. TS 3.7.1, "RHRSW System," Condition A was entered. TS 3.6.2.3 ACTIONS do not yet have to be entered per LCO 3.0.6.

The following is the SFD for the Supported Features:

- Although the "C" RHR-SDC subsystem became inoperable at 2100 on 1/2/98, the "D" RHR-SDC subsystem is OPERABLE. Therefore, LCO 3.4.7, "RHR Shutdown Cooling System - Hot Shutdown," is met and LCO 3.0.6 is not applicable to TS 3.4.7.

- The safety analysis for RHR-SPC requires 8000 gpm service water flow to ensure an RHR-SPC subsystem can perform its Safety Function. As a result, LCO 3.6.2.3 is not met due to the "A" RHR-SPC subsystem inoperable (one RHRSW pump inoperable). However, TS 3.6.2.3 ACTIONS do not yet have to be entered per LCO 3.0.6.

- Per LCO 3.0.6 and TS 5.5.11, a SFD must be performed and would reveal that the "B" RHR-SPC subsystem has been inoperable since 1500 on 1/1/98. Since the "A" RHR-SPC subsystem is inoperable concurrent with the "B" RHR-SPC subsystem, a LOSF exists for TS 3.6.2.3.

Conclusion:

TS 3.6.2.3 Condition A should be continued for the "A" RHR-SPC subsystem inoperable and TS 3.6.2.3 Condition B should be entered immediately upon discovery of the LOSF.

(continued)

SFD Evaluation Examples

SFD EVALUATION EXAMPLE 1 (continued)

Assuming the "B" RHR pump is restored to OPERABLE status by 1500 on 1/8/98 and the "C" RHRSW pump is restored to OPERABLE status by 2100 on 1/16/98, the Maximum Completion Time for restoring the "A" RHR-SPC subsystem to OPERABLE status following subsequent contiguous inoperabilities (including all Support Features) is 2100 on 1/23/98; 14 days (TS 3.7.1 Required Action A.1) plus 7 days (TS 3.6.2.3 Required Action A.1).

SFD EVALUATION EXAMPLE 2

Unit 2 is operating at 100% power. A portion of SR 3.3.5.2.5 is being performed to verify Relay K-52 is OPERABLE. TS 3.3.5.2, "RCIC System Instrumentation," Condition C was entered at 0300 on 4/2/98 due to the testing. Six hours has elapsed as allowed by Note 2 to the Surveillance Requirements. At 2000 on 4/2/98, the 2A DC Switchboard de-energizes due to an internal electrical short. TS 3.8.7, "Distribution Systems-Operating," Condition C is entered.

The following is the SFD for the Supported Features:

- The HPCI System is inoperable due to the loss of power to much of the system. However, TS 3.5.1, "ECCS-Operating," ACTIONS do not have to be entered per LCO 3.0.6.

- The Bases for TS 3.5.3, "RCIC System," states that the function of the RCIC System is to provide core cooling during a loss of feedwater event. Since the RCIC System can still perform its required function in the above condition (RCIC high water level trip inoperable), it can be considered OPERABLE and a LOSF has not occurred.

Conclusion:

Since a LOSF has not occurred, entry into TS 3.5.1 or TS 3.5.3 ACTIONS is not required at this time. However, if SR 3.3.5.2.5 is not satisfactorily completed by 0300 on 4/3/98, TS 3.3.5.2 Required Action E.1 requires declaring the RCIC System inoperable and TS 3.5.3 Condition A must be entered.

(continued)

SFD Evaluation Examples

SFD EVALUATION EXAMPLE 2 (continued)

A review of the SFD (refer to Attachment 4 of the SFDP) will show that the HPCI and RCIC Systems are both inoperable. Therefore, TS 3.5.1 Condition I must be entered and TS 3.5.3 Condition B must be entered upon discovery that both systems are inoperable.

Assuming that Relay K-52 is demonstrated OPERABLE by 0300 on 4/3/98 and the 2A DC Switchboard is restored to OPERABLE status by 2000 on 4/9/98, the Maximum Completion Time for restoring the HPCI System to OPERABLE status following subsequent contiguous inoperabilities (including all Support Features) is 2000 on 4/23/98; 7 days (TS 3.8.7 Required Action C.1) plus 14 days (TS 3.5.1 Required Action D.2).

SFD EVALUATION EXAMPLE 3

Unit 1 is in MODE 5 and Unit 2 is operating at 100% power. At 0900 on 10/2/98, Diesel Generator (DG) #1 was removed from service to perform preventative maintenance and Unit 2 TS 3.8.1, "AC Sources-Operating," Condition C is entered. Unit 1 LCO 3.8.2, "AC Sources-Shutdown," is met. During the performance of SR 3.3.5.1.2 on Unit 2, it was discovered that improper grounding resulted in a failure of Relays K-11B and K-10B on Unit 2 core spray logic. I&C reports that the "B" core spray logic is inoperable and the "A" core spray logic is still OPERABLE. The "B" core spray logic (TS 3.3.5.1, "ECCS Instrumentation," Functions 1.a, 1.b, and 1.c) is declared inoperable at 1500 on 10/4/98.

Unit 2 TS 3.3.5.1 Conditions B and C are entered at this time. Required Actions B.1 and C.1 are not applicable at this time since "A" core spray initiation capability is still available. Required Actions B.3 and C.2 allow 24 hours to fix the relays before declaring the Supported Features inoperable. TS 3.5.1, "ECCS-Operating," ACTIONS do not yet have to be entered per LCO 3.0.6.

The following is the SFD for the Supported Features:

- Although core spray Relay K-11B is not available to start the emergency diesel generators, Relay K-11A is still OPERABLE. Therefore, DGs 2,3, and 4 will start if required and are still considered OPERABLE and a LOSF has not occurred.

(continued)

SFD EVALUATION EXAMPLE 3 (continued)

- ----------NOTE----------
  The DGs cannot withstand a single failure (i.e., failure of core spray Relay K-11A), however, plant operation is limited by TS 3.3.5.1 ACTIONS.

The 2A LPCI subsystem is still OPERABLE since offsite power is available to the E1 4.16 kV bus. However, the Completion Time for TS 3.8.1 Required Action C.2 begins at 1500 on 10/4/98 since E1 supplies power to the 2A LPCI subsystem (2C LPCI pump and LPCI injection valves) and 2A LPCI is redundant to the 2B core spray subsystem. Since only one low pressure ECCS subsystem is inoperable a LOSF has not occurred.

Conclusion:

Since all ECCS will initiate except 2B core spray, the Safety Function is maintained and TS 3.5.1 ACTIONS do not have to be entered at this time. However, at 1900 on 10/4/98, TS 3.8.1 Required Action C.2 requires declaring the 2A LPCI subsystem inoperable and TS 3.5.1 Condition A must be entered. A review of the SFD at this time (refer to Attachment 4 of the SFDP) will show that the 2A LPCI subsystem and 2B core spray subsystem are both inoperable. Therefore, TS 3.5.1 Condition J must be entered upon discovery that both low pressure ECCS subsystems are inoperable. In addition, TS 3.5.1 Condition A should be continued and TS 3.5.1 Condition B should be entered for the 2B core spray subsystem inoperable.

Assuming DG#1 is restored to OPERABLE status prior to completion of the shutdown required by LCO 3.0.3 and the 2B core spray logic is restored to OPERABLE status by 1500 10/5/98, the Maximum Completion Time for restoring the 2B core spray subsystem to OPERABLE status following subsequent contiguous inoperabilities (including all Support Features) is 1500 on 10/12/98; 24 hours (TS 3.3.5.1 Required Action C.2) plus 7 days (TS 3.5.1 Required Action A.1).

(continued)

SFD Evaluation Examples (continued)

SFD EVALUATION EXAMPLE 4

A 480 VAC emergency bus (E8) indicates a ground fault at 1300 on 7/2/98. Further investigation reveals that, although all E8 loads seem to be operating normally, a high impedance ground fault has developed on the E8 emergency bus (cause unknown). Engineering has been contacted to provide technical support and perform an OPERABILITY Determination.

Unit 2 is operating at 100% power. At 2300 on 7/5/98, the control power transformer fuse fails in the 2A SGT fan motor control circuit. Maintenance reports that the failing of the fuse damaged the fuse holder and it may take 12 hours to correct the problem. All secondary containment isolation instrumentation functions are declared inoperable for the 2A SGT subsystem and TS 3.3.6.2, "Secondary Containment Isolation Instrumentation," Condition A is entered. TS 3.6.4.3, "SGT System," ACTIONS do not yet have to be entered per LCO 3.0.6.

Engineering reports at 0900 on 7/6/98 that the margin in the AC Distribution Voltage Study shows that the high impedance fault results in E8 being inoperable. TS 3.8.7, "Distribution Systems - Operating," Condition A is entered at this time. TS 3.6.4.3 ACTIONS do not yet have to be entered per LCO 3.0.6.

The following is the SFD for the Supported Features:

- LCO 3.6.4.2, "SCIDs," is still met since the failure of the secondary containment isolation instrumentation functions only affects the 2A SGT subsystem and is independent of the secondary containment isolation dampers.

- Improper voltage (as a result of the ground) on the E8 results in the 2B SGT subsystem becoming inoperable. Per LCO 3.0.6 and TS 5.5.11, a SFD must be performed and would reveal that the 2A SGT subsystem has been inoperable since 2300 on 7/5/98. Since the 2A SGT subsystem is inoperable concurrent with the 2B SGT subsystem, a loss of LOSF exists for TS 3.6.4.3.

Conclusion:

TS 3.6.4.3 Conditions A and B should be entered immediately upon discovery of the LOSF.

(continued)

SFD Evaluation Examples

SFD EVALUATION EXAMPLE 4 (continued)	Assuming either E8 is restored to OPERABLE status or the 2A SGT fan is restored to OPERABLE status prior to the completion of the plant shutdown required by TS3.6.4.3 Condition B and both E8 and 2A SGT instrumentation are restored to OPERABLE status within their associated Completion Times, the Maximum Completion Time for restoring the 2A SGT subsystem to OPERABLE status following subsequent contiguous inoperabilities (including all Support Features) is 1100 on 7/13/98; 12 hours (TS 3.3.6.2 Required Action A.1) plus 7 days (TS 3.6.4.3 Required Action A.1). The Maximum Completion Time for restoring the 2B SGT subsystem to OPERABLE status following subsequent contiguous inoperabilities (including all Support Features) is 1700 on 7/13/98; 8 hours (TS 3.8.7 Required Action A.1) plus 7 days (TS 3.6.4.3 Required Action A.1).

SAFETY FUNCTION DETERMINATION PROGRAM (SFDP) BASES

Attachments

ATTACHMENT 1 This attachment is an aid which identifies the Supported Features associated with each Support Feature Technical Specification (TS). The Table includes the TS number and title of the support system and supported systems so the appropriate TS and Bases may be reviewed. The Table of Support vs. Supported Features does not infer that a Support Feature inoperability results in all Supported Features becoming inoperable. The Table only provides Supported Feature TS that may be affected. To ensure the list is user friendly, the list is minimized to the extent practical. Therefore, features that are not in TS are not included in Attachment 1 since TS LCO 3.0.6 does not apply to these features (e.g., ECCS room cooler subsystems). Additionally, Support Features that exclusively support only one Supported Feature and contain TS ACTIONS that require cascading to the Supported Feature TS ACTIONS are generally not included in Attachment 1 (e.g., Control Rod Accumulators). Support Features that are "failsafe" upon loss of power (i.e., loss of power results in the feature automatically performing its required Safety Function), are also not listed since the Safety Function is performed upon loss of power (e.g., loss of DC power to RPS electric power monitoring assemblies).

ATTACHMENT 2 This attachment provides a list of all TS equipment affected by a loss of a single emergency load group (i.e., a loss of a single 4.16 kV emergency bus) except equipment that is "failsafe." If a supported subsystem is "failsafe" upon loss of AC power, the supported subsystem is not listed in Attachment 2. Additionally, this Attachment is limited to redundant supported subsystems and does not provide detail as to which component has lost power. Unless otherwise noted, an "X" in the support subsystem column indicates the supported subsystem is inoperable.

ATTACHMENT 3 This attachment provides a list of all the motor-operated primary containment isolation valves (PCIVs) and their associated power supplies. If a motor-operated valve is open and loses power, it cannot provide the required isolation function.

(continued)

Attachments

ATTACHMENT 3 (continued)	This attachment is an aid which identifies all of the affected PCIVs. If the PCIV is closed and loses power, inherently the Safety Function is maintained. Some of the PCIVs have a normal and alternate power supply. As noted, PCIVs are considered OPERABLE provided power is available to the motor-operator.
ATTACHMENT 4	This attachment provides all known combinations of inoperabilities where LOSF exists. The attachment includes combinations of inoperabilities that require a plant shutdown or entry into TS LCO 3.0.3 per the Supported Feature TS. Additionally, this attachment only includes loss of function for systems used to perform Safety Function Determinations. If a TS system is supported by a system that is not a TS system, the non-TS support feature is not included in the attachment because TS LCO 3.0.6 is not applicable for this case. If a TS system is supported by another TS system but the TS ACTIONS for the inoperable TS Support Feature require "cascading" into the TS ACTIONS for the Supported Feature TS, then a LOSF for this Supported Feature is not included in the attachment because TS LCO 3.0.6 is not applicable for this case. Several TS LCOs do not require all installed features (e.g., only six of seven ADS valves are required to be OPERABLE to meet LCO 3.5.1). As such, the word required is underlined in Attachment 4 to indicate only those features required to meet the LCO. Since the NRC has previously approved the TS, continued operation with plant degradations within the bounds of the Supported Feature TS is allowed. Continued operation with plant degradations outside the bounds of the Supported Feature TS is not allowed. Therefore, if the combination of inoperabilities results in a LOSF as defined in Attachment 4 (i.e., continued plant operation is not allowed by the Supported Feature TS), the appropriate Conditions of the Supported Feature TS must be entered and the Required Actions performed.