Millstone Power Station Unit 2
Technical Requirements Manual

(Incorporated by Reference)

THIS IS A CONTROLLED COPY OF THE UNIT 2 TECHNICAL REQUIREMENTS
MANUAL INCLUDING CHANGE NO. 177
UPDATED BY TECHNICAL PUBLISHING

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*Refer to separate Appendix R sections (26 total) for LCO & SR breakdowns

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Old TRM LCO -	SR	Tbl 1 Item	Component ID	System Description	New TRM LCO	New TRM SR
3.0.1 -	3.0.3	27	P18A, 18B. 18C	Charging Pumps	7.1.1	SR 7.1 .I
3.0.1 -	3.0.3	28	CH-089	Regen HX Outlet Is0	7.1.1	SR 7.1.1
3.0.1 -	3.0.3	29	CH-518,519	Charging to RCS loops	7.1 .I	SR 7.1.1
3.0.1 -	3.0.3	30	CH-517	Aux Spray to PZR (RCS)	7.1.1	SR 7.1.1
3.0.1 -	3.0.3	31	CH-429	Charging Pump Header Is0 MOV	7.1 .I	SR 7.1 .I
3.0.1 -	3.0.3	32	CH-501	VCT outlet MOV	7.1.1	SR 7.1.1
3.0.1 -	3.0.3	33	CH-504	Chrg Pps suct fm RWST MOV	7.1.1	SR 7.1.1
3.0.1 -	3.0.3	34	CH-192	Chrg Pps suct fm RWST AOV	7.1.1	SR 7.1.1
3.0.1 -	3.0.3	57A	LI-206A, 208A	Instr, Monitor local BAST level	7.1.2	SR 7.1.2
3.0.1 -	3.0.3	8A	MS-265B	MS Low Pt Drain -ESF-MSI	7.1.3	SR 7.1.3
3.0.1 -	3.0.3	88	MS-266B	MS Low Pt Drain -ESF-MSI	7.1.3	SR 7.1.3
3.0.1 -	3.0.3	50	PT- 1 02B- 1	Instrument, Monitoring Pzr Press	7.1.4	SR 7.1.4
3.0.1 -	3.0.3	54	PT-10238	Instr, Monitor SG Press	7.1.4	SR 7.1.4
3.0.1 -	3.0.3	56	QEXC2PDA. 4PDA	Instr, Monitor NI, wide rang	7.1.4	SR 7.1.4
3.0.1 -	3.0.3	56A	QEXCI PDA, 3PDA	Instr, Monitor NI, wide range	7.1.4	SR 7.1.4
3.0.1 -	3.0.3	58A	PT-103,103-1	Instr, Monitor Pzr Press low rng	7.1.4	SR 7.1.4
3.0.1 -	3.0.3	58F	LT-103. 1 lox, 110Y	Instr, monitor Pzr level, cold, nor	7.1.4	SR 7.1.4
3.0.1 -	3.0.3	58C	LT-1114A. 11 148	Instr, monitor SG 1 level,wide mg	7.1.4	SR 7.1.4
3.0.1 -	3.0.3	58B	LT-11238	Instr, Monitor SG 2 level, nar mg	7.1.4	SR 7.1.4
3.0.1 -	3.0.3	588	LT-1124A. 1 124B	Instr, Monitor SG 2 level,wide rng	7.1.4	SR 7.1.4
3.0.1 -	3.0.3	51	TE-121X	Instr, Monitoring hot leg temp	7.1.5	SR 7.1.5
3.0.1 -	3.0.3	52	TE-125	Instr. Monitoring cold leg temp	7.1.5	SR 7.1.5
3.0.1 -	3.0.3	51A	TE-111X	Instr, Monitoring hot leg temp	7.1.5	SR 7.1.5
3.0.1 -	3.0.3	52A	TE-115	Instr, Monitoring cold leg temp	7.1.5	SR 7.1.5
3.0.1 -	3.0.3	58 B	FT-5278A. 5278B	Instr, Monitor AFW flow to SG 2	7.1.5	SR 7.1.5
3.0.1 -	3.0.3	58C	FT-5277A. 52778	Instr, Monitor AFW flow to SG 1	7.1.5	SR 7.1.5
3.0.1 -	3.0.3	69A	Bus 25A (Hi)	6900 V breakers for RCPs	7.1.6	SR 7.1.6
3.0.1 -	3.0.3	69B	Bus 25B (H2)	6900 V breakers for RCPs	7.1.6	SR 7.1.6
3.0.1 -	3.0.3	21	SI-306	SDC HX bypass	7.1.7	SR 7.1.7
3.0.1 -	3.0.3	22	SI-651,652	SDC suct MOVs	7.1.7	SR 7.1.7
3.0.1 -	3.0.3	580	TE-351 X, 351 Y	SDC sup, ret temp monitors	7.1.7	SR 7.1.7
3.0.1 -	3.0.3	58G	TE-303X, 303Y	SDC HXs outlet temps indication	7.1.7	SR 7.1.7
3.0.1 -	3.0.3	19	RC-402/ 404	RCS- PORVS	7.1.8	SR 7.1.8
3.0.1 -	3.0.3	26D	SI-614,624,634,644	SIT Outlet MOVs	7.1.9	SR 7.1.9
3.0.1 -	3.0.3	26E	SI-613,623,633,643	SIT Nitrogen vent valves	7.1.9	SR 7.1.9
3.0.1 -	3.0.3	20	SI-615,625,635,645	LPSI flow MOVs	7.1.10	SR 7.1.10
3.0.1 -	3.0.3	24	SI-657	SDC HX outlet	7.1.10	SR 7.1.10
3.0.1 -	3.0.3	23A	SI-449.450	SDC min flow alt	7.1.10	SR 7.1.10
3.0.1 -	3.0.3	26A1	SI-432.444	LPSI suct fm RWST	7.1.10	SR 7.1.10
3.0.1 -	3.0.3	26A2	SI440,441	LPSI suct fm RCS	7.1.10	SR 7.1 .I0
3.0.1 -	3.0.3	26B	S1452,453	LPSI disch to SDC HX	7.1.10	SR 7.1.10
3.0.1 -	3.0.3	26C	SI-456,457	SDC HX outlet	7.1.10	SR 7.1.10
3.0.1 -	3.0.3	36	CS-13.1B	RSWT outlet MOV	7.1.11	SR7.1.11
3.0.1 -	3.0.3	35	CH-508,509	Boric Acid Grav feed MOVs	7.1.12	SR 7.1.12
3.0.1 -	3.0.3	58E	TE-8108	Ctmt Ambient Temp monitoring	7.1.13	SR 7.1.13
3.0.1 -	3.0.3	25A	CS-4A, 4B	Ctmt Spray Stop Valves	7.1.14	SR 7.1.14

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3.0.1 -	3.0.3	1	SV-4188	AFW Turbine	7.1.15	SR 7.1.15
3.0.1 -	3.0.3	2	P4 & H-21	AFW Turbine	7.1.15	SR 7.1.15
3.0.1 -	3.0.3	7	MS-202	AFW Turbine steam stop MOV	7.1.15	SR 7.1.15
3.0.1 -	3.0.3	8	P9A, P9B	AFW pumps, motor driven	7.1.15	SR 7.1.15
3.0.1 -	3.0.3	10	FW-44	AFW P4 Discharge Is0 MOV	7.1.15	SR 7.1.15
3.0.1 -	3.0.3	12	FW-43N43B	AFW flow control valves	7.1.15	SR 7.1.15
3.0.1 -	3.0.3	55	LT-5282	Instr, Monitor CST level	7.1.16	SR 7.1.16
3.0.1 -	3.0.3	55A	LIS-5489	Instr, Local CST level Ind	7.1.16	SR 7.1.16
3.0.1 -	3.0.3	3	MS-64N64 B	MSIVs	7.1.17	SR 7.1.1 7
3.0.1 -	3.0.3	4	MS-65N65B	MSIV Bypass	7.1.17	SR 7.1.17
3.0.1 -	3.0.3	5	MS-1 SON1 90B	AOVs	7.1.18	SR7.1 .I8
3.0.1 -	3.0.3	6	MS-220N220B	SG Blowdown Valves	7.1.19	SR 7.1.19
3.0.1 -	3.0.3	39	RB-13.1A, 13.18	RBCCW out of SDC HXs	7.1.20	SR 7.1.20
3.0.1 -	3.0.3	40	RB-21 IA, 21 1B	RBCCW Pp A Inlet AOVs	7.1.20	SR 7.1 20
3.0.1 -	3.0.3	41	RB-21 IC, 21 1D	RBCCW Pp 6 Inlet AOV's	7.1 20	SR 7.1.20
3.0.1 -	3.0.3	42	RB-211E,211F	RBCCW Pp C Inlet AOVs	7.1 -20	SR 7.1.20
3.0.1 -	3.0.3	43	RB-4.1A. 4.18	RBCCW Hx A outlet AOVs	7.1 -20	SR 7.1.20
3.0.1 -	3.0.3	44	RB4.1C. 4.10	RBCCW Hx B outlet AOVs	7.1.20	SR 7.1.20
3.0.1 -	3.0.3	45	RB-4.1 E, 4.1 F	RBCCW Hx C outlet AOVs	7.1.20	SR 7.1.20
3.0.1 -	3.0.3	46	PllA, P I I B , P I I C	RBCCW pumps	7.1.20	SR 7.1.20
3.0.1 -	3.0.3	47	P5A, P5C, LIA, L1C	RBCCW pp disch x-tie AOVs	7.1.20	SR 7.1.20
3.0.1 -	3.0.3	13	RB-251A. 251B	SW pumps 8 Strainers	7.1.21	SR 7.1.21
3.0.1 -	3.0.3	14	SW-97AI 978	SW Disch hdr x-tie valves	7.1.21	SR 7.1.21
3.0.1 -	3.0.3	15	SW-3.1N 3.16	SW inlet to RBCCW HXs	7.1.21	SR 7.1.21
3.0.1 -	3.0.3	14A	SW-2A. 2B, 2C	SW pump disch valves	7.1.21	SR 7.1.21
3.0.1 -	3.0.3	16A	SW-9N 9B/ 9C	SW outlet fm RBCCW HXs	7.1.21	SR 7.1.21
3.0.1 -	3.0.3	18A	SW-5N 5BI 5C	SW inlet to TBCCW HXs	7.1.21	SR 7.1.21
3.0.1 -	3.0.3	188	SW-12BI 12C	SW is0 to EDG A & B	7.1.21	SR 7.1.21
3.0.1 -	3.0.3	18C	SW-296	Drain on SW to EDG B	7.1.21	SR 7.1.21
3.0.1 -	3.0.3	62	SBO DG	Alternate AC diesel gen	7.1.22	SR 7.1.22
3.0.1 -	3.0.3	59	Bus 24C (A3)	4160 volt switchgear	7.1.23	SR 7.1.23
3.0.1 -	3.0.3	60	Bus 240 (A4)	4160 volt switchgear	7.1.23	SR 7.1.23
3.0.1 -	3.0.3	61	Bus 24E (A5)	4160 volt switchgear	7.1.23	SR 7.1.23
3.0.1 -	3.0.3	63	Bus 22E (805)	480 volt switchgear	7.1.23	SR 7.1.23
3.0.1 -	3.0.3	64	Bus 22F (B06)	480 volt switchgear	7.1.23	SR 7.1.23
3.0.1 -	3.0.3	65	851 (mcc-22-1 E)	MCC B51	7.1 2 3	SR 7.1.23
3.0.1 -	3.0.3	66	852 (mcc-22-2E)	MCC B52	7.1.23	SR 7.1.23
3.0.1 -	3.0.3	67	B61 (mcc-22-1 F)	MCC B61	7.1.23	SR 7.1.23
3.0.1 -	3.0.3	68	862 (mcc-22-2F)	MCC B62	7.1.23	SR 7.1.23
3.0.1 -	3.0.3	70	ELUs	Em. Light Units	7.1.23	SR 7.1.23
3.0.1 -	3.0.3	62A	Bus 24A (Al)	4160 volt switchgear	7.1.23	SR 7.1.23
3.0.1 -	3.0.3	62B	Bus 248 (A2)	4160 volt switchgear	7.1 :23	SR 7.1.23
3.0.1 -	3.0.3	62C	Bus 22A (BOl)	480 volt load center	7.1.23	SR 7.1.23
3.0.1 -	3.0.3	62D	Bus 228 (802)	480 volt load center	7.1.23	SR 7.1.23
3.0.1 -	3.0.3	69K	VA 20	120 VAC panel VIAC-2	7.1.23	SR 7.1.23
3.0.1 -	3.0.3	69	DC3	201 C swing batt charger	7.1 24	SR 7.1.24
3.0.1 -	3.0.3	69C	Bus DO1	125 VDC Bus 201A	7.1 24	SR 7.1.24

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3.0.1 -	3.0.3	69E	DV 10	125 VDC panel 201A-1V	7.1.24	SR 7.1 2 4
3.0.1 -	3.0.3	69F	DV 20	125 VDC panel 201B-1V	7.1 24	SR 7.1.24
3.0.1 -	3.0.3	69G	D11	125 VDC panel 201A-1	7.1.24	SR 7.1 24
3.0.1 -	3.0.3	69H	Dl2	125 VDC panel 201A-2	7.1.24	SR 7.1.24
3.0.1 -	3.0.3	69 I	D2 1	125 VDC panel 201 B-1	7.1.24	SR 7.1.24
3.0.1 -	3.0.3	69J	D22	125 VDC panel 201 B-2	7.1.24	SR 7.1.24
3.0.1 -	3.0.3	71	FIRE-258, 259, 559, 560	Fire Supp system	7.1.25	SR 7.1.25
3.0.1 -	3.0.3	18D	Fire Suppression sys	Alt(Fire Pro) cooling to EDGs	7.1.25	SR 7.1.25
3.0.1 -	3.0.3	72	Radio Comm Sys	Radio Communication system	7.1 2 6	SR 7.1.26
3.0.1 -	3.0.3	74	HSD Storage Box	Box Inventory items available	7.1 2 6	SR 7.1.26
3.0.1 -	3.0.3	75	FSD Storage Box	Box Inventory items available	7.1.26	SR 7.1.26
3.0.1 -	3.0.3	76	CSD Repair Material	Materials available for repairs	7.1.26	SR 7.1.26
3.0.1 -	3.0.3	81	F156A, B, C, D	fans-East &West DC rooms	7.1.26	SR 7.1.26
3.0.1 -	3.0.3	82	F157A. B, C, D	fans-East & West 480 V rooms	7.1 2 6	SR 7.1.26
3.0.1 -	3.0.3	83	Bottle 3A, 3B,3C	bottles and valves	7.1 2 6	SR 7.1 26

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Dominion

Memorandum

JAN 30 2002

RA-02-015

To: Millstone Unit No.2 Technical Requirements Manual Controlled Copy Holders

From: C. Schwarz
Director Nuclear Station Operations & Maintenance

RE-Issuance of Millstone Unit No.2 Technical Requirements Manual

Please find attached the Millstone Unit No.2 Technical Requirements Manual (TRM).This reissued TRM has been written in the Standard Technical Specifications format. The TRM contains the re-located requirements from Technical Specifications and certain material that warrants administrative controls (e.g. , Appendix R -Safe Shutdown Requirements) and does not contain and will not contain any clarification of a particular LCO or Surveillance. The information in the TRM will be controlled in a manner consistent with the Technical Specifications and by use of the Master Manual, License Basis Management Program, MP-03-LBM-PRG, and specifically by procedure MP-03-LBM-SAP04.

It is suggested that the TRM be maintained next to the Millstone Unit No.2 Technical Specifications. Distribution and control of the TRM will be similar to that of The Technical Specifications. If you have any questions concerning this manual ,please call Rick Bonner at 5230 or Ravi Joshi at 2080.

cc: Memo File
Nuclear Records

1.0 DEFINITIONS

The DEFINED TERMS appear in capitalized type throughout these TECHNICAL REQUIREMENTS. These capitalized terms are defined in Section 1.0 of the Technical Specifications.

In addition to the terms defined in the Technical Specifications, the following defined terms and acronyms appear in the TECHNICAL REQUIREMENTS. These defined terms and acronyms also appear in capitalized type throughout the TECHNICAL REQUIREMENTS.

CURRENT LICENSING BASIS

1.1 The CURRENT LICENSING BASIS (CLB) is the set of NRC requirements applicable to a specific plant, plus a licensee's docketed and currently effective written commitments for ensuring compliance with, and operation within, applicable NRC requirements and the plant-specific DESIGN BASIS, including all modifications and additions to such commitments over the life of the facility operating license.

The set of NRC requirements applicable to a specific plant CLB include:

a. NRC regulations in 10 CFR Parts 2, 19, 20, 21, 26, 30, 40, 50, 51, 54, 55, 70, 72, 73, and 100 and appendices thereto
b. Commission orders
c. license conditions
d. exemptions
e. technical specifications (TSs)
f. plant-specific DESIGN BASIS information defined in 10 CFR 50.2 and documented in the most recent Updated Final Safety Analysis Report (UFSAR) (as required by 10 CFR 50.71)
g. licensee commitments remaining in effect that were made in docketed licensing correspondence (such as licensee responses to NRC bulletins, Licensee Event Reports, generic letters, and enforcement actions)
h. licensee commitments documented in NRC safety evaluations

DESIGN BASIS

1.2 Design bases information, defined by 10 CFR 50.2, is documented in the UFSAR as required by 10 CFR 50.71. The DESIGN BASIS of safety-related structures, systems, and components (SSCs) is established initially during the original plant licensing and relates primarily to the accident prevention or mitigation functions of safety-related SSCs. The DESIGN BASIS of a safety-related SSC is a subset of the CLB.

FUNCTIONAL – FUNCTIONALITY

1.3 FUNCTIONALITY is an attribute of SSCs that is not controlled by TSs. An SSC is FUNCTIONAL or has FUNCTIONALITY when it is capable of performing its SPECIFIED FUNCTION, as set forth in the CLB. FUNCTIONALITY does not apply to SPECIFIED SAFETY FUNCTIONS, but does apply to the ability of non-TS SSCs to perform other SPECIFIED FUNCTIONS that have a necessary support function.

SPECIFIED FUNCTION/SPECIFIED SAFETY FUNCTION

1.4 The SPECIFIED FUNCTION(S) of the system, subsystem, train, component or device (hereafter referred to as system) is that SPECIFIED SAFETY FUNCTION(S) in the CLB for the facility. In addition to providing the SPECIFIED SAFETY FUNCTION, a system is expected to perform as designed, tested and maintained. When system capability is degraded to a point where it cannot perform with reasonable expectation or reliability, the system should be judged inoperable/nonfunctional, even if at this instantaneous point in time the system could provide the SPECIFIED SAFETY FUNCTION.

TECHNICAL REQUIREMENT

1.5 A TECHNICAL REQUIREMENT represents the lowest functional capability or performance level allowed for the specified equipment or parameter.

TECHNICAL SURVEILLANCE REQUIREMENT

1.6 TECHNICAL SURVEILLANCE REQUIREMENTS are requirements related to test, calibration, or inspection to verify that the associated TECHNICAL REQUIREMENTS are met.

3/4.0 TECHNICAL REQUIREMENT (TR) AND TECHNICAL SURVEILLANCE REQUIREMENT (TSR) APPLICABILITY

For the purpose of the TRs, the Technical Requirements Manual (TRM) terms specified below are considered similar to the listed Technical Specification terms:

Technical Specification Term	Technical Requirements Manual Term
Technical Specifications (TS)	Technical Requirements Manual (TRM)
Limiting Condition for Operation (LCO)	TECHNICAL REQUIREMENT (TR)
Surveillance Requirement (SR)	TECHNICAL SURVEILLANCE REQUIREMENT (TSR)
Specification	Requirement

TECHNICAL REQUIRMENT

TR 3.0.1 Compliance with the TRs contained in the succeeding requirements is required during the OPERATIONAL MODES or other conditions specified therein; except that upon failure to meet the TR, the associated ACTION requirements shall be met.

TR 3.0.2 Noncompliance with a requirement shall exist when the requirements of the TR and associated ACTION requirements are not met within the specified time intervals, except as provided in TR 3.0.6. If the TR is restored prior to expiration of the specified time intervals, completion of the ACTION requirements is not required.

TR 3.0.3 When a TR is not met, except as provided in the associated ACTION requirements, the unit shall be placed in a safe condition as determined by the Operational Decision Making process. Corrective action shall be initiated in accordance with the corrective action program.

TR 3.0.4 Entry into an OPERATIONAL MODE or specified condition may be made in accordance with ACTION requirements when conformance to them permits continued operation of the facility for an unlimited period of time. This provision shall not prevent passage through or to OPERATIONAL MODES as required to comply with ACTION requirements or that is part of a shutdown of the unit.

3/4.0 TECHNICAL REQUIREMENT (TR) AND TECHNICAL SURVEILLANCE REQUIREMENT (TSR) APPLICABILITY

TECHNICAL REQUIRMENT

TR 3.0.5 When a system, subsystem, train, component or device is determined to be nonfunctional solely because its emergency power source is nonfunctional, or solely because its normal power source is nonfunctional, it may be considered FUNCTIONAL for the purpose of satisfying the requirements of its applicable TR, provided: (1) its corresponding normal or emergency power source is FUNCTIONAL; and (2) all of its redundant system(s), subsystem(s), train(s), component(s) and device(s) are FUNCTIONAL, or likewise satisfy the requirements of this requirement. Unless both conditions (1) and (2) are satisfied, the unit shall be placed in a safe condition as determined by the Operational Decision Making process. Corrective action shall be initiated in accordance with the corrective action program.

This TR is not applicable in MODES 5 or 6.

TR 3.0.6 Equipment removed from service or declared nonfunctional to comply with ACTIONS may be returned to service under administrative control solely to perform testing required to demonstrate its FUNCTIONALITY or the FUNCTIONALITY of other equipment. This is an exception to TR 3.0.2 for the system returned to service under administrative control to perform the testing required to demonstrate FUNCTIONALITY.

TECHNICAL SURVEILLANCE REQUIREMENTS

TSR 4.0.1 TSRs shall be met during the OPERATIONAL MODES or other conditions specified for individual TRs unless otherwise stated in an individual TSR.

Failure to meet a TSR, whether such failure is experienced during the performance of the TSR or between performances of the TSR, shall be failure to meet the TR. Failure to perform a TSR within the specified TSR interval shall be failure to meet the TR except as provided in TSR 4.0.3. TSRs do not have to be performed on nonfunctional equipment or variables outside specified limits.

TSR 4.0.2 Each TSR shall be performed within the specified time interval with a maximum allowable extension not to exceed 25% of the surveillance time interval.

TSR 4.0.3 If it is discovered that a TSR was not performed within its specified surveillance interval, then compliance with the requirement to declare the TR not met may be delayed, from the time of discovery, up to 24 hours or up to the limit of the specified surveillance interval, whichever is greater. This delay period is permitted to allow performance of the TSR. A risk evaluation shall be performed for any TSR delayed greater than 24 hours and the risk impact shall be managed.

3/4.0 TECHNICAL REQUIREMENT (TR) AND TECHNICAL SURVEILLANCE REQUIREMENT (TSR) APPLICABILITY

TECHNICAL SURVEILLANCE REQUIREMENTS

If the TSR is not performed within the delay period, the TR must immediately be declared not met, and the applicable ACTION(s) must be entered.

When the TSR is performed within the delay period and the TSR is not met, the TR must immediately be declared not met, and the applicable ACTION(s) must be entered.

TSR 4.0.4 Entry into an OPERATIONAL MODE or other specified condition shall not be made unless the TSR(s) associated with the TR have been performed within the stated TSR interval or as otherwise specified. This provision shall not prevent passage through or to OPERATIONAL MODES as required to comply with ACTION requirements or that is part of a shutdown of the unit.

BASES:

TR 3.0.1 through 3.0.4 establish the general requirements applicable to TRs.

TR 3.0.1 establishes the Applicability statement within each individual TR as the requirement for when (i.e., in which OPERATIONAL MODES or other specified conditions) conformance to the TR is required for safe operation of the facility. The ACTION requirements establish those remedial measures that must be taken within specified time limits when the requirements of a TR are not met.

There are two basic types of ACTION requirements. The first specifies the remedial measures that permit continued operation of the facility that is not further restricted by the time limits of the ACTION requirements. In this case, conformance to the ACTION requirements provides an acceptable level of safety for unlimited continued operation as long as the ACTION requirements continue to be met. The second type of ACTION requirement specifies a time limit in which conformance to the conditions of the TR must be met. This time limit is the allowable outage time to restore a nonfunctional system or component to FUNCTIONAL status or for restoring parameters within specified limits. If these actions are not completed within the allowable outage time limits, the unit shall be placed in a safe condition as determined by the Operational Decision Making process and corrective action shall be initiated in accordance with the corrective action program. It is not intended that the ACTION requirements be used as an operational convenience that permits (routine) voluntary removal of a system(s) or component(s) from service in lieu of other alternatives that would not result in redundant systems or components being nonfunctional.

3/4.0 TECHNICAL REQUIREMENT (TR) AND TECHNICAL SURVEILLANCE REQUIREMENT (TSR) APPLICABILITY

TECHNICAL SURVEILLANCE REQUIREMENTS

The specific time limits of the ACTION requirements are applicable from the point in time it is identified that a TR is not met. The time limits of the ACTION requirements are also applicable when a system or component is removed from service for surveillance testing or investigation of operational problems. Individual TRs may include a specified time limit for the completion of a TSR when equipment is removed from service. In this case, the allowable outage time limits of ACTION requirements are applicable when this limit expires if the TSR has not been completed.

TR 3.0.2 establishes that noncompliance with a TR exists when the requirements of the TR are not met and the associated ACTION requirements have not been implemented within the specified time interval. The purpose of this TR is to clarify that (1) implementation of the ACTION requirements within the specified time interval constitutes compliance with a TR and (2) completion of the remedial measures of the ACTION requirements is not required when compliance with a TR is restored within the time interval specified in the associated ACTION requirements.

TR 3.0.3 establishes the ACTION requirements that must be implemented when a TR is not met and the condition is not specifically addressed by the associated ACTION requirements. The purpose of this TR is to delineate the ACTIONS when plant operation cannot be maintained within the limits of safe operation defined by the TR and its ACTION requirements. It is not intended to be used as an operational convenience that permits (routine) voluntary removal of redundant systems or components from service in lieu of other alternatives that would not result in redundant systems or components being nonfunctional.

TR 3.0.4 establishes limitations on MODE changes when a TR is not met. It precludes placing the facility in a higher MODE of operation when the requirements for a TR are not met and continued noncompliance to these conditions would result in a shutdown to comply with the ACTION requirements if a change in MODES were permitted. The purpose of this specification is to ensure that facility operation is not initiated or that higher MODES of operation are not entered when corrective action is being taken to obtain compliance with a requirement by restoring equipment to FUNCTIONAL status or parameters to specified limits. Compliance with ACTION requirements that permit continued operation of the facility for an unlimited period of time provides an acceptable level of safety for continued operation without regard to the status of the plant before or after a MODE change. Therefore, in this case, entry into an OPERATIONAL MODE or other specified condition may be made in accordance with the provision of the ACTION requirements. The provisions of this specification should not, however, be interpreted as endorsing the failure to exercise good practice in restoring systems or components to FUNCTIONAL status before plant STARTUP.

When a shutdown is required as determined by the Operational Decision Making process, the provisions of TR 3.0.4 do not apply because they would delay placing the facility in a lower MODE of operation.

3/4.0 TECHNICAL REQUIREMENT (TR) AND TECHNICAL SURVEILLANCE REQUIREMENT (TSR) APPLICABILITY

TECHNICAL SURVEILLANCE REQUIREMENTS

TR 3.0.5 delineates what additional conditions must be satisfied to permit operation to continue, consistent with the ACTION statements for power sources, when a normal or emergency power source is nonfunctional. It specifically prohibits operation when one division is nonfunctional because its normal or emergency power source is nonfunctional and a system, subsystem, train, component or device in another division is nonfunctional for another reason.

The provisions of this TR permit the ACTION statements associated with individual systems, subsystems, trains, components, or devices to be consistent with the ACTION statements of the associated electrical power source. It allows operation to be governed by the time limits of the ACTION statement associated with the TR for the normal or emergency power source, not the individual ACTION statements for each system, subsystem, train, component or device that is determined to be nonfunctional solely because of the nonfunctionality of its normal emergency power source.

In MODES 5 and 6 TR 3.0.5 is not applicable, and thus the individual ACTION statements for each applicable TR in these MODES must be adhered to.

TR 3.0.6 establishes the allowance for restoring equipment to service under administrative controls when it has been removed from service or declared nonfunctional to comply with ACTIONS. The sole purpose of this TR is to provide an exception to TR 3.0.2 (e.g., to not comply with the applicable required ACTION(s)) to allow the performance of TSRs to demonstrate:

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

b. The FUNCTIONALITY of other equipment.

The administrative controls ensure the time the equipment is returned to service in conflict with the requirements of the ACTIONS is limited to the time absolutely necessary to perform the allowed TSRs. The TR does not provide time to perform any other preventive or corrective maintenance.

TSR 4.0.1 through 4.0.4 establish the general requirements applicable to TSRs.

TSR 4.0.1 establishes the requirement that TSRs must be met during the OPERATIONAL MODES or other conditions for which the requirements of the TR apply unless otherwise stated in an individual TSR. The purpose of this requirement is to ensure that TSRs are performed to verify the FUNCTIONALITY of systems and components and that parameters are within specified limits to ensure safe operation of the facility when the plant is in a MODE or other specified condition for which the associated TR are applicable. Failure to meet a TSR within the specified TSR interval, in accordance with TSR 4.0.2 constitutes a failure to meet a TR.

3/4.0 TECHNICAL REQUIREMENT (TR) AND TECHNICAL SURVEILLANCE REQUIREMENT (TSR) APPLICABILITY

TECHNICAL SURVEILLANCE REQUIREMENTS

Systems and components are assumed to be FUNCTIONAL when the associated TSRs have been met. Nothing in this requirement, however, is to be construed as implying that systems or components are FUNCTIONAL when either:

a. The system or components are known to be nonfunctional, although still meeting the TSRs or

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

TSRs do not have to be performed when the facility is in an OPERATIONAL MODE or other specified conditions for which the requirements of the associated TR do not apply unless otherwise specified. The TSRs associated with a Special Test Exception are only applicable when the Special Test Exception is used as an allowable exception to the requirements of a TR.

Unplanned events may satisfy the requirements (including applicable acceptance criteria) for a given TSR. In this case, the unplanned event may be credited as fulfilling the performance of the TSR. This allowance includes those TSRs whose performance is normally precluded in a given MODE or other specified condition.

TSRs, including TSRs invoked by ACTION requirements, do not have to be performed on nonfunctional equipment because the ACTIONS define the remedial measures that apply. TSRs have to be met and performed in accordance with TSR 4.0.2, prior to returning equipment to FUNCTIONAL status.

Upon completion of maintenance, appropriate post maintenance testing is required to declare equipment FUNCTIONAL. This includes ensuring applicable TSRs are not failed and their most recent performance is in accordance with TSR 4.0.2. 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 FUNCTIONAL 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.

TSR 4.0.2 establishes the limit for which the specified time interval for TSRs may be extended. It permits an allowable extension of the normal TSR interval to facilitate TSR scheduling and consideration of plant operating conditions that may not be suitable for conducting the TSR, e.g., transient conditions or other ongoing TSR or maintenance activities. It also provides flexibility to accommodate the length of a fuel cycle for TSRs that are performed at each REFUELING outage and are specified with an 18-month TSR interval. It is not intended that this provision be used repeatedly as a convenience to extend TSR intervals beyond that specified for TSRs that are not performed during

3/4.0 TECHNICAL REQUIREMENT (TR) AND TECHNICAL SURVEILLANCE REQUIREMENT (TSR) APPLICABILITY

TECHNICAL SURVEILLANCE REQUIREMENTS

REFUELING outages. The limitation of TSR 4.0.2 is based on engineering judgment and the recognition that the most probable result of any particular TSR being performed is the verification of conformance with the TSR. This provision is sufficient to ensure that the reliability ensured through TSR activities is not significantly degraded beyond that obtained from the specified TSR interval.

TSR 4.0.3 establishes the flexibility to defer declaring affected equipment nonfunctional or an affected variable outside the specified limits when a TSR has not been completed within the specified TSR interval. A delay period of up to 24 hours or up to the limit of the specified TSR interval, whichever is greater, applies from the point in time that it is discovered that the TSR has not been performed in accordance with TSR 4.0.2,and not at the time that the specified TSR interval was not met.

This delay period provides adequate time to complete TSRs that have been missed. This delay period permits the completion of a TSR before complying with ACTION requirements or other remedial measures that might preclude completion of the TSR. The basis for this delay period includes consideration of unit conditions, adequate planning, availability of personnel, the time required to perform the TSR, the safety significance of the delay in completing the required TSR, and the recognition that the most probable result of any particular TSR being performed is the verification of conformance with the requirements.

When a TSR, with a TSR interval based not on time intervals, but upon specified unit conditions, operating situations, or requirements of regulations, (e.g., prior to entering MODE 1 after each fuel loading, or in accordance with 10 CFR 50, Appendix J, as modified by approved exemptions, etc.) is discovered to not have been performed when specified, TSR 4.0.3 allows for the full delay period of up to the specified TSR interval to perform the TSR. However, since there is not a time interval specified, the missed TSR should be performed at the first reasonable opportunity.

TSR 4.0.3 provides a time limit for, and allowances for the performance of, TSRs that become applicable as a consequence of MODE changes imposed by ACTION requirements.

Failure to comply with specified TSR intervals for the TSRs is expected to be an infrequent occurrence. Use of the delay period established by TSR 4.0.3 is a flexibility that is not intended to be used as an operational convenience to extend TSR intervals. While up to 24 hours or the limit of the specified TSR interval is provided to perform the missed TSR, it is expected that the missed TSR will be performed at the first reasonable opportunity. The determination of the first reasonable opportunity should include consideration of the impact on plant risk (from delaying the TSR as well as any plant configuration changes required) and impact on any analysis assumptions, in addition to unit conditions, planning, availability of personnel, and the time required to perform the TSR. This risk impact should

3/4.0 TECHNICAL REQUIREMENT (TR) AND TECHNICAL SURVEILLANCE REQUIREMENT (TSR) APPLICABILITY

TECHNICAL SURVEILLANCE REQUIREMENTS

be managed through the program in place to implement 10 CFR 50.65(a)(4) and its implementation guidance, NRC Regulatory Guide 1.182, “Assessing and Managing Risk Before Maintenance Activities at Nuclear Power Plants.” This Regulatory Guide addresses consideration of temporary and aggregate risk impacts, determination of risk management action thresholds, and risk management action up to and including plant shutdown. The missed TSR should be treated as an emergent condition as discussed in the Regulatory Guide. The risk evaluation may use quantitative, qualitative, or blended methods. The degree of depth and rigor of the evaluation should be commensurate with the importance of the component. If the results of the risk evaluation determine the risk increase is significant, this evaluation should be used to determine the safest course of action. All missed TSRs will be placed in the licensee’s Corrective Action Program.

If a TSR is not completed within the allowed delay period, then the equipment is considered nonfunctional or the variable is considered outside the specified limits and the entry into the ACTION requirements for the applicable TR begins immediately upon expiration of the delay period. If a TSR is failed within the delay period, then the equipment is nonfunctional, or the variable is outside the specified limits and entry into the ACTION requirements for the applicable TR begins immediately upon the failure of the TSR.

Completion of the TSR within the delay period allowed by this TSR, or within the Allowed Outage Time of the applicable ACTIONS, restores compliance with TSR 4.0.1.

TSR 4.0.4 establishes the requirement that all applicable TSRs must be met before entry into an OPERATIONAL MODE or other condition of operation specified in the Applicability statement. The purpose of this specification is to ensure that system and component FUNCTIONALITY requirements or parameter limits are met before entry into a MODE or condition for which these systems and components ensure safe operation of the facility. This provision applies to changes in OPERATIONAL MODES or other specified conditions associated with plant shutdown as well as STARTUP.

Under the provisions of this specification, the applicable TSRs must be performed within the specified TSR interval to ensure that the TRs are met during initial plant STARTUP following a plant outage.

When a shutdown is required as determined by the Operational Decision Making process, the provisions of TSR 4.0.4 do not apply because this would delay placing the facility in a lower MODE of operation.

3/4.1 REACTIVITY CONTROL SYSTEM

3/4.1.2 BORATION SYSTEMS

FLOW PATHS - SHUTDOWN

TECHNICAL REQUIRMENT

3.1.2.1 As a minimum, one of the following boron injection flow paths shall be FUNCTIONAL:

a. A flow path with a piping temperature of greater than 55°F from the boric acid storage tank via either a boric acid pump or a gravity feed connection and a charging pump to the Reactor Coolant System if only the boric acid storage tank in TECHNICAL REQUIREMENT 3.1.2.7.a is FUNCTIONAL, or

b. The flow path from the refueling water storage tank via a charging pump to the Reactor Coolant System if only the refueling water storage tank in TECHNICAL REQUIREMENT 3.1.2.7.b is FUNCTIONAL.

APPLICABILITY: MODES 5 and 6.

ACTION:

With none of the above flow paths FUNCTIONAL, suspend all operations involving CORE ALTERATIONS and positive reactivity additions that could cause introduction of coolant into the RCS with boron concentration less than required to meet Technical Specification 3.1.1.1 in MODE 5 or Technical Specification 3.9.1 in MODE 6 until at least one injection path is restored to FUNCTIONAL status.

TECHNICAL SURVEILLANCE REQUIREMENTS

4.1.2.1 At least one of the above required flow paths shall be demonstrated FUNCTIONAL:

a. At least once per 31 days by verifying each manual, power operated, and automatic valve in the boron injection flow path that is not locked, sealed or otherwise secured in position, is in the correct position.

b. At least once per 24 hours by verifying that the boric acid piping temperature is greater than 55°F.

3/4.1 REACTIVITY CONTROL SYSTEM

3/4.1.2 BORATION SYSTEMS

FLOW PATHS - SHUTDOWN

BASES:

The boron injection system ensures that negative reactivity control is available during each MODE of facility operation. The components required to perform this function include 1) borated water sources, 2) charging pumps, 3) separate flow paths, and 4) boric acid pumps.

With the RCS temperature below 200°F, one injection system is acceptable without single failure consideration on the basis of the stable reactivity condition of the reactor and the additional restrictions prohibiting CORE ALTERATIONS and operations that would dilute the RCS boron concentration by introduction of coolant into the RCS with boron concentration less than required to meet the minimum boron concentration as described in the Technical Specifications in the event the single injection system becomes nonfunctional. The MODES 5 and 6 ACTION requirement to suspend positive reactivity additions does not preclude completion of actions to establish a safe conservative plant condition, or to maintain or increase reactor vessel inventory provided the boron concentration of the makeup water source is greater than or equal to the boron concentration for the required SHUTDOWN MARGIN (SDM).

TECHNICAL SURVEILLANCE REQUIREMENT 4.1.2.1.a verifies the correct alignment for manual, power operated, and automatic valves in the boration flow paths to provide assurance that the proper flow paths will exist to establish boric acid flow to the Reactor Coolant System (RCS). This surveillance does not apply to valves that are locked, sealed, or otherwise secured in position, since these valves were verified to be in the correct position prior to locking, sealing, or securing. A valve that receives an actuation signal is allowed to be in a non-accident position provided the valve automatically repositions within the proper stroke time. This surveillance does not require any testing or valve manipulation. Rather, it involves verification that those valves capable of being mispositioned are in the correct position. The 31 day frequency has been shown to be acceptable through operating experience.

TECHNICAL SURVEILLANCE REQUIREMENT 4.1.2.1.b verifies the temperature of the boric acid piping to ensure FUNCTIONALITY of the boration flow path. Ambient air temperature in the vicinity of the boric acid piping on elevations (-)5’ -0” and (-)25’ -6” is a valid indication of piping temperature. The 24 hour frequency is sufficient to identify temperature changes that approach the limit.

REFERENCE:

1. License Amendment 283
2. License Amendment 293

3/4.1 REACTIVITY CONTROL SYSTEM

FLOW PATHS - OPERATING

TECHNICAL REQUIREMENT

3.1.2.2 The following boron injection flowpaths to the RCS via the charging pump(s) shall be FUNCTIONAL:

a. At least one of the following combinations:

1. One boric acid storage tank, with the tank contents in accordance with Figure 3.1-1 and a piping temperature greater than 55°F, its associated gravity feed valve, and boric acid pump.

2. Two boric acid storage tanks, with the weighted average of the combined contents of the tanks in accordance with Figure 3.1-1 and a piping temperature greater than 55°F, their associated gravity feed valves, and boric acid pumps.

3. Two boric acid storage tanks, each with contents in accordance with Figure 3.1-1 and a piping temperature greater than 55°F, at least one gravity feed valve, and at least one boric acid pump.

b. The flow path from a FUNCTIONAL refueling water storage tank, as per TECHNICAL REQUIREMENT 3.1.2.8.b.

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

ACTION:

With fewer than the above required boron injection flow paths to the Reactor Coolant System FUNCTIONAL, manage the risk impact in accordance with the requirements of 10 CFR 50.65(a)(4).

TECHNICAL SURVEILLANCE REQUIREMENTS

4.1.2.2 The above required flow paths shall be demonstrated FUNCTIONAL:

a. At least once per 31 days by verifying each manual, power operated, and automatic valve in the boron injection flow path that is not locked, sealed or otherwise secured in position, is in the correct position.

b. At least once per 24 hours by verifying that the boric acid piping temperature is greater than 55°F.

3/4.1 REACTIVITY CONTROL SYSTEM

FLOW PATHS - OPERATING

TECHNICAL SURVEILLANCE REQUIREMENTS

c. At least once per 36 months, by verifying each valve in the required boron injection flowpaths that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal. |

BASES:

The boron injection system ensures that negative reactivity control is available during each MODE of facility operation. The components required to perform this function include 1) borated water sources, 2) charging pumps, 3) separate flow paths, and 4) boric acid pumps.

With the RCS average temperature above 200°F, a minimum of two separate and redundant boron injection flowpaths are provided to ensure single FUNCTIONAL capability in the event an assumed failure of a pump or valve renders one of the flowpaths nonfunctional. Redundant flow paths from the boric acid storage tanks are achieved through boric acid pumps, gravity feed lines and charging pumps. Redundant flow paths from the refueling water storage tank are achieved through charging pump flow path guaranteed by TECHNICAL REQUIREMENT 3.1.2.2 and the HPSI flow path guaranteed by Technical Specification 3.5.2 and 3.5.3.

Paragraph (a)(4) of 10CFR50.65 “Maintenance Rule” requires that licensees assess and manage the increase in risk that may result from proposed maintenance activities, including out of service Structures, Systems, and Components (SSCs). Management of risk involves consideration of incremental and aggregate impacts. The incremental risk increase is predominantly assessed using quantitative PRA methods, which measure the effect on core damage frequency and large early release frequency associated with the plant configuration. The risk increase is then managed in accordance with action thresholds defined by NUMARC 93-01. The aggregate impact is controlled by meeting Maintenance Rule requirements for establishing and meeting SSC performance criteria. These requirements include consideration of the risk significance of SSCs in establishing performance goals. Significant risk impacts are documented in the corrective action program and assessed as appropriate.

TECHNICAL SURVEILLANCE REQUIREMENT 4.1.2.2.a verifies the correct alignment for manual, power operated, and automatic valves in the boration flow paths and provides assurance that the proper flow paths will exist to establish boric acid flow to the Reactor Coolant System (RCS). This surveillance does not apply to valves that are locked, sealed, or otherwise secured in position, since these valves were verified to be in the correct position prior to locking, sealing, or securing. A valve that receives an actuation signal is allowed to be in a non-accident position provided the valve

3/4.1 REACTIVITY CONTROL SYSTEM

FLOW PATHS - OPERATING

TECHNICAL SURVEILLANCE REQUIREMENTS

automatically repositions within the proper stroke time. This surveillance does not require any testing or valve manipulation. Rather, it involves verification that those valves capable of being mispositioned are in the correct position. The 31-day frequency has been shown to be acceptable through operating experience.

TECHNICAL SURVEILLANCE REQUIREMENT 4.1.2.2.b verifies the temperature of the boric acid piping to ensure FUNCTIONALITY of the boration flow path. Ambient air temperature in the vicinity of the boric acid piping on elevations (-)5’ -0” and (-)25’ -6” is a valid indication of piping temperature. The 24 hour frequency is sufficient to identify temperature changes that approach the limit.

TECHNICAL SURVEILLANCE REQUIREMENT 4.1.2.2.c verifies the ability of the valves in the boration injection flowpath to actuate to the correct position on an actual or simulated actuation signal. The 36 month frequency is consistent with other Millstone Power Station Unit 2 actuation testing requirements and with standard industry practices and guidelines.

REFERENCE:

1. License Amendment 283

3/4.1 REACTIVITY CONTROL SYSTEM

CHARGING PUMP - SHUTDOWN

TECHNICAL REQUIREMENT

3.1.2.3 At least one charging pump in the boron injection flow path required FUNCTIONAL pursuant to TECHNICAL REQUIREMENT 3.1.2.1 shall be FUNCTIONAL.

APPLICABILITY: MODES 5 and 6.

ACTION:

With no charging pump FUNCTIONAL, suspend all operations involving CORE ALTERATIONS and positive reactivity additions that could cause introduction of coolant into the RCS with boron concentration less than required to meet Technical Specification 3.1.1.1 in MODE 5 or Technical Specification 3.9.1 in MODE 6 until one charging pump is restored to FUNCTIONAL status.

TECHNICAL SURVEILLANCE REQUIREMENTS

4.1.2.3 The above required charging pump shall be demonstrated FUNCTIONAL by verifying the delivered flow of the charging pump at the required discharge pressure is greater than or equal to the required flow when tested in accordance with the Inservice Testing (IST) program.

BASES:

The boron injection system ensures that negative reactivity control is available during each MODE of facility operation. The components required to perform this function include 1) borated water sources, 2) charging pumps, 3) separate flow paths, and 4) boric acid pumps.

With the RCS temperature below 200°F, one injection system is acceptable without single failure consideration on the basis of the stable reactivity condition of the reactor and the additional restrictions prohibiting CORE ALTERATIONS and operations that would dilute the RCS boron concentration by introduction of coolant into the RCS with boron concentration less than required to meet the minimum boron concentration as described in the technical specifications in the event the single injection system becomes nonfunctional. The MODES 5 and 6 ACTION requirement to suspend positive reactivity additions does not preclude completion of actions to establish a safe conservative plant condition, or to maintain or increase reactor vessel inventory provided the boron concentration of the makeup water source is greater than or equal to the boron concentration for the required SHUTDOWN MARGIN (SDM).

3/4.1 REACTIVITY CONTROL SYSTEM

CHARGING PUMP - SHUTDOWN

TECHNICAL SURVEILLANCE REQUIREMENTS

TECHNICAL SURVEILLANCE REQUIREMENT 4.1.2.3, which verifies charging pump flow and discharge pressure, is a normal test of charging pump performance required by the ASME OM Code. The frequency for this surveillance is a Code requirement governed by the IST program. Such inservice testing detects component degradation and incipient failures.

REFERENCE:

1. License Amendment 283

2. License Amendment 293

3/4.1 REACTIVITY CONTROL SYSTEM

CHARGING PUMPS - OPERATING

TECHNICAL REQUIREMENT

3.1.2.4 At least two charging pumps shall be FUNCTIONAL.

APPLICABILITY: MODES 1, 2, 3 and 4*.

ACTION:

With only one charging pump FUNCTIONAL, manage the risk impact in accordance with the requirement of 10 CFR 50.65(a)(4).

TECHNICAL SURVEILLANCE REQUIREMENTS

4.1.2.4.1 Two charging pumps shall be demonstrated FUNCTIONAL by verifying the delivered flow of the charging pump at the required discharge pressure is greater than or equal to the required flow when tested in accordance with the Inservice Testing (IST) program.

4.1.2.4.2 Two charging pumps shall be demonstrated FUNCTIONAL at least once per 36 months by verifying that each charging pump NOT in Pull-To-Lock starts automatically on an actual or simulated actuation signal.

BASES:

The boron injection system ensures that negative reactivity control is available during each MODE of facility operation. The components required to perform this function include 1) borated water sources, 2) charging pumps, 3) separate flow paths, and 4) boric acid pumps.

With the RCS average temperature above 200 °F, a minimum of two separate and redundant boron injection flowpaths are provided to ensure single FUNCTIONAL capability in the event an assumed failure of a pump or valve renders one of the flowpaths nonfunctional. Redundant flow paths from the boric acid storage tanks are

* The provisions of TECHNICAL REQUIREMENT 3.0.4 and 4.0.4 are not applicable for entry into MODE 4 for the charging pump that is nonfunctional pursuant to Technical Specification 3.4.9.3 provided the charging pump is restored to FUNCTIONAL status within at least 4 hours or prior to entering MODE 3, whichever comes first.

3/4.1 REACTIVITY CONTROL SYSTEM

CHARGING PUMPS - OPERATING

TECHNICAL SURVEILLANCE REQUIREMENTS

achieved through Boric Acid Pumps, gravity feed lines and Charging Pumps. Redundant flow paths from the Refueling Water Storage Tank are achieved through Charging Pump flow path guaranteed by TECHNICAL REQUIREMENT 3.1.2.2 and the HPSI flow path guaranteed by Technical Specification 3.5.2 and 3.5.3.

Paragraph (a)(4) of 10CFR50.65 “Maintenance Rule” requires that licensees assess and manage the increase in risk that may result from proposed maintenance activities, including out of service Structures, Systems, and Components (SSCs). Management of risk involves consideration of incremental and aggregate impacts. The incremental risk increase is predominantly assessed using quantitative PRA methods, which measure the effect on core damage frequency and large early release frequency associated with the plant configuration. The risk increase is then managed in accordance with action thresholds defined by NUMARC 93-01. The aggregate impact is controlled by meeting Maintenance Rule requirements for establishing and meeting SSC performance criteria. These requirements include consideration of the risk significance of SSCs in establishing performance goals. Significant risk impacts are documented in the corrective action program and assessed as appropriate.

TECHNICAL SURVEILLANCE REQUIREMENT 4.1.2.4.1, which verifies charging pump flow at the design discharge pressure, is a normal test of charging pump performance required by the ASME OM Code. The frequency for this surveillance is a Code requirement governed by the IST program. Such inservice testing detects component degradation and incipient failures.

TECHNICAL SURVEILLANCE REQUIREMENT 4.1.2.4.2 verifies the ability of the charging pumps which are NOT in Pull-To-Lock to automatically start on an actual or simulated actuation signal. The 36 month frequency is consistent with other Millstone Power Station Unit 2 actuation testing requirements and with standard industry practices and guidelines.

REFERENCE:

1. License Amendment 283

2. DCR M2-07-002, “Replacement of the Unit 2 Charging Pumps Discharge Pulsation Dampeners”

3/4.1 REACTIVITY CONTROL SYSTEM

BORIC ACID PUMPS - SHUTDOWN

TECHNICAL REQUIREMENT

3.1.2.5 At least one boric acid pump shall be FUNCTIONAL if only the flow path through the boric acid pump in TECHNICAL REQUIREMENT 3.1.2.1.a is FUNCTIONAL.

APPLICABILITY: MODES 5 and 6.

ACTION:

With no boric acid pump FUNCTIONAL as required to complete the flow path of TECHNICAL REQUIREMENT 3.1.2.1.a, suspend all operations involving CORE ALTERATIONS and positive reactivity additions that could cause introduction of coolant into the RCS with boron concentration less than required to meet Technical Specification 3.1.1.1 in MODE 5 or Technical Specification 3.9.1 in MODE 6 until at least one boric acid pump is restored to FUNCTIONAL status.

TECHNICAL SURVEILLANCE REQUIREMENTS

4.1.2.5 One boric acid pump shall be demonstrated FUNCTIONAL by verifying the developed head of the boric acid pump at the flow test point is greater than or equal to the required developed head when tested in accordance with the Inservice Testing (IST) program.

BASES:

The boron injection system ensures that negative reactivity control is available during each MODE of facility operation. The components required to perform this function include 1) borated water sources, 2) charging pumps, 3) separate flow paths, and 4) boric acid pumps.

With the RCS temperature below 200°F, one injection system is acceptable without single failure consideration on the basis of the stable reactivity condition of the reactor and the additional restrictions prohibiting CORE ALTERATIONS and operations that would dilute the RCS boron concentration by introduction of coolant into the RCS with boron concentration less than required to meet the minimum boron concentration as described in the Technical Specifications in the event the single injection system becomes nonfunctional. The MODES 5 and 6 ACTION requirement to suspend positive reactivity additions does not preclude completion of actions to establish a safe conservative plant condition, or to maintain or increase reactor vessel inventory provided the boron concentration of the makeup water source is greater than or equal to the boron concentration for the required SHUTDOWN MARGIN (SDM).

3/4.1 REACTIVITY CONTROL SYSTEM

BORIC ACID PUMPS - SHUTDOWN

TECHNICAL SURVEILLANCE REQUIREMENTS

TECHNICAL SURVEILLANCE REQUIREMENT 4.1.2.5, which verifies boric acid pump design flow, is a normal test of boric acid pump performance required by the ASME OM Code. A quarterly frequency for such tests is a Code requirement. Such inservice testing detects component degradation and incipient failures.

REFERENCE:

1. License Amendment 283

2. License Amendment 293

3/4.1 REACTIVITY CONTROL SYSTEM

BORIC ACID PUMPS - OPERATING

TECHNICAL REQUIREMENT

3.1.2.6 The boric acid pump(s) in the boron injection flow path(s) required FUNCTIONAL pursuant to TECHNICAL REQUIREMENT 3.1.2.2.a shall be FUNCTIONAL if the flow path through the boric acid pump in TECHNICAL REQUIREMENT 3.1.2.2.a is FUNCTIONAL.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With the boric acid pump(s) required for the boron injection flow path(s) pursuant to TECHNICAL REQUIREMENT 3.1.2.2.a nonfunctional, manage the risk impact in accordance with the requirements of 10CFR50.65(a)(4).

TECHNICAL SURVEILLANCE REQUIREMENTS

4.1.2.6.1 The boric acid pump(s) shall be demonstrated FUNCTIONAL by verifying the developed head of each boric acid pump at the flow test point is greater than or equal to the required developed head when tested in accordance with the Inservice Testing (IST) program.

4.1.2.6.2 Two boric acid pumps shall be demonstrated FUNCTIONAL at least once per 36 months by verifying that each boric acid pump starts automatically on an actual or simulated actuation signal.

BASES:

The boron injection system ensures that negative reactivity control is available during each MODE of facility operation. The components required to perform this function include 1) borated water sources, 2) charging pumps, 3) separate flow paths, and 4) boric acid pumps.

With the RCS average temperature above 200°F, a minimum of two separate and redundant boron injection flowpaths are provided to ensure single FUNCTIONAL capability in the event an assumed failure of a pump or valve renders one of the flowpaths nonfunctional. Redundant flow paths from the boric acid storage tanks are achieved through boric acid pumps, gravity feed lines and charging pumps. Redundant flow paths from the refueling water storage tank are achieved through charging pump flow path guaranteed by TECHNICAL REQUIREMENT 3.1.2.2 and the HPSI flow path guaranteed by Technical Specification 3.5.2 and 3.5.3.

3/4.1 REACTIVITY CONTROL SYSTEM

BORIC ACID PUMPS - OPERATING

TECHNICAL SURVEILLANCE REQUIREMENTS

Paragraph (a)(4) of 10CFR50.65 “Maintenance Rule” requires that licensees assess and manage the increase in risk that may result from proposed maintenance activities, including out of service Structures, Systems, and Components (SSCs). Management of risk involves consideration of incremental and aggregate impacts. The incremental risk increase is predominantly assessed using quantitative PRA methods, which measure the effect on core damage frequency and large early release frequency associated with the plant configuration. The risk increase is then managed in accordance with action thresholds defined by NUMARC 93-01. The aggregate impact is controlled by meeting Maintenance Rule requirements for establishing and meeting SSC performance criteria. These requirements include consideration of the risk significance of SSCs in establishing performance goals. Significant risk impacts are documented in the corrective action program and assessed as appropriate.

TECHNICAL SURVEILLANCE REQUIREMENT 4.1.2.6.1, which verifies boric acid pump developed head at the flow test point, is a normal test of boric acid pump performance required by the ASME OM Code. The frequency for this surveillance is a Code requirement governed by the IST Program. Such inservice testing detects component degradation and incipient failures.

TECHNICAL SURVEILLANCE REQUIREMENT 4.1.2.6.2 verifies the ability of the boric acid pumps to automatically start on an actual or simulated actuation signal. The 36 month frequency is consistent with other Millstone Power Station Unit 2 actuation testing requirements and with standard industry practices and guidelines.

REFERENCE:

1. License Amendment 283

3/4.1 REACTIVITY CONTROL SYSTEM

BORATED WATER SOURCES - SHUTDOWN

TECHNICAL REQUIREMENT

3.1.2.7 As a minimum, one of the following borated water sources shall be FUNCTIONAL:

a. One boric acid storage tank with:

1. A concentration between 2.5 and 3.5 weight percent boric acid.
2. A minimum volume of 3750 gallons, and
3. A minimum boric acid storage tank temperature of 55°F.

or b. The refueling water storage tank with:

1. A minimum contained volume of 57,300 gallons,
2. A minimum boron concentration of 1720 ppm when in MODE 5,
3. A minimum boron concentration as defined in Technical Specification 3.9.1 when in MODE 6.
4. A minimum solution temperature of 35°F.

APPLICABILITY: MODES 5 and 6.

ACTION:

With no borated water sources FUNCTIONAL, suspend all operations involving CORE ALTERATIONS and positive reactivity additions that could cause introduction of coolant into the RCS with boron concentration less than required to meet Technical Specification 3.1.1.1 in MODE 5 or Technical Specification 3.9.1 in MODE 6 until at least one borated water source is restored to FUNCTIONAL status.

3/4.1 REACTIVITY CONTROL SYSTEM

BORATED WATER SOURCES - SHUTDOWN

TECHNICAL SURVEILLANCE REQUIREMENTS

4.1.2.7 The above required borated water source shall be demonstrated FUNCTIONAL:

a. By performing the following as appropriate for the tank(s) being credited to satisfy this TRM requirement:

1. Verify boron concentration of the BASTs at least once per 31 days and within 12 hours after each solution volume increase of $\geq$ 1% of indicated tank volume.

2. Verify boron concentration of the RWST at least once per 7 days.

3. Verify water level of both BASTs and the RWST at least once per 7 days.

b. At least once per 24 hours by verifying the RWST temperature when it is the source of borated water and the RWST ambient air temperature is <35°F.

c. At least once per 24 hours by verifying that the Boric Acid Storage Tank temperature is greater than 55°F when it is the source of borated water.

BASES:

The boron injection system ensures that negative reactivity control is available during each MODE of facility operation. The components required to perform this function include 1) borated water sources, 2) charging pumps, 3) separate flow paths, and 4) boric acid pumps.

A minimum boron concentration of 1720 ppm is required in the RWST at all times in order to satisfy safety analysis assumptions for boron dilution incidents and other transients using the RWST as a borated water source as well as the analysis assumption to determine the boration requirement to ensure adequate SHUTDOWN MARGIN.

The boron capability required below 200°F is based upon providing a SHUTDOWN MARGIN (SDM) within the limit specified in the CORE OPERATING LIMITS REPORT at 140°F after xenon decay. This condition requires either 3750 gallons of 2.5% boric acid solution from the boric acid storage tanks or 57,300 gallons of 1720 ppm borated water from the refueling water storage tank.

The maximum boron concentration requirement (3.5%) and the minimum temperature requirement (55°F) for the Boric Acid Storage Tank ensure that boron does not precipitate in the Boric Acid System. The daily surveillance requirement provides sufficient assurance that the temperature of the tank will be maintained higher than 55°F at all times.

3/4.1 REACTIVITY CONTROL SYSTEM

BORATED WATER SOURCES - SHUTDOWN

BASES:

A minimum boron concentration of 1720 ppm is required in the RWST at all times in order to satisfy safety analysis assumptions for boron dilution incidents and other transients using the RWST as a borated water source as well as the analysis assumption to determine the boration requirement to ensure adequate SHUTDOWN MARGIN.

TECHNICAL SURVEILLANCE REQUIREMENT 4.1.2.7.a verifies the boron concentration of the water and the water level of the tank. This assures the availability of the borated water source for boron dilution incidents and other transients using the RWST as a borated water source.

TECHNICAL SURVEILLANCE REQUIREMENT 4.1.2.7.b verifies the RWST temperature is greater than 35°F when it is the source of borated water and the RWST ambient air temperature is less than 35°F.

TECHNICAL SURVEILLANCE REQUIREMENT 4.1.2.7.c verifies the Boric Acid Storage Tank temperature is greater than 55°F when it is the source of borated water. This may be accomplished by verifying that the ambient air temperature in the vicinity of the BAST is greater than 55°F.

REFERENCE:

1. License Amendment 283

2. License Amendment 293

3/4.1 REACTIVITY CONTROL SYSTEMS

BORATED WATER SOURCES - OPERATING

TECHNICAL REQUIREMENT

3.1.2.8 Both of the following borated water sources shall be FUNCTIONAL:

a. At least one of the following Boric Acid Storage Tank(s) (BASTs) combinations:

1. One boric acid storage tank, with the tank contents in accordance with Figure 3.1-1 and a minimum temperature of 55°F, its associated gravity feed valve, and boric acid pump, or

2. Two boric acid storage tanks, with the weighted average of the combined contents of the tanks in accordance with Figure 3.1-1 and a minimum temperature of 55°F, their associated gravity feed valves, and boric acid pumps, or

3. Two boric acid storage tanks, each with contents in accordance with Figure 3.1-1 and a minimum temperature of 55°F, at least one gravity feed valve, and at least one boric acid pump.

and b. The refueling water storage tank with:

1. A minimum contained volume of 370,000 gallons of water,

2. A minimum boron concentration of 1720 ppm,

3. A minimum solution temperature of 50°F when in MODES 1 and 2, and

4. A minimum solution temperature of 35°F when in MODES 3 and 4.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With only one borated water source FUNCTIONAL, manage the risk impact in accordance with the requirements of 10CFR50.65(a)(4).

TECHNICAL SURVEILLANCE REQUIREMENTS

4.1.2.8 Each borated water source shall be demonstrated FUNCTIONAL:

a. By performing the following as appropriate for the tank(s) being credited to satisfy this TRM requirement:

3/4.1 REACTIVITY CONTROL SYSTEMS

BORATED WATER SOURCES - OPERATING

TECHNICAL SURVEILLANCE REQUIREMENTS

1. Verify boron concentration of the BASTs at least once per 31 days and within 12 hours after each solution volume increase of ≥ 1% of indicated tank volume.
2. Verify boron concentration of the RWST at least once per 7 days.
3. Verify water level of both BASTs and the RWST at least once per 7 days.

b. When in MODES 3 and 4, at least once per 24 hours by verifying the RWST temperature is ≥35°F when the RWST ambient air temperature is <35°F.

c. When in MODES 1 and 2, at least once per 24 hours by verifying the RWST temperature is ≥50°F when the RWST ambient air temperature is <50°F.

d. At least once per 24 hours by verifying that the boric acid storage tank temperatures are greater than 55°F.

BASES:

The boron injection system ensures that negative reactivity control is available during each MODE of facility operation. The components required to perform this function include 1) borated water sources, 2) charging pumps, 3) separate flow paths, and 4) boric acid pumps.

The minimum boration capability is sufficient to provide a SHUTDOWN MARGIN within the limits specified in the CORE OPERATING LIMITS REPORT at all temperatures above 200°F. The maximum boration capability requirement occurs at EOL from full power equilibrium xenon conditions and requires an equivalent of 4900 gallons of 3.5% boric acid solution from the boric acid storage tanks plus 15,000 gallons of 1720 ppm borated water from the refueling water storage tank. The refueling water storage tank can also be used alone by feed-and-bleed using well under the 370,000 gallons of 1720 ppm borated water required.

The requirement for a minimum contained volume of 370,000 gallons of borated water in the refueling water storage tank ensures the capability for borating the RCS to the desired level. The specified quantity of borated water is consistent with the ECCS requirements of Technical Specification 3.5.4. Therefore, the larger volume of borated water is specified here too.

3/4.1 REACTIVITY CONTROL SYSTEMS

BORATED WATER SOURCES - OPERATING

TECHNICAL SURVEILLANCE REQUIREMENTS

The analysis to determine the boration requirements assumed that the Reactor Coolant System is borated concurrently with cooldown. In the limiting situation when letdown is not available, the cooldown is assumed to be initiated within 26 hours and cooldown to 220°F, is completed in the next 28 hours.

A minimum boron concentration of 1720 ppm is required in the RWST at all times in order to satisfy safety analysis assumptions for boron dilution incidents and other transients using the RWST as a borated water source as well as the analysis assumption to determine the boration requirement to ensure adequate SHUTDOWN MARGIN.

Paragraph (a)(4) of 10CFR50.65 “Maintenance Rule” requires that licensees assess and manage the increase in risk that may result from proposed maintenance activities, including out of service Structures, Systems, and Components (SSCs). Management of risk involves consideration of incremental and aggregate impacts. The incremental risk increase is predominantly assessed using quantitative PRA methods, which measure the effect on core damage frequency and large early release frequency associated with the plant configuration. The risk increase is then managed in accordance with action thresholds defined by NUMARC 93-01. The aggregate impact is controlled by meeting Maintenance Rule requirements for establishing and meeting SSC performance criteria. These requirements include consideration of the risk significance of SSCs in establishing performance goals. Significant risk impacts are documented in the corrective action program and assessed as appropriate.

TECHNICAL SURVEILLANCE REQUIREMENT 4.1.2.8.a verifies the boron concentration in each water source and the water level in each water source. This assures the availability of the borated water source for boron dilution incidents and other transients using the BAST and RWST as a borated water sources.

TECHNICAL SURVEILLANCE REQUIREMENT 4.1.2.8.b verifies the RWST temperature is greater than 35°F when in MODES 3 and 4 and the RWST ambient air temperature is less than 35°F.

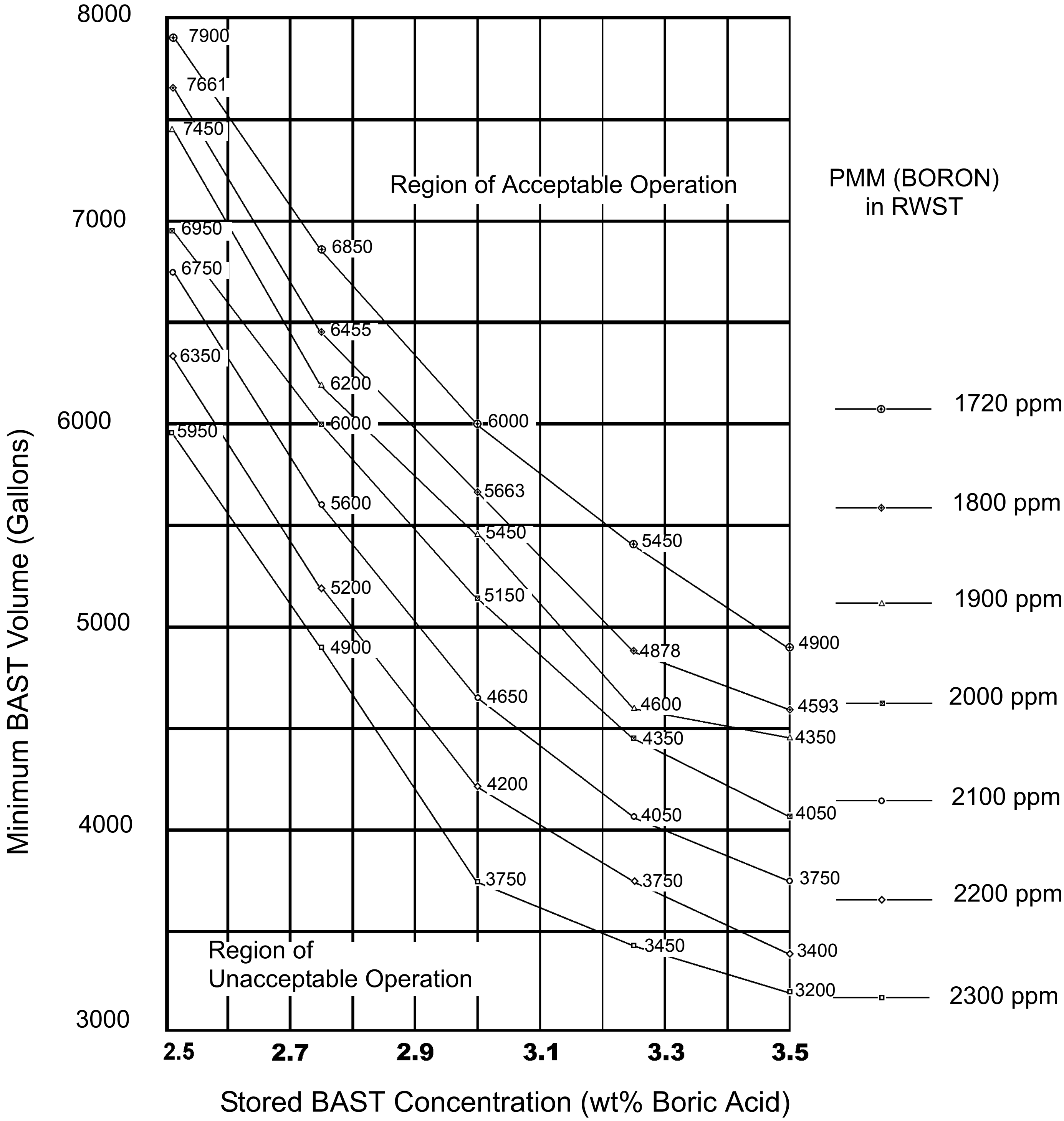
TECHNICAL SURVEILLANCE REQUIREMENT 4.1.2.8.c verifies the RWST temperature is greater than 50°F when in MODES 1 and 2 and the RWST ambient air temperature is less than 50°F.

TECHNICAL SURVEILLANCE REQUIREMENT 4.1.2.8.d verifies the BAST temperature is greater than 55°F. This may be accomplished by verifying that the ambient air temperature in the vicinity of the BAST is greater than 55°F.

REFERENCE:

1. License Amendment 283

FIGURE 3.1-1
MINIMUM VOLUME VS
STORED BAST CONCENTRATION
(WT% BORIC ACID)



3/4.3 INSTRUMENTATION

3/4.3.1 REACTOR PROTECTIVE INSTRUMENTATION

TECHNICAL REQUIREMENT

3.3.1.1 In accordance with Technical Specification LCO 3.3.1.1, Reactor Protective Instrumentation.

APPLICABILITY:

In accordance with Technical Specification LCO 3.3.1.1.

ACTION:

In accordance with Technical Specification LCO 3.3.1.1.

TECHNICAL SURVEILLANCE REQUIREMENTS

4.3.1.1.3 The REACTOR TRIP SYSTEM RESPONSE TIME of each reactor trip function shall be demonstrated to be within its limit as listed in TRM Table 3.3-2, in accordance with the test frequency specified in TS SR 4.3.1.1.3.

BASES:

In accordance with Technical Specification Bases section 3/4.3.1.

REFERENCE:

1. CR M3-00-02659.
2. Technical Specification section 3/4.3.1

Table 3.3-2
Reactor Protective Instrumentation Response Times

FUNCTIONAL Unit No.	FUNCTIONAL Unit Description	Response Time
1	Manual Reactor Trip	≤ 2.0 seconds
2	Power Level - High	
	2.a Neutron Flux power	≤ 0.4 seconds
	2.b Delta T Power	≤ 8.4 seconds# and ≤8.0 seconds##
3	Reactor Coolant Flow - Low	≤ 0.65 seconds
4	Pressurizer Pressure - High	≤ 0.90 seconds
5	Containment Pressure - High	≤ 0.90 seconds
6	Steam Generator Pressure - Low	≤ 0.90 seconds
7	Steam Generator Water Level - Low	≤ 0.90 seconds
8	Local power Density - High	
	8.a Neutron Flux Power	≤ 0.40 seconds*
	8.b Delta T Power	≤ 8.4 seconds# and ≤ 8.0 seconds##
9	Thermal Margin/Low Pressure	
	9.a Pressurizer Pressure/Neutron Flux Power	≤ 0.90 seconds
	9.b Delta T Power	≤ 0.89 seconds# and ≤ 8.0 seconds##
10	Loss of Turbine - Hydraulic Fluid Pressure	Not Applicable

* Neutron detectors are exempt from response time testing. Response time of the neutron flux signal portion of the signal shall be measured from the detector output or input of first electronic component in channel.

\# Response time includes contribution of RTDs

\## RTD response time only. This value is equivalent to the time interval required for the RTD's output to achieve 63.2% of its total change when subjected to a step change in RTD temperature.

3/4.3 INSTRUMENTATION

3/4.3.1 REACTOR TRIP SYSTEM INSTRUMENTATION

PRESSURIZER HIGH PRESSURE CHANNELS

TECHNICAL REQUIREMENT

3.3.1.1.1 All pressurizer high pressure reactor protection channels shall be FUNCTIONAL.

APPLICABILITY:

In accordance with Technical Specification LCO 3.3.1.1 Applicability.

ACTION:

Restore any nonfunctional pressurizer high pressure reactor protection channel to FUNCTIONAL status within 30 days of placing the channel in the tripped condition, or be in MODE 3 within the next 6 hours with the failed channel in the bypassed condition.

3/4.3 INSTRUMENTATION

3/4.3.1 REACTOR TRIP SYSTEM INSTRUMENTATION

PRESSURIZER HIGH PRESSURE CHANNELS

TECHNICAL SURVEILLANCE REQUIREMENTS

4.3.1.1.4 In accordance with Technical Specification LCO 3.3.1.1 Surveillance Requirements.

BASES:

Technical Specification 3.3.1.1, "Instrumentation - Reactor Protective Instrumentation" ACTION 2, requires an inoperable reactor protection channel to be placed in the tripped condition if not restored to the OPERABLE status within 48 hours. With a pressurizer high pressure channel in the tripped condition, the high failure of a second pressurizer pressure channel would initiate a reactor trip and open both pressurizer power operated relief valves (PORVs). Opening the pressurizer PORVs would result in an undesired loss of primary coolant. To minimize the risk of a loss of primary coolant associated with a second failure, a 30 day restriction on plant operation with a failed high pressurizer pressure channel in the tripped condition is necessary. If the channel is not restored to OPERABLE status the plant shall be shutdown to MODE 3, where this function is not required by Technical Specifications. After entering MODE 3, the failed channel shall be placed in the bypassed condition.

REFERENCE:

1. Condition Report M3-00-02659

3/4.3 INSTRUMENTATION

3/4.3.2 ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

TECHNICAL REQUIREMENT

3.3.2.1 In accordance with Technical Specification LCO 3.3.2.1, Engineered Safety Feature Actuation System Instrumentation.

APPLICABILITY:

In accordance with Technical Specification LCO 3.3.2.1.

ACTION:

In accordance with Technical Specification LCO 3.3.2.1.

TECHNICAL SURVEILLANCE REQUIREMENTS

4.3.2.1.3 The ENGINEERED SAFETY FEATURES RESPONSE TIME of each ESF function shall be demonstrated to be within the limit as listed in TRM Table 3.3-5, in accordance with the test frequency specified in TS SR 4.3.2.1.3.

BASES:

In accordance with Technical Specification Bases section 3/4.3.2.

REFERENCE:

1. CR M3-00-2659
2. Technical Specification section 3/4.3.2
3. NRC Generic Letter 96-01, “Testing of Safety Related Logic Circuits”

Table 3.3-5
Engineered Safety Features Response Times

Initiating Signal and Function	Response Time in Seconds	Equipment Tested
1. Manual		
a. SIAS		
Safety Injection (ECCS)	Not Applicable	Not Applicable
Containment Isolation	Not Applicable	Not Applicable
Enclosure Building Filtration System	Not Applicable	Not Applicable
b. CSAS		
Containment Spray	Not Applicable	Not Applicable
c. CIAS		
Containment Isolation	Not Applicable	Not Applicable
d. SRAS		
Containment Sump Recirculation	Not Applicable	Not Applicable
e. EBFAS		
Enclosure Building Filtration System	Not Applicable	Not Applicable
f. Auxiliary Feedwater Initiation	Not Applicable	Not Applicable
g. Main Steam Isolation	Not Applicable	Not Applicable
2. Pressurizer Pressure - Low		
a. Safety Injection (ECCS)		
1) High Pressure Safety Injection	≤ 25.0*/10.0**	See Table 3.3-5A
2) Low Pressure Safety Injection	≤ 45.0*/30.0**	See Table 3.3-5B
3) Charging Pump	≤ 35.0*/35.0**	See Table 3.3-5C
4) Containment Air Recirculation System	≤ 26.0*/15.0**	See Table 3.3-5D
b. Containment Isolation	≤ 7.5	See Table 3.3-5E
c. Enclosure Building Filtration System	≤ 45.0*/45.0**	See Table 3.3-5F

Table 3.3-5
Engineered Safety Features Response Times

Initiating Signal and Function	Response Time in Seconds	Equipment Tested
3. Containment Pressure - High		
a. Safety Injection (ECCS)		
1) High Pressure Safety Injection	≤ 25.0*/10.0**	See Table 3.3-5A
2) Low Pressure Safety Injection	≤ 45.0*/30.0**	See Table 3.3-5B
3) Charging Pumps	≤ 35.0*/35.0**	See Table 3.3-5C
4) Containment Air Recirculation System	≤ 26.0*/15.0**	See Table 3.3-5D
b. Containment Isolation	≤ 7.5	See Table 3.3-5E
c. Enclosure Building Filtration System	≤ 45.0*/45.00**	See Table 3.3-5F
d. Main Steam Isolation	≤ 6.9	See Table 3.3-5G
e. Feedwater Isolation	≤ 14	See Table 3.3-5H
4. Containment Pressure -- High-High		
a. Containment Spray	≤ 35.6*(1)/16.0**(1)	See Table 3.3-5I
5. DELETED		
6. Steam Generator Pressure - Low		
a. Main Steam Isolation	≤ 6.9	See Table 3.3-5G
b. Feedwater Isolation	≤ 14	See Table 3.3-5H
7. Refueling Water Storage Tank - Low		
a. Containment Sump Recirculation	≤ 120	See Table 3.3-5K
8. Steam Generator Level - Low		
a. Auxiliary Feedwater System	≤ 240/ > 180	See Table 3.3-5L
b. Steam Generator Blooding Isolation	≤ 10	

Table 3.3-5
Engineered Safety Features Response Times

Table Notation

* Diesel generator starting and sequence loading delays included.

** Diesel generator starting and sequence loading delays not included.

(1) Header fill time not included.

Table 3.3-5A
High Pressure Safety Injection

TECHNICAL REQUIREMENT	ESF Actuation Signal	Tested Equipment	Equipment Action
2a1, 3a1	SIAS	P41A	Start
2a1, 3a1	SIAS	P41B	Start
2a1, 3a1	SIAS	P41C	Start
2a1, 3a1	SIAS	2-SI-616	Open
2a1, 3a1	SIAS	2-SI-617	Open
2a1, 3a1	SIAS	2-SI-626	Open
2a1, 3a1	SIAS	2-SI-627	Open
2a1, 3a1	SIAS	2-SI-636	Open
2a1, 3a1	SIAS	2-SI-637	Open
2a1, 3a1	SIAS	2-SI-646	Open
2a1, 3a1	SIAS	2-SI-647	Open
2a1, 3a1	SIAS	2-SI-618	Close
2a1, 3a1	SIAS	2-SI-628	Close
2a1, 3a1	SIAS	2-SI-638	Close
2a1, 3a1	SIAS	2-SI-648	Close

Notes for Table 3.3-5A:

1. Response time is defined as the time interval from when the monitored process parameter exceeds its ESF actuation setpoint at the channel sensor until the ESF equipment is capable of performing its safety function (i.e., the valves travel to their required positions, pump discharge/differential pressures reach their required values, etc.). The response time includes the signal processing time, ESAS actuation time, diesel generator starting and sequencing time (when applicable), and component actuation time (e.g., valve opening or closing stroke time, motor and pump acceleration time).

2. HPSI Pumps - The pump under test is aligned with its recirculation valves open and its facility stop valve closed. Timing for the component actuation portion of the response time begins with the pump start signal and ends when the required Technical Specification pump PSID is developed.

3. HPSI Valves - Timing for the component actuation portion of the response time begins with the valve open (or close) signal and ends when the control board valve position lamps indicate full travel.

Table 3.3-5B
Low Pressure Safety Injection

TECHNICAL REQUIREMENT	ESF Actuation Signal	Equipment Tested	Equipment Action
2a2, 3a2	SIAS	P42A	Start
2a2, 3a2	SIAS	P42B	Start
2a2, 3a2	SIAS	2-SI-615	Open
2a2, 3a2	SIAS	2-SI-625	Open
2a2, 3a2	SIAS	2-SI-635	Open
2a2, 3a2	SIAS	2-SI-645	Open

Notes for Table 3.3-5B:

1. Response time is defined as the time interval from when the monitored process parameter exceeds its ESF actuation setpoint at the channel sensor until the ESF equipment is capable of performing its safety function (i.e., the valves travel to their required positions, pump discharge/differential pressures reach their required values, etc.). The response time includes the signal processing time, ESAS actuation time, diesel generator starting and sequencing time (when applicable), and component actuation time (e.g., valve opening or closing stroke time, motor and pump acceleration time).

2. LPSI Pumps - The pump under test is aligned with its recirculation valves open and its facility stop valve closed. Timing for the component actuation portion of the response time begins with the pump start signal and ends when the required Technical Specification pump PSID is developed.

3. LPSI Valves - Timing for the component actuation portion of the response time begins with the valve open (or close) signal and ends when the control board valve position lamps indicate full travel.

Table 3.3-5C
Charging Pump

TECHNICAL REQUIREMENT	ESF Actuation Signal	Equipment Tested	Equipment Action
2a3, 3a3 note 6	SIAS	P18A	Start
2a3, 3a3 note 6	SIAS	P18B	Start
2a3, 3a3 note 6	SIAS	P18C	Start
2a3, 3a3 note 3, 4	SIAS P19A	Start	
2a3, 3a3 note 3, 4	SIAS P19B	Start	
2a3, 3a3 note 3, 5	SIAS	2-CH-501	Close
2a3, 3a3 note 3, 5	SIAS	2-CH-510	Close
2a3, 3a3 note 3, 5	SIAS	2-CH-511	Close
2a3, 3a3 note 3, 5	SIAS	2-CH-512	Close
2a3, 3a3 note 3, 5	SIAS	2-CH-508	Open
2a3, 3a3 note 3, 5	SIAS	2-CH-509	Open
2a3, 3a3 note 3, 5	SIAS	2-CH-514	Open

Notes for Table 3.3-5C:

1. Response time is defined as the time interval from when the monitored process parameter exceeds its ESF actuation setpoint at the channel sensor until the ESF equipment is capable of performing its safety function (i.e., the valves travel to their required positions, pump discharge/differential pressures reach their required values, etc.). The response time includes the signal processing time, ESAS actuation time, diesel generator starting and sequencing time (when applicable), and component actuation time (e.g., valve opening or closing stroke time, motor and pump acceleration time).

2. Charging Pumps - Initially, one charging pump is running. The pump under test is initially off. Timing for the component actuation portion of the response time begins with the pump start signal and ends when charging header flow has increased by the required GPM.

Table 3.3-5C
Charging Pump

3. Response time testing of this component is outside the scope of Technical Specification Surveillance 4.3.2.1.3. However, verification of the response time of this component is necessary to ensure that the equipment is capable of supporting the safety function within the response times assumed in the accident analyses. If the overall response time of this component does not meet the required response time, FUNCTIONALITY and Reportability Determinations should be performed to ensure the accident analyses assumptions are met.

4. Boric acid pumps - Timing for the component actuation portion of the response time begins with the pump start signal and ends when the required Technical Specification pump PSID is developed.

5. The component actuation time of this component is tested under the IST program. The acceptance criteria for the component actuation time is established conservatively, such that the overall response time criteria will be met if the component actuation time is met.

6. Any charging pump with it’s control switch positioned to Pull-To-Lock (PTL) will be precluded from automatic operation under both normal and abnormal (e.g., SIAS) signal.

Table 3.3-5D
Containment Air Recirculation System

TECHNICAL REQUIREMENT	ESF Actuation Signal	Equipment Tested	Equipment Action
2a4, 3a4	SIAS	CAR F14A	Start Slow Speed
2a4, 3a4	SIAS	CAR F14B	Start Slow Speed
2a4, 3a4	SIAS	CAR F14C	Start Slow Speed
2a4, 3a4	SIAS	CAR F14D	Start Slow Speed
2a4, 3a4 note 3, 4	SIAS	2-RB-210 (HV-6739)	Close
2a4, 3a4 note 3, 4	SIAS	2-RB-28.3A (HV-6080)	Open
2a4, 3a4 note 3, 4	SIAS	2-RB-28.3B (HV-6084)	Open
2a4, 3a4 note 3, 4	SIAS	2-RB-28.3C (HV-6088)	Open
2a4, 3a4 note 3, 4	SIAS	2-RB-28.3D (HV-6092)	Open
2a4, 3a4 note 3, 4	SIAS	2-RB-8.1A (HV-6315)	Close
2a4, 3a4 note 3, 4	SIAS	2-RB-8.1B (HV-6316)	Close
2a4, 3a4 note 3, 4	SIAS	2-RB-68.1A (HV-6731)	Open
2a4, 3a4 note 3, 4	SIAS	2-RB-68.1B (HV-6735)	Open
2a4, 3a4 note 3, 4	CIAS	2-RB-402	Close
2a4, 3a4 note 3, 4	SIAS	2-SW-8.1A (HV-6308)	Open
2a4, 3a4 note 3, 4	SIAS	2-SW-8.1B (HV-6307)	Open
2a4, 3a4 note 3, 4	SIAS	2-SW-8.1C (HV-6706)	Open
2a4, 3a4 note 3, 4	SIAS	2-SW-3.2A (HV-6438)	Close
2a4, 3a4 note 3, 4	SIAS	2-SW-3.2B (HV-6439)	Close

Notes for Table 3.3-5D:

1. Response time is defined as the time interval from when the monitored process parameter exceeds its ESF actuation setpoint at the channel sensor until the ESF equipment is capable of performing its safety function (i.e., the valves travel to their required positions, pump discharge/differential pressures reach their required values, etc.). The response time includes the signal processing time, ESAS actuation time, diesel generator starting and sequencing time (when applicable), and component actuation time (e.g., valve opening or closing stroke time, motor and pump acceleration time).

2. The CAR fans are individually started and stopped in slow speed. Timing for the component actuation portion of the response time begins with the fan start signal and ends when the CAR fan motor current decays to the normal steady state, slow speed motor current (Amperes) following the initial motor in-rush current.

Table 3.3-5D
CONTAINMENT AIR RECIRCULATION SYSTEM

3. Response time testing of this component is outside the scope of Technical Specification Surveillance 4.3.2.1.3. However, verification of the response time of this component is necessary to ensure that the equipment is capable of supporting the safety function within the response times assumed in the accident analyses. If the overall response time of this component does not meet the required response time, FUNCTIONALITY and Reportability Determinations should be performed to ensure the accident analyses assumptions are met.

4. The component actuation time of this component is tested under the IST program. The acceptance criteria for the component actuation time is established conservatively, such that the overall response time criteria will be met if the component actuation time is met.

Table 3.3-5E
Containment Isolation

TECHNICAL REQUIREMENT	ESF Actuation Signal	Equipment Tested	Equipment Action
2b, 3b	CIAS	2-AC-12 (HV-8122)	Close
2b, 3b	CIAS	2-AC-15 (HV-8124)	Close
2b, 3b	CIAS	2-AC-20 (HV-8656)	Close
2b, 3b	CIAS	2-AC-47 (HV-8121)	Close
2b, 3b	CIAS	2-CH-089 (HV-2525)	Close
2b, 3b	CIAS	2-CH-198	Close
2b, 3b	CIAS	2-CH-505	Close
2b, 3b	CIAS	2-CH-506	Close
2b, 3b	CIAS	2-CH-516	Close
2b, 3b	CIAS	2-EB-100 (HV-8378)	Close
2b, 3b	CIAS	2-EB-88 (HV-8150)	Close
2b, 3b	CIAS	2-EB-89 (HV-8151)	Close
2b, 3b	CIAS	2-EB-91 (HV-8380)	Close
2b, 3b	CIAS	2-EB-92 (HV-8379)	Close
2b, 3b	CIAS	2-EB-99 (HV-8377)	Close
2b, 3b	CIAS	2-GR-11.1 (HV-9125)	Close
2b, 3b	CIAS	2-GR-11.2 (HV-9126)	Close
2b, 3b	CIAS	2-LRR-43.1 (HV-9015)	Close
2b, 3b	CIAS	2-LRR-43.2 (HV-9016)	Close
2b, 3b	CIAS	2-LRR-61.1 (HV-9230)	Close
2b, 3b	CIAS	2-MS-191A (HV-4250)	Close
2b, 3b	CIAS	2-MS-191B (HV-4251)	Close
2b, 3b	CIAS	2-MS-220A (HV-4246)	Close
2b, 3b	CIAS	2-MS-220B (HV-4248)	Close
2b, 3b	CIAS	2-PMW-43 (HV-7311)	Close
2b, 3b	CIAS	2-RC-001 (HV-1064)	Close
2b, 3b	CIAS	2-RC-002 (HV-1062)	Close
2b, 3b	CIAS	2-RC-003 (HV-1060)	Close
2b, 3b	CIAS	2-RC-45 (HV-7690)	Close
2b, 3b	CIAS	2-SI-312 (HV-7312)	Close
2b, 3b	CIAS	2-SSP-16.1 (HV-9151)	Close
2b, 3b	CIAS	2-SSP-16.2 (HV-9150)	Close

Table 3.3-5E
CONTAINMENT ISOLATION

Notes for Table 3.3-5E:

1. Response time is defined as the time interval from when the monitored process parameter exceeds its ESF actuation setpoint at the channel sensor until the ESF equipment is capable of performing its safety function (i.e., the valves travel to their required positions, pump discharge/differential pressures reach their required values, etc.). The response time includes the signal processing time, ESAS actuation time, diesel generator starting and sequencing time (when applicable), and component actuation time (e.g., valve opening or closing stroke time, motor and pump acceleration time).

2. Containment Isolation Valves - Timing for the component actuation portion of the response time begins with the valve close signal and ends when the control board valve position lamps indicate full travel.

Table 3.3-5F
Enclosure Building Filtration

The EBFAS fan being tested is aligned with its suction damper and header isolation damper open. Timing begins with a fan start signal and ends when EBFAS train D/P is stable.

TECHNICAL REQUIREMENT	ESF Actuation Signal	Equipment Tested	Equipment Action
2c, 3c	EBFAS	F25A	Start
2c, 3c	EBFAS	F25B	Start

Notes for Table 3.3-5F:

1. Response time is defined as the time interval from when the monitored process parameter exceeds its ESF actuation setpoint at the channel sensor until the ESF equipment is capable of performing its safety function (i.e., the valves travel to their required positions, pump discharge/ differential pressures reach their required values, etc.). The response time includes the signal processing time, ESAS actuation time, diesel generator starting and sequencing time (when applicable), and component actuation time (e.g., valve opening or closing stroke time, motor and pump acceleration time).

2. The EBFAS fan under tested is aligned with its suction damper and header isolation damper open. Timing for the component actuation portion of the response time begins with the fan start signal and ends when EBFAS train D/P is stable.

Table 3.3-5G
Main Steam Isolation

TECHNICAL REQUIREMENT	ESF Actuation Signal	Equipment Tested	Equipment Action
3d, 6a	MSI	MSIV HV-4217A (MS-64A)	Close
3d, 6a	MSI	MSIV HV-4217B (MS-64A)	Close
3d, 6a	MSI	MSIV HV-4221A (MS-64B)	Close
3d, 6a	MSI	MSIV HV-4221B (MS-64B)	Close

Notes for Table 3.3-5G:

1. Response time is defined as the time interval from when the monitored process parameter exceeds its ESF actuation setpoint at the channel sensor until the ESF equipment is capable of performing its safety function (i.e., the valves travel to their required positions, pump discharge/differential pressures reach their required values, etc.). The response time includes the signal processing time, ESAS actuation time, diesel generator starting and sequencing time (when applicable), and component actuation time (e.g., valve opening or closing stroke time, motor and pump acceleration time).

2. The MSIV being tested is aligned open with its bypass valve open. Timing for the component actuation portion of the response time begins with the valve close signal and ends when the MSIV indicates closed.

Table 3.3-5H
Feedwater Isolation

TECHNICAL REQUIREMENT	ESF Actuation Signal	Equipment Tested	Equipment Action
3e, 6b	MSI	2-FW-38A (HV-5245)	Close
3e, 6b	MSI	2-FW-38B (HV-5247)	Close
3e, 6b	MSI	2-FW-41A (HV-5215)	Close
3e, 6b	MSI	2-FW-41B (HV-5216)	Close
3e, 6b	MSI	2-FW-42A (HV-5263)	Close
3e, 6b	MSI	2-FW-42B (HV-5264)	Close
3e, 6b	MSI	2-FW-51A (HV-5268)	Close
3e, 6b	MSI	2-FW-51B (HV-5269)	Close
3e, 6b	MSI	2-MS-265B (HV-4193)	Close
3e, 6b	MSI	2-MS-266B (HV-4209)	Close
3e, 6b	MSI	SGFP Turb H5A	Stop
3e, 6b	MSI	SGFP Turb H5B	Stop

Notes for Table 3.3-5H:

1. Response time is defined as the time interval from when the monitored process parameter exceeds its ESF actuation setpoint at the channel sensor until the ESF equipment is capable of performing its safety function (i.e., the valves travel to their required positions, pump discharge/differential pressures reach their required values, etc.). The response time includes the signal processing time, ESAS actuation time, diesel generator starting and sequencing time (when applicable), and component actuation time (e.g., valve opening or closing stroke time, motor and pump acceleration time).

Table 3.3-5I
Containment Spray

TECHNICAL REQUIREMENT	ESF Actuation Signal	Equipment Tested	Equipment Action
4a	CSAS	CS P43A	Start
4a	CSAS	CS P43B	Start
4a	CSAS	2-CS-4.1A (HV-3021)	Open
4a	CSAS	2-CS-4.1B (HV-3022)	Open

Notes for Table 3.3-5I:

1. Response time is defined as the time interval from when the monitored process parameter exceeds its ESF actuation setpoint at the channel sensor until the ESF equipment is capable of performing its safety function (i.e., the valves travel to their required positions, pump discharge/differential pressures reach their required values, etc.). The response time includes the signal processing time, ESAS actuation time, diesel generator starting and sequencing time (when applicable), and component actuation time (e.g., valve opening or closing stroke time, motor and pump acceleration time).

2. CS Pumps - The pump being tested is aligned with its minimum flow recirculation valves open. If Shutdown Cooling (SDC) is in operation, the CS header isolation valve is closed. If SDC is not in operation, the CS pump discharge valve is closed. Timing for the component actuation portion of the response time begins with the pump start signal and ends when the required pump differential pressure (psid) is established and stable.

3. CS Valves - Timing for the component actuation portion of the response time begins with the valve open signal and ends when the control board valve position lamps indicate full travel.

Table 3.3-5J

Deleted

Table 3.3-5K
Containment Sump Recirculation

TECHNICAL REQUIREMENT	ESF Actuation Signal	Equipment Tested	Equipment Action
7a	SRAS	2-CS-16.1A (HV-3008)	Open
7a	SRAS	2-CS-16.1B (HV-3009)	Open

Notes for Table 3.3-5K:

1. Response time is defined as the time interval from when the monitored process parameter exceeds its ESF actuation setpoint at the channel sensor until the ESF equipment is capable of performing its safety function (i.e., the valves travel to their required positions, pump discharge/differential pressures reach their required values, etc.). The response time includes the signal processing time, ESAS actuation time, diesel generator starting and sequencing time (when applicable), and component actuation time (e.g., valve opening or closing stroke time, motor and pump acceleration time).

2. Containment Sump Outlet Isolation Valves - Timing for the component actuation portion of the response time begins with the valve open signal and ends when the control board valve position lamps indicate full travel.

Table 3.3-5L
Auxiliary Feedwater System

TECHNICAL REQUIREMENT	ESF Actuation Signal	Equipment Tested	Equipment Action
8a	AFAIS	2-FW-43A (HV-5276)	Open
8a	AFAIS	2-FW-43B (HV-5279)	Open
8a	AFAIS	AFW P9A	Start
8a	AFAIS	AFW P9B	Start

Notes for Table 3.3-5L:

1. Response time is defined as the time interval from when the monitored process parameter exceeds its ESF actuation setpoint at the channel sensor until the ESF equipment is capable of performing its safety function (i.e., the valves travel to their required positions, pump discharge/differential pressures reach their required values, etc.). The response time includes the signal processing time, ESAS actuation time, diesel generator starting and sequencing time (when applicable), and component actuation time (e.g., valve opening or closing stroke time, motor and pump acceleration time).

2. The AFW pump being tested is aligned for recirculation. Timing for the component actuation portion of the response time test begins with the start logic satisfied and ends when the aux feedwater pump develops the required differential pressure and valves HV-5276/FW-43A (HV-5279/FW-43B) are open.

Table 3.3-5M
Actuated Components Not Response Time Tested

The following components receive ESF Actuation Signals, but do not affect the response time of the ESF functions listed in Table 3.3-5. Therefore, the components listed below are not periodically time response tested

SF Actuation Signal	Equipment Not Tested	Equipment Action	Basis
SIAS	2-CH-196	Close	The timing for primary make-up water isolation does not affect the charging volumetric flow function.
SIAS	2-CH-515	Close	Timing for let down isolation does not affect the charging function.
SIAS	2-CHW-11 (HV-8847)	Close	The timing for closure of this chilled water valve is not critical to establishing the safety function assumed in the accident analysis.
SIAS	2-CHW-12 (HV-8854)	Close	The timing for closure of this chilled water valve is not critical to establishing the safety function assumed in the accident analysis.
SIAS	2-CHW-13 (HV-8850)	Close	The timing for closure of this chilled water valve is not critical to establishing the safety function assumed in the accident analysis.
SIAS	2-CHW-14 (HV-8855)	Close	The timing for closure of this chilled water valve is not critical to establishing the safety function assumed in the accident analysis.
SIAS	2-CHW-3 (HV-8846)	Open	The timing for closure of this chilled water valve is not critical to establishing the safety function assumed in the accident analysis.
SIAS	2-CHW-33 (HV-8853)	Open	The timing for closure of this chilled water valve is not critical to establishing the safety function assumed in the accident analysis.
SIAS	2-SI- 634	Open	The SIT Valves are disabled in the open position during heat up.
SIAS	2-SI-614	Open	The SIT Valves are disabled in the open position during heat up.
SIAS	2-SI-624	Open	The SIT Valves are disabled in the open position during heat up.
SIAS	2-SI-644	Open	The SIT Valves are disabled in the open position during heat up.
SIAS	F112A	Inhibit	The timing of the inhibit of Battery Room Vent Fan 'A' does not impact the initiation of the safety injection function.

Table 3.3-5M
Actuated Components Not Response Time Tested

SIAS	F112B	Inhibit	The timing of the inhibit of Battery Room Vent Fan 'B' does not impact the initiation of the safety injection function.
SIAS	F13A	Inhibit	CEDM cooling fans do not support completion of the safety injection function.
SIAS	F13B	Inhibit	CEDM cooling fans do not support completion of the safety injection function.
SIAS	F13C	Inhibit	CEDM cooling fans do not support completion of the safety injection function.
SIAS	F15A	Start	The response time for the start of the ESF room recirculation fans is not critical to the safety injection function.
SIAS	F15B	Start	The response time for start of the ESF room recirculation fans is not critical to the safety injection function.
SIAS	F54A	Start	The response time for start of the DC vital switchgear room cooling fans is not critical to the safety injection function.
SIAS	F54B	Start	The response time for start of the DC vital switchgear room cooling fans is not critical to the safety injection function.
SIAS	H7A	Start	The diesel generators are tested per the Tech Specs. The diesel starting and load sequencing time is included in the ESF Response Time when required.
SIAS	H7B	Start	The diesel generators are tested per the Tech Specs. The diesel starting and load sequencing time is included in the ESF Response Time when required.

Table 3.3-5M
Actuated Components Not Response Time Tested

SIAS	P5A	Start	The SW pumps are not ESF equipment. It is impractical to response time test the component actuation time for these pumps. This is considered acceptable because the component actuation time (i.e., motor and pump acceleration time) is small compared with the time for signal processing, ESAS actuation, and diesel starting and load sequencing. The time for signal processing, ESAS actuation, and diesel starting and load sequencing are response time tested and the acceptance criteria are set consistent with the response time assumed in the accident analysis, including an allowance for motor and pump acceleration time. Periodic surveillance testing and the IST will detect any changes in the performance characteristics of the pump.
SIAS	P5B	Start	The SW pumps are not ESF equipment. It is impractical to response time test the component actuation time for these pumps. This is considered acceptable because the component actuation time (i.e., motor and pump acceleration time) is small compared with the time for signal processing, ESAS actuation, and diesel starting and load sequencing. The time for signal processing, ESAS actuation, and diesel starting and load sequencing are response time tested and the acceptance criteria are set consistent with the response time assumed in the accident analysis, including an allowance for motor and pump acceleration time. Periodic surveillance testing and the IST will detect any changes in the performance characteristics of the pump.

Table 3.3-5M
Actuated Components Not Response Time Tested

SIAS	P5C	Start	The SW pumps are not ESF equipment. It is impractical to response time test the component actuation time for these pumps. This is considered acceptable because the component actuation time (i.e., motor and pump acceleration time) is small compared with the time for signal processing, ESAS actuation, and diesel starting and load sequencing. The time for signal processing, ESAS actuation, and diesel starting and load sequencing are response time tested and the acceptance criteria are set consistent with the response time assumed in the accident analysis, including an allowance for motor and pump acceleration time. Periodic surveillance testing and the IST will detect any changes in the performance characteristics of the pump.
SIAS	P11A	Start	The RBCCW pumps are not ESF equipment. It is impractical to response time test the component actuation time for these pumps. This is considered acceptable because the component actuation time (i.e., motor and pump acceleration time) is small compared with the time for signal processing, ESAS actuation, and diesel starting and load sequencing. The time for signal processing, ESAS actuation, and diesel starting and load sequencing are response time tested and the acceptance criteria are set consistent with the response time assumed in the accident analysis, including an allowance for motor and pump acceleration time. Periodic surveillance testing and the IST will detect any changes in the performance characteristics of the pump.

Table 3.3-5M
Actuated Components Not Response Time Tested

SIAS	P11B	Start	The RBCCW pumps are not ESF equipment. It is impractical to response time test the component actuation time for these pumps. This is considered acceptable because the component actuation time (i.e., motor and pump acceleration time) is small compared with the time for signal processing, ESAS actuation, and diesel starting and load sequencing. The time for signal processing, ESAS actuation, and diesel starting and load sequencing are response time tested and the acceptance criteria are set consistent with the response time assumed in the accident analysis, including an allowance for motor and pump acceleration time. Periodic surveillance testing and the IST will detect any changes in the performance characteristics of the pump.
SIAS	P11C	Start	The RBCCW pumps are not ESF equipment. It is impractical to response time test the component actuation time for these pumps. This is considered acceptable because the component actuation time (i.e., motor and pump acceleration time) is small compared with the time for signal processing, ESAS actuation, and diesel starting and load sequencing. The time for signal processing, ESAS actuation, and diesel starting and load sequencing are response time tested and the acceptance criteria are set consistent with the response time assumed in the accident analysis, including an allowance for motor and pump acceleration time. Periodic surveillance testing and the IST will detect any changes in the performance characteristics of the pump.
SIAS	P122A	Start	The timing for start of the vital switchgear chilled water pumps is not critical to establishing the safety function assumed in the accident analysis.
SIAS	P122B	Start	The timing for start of the vital switchgear chilled water pumps is not critical to establishing the safety function assumed in the accident analysis.
SIAS	X169A	Start	The timing for start of the DC Swgr Room Chillers is not critical to establishing the safety function assumed in the accident analysis.
SIAS	X169B	Start	The timing for start of the DC Swgr Room Chillers is not critical to establishing the safety function assumed in the accident analysis.

Table 3.3-5M
Actuated Components Not Response Time Tested

CIAS	2-AC-1 (HV-8050)	Close	Enclosure building damper, not a containment isolation valve. FUNCTIONAL testing verifies that the damper goes to the required position. The component actuation time is not critical to the accident analysis assumption. Therefore response time testing is not required.
CIAS	2-AC-3 (HV-8081)	Open	Enclosure building damper, not a containment isolation valve. FUNCTIONAL testing verifies that the damper goes to the required position. The component actuation time is not critical to the accident analysis assumption. Therefore response time testing is not required.
CIAS	2-AC-8 (HV-8127)	Open	Enclosure building damper, not a containment isolation valve. FUNCTIONAL testing verifies that the damper goes to the required position. The component actuation time is not critical to the accident analysis assumption. Therefore response time testing is not required.
CIAS	2-AC-11 (HV-8128)	Close	Enclosure building damper, not a containment isolation valve. FUNCTIONAL testing verifies that the damper goes to the required position. The component actuation time is not critical to the accident analysis assumption. Therefore response time testing is not required.
CIAS	2-AC-527 (HV-8262AB1)	Close	This valve isolates Radiation Monitor RM-8262 to prevent leakage from the radiation monitors when the containment isolation valves in the sample lines are re-opened manually to align the hydrogen analyzers and PASS after an accident. This valve is subject to the leak requirements of Appendix J and ISI/IST requirements. The timing for closure for this valve is not critical to the accident analysis assumptions regarding containment isolation. The function of this valve is to protect the radiation monitor after the containment isolation valves have performed their functions and are opened manually to provide flow to the H2 analyzer and for PASS

Table 3.3-5M
Actuated Components Not Response Time Tested

CIAS	2-AC-528 (HV-8262AB2)	Close	This valve isolates Radiation Monitor RM-8262 to prevent leakage from the radiation monitors when the containment isolation valves in the sample lines are re-opened manually to align the hydrogen analyzers and PASS after an accident. This valve is subject to the leak requirements of Appendix J and ISI/IST requirements. The timing for closure for this valve is not critical to the accident analysis assumptions regarding containment isolation. The function of this valve is to protect the radiation monitor after the containment isolation valves have performed their functions and are opened manually to provide flow to the H2 analyzer and for PASS
CIAS	2-AC-529 (HV-8123AB1)	Close	This valve isolates Radiation Monitor RM-8123 to prevent leakage from the radiation monitors when the containment isolation valves in the sample lines are re-opened manually to align the hydrogen analyzers and PASS after an accident. This valve is subject to the leak requirements of Appendix J and ISI/IST requirements. The timing for closure for this valve is not critical to the accident analysis assumptions regarding containment isolation. The function of this valve is to protect the radiation monitor after the containment isolation valves have performed their functions and are opened manually to provide flow to the H2 analyzer and for PASS
CIAS	2-AC-530 (HV-8123AB2)	Close	This valve isolates Radiation Monitor RM-8123 to prevent leakage from the radiation monitors when the containment isolation valves in the sample lines are re-opened manually to align the hydrogen analyzers and PASS after an accident. This valve is subject to the leak requirements of Appendix J and ISI/IST requirements. The timing for closure for this valve is not critical to the accident analysis assumptions regarding containment isolation. The function of this valve is to protect the radiation monitor after the containment isolation valves have performed their functions and are opened manually to provide flow to the H2 analyzer and for PASS

Table 3.3-5M
Actuated Components Not Response Time Tested

CIAS	F23	Stop	The containment PURGE supply fan does not perform a containment isolation function. The response time for stopping the fan on a CIAS is not critical to the safety function assumed in the accident analysis.
CIAS	F39A	Stop	The containment radiation monitor fan does not perform a containment isolation function. The response time for stopping the fan on a CIAS is not critical to the safety function assumed in the accident analysis.
CIAS	F39B	Stop	The containment radiation monitor fan does not perform a containment isolation function. The response time for stopping the fan on a CIAS is not critical to the safety function assumed in the accident analysis.
CIAS	P33A	Stop	Containment sump pumps are stopped on a CIAS for equipment protection. The time it takes to stop the pumps does not effect the completion of the containment isolation function.
CIAS	P33B	Stop	Containment sump pumps are stopped on a CIAS for equipment protection. The time it takes to stop the pumps does not effect the completion of the containment isolation function.
EBFAS	2-EB-40 (HV-8063)	Open	The EBFAS time response test is a system level test. Timing begins with a fan start signal and ends when EBFAS train D/P is stable. Therefore, individual component time response testing is not required.
EBFAS	2-EB-41 (HV-8070)	Open	The EBFAS time response test is a system level test. Timing begins with a fan start signal and ends when EBFAS train D/P is stable. Therefore, individual component time response testing is not required.
EBFAS	2-EB-42 (HV-8073)	Open	The EBFAS time response test is a system level test. Timing begins with a fan start signal and ends when EBFAS train D/P is stable. Therefore, individual component time response testing is not required.
EBFAS	2-EB-50 (HV-8153)	Open	The EBFAS time response test is a system level test. Timing begins with a fan start signal and ends when EBFAS train D/P is stable. Therefore, individual component time response testing is not required.
EBFAS	2-EB-51 (HV-8074)	Open	The EBFAS time response test is a system level test. Timing begins with a fan start signal and ends when EBFAS train D/P is stable. Therefore, individual component time response testing is not required.

Table 3.3-5M
Actuated Components Not Response Time Tested

EBFAS	2-EB-52 (HV-8079)	Open	The EBFAS time response test is a system level test. Timing begins with a fan start signal and ends when EBFAS train D/P is stable. Therefore, individual component time response testing is not required.
EBFAS	2-EB-55 (HV-8654)	Close	The EBFAS time response test is a system level test. Timing begins with a fan start signal and ends when EBFAS train D/P is stable. Therefore, individual component time response testing is not required.
EBFAS	2-EB-56 (HV-8695)	Close	The EBFAS time response test is a system level test. Timing begins with a fan start signal and ends when EBFAS train D/P is stable. Therefore, individual component time response testing is not required.
EBFAS	2-EB-60 (HV-8143)	Close	The EBFAS time response test is a system level test. Timing begins with a fan start signal and ends when EBFAS train D/P is stable. Therefore, individual component time response testing is not required.
EBFAS	2-EB-61 (HV-8062)	Close	The EBFAS time response test is a system level test. Timing begins with a fan start signal and ends when EBFAS train D/P is stable. Therefore, individual component time response testing is not required.
EBFAS	2-EB-72 (HV-8650)	Close	The EBFAS time response test is a system level test. Timing begins with a fan start signal and ends when EBFAS train D/P is stable. Therefore, individual component time response testing is not required.
EBFAS	2-EB-73 (HV-8651)	Close	The EBFAS time response test is a system level test. Timing begins with a fan start signal and ends when EBFAS train D/P is stable. Therefore, individual component time response testing is not required.
EBFAS	2-HV-106 (HV-8133)	Close	The EBFAS time response test is a system level test. Timing begins with a fan start signal and ends when EBFAS train D/P is stable. Therefore, individual component time response testing is not required.
EBFAS	2-HV-107 (HV-8247)	Close	The EBFAS time response test is a system level test. Timing begins with a fan start signal and ends when EBFAS train D/P is stable. Therefore, individual component time response testing is not required.
EBFAS	2-HV-116 (HV-8249)	Close	The EBFAS time response test is a system level test. Timing begins with a fan start signal and ends when EBFAS train D/P is stable. Therefore, individual component time response testing is not required.

Table 3.3-5M
Actuated Components Not Response Time Tested

EBFAS	2-HV-117 (HV-8248)	Close	The EBFAS time response test is a system level test. Timing begins with a fan start signal and ends when EBFAS train D/P is stable. Therefore, individual component time response testing is not required.
EBFAS	2-HV-202 (HV-8361)	Close	Control room isolation damper. The current TRM requirements do not include a response time for this function. Condition Report, CR M2-99-0282 was issued to investigate the need for response time testing of this component in accordance with the assumptions in the radiological accident analysis.
EBFAS	2-HV-207 (HV-8002)	Close	Control room isolation damper. The current TRM requirements do not include a response time for this function. Condition Report, CR M2-99-0282 was issued to investigate the need for response time testing of this component in accordance with the assumptions in the radiological accident analysis.
EBFAS	2-HV-208 (HV-8003B)	Close	Control room isolation damper. The current TRM requirements do not include a response time for this function. Condition Report, CR M2-99-0282 was issued to investigate the need for response time testing of this component in accordance with the assumptions in the radiological accident analysis.
EBFAS	2-HV-210 (HV-8005)	Open	The EBFAS time response test is a system level test. Timing begins with a fan start signal and ends when EBFAS train D/P is stable. This damper is disable in the open position Therefore, individual component time response testing is not required.
EBFAS	2-HV-211 (HV-8004)	Close	The EBFAS time response test is a system level test. Timing begins with a fan start signal and ends when EBFAS train D/P is stable. Therefore, individual component time response testing is not required.
EBFAS	2-HV-212A (HV-8006)	Open	The EBFAS time response test is a system level test. Timing begins with a fan start signal and ends when EBFAS train D/P is stable. Therefore, individual component time response testing is not required.
EBFAS	2-HV-212B (HV-8007)	Open	The EBFAS time response test is a system level test. Timing begins with a fan start signal and ends when EBFAS train D/P is stable. Therefore, individual component time response testing is not required.

Table 3.3-5M
Actuated Components Not Response Time Tested

EBFAS	2-HV-495	Close	Control room isolation damper. The current TRM requirements do not include a response time for this function. Condition Report, CR M2-99-0282 was issued to investigate the need for response time testing of this component in accordance with the assumptions in the radiological accident analysis.
EBFAS	2-HV-496	Close	Control room isolation damper. The current TRM requirements do not include a response time for this function. Condition Report, CR M2-99-0282 was issued to investigate the need for response time testing of this component in accordance with the assumptions in the radiological accident analysis.
EBFAS	2-HV-497	Close	Control room isolation damper. The current TRM requirements do not include a response time for this function. Condition Report, CR M2-99-0282 was issued to investigate the need for response time testing of this component in accordance with the assumptions in the radiological accident analysis.
EBFAS	F32A	Start	The EBFAS time response test is a system level test. Timing begins with a fan start signal and ends when EBFAS train D/P is stable. Therefore, individual component time response testing is not required.
EBFAS	F32B	Start	The EBFAS time response test is a system level test. Timing begins with a fan start signal and ends when EBFAS train D/P is stable. Therefore, individual component time response testing is not required.
EBFAS	X61A	Start	The EBFAS time response test is a system level test. Timing begins with a fan start signal and ends when EBFAS train D/P is stable. Therefore, individual component time response testing is not required.
EBFAS	X61B	Start	The EBFAS time response test is a system level test. Timing begins with a fan start signal and ends when EBFAS train D/P is stable. Therefore, individual component time response testing is not required.
MSIAS	2-MS-65A (HV-4218)	Close	The MSIV bypass valve is normally closed. It is only opened for a short time to equalize the pressure across the MSIV during plant start-up. Therefore response time testing is not required.

Table 3.3-5M
Actuated Components Not Response Time Tested

MSIAS	2-MS-65B (HV-4222)	Close	The MSIV bypass valve is normally closed. It is only opened for a short time to equalize the pressure across the MSIV during plant start-up. Therefore response time testing is not required.
SRAS	2-RB-13.1A (HV-6050)	Open	This RBCCW valve opens on an SRAS to direct RBCCW flow to the shutdown cooling heat exchanger. FUNCTIONAL testing of this valve is adequate to demonstrate that the safety function of this valve is met. Therefore, response time testing is not required.
SRAS	2-RB-13.1B (HV-6055)	Open	This RBCCW valve opens on an SRAS to direct RBCCW flow to the shutdown cooling heat exchanger. FUNCTIONAL testing of this valve is adequate to demonstrate that the safety function of this valve is met. Therefore, response time testing is not required.
SRAS	2-SI-659	Close	Closure of the RWST minflow valves prevents highly radioactive water from being sent to the RWST following an SRAS. FUNCTIONAL testing of this valve is adequate to demonstrate that the safety function of this valve is met. Therefore, response time testing is not required.
SRAS	2-SI-660	Close	Closure of the RWST minflow valves prevents highly radioactive water from being sent to the RWST following an SRAS. FUNCTIONAL testing of this valve is adequate to demonstrate that the safety function of this valve is met. Therefore, response time testing is not required.
SRAS	P42A	Stop	LPSI pumps, P42A and P42B are not time response tested because a failure of the pump to trip within the required SRAS response time would be considered a equipment failure issue as opposed to a time response issue.
SRAS	P42B	Stop	LPSI pumps, P42A and P42B are not time response tested because a failure of the pump to trip within the required SRAS response time would be considered a equipment failure issue as opposed to a time response issue.
LOAD SHED	52-A302	Load Shed	Response time testing of the load shed function is not required. The load shed function is tested implicitly during the Loss of Normal Power (LNP) test.

Table 3.3-5M
Actuated Components Not Response Time Tested

LOAD SHED	52-A304	Load Shed	Response time testing of the load shed function is not required. The load shed function is tested implicitly during the Loss of Normal Power (LNP) test.
LOAD SHED	52-A312	Load Shed	Response time testing of the load shed function is not required. The load shed function is tested implicitly during the Loss of Normal Power (LNP) test.
LOAD SHED	52-A401	Load Shed	Response time testing of the load shed function is not required. The load shed function is tested implicitly during the Loss of Normal Power (LNP) test.
LOAD SHED	52-A410	Load Shed	Response time testing of the load shed function is not required. The load shed function is tested implicitly during the Loss of Normal Power (LNP) test.
LOAD SHED	52-A411	Load Shed	Response time testing of the load shed function is not required. The load shed function is tested implicitly during the Loss of Normal Power (LNP) test.
LOAD SHED	52-A505	Load Shed	Response time testing of the load shed function is not required. The load shed function is tested implicitly during the Loss of Normal Power (LNP) test.
LOAD SHED	L105	Load Shed	Response time testing of the load shed function is not required. The load shed function is tested implicitly during the Loss of Normal Power (LNP) test.
LOAD SHED	L106	Load Shed	Response time testing of the load shed function is not required. The load shed function is tested implicitly during the Loss of Normal Power (LNP) test.
LOAD SHED	LO46A	Load Shed	Response time testing of the load shed function is not required. The load shed function is tested implicitly during the Loss of Normal Power (LNP) test.
LOAD SHED	LO46B L	Load Shed	Response time testing of the load shed function is not required. The load shed function is tested implicitly during the Loss of Normal Power (LNP) test.

Table 3.3-5M
Actuated Components Not Response Time Tested

LOAD SHED	P11A	Load Shed	Response time testing of the load shed function is not required. The load shed function is tested implicitly during the Loss of Normal Power (LNP) test.
LOAD SHED	P11B	Load Shed	Response time testing of the load shed function is not required. The load shed function is tested implicitly during the Loss of Normal Power (LNP) test.
LOAD SHED	P11C	Load Shed	Response time testing of the load shed function is not required. The load shed function is tested implicitly during the Loss of Normal Power (LNP) test.
LOAD SHED	P41A	Load Shed	Response time testing of the load shed function is not required. The load shed function is tested implicitly during the Loss of Normal Power (LNP) test.
LOAD SHED	P41B	Load Shed	Response time testing of the load shed function is not required. The load shed function is tested implicitly during the Loss of Normal Power (LNP) test.
LOAD SHED	P41C	Load Shed	Response time testing of the load shed function is not required. The load shed function is tested implicitly during the Loss of Normal Power (LNP) test.
LOAD SHED	P42A	Load Shed	Response time testing of the load shed function is not required. The load shed function is tested implicitly during the Loss of Normal Power (LNP) test.
LOAD SHED	P42B	Load Shed	Response time testing of the load shed function is not required. The load shed function is tested implicitly during the Loss of Normal Power (LNP) test.
LOAD SHED	P43A	Load Shed	Response time testing of the load shed function is not required. The load shed function is tested implicitly during the Loss of Normal Power (LNP) test.
LOAD SHED	P43B	Load Shed	Response time testing of the load shed function is not required. The load shed function is tested implicitly during the Loss of Normal Power (LNP) test.

Table 3.3-5M
Actuated Components Not Response Time Tested

LOAD SHED	P5A	Load Shed	Response time testing of the load shed function is not required. The load shed function is tested implicitly during the Loss of Normal Power (LNP) test.
LOAD SHED	P5B	Load Shed	Response time testing of the load shed function is not required. The load shed function is tested implicitly during the Loss of Normal Power (LNP) test.
LOAD SHED	P5C	Load Shed	Response time testing of the load shed function is not required. The load shed function is tested implicitly during the Loss of Normal Power (LNP) test.
LOAD SHED	P98	Load Shed	Response time testing of the load shed function is not required. The load shed function is tested implicitly during the Loss of Normal Power (LNP) test.
LOAD SHED	P9A	Load Shed	Response time testing of the load shed function is not required. The load shed function is tested implicitly during the Loss of Normal Power (LNP) test.
AEAS	2-EB-40	Close	The fuel handling accident analysis does not credit any AEAS related ACTION for accident mitigation
AEAS	2-EB-41	Open	The fuel handling accident analysis does not credit any AEAS related ACTION for accident mitigation
AEAS	2-EB-42	Open	The fuel handling accident analysis does not credit any AEAS related ACTION for accident mitigation
AEAS	2-EB-50	Close	The fuel handling accident analysis does not credit any AEAS related ACTION for accident mitigation
AEAS	2-EB-51	Open	The fuel handling accident analysis does not credit any AEAS related ACTION for accident mitigation
AEAS	2-EB-52	Open	The fuel handling accident analysis does not credit any AEAS related ACTION for accident mitigation
AEAS	2-EB-55	Close	The fuel handling accident analysis does not credit any AEAS related ACTION for accident mitigation
AEAS	2-EB-56	Close	The fuel handling accident analysis does not credit any AEAS related ACTION for accident mitigation

Table 3.3-5M
Actuated Components Not Response Time Tested

AEAS	2-EB-60	Open	The fuel handling accident analysis does not credit any AEAS related ACTION for accident mitigation
AEAS	2-EB-61	Open	The fuel handling accident analysis does not credit any AEAS related ACTION for accident mitigation
AEAS	2-EB-72	Close	The fuel handling accident analysis does not credit any AEAS related ACTION for accident mitigation
AEAS	2-EB-73	Close	The fuel handling accident analysis does not credit any AEAS related ACTION for accident mitigation
AEAS	2-HV-165	Close	The fuel handling accident analysis does not credit any AEAS related ACTION for accident mitigation
AEAS	2-HV-170	Close	The fuel handling accident analysis does not credit any AEAS related ACTION for accident mitigation
AEAS	2-HV-171	Close	The fuel handling accident analysis does not credit any AEAS related ACTION for accident mitigation
AEAS	2-HV-202	Close	The fuel handling accident analysis does not credit any AEAS related ACTION for accident mitigation
AEAS	2-HV-207	Close	The fuel handling accident analysis does not credit any AEAS related ACTION for accident mitigation
AEAS	2-HV-208	Close	The fuel handling accident analysis does not credit any AEAS related ACTION for accident mitigation
AEAS	2-HV-210	Open	The fuel handling accident analysis does not credit any AEAS related ACTION for accident mitigation
AEAS	2-HV-211	Close	The fuel handling accident analysis does not credit any AEAS related ACTION for accident mitigation
AEAS	2-HV-212A	Open	The fuel handling accident analysis does not credit any AEAS related ACTION for accident mitigation

Table 3.3-5M
Actuated Components Not Response Time Tested

AEAS	2-HV-212B	Open	The fuel handling accident analysis does not credit any AEAS related ACTION for accident mitigation
AEAS	2-HV-495	Close	The fuel handling accident analysis does not credit any AEAS related ACTION for accident mitigation
AEAS	2-HV-496	Close	The fuel handling accident analysis does not credit any AEAS related ACTION for accident mitigation
AEAS	2-HV-497	Close	The fuel handling accident analysis does not credit any AEAS related ACTION for accident mitigation
AEAS	F20	Stop	The fuel handling accident analysis does not credit any AEAS related ACTION for accident mitigation
AEAS	F25A	Start	The fuel handling accident analysis does not credit any AEAS related ACTION for accident mitigation
AEAS	F25B	Start	The fuel handling accident analysis does not credit any AEAS related ACTION for accident mitigation
AEAS	F32A	Start	The fuel handling accident analysis does not credit any AEAS related ACTION for accident mitigation
AEAS	F32B	Start	The fuel handling accident analysis does not credit any AEAS related ACTION for accident mitigation
AEAS	X61A	Start	The fuel handling accident analysis does not credit any AEAS related ACTION for accident mitigation
AEAS	X61B	Start	The fuel handling accident analysis does not credit any AEAS related ACTION for accident mitigation

3/4.3 INSTRUMENTATION

3/4.3.3 MONITORING INSTRUMENTATION

3/4.3.3.2 INCORE DETECTOR INSTRUMENTATION

TECHNICAL REQUIREMENT

3.3.3.2 The incore detection system shall be FUNCTIONAL with:

a. At least 75 % of all incore detector locations, and

b. A minimum of two quadrant symmetric incore detector locations per core quadrant, and

c. A minimum of 9 FUNCTIONAL incore detector segments at each detector segment level.

Where;
A FUNCTIONAL incore detector segment shall consist of a FUNCTIONAL rhodium detector constituting one of the segments in a fixed detector string.

A FUNCTIONAL incore detection location shall consist of a string in which at least three of the four incore detector segments are FUNCTIONAL.

APPLICABILITY:

When the incore detection system is used for:

a. Monitoring the AZIMUTHAL POWER TILT,

b. Recalibration of the excore neutron flux detection system, or

c. Monitoring the TOTAL UNRODDED INTEGRATED RADIAL PEAKING FACTOR or the linear heat rate.

ACTION:

With the incore detection system nonfunctional, do not use the system for the above applicable monitoring or calibration functions.

3/4.3 INSTRUMENTATION

3/4.3.3 MONITORING INSTRUMENTATION

3/4.3.3.2 INCORE DETECTOR INSTRUMENTATION

TECHNICAL SURVEILLANCE REQUIREMENTS

4.3.3.2 The incore detection system shall be demonstrated FUNCTIONAL:

a. By performance of a CHANNEL CHECK within 24 hours prior to its use and a least once per 7 days thereafter when required for:

   1. Monitoring the AZIMUTHAL POWER TILT.

   2. Recalibration of the excore neutron flux detection system, or

   3. Monitoring the TOTAL UNRODDED INTEGRATED RADIAL PEAKING FACTOR or the linear heat rate.

b. At least once per 18 months by performance of a CHANNEL CALIBRATION operation which exempts the neutron detectors but includes all electronic components. The neutron detectors shall be calibrated prior to installation in the reactor core.

BASES:

The FUNCTIONALITY of the incore detectors with the specified minimum compliment of equipment ensures that the measurements from use of this system accurately represent the spatial neutron flux distribution of the reactor core.

The analysis performed by AREVA (Reference 2) in accordance with the NRC approved methodology (Reference 1) concludes that the current uncertainty limits on F_Q^N and $F_{\Delta H}$, 7% and 6% respectively, are protected with at least 75% of all incore detector locations FUNCTIONAL.

REFERENCE:

1. Siemens Report No. EMF-96-029(P)(A), dated January 1997, volumes 1 and 2, “Reactor Analysis System for PWRs, Volume 1-Methodology Description, Volume 2 - Benchmarking Results.”

2. AREVA report EIR No. 51-9126147-000, dated November, 2009, “Millstone Unit 2 Cycle 20 Misalignment of ICI Rhodium Detector Strings Due to ICI Thimble Tube Replacement.”

3/4.3 INSTRUMENTATION

3/4.3.3 MONITORING INSTRUMENTATION

3/4.3.3.3 SEISMIC INSTRUMENTATION

TECHNICAL REQUIREMENT

3.3.3.3. The seismic monitoring instrumentation channels shown in TRM Table 3.3-7 shall be FUNCTIONAL.

APPLICABILITY:

All MODES.

ACTION:

a. With the number of FUNCTIONAL seismic monitoring channels less than required by TRM Table 3.3-7, restore the nonfunctional channel(s) to FUNCTIONAL status within 30 days or otherwise enter the condition into the corrective action program.

3/4.3 INSTRUMENTATION

3/4.3.3 MONITORING INSTRUMENTATION

3/4.3.3.3 SEISMIC INSTRUMENTATION

TECHNICAL SURVEILLANCE REQUIREMENTS

4.3.3.3 Each of the above seismic monitoring instrumentation channels shall be Demonstrated FUNCTIONAL by the performance of the CHANNEL CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST operations at the frequencies shown in TRM Table 4.3-4.

BASES:

The FUNCTIONALITY of the seismic instrumentation ensures that sufficient capability is available to promptly determine the magnitude of a seismic event and evaluate the response of those features important to safety. This capability is required to permit comparison of the measured response to that used in the design of the facility.

REFERENCE:

1. Condition Report M3-00-02659

Table 3.3-7
Seismic Monitoring Instrumentation Response Times

INSTRUMENT CHANNEL	SENSOR LOCATION	MEASUREMENT RANGE	MINIMUM CHANNELS FUNCTIONAL
1. TIME HISTORY ACCELEROGRAPHS			
a. Containment Base Slab	El. -24’0” @ 215° outside of containment	.001 to 1 g	1
b. Containment Structure	El. 75’0” @ 215° outside of containment	.001 to 1 g	1
c. Auxiliary Building	El. 14’6” in maintenance work area	.001 to 1 g	1
d. Intake Structure	El. 18’0” on South wall	.001 to 1 g	1
e. Free Field	El. 14’6” ground level on pad 139’ South-East of Condensate Storage Tank	.001 to 1 g	1
2. PEAK ACCELEROGRAPHS			
a. Containment Base Slab	El. -24’0” outside of containment	0 to 1 g	1
b. Steam Generator Support	El. -0’7” S/G #1	0 to 1 g	1
c. Pressurizer Support	El. 14’6”	0 to 1 g	1
d. Safety Injection Tank Support	El. 38’6”	0 to 1 g	1
3. SEISMIC TRIGGER			
a. Containment Base Slab	El. -24’0” @ 215° outside of containment	.005 to .02 g	1
4. RESPONSE SPECTRUM RECORDER			
a. Containment Base Slab	El. -24’0” outside of containment	-	1

Table 4.3-4
Seismic Monitoring Instrumentation Technical Surveillance Requirements

INSTRUMENT CHANNEL	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST
1. TIME HISTORY ACCELEROGRAPHS			
a. Containment Base Slab	M	R	SA
b. Containment Structure	M	R	SA
c. Auxiliary Building	M	R	SA
d. Intake Structure	M	R	SA
e. Free Field	M	R	SA
2. PEAK ACCELEROGRAPHS			
a. Containment Base Slab	N.A.	R	N.A.
b. Steam Generator Support	N.A.	R	N.A.
c. Pressurizer Support	N.A.	R	N.A.
d. Safety Injection Tank Support	N.A.	R	N.A.
3. SEISMIC TRIGGER			
a. Containment Base Slab	N.A.	R	SA
4. RESPONSE SPECTRUM RECORDER			
a. Containment Base Slab	N.A.	R	N.A.

3/4.3 INSTRUMENTATION

3/4.3.3 MONITORING INSTRUMENTATION

3/4.3.3.4 METEOROLOGICAL INSTRUMENTATION

TECHNICAL REQUIREMENT

3.3.3.4 The meteorological monitoring instrumentation channels shown in TRM Table 3.3-8 shall be FUNCTIONAL.

APPLICABILITY:

All MODES.

ACTION:

a. With the number of FUNCTIONAL meteorological monitoring channels less than required by TRM Table 3.3-8, suspend all releases of gaseous radioactive material from the radwaste gas decay tanks until the nonfunctional channel(s) is restored to FUNCTIONAL status.

b. With one or more required meteorological monitoring channels nonfunctional for more than 7 days, enter condition into the corrective action program.

3/4.3 INSTRUMENTATION

3/4.3.3 MONITORING INSTRUMENTATION

3/4.3.3.4 METEREOLOGICAL INSTRUMENTATION

TECHNICAL SURVEILLANCE REQUIREMENTS

4.3.3.4 Each meteorological monitoring instrumentation channel shall be demonstrated FUNCTIONAL by the performance of the CHANNEL CHECK and CHANNEL CALIBRATION operations at the frequencies shown in TRM Table 4.3-5.

BASES:

The FUNCTIONALITY of the meteorological instrumentation ensures that sufficient meteorological data is available for estimating potential radiation doses to the public as a result of routine or accidental release of radioactive materials to the atmosphere. This capability is required to evaluate the need for initiating protective measures to protect the health and safety of the public. This instrumentation is consistent with the recommendations of Regulatory Guide 1.23, “Onsite Meteorological Programs.”

If the ACTIONS of the TECHNICAL REQUIREMENT cannot be met, the condition is documented in the corrective action program and assessed, as appropriate.

REFERENCE:

1. Condition Report M3-00-02659

Table 3.3-8
Meteorological Monitoring InstrumentatioN

INSTRUMENT	LOCATION	INSTRUMENT MINIMUM ACCURACY	MINIMUM CHANNELS FUNCTIONAL
1. WIND SPEED			
a. Nominal Elev.	142 ft.	± 0.22 m/sec*	1
b. Nominal Elev.	374 ft.	± 0.22 m/sec*	1
2. WIND DIRECTION			
a. Nominal Elev.	142 ft.	± 5°	1
b. Nominal Elev.	374 ft.	± 5°	1
3. AIR TEMPERATURE - DELTA T			
a. Nominal Elev.	142 ft.	± 0.18°F	1
b. Nominal Elev.	374 ft.	± 0.18°F	1

* Starting speed of anemometer shall be < 0.45 m/sec.

Table 4.3-5
Meteorological Monitoring Instrumentation Technical Surveillance Requirements

INSTRUMENT CHANNEL	CHANNEL CHECK	CHANNEL CALIBRATION
1. WIND SPEED		
a. Nominal Elev. 142	D	SA
b. Nominal Elev. 374	D	SA
2. WIND DIRECTION		
a. Nominal Elev. 142	D	SA
b. Nominal Elev. 374	D	SA
3. AIR TEMPERATURE - DELTA T		
a. Nominal Elev. 142	D	SA
b. Nominal Elev. 374	D	SA

3/4.3 INSTRUMENTATION

3/4.3.3 MONITORING INSTRUMENTATION

3/4.3.3.7 FIRE DETECTION INSTRUMENTATION

TECHNICAL REQUIREMENT

3.3 3.7 As a minimum, the fire detection instrumentation for each fire detection zone in TRM Table 3.3-10 shall be FUNCTIONAL.

APPLICABILITY:

Whenever equipment in that fire detection zone is required to be FUNCTIONAL.

ACTION:

With the number of FUNCTIONAL fire detection instrument(s) less than the minimum number of FUNCTIONAL requirements of TRM Table 3.3-10:

a. Within 1 hour, establish a fire watch patrol to inspect the zone(s) with the nonfunctional instrument(s) at least once per hour unless the instrument(s) is located inside the containment. Roving fire watches must monitor the area of the device in question, as a minimum, within the specified time frame, plus or minus 25% of the time interval specified in the ACTION statement for periodic roving fire watches. The 25% extension of the time interval specified does not degrade the reliability that results from performing the rove at the specified interval, based on plant experience, and Fire Protection Engineering analysis as documented in Technical Evaluation M3-EV-02-2005.

   If the instrument(s) are located inside the containment, then inspect the associated containment area at least once per 8 hours or monitor and record the average containment air temperatures manually once an hour or rely on the plant process computer to continuously monitor associated area containment temperatures with an alarm setpoint of 150°F using the following temperature elements:

   - TE8098 (located 30’ elev. C and D RCP’s)
   - TE9770 (located 18’ elev. West Penetration)
   - TE9771 (located 18’ elev. East Penetration)
   - TE8097 (located 30’ elev. A and B RCPS)

b. Restore the nonfunctional equipment to FUNCTIONAL status within 14 days, or develop a plan and schedule for restoring the equipment to FUNCTIONAL status.

3/4.3 INSTRUMENTATION

3/4.3.3 MONITORING INSTRUMENTATION

3/4.3.3.7 FIRE DETECTION INSTRUMENTATION

TECHNICAL SURVEILLANCE REQUIREMENTS

4.3.3.7.1 Each of the above required fire detection instruments, which are accessible during plant operation, shall be demonstrated FUNCTIONAL at least once per 6 months by performance of a CHANNEL FUNCTIONAL TEST. Fire detectors which are not accessible during plant operation shall be demonstrated FUNCTIONAL by the performance of a CHANNEL FUNCTIONAL TEST during each COLD SHUTDOWN exceeding 24 hours unless performed in the previous 6 months.

4.3.3.7.2 The circuitry associated with the supervision of the above fire detection instruments and circuits, per NFPA 72-D, shall be demonstrated FUNCTIONAL at least once per 6 months.

BASES:

FUNCTIONALITY of the fire detection instrumentation ensures that adequate warning capability is available for the prompt detection of fires. This capability is required in order to detect and locate fires in their early stages. Prompt detection of fires will reduce the potential for damage to safety related equipment and is an integral element in the overall facility Fire Protection program.

In the event that a portion of the fire detection instrumentation is nonfunctional, the establishment of frequent fire patrols in the affected areas is required to provide detection capability until the nonfunctional instrumentation is restored to FUNCTIONALITY.

Roving fire watches must monitor the area of the device in question, as a minimum, within the specified time frame, plus or minus 25% of the time interval specified in the ACTION statement for periodic roving fire watches. The 25% extension of the time interval specified does not degrade the reliability that results from performing the rove at the specified interval, based on plant experience, and Fire Protection Engineering analysis as documented in Technical Evaluation M3-EV-02-2005.

Fire detection in containment is limited to the areas above the reactor coolant pumps and above the electrical penetration areas. The plant process computer (PPC) continuously monitors air temperatures throughout containment to compute technical specification containment average air temperature. However monitoring the average temperature is not ideal for detecting incipient stage fires in the reactor coolant pump and the cable penetration areas.

3/4.3 INSTRUMENTATION

3/4.3.3 MONITORING INSTRUMENTATION

3/4.3.3.7 FIRE DETECTION INSTRUMENTATION

BASES: (Continued)

Individual temperature monitoring elements located in containment are set to alarm at 150°F. When the PPC alarms it will display any appropriate AOP's associated with the alarm. The PPC must display the procedure for fire response A0P2559, "Fire" to credit these points as an appropriate compensatory measure for a nonfunctional fire detection system in containment.

The temperature monitoring elements indicated were chosen based on their proximity to the existing fire detection systems. In the event the temperature element associated with the nonfunctional fire detector or the PPC fails, it is acceptable to monitor and record average containment air temperatures manually once an hour.

Based on the ability of the PPC to produce historic records of temperatures for the locations specified, this compensatory measure would provide an acceptable means of monitoring for fire conditions and would document regulatory adherence.

REFERENCE:

1. Condition Report M3-00-2659

Table 3.3-10
Fire Detection Instruments

	[redacted]		[redacted]	
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted] [redacted]				
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted] [redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted] [redacted]				
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

Table 3.3-10 (Continued)
Fire Detection Instruments

	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]				
	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]				
	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]				
	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]				
	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

SECURITY-RELATED-INFORMATION—Withheld under 10 CFR 2.390 (d) (1)

Table 3.3-10 (Continued)

Fire Detection Instruments

[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
9. [redacted]				
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted] [redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted] [redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted] [redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]				
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]				
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]				
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

SECURITY-RELATED-INFORMATION—Withheld under 10 CFR 2.390 (d) (1)

Table 3.3-10 (Continued)

Fire Detection Instruments

	[redacted]			[redacted]		
[redacted]	[redacted]		[redacted]	[redacted]		[redacted]
[redacted]	[redacted]		[redacted]	[redacted]		[redacted]
[redacted]	[redacted]		[redacted]	[redacted]		[redacted]
[redacted]	[redacted]		[redacted]	[redacted]		[redacted]
[redacted]	[redacted]		[redacted]	[redacted]		[redacted]
[redacted]	[redacted]		[redacted]	[redacted]		[redacted]
[redacted]	[redacted]		[redacted]	[redacted]		[redacted]
[redacted]	[redacted]		[redacted]	[redacted]		[redacted]
[redacted]	[redacted]	[redacted]		[redacted]	[redacted]	
[redacted]	[redacted]	[redacted]		[redacted]	[redacted]	

3/4.3 INSTRUMENTATION

3/4.3.3.8 ACCIDENT RADIATION MONITORING INSTRUMENTATION

TECHNICAL REQUIREMENT

3.3.3.8 The mid and high range channels of the Wide Range Gas Monitor (WRGM) shall be FUNCTIONAL with an alarm setpoint set less than the EAL Alert Classification level.

APPLICABILITY:

MODES 1, 2, 3, 4, 5, and 6.

ACTION:

a. With an alarm setpoint of the mid or high range channel(s) of the WRGM exceeding the EAL Alert Classification level, adjust the setpoint to within the required value within twenty-four hours or declare the channel(s) nonfunctional.

b. With mid or high range channel(s) of WRGM nonfunctional, within 72 hours, initiate an alternate method of monitoring the appropriate parameters (not required if the nonfunctionality is only due to alarm setpoint)

   AND

   Restore required channel(s) to FUNCTIONAL status within 30 days, or otherwise initiate corrective actions.

TECHNICAL SURVEILLANCE REQUIREMENTS

4.3.3.8 The mid and high range channels of the WRGM shall be demonstrated FUNCTIONAL by the performance of the following surveillances at the frequencies shown:

a. CHANNEL CHECK once per 12 hours.

b. CHANNEL FUNCTIONAL TEST once per 31 days.

c. CHANNEL CALIBRATION once per 18 months.

3/4.3 INSTRUMENTATION

3/4.3.3.8 ACCIDENT RADIATION MONITORING INSTRUMENTATION

BASES:

When the Unit 1 stack high range radiation monitor was deactivated and removed, Unit 2 had to install a new high range radiation monitor (the Wide Range Gas Monitor, or WRGM, RM-8169) to monitor its release to the Millstone stack during an accident.

FUNCTIONALITY and TECHNICAL SURVEILLANCE REQUIREMENT for RM-8169 are needed to replace the equivalent requirements applicable to the Unit 1 high range monitor. FUNCTIONALITY and TECHNICAL SURVEILLANCE REQUIREMENT for the WRGM are consistent with technical specifications which have similar requirements for the Unit 2 vent high range radiation monitor (RM-8168). These requirements will assure that radiation monitoring is available during an accident with releases to the environment for assessment purposes.

The alternate method of monitoring specified in TR ACTION b. is contained in procedures. It includes use of the lower range (channel 1) of the WRGM, if FUNCTIONAL and on scale.

REFERENCE:

1. CR-01-01975, “New Wide Range Gas Monitor Does Not Appear to Meet NUREG-0737 Requirement”

3/4.4 REACTOR COOLANT SYSTEM

3/4.4.7 CHEMISTRY

TECHNICAL REQUIREMENT

3.4.7 The reactor coolant system chemistry shall be maintained within the limits specified in TRM Table 3.4-1.

APPLICABILITY:

All MODES.

ACTION:

MODES 1, 2, 3 and 4.

a. With any one or more chemistry parameter in excess of its Steady State Limit but within its Transient Limit, implement established plant chemistry guidelines.

b. With any one or more chemistry parameter in excess of its Transient Limit, implement established plant chemistry guidelines.

MODES 5 and 6.

With the concentration of either chloride or fluoride in the reactor coolant system in excess of its Steady State Limit for more than 24 hours or in excess of its Transient Limit, reduce the pressurizer pressure to ≤500 psia, if applicable, and perform an analysis to determine the effects of the out-of-limit condition on the structural integrity of the reactor coolant system; determine that the reactor coolant system remains acceptable for continued operations prior to increasing the pressurizer pressure above 500 psia or prior to proceeding to MODE 4.

TECHNICAL SURVEILLANCE REQUIREMENTS

4.4.7 The reactor coolant system chemistry shall be determined to be within the limits by analysis of those parameters at the frequencies specified in TRM Table 4.4-1.

3/4.4 REACTOR COOLANT SYSTEM

3/4.4.7 CHEMISTRY

BASES:

The limitations on reactor coolant system contaminants ensure that corrosion of the reactor coolant system is minimized and reduce the potential for reactor coolant system leakage or failure due to stress corrosion. Maintaining the concentrations of the contaminants within the Steady State Limits shown on TRM Table 3.4-1 provides adequate corrosion protection to ensure the structural integrity of the reactor coolant system over the life of the plant. The associated effects of exceeding the oxygen, chloride and fluoride limits are time and temperature dependent.

Established plant chemistry guidelines are contained in MP-PROC-CH-CP 2802A, “Primary Chemistry Control.”

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

REFERENCE:

1. License Amendment No. 266

Table 3.4-1
Reactor Coolant System
Chemistry Limits

PARAMETER	**STEADY STATE LIMIT**	**TRANSIENT LIMIT**
DISSOLVED OXYGEN	$\leq$ 0.10 ppm*	$\leq$ 1.00 ppm*
CHLORIDE	$\leq$ 0.15 ppm	$\leq$ 1.50 ppm
FLUORIDE	$\leq$ 0.10 ppm	$\leq$ 1.00 ppm

*Limit not applicable with $T_{avg} \leq 250°F$.

Table 4.4-1
Reactor Coolant System
Chemistry Limits Technical Surveillance Requirements

PARAMETER	**MINIMUM SAMPLING FREQUENCIES**	**MAXIMUM TIME BETWEEN SAMPLES**
DISSOLVED OXYGEN	3 times per 7 days*	72 hours
CHLORIDE	3 times per 7 days	72 hours
FLUORIDE	3 times per 7 days	72 hours

*Not required with $T_{avg} \leq 250°F$.

3/4.4 REACTOR COOLANT SYSTEM

3/4.4.9 PRESSURE/TEMPERATURE LIMITS

TECHNICAL REQUIREMENT

3.4.9.1 In accordance with Technical Specification LCO 3.4.9.1, Pressure/ Temperature Limits.

APPLICABILITY:

In accordance with Technical Specification 3.4.9.1.

ACTION:

In accordance with Technical Specification 3.4.9.1.

TECHNICAL SURVEILLANCE REQUIREMENTS

4.4.9.1

a. In accordance with Technical Specifications Surveillance Requirement 4.4.9.1a.

b. The reactor vessel material irradiation surveillance specimens shall be removed and examined, to determine changes in material properties, at the intervals shown in Table 4.4-3.

c. The results of the examinations in TECHNICAL SURVEILLANCE REQUIREMENT 4.4.9.1b shall be used to update Technical Specifications Table 3.4-2 and Technical Specifications Figures 3.4-2a and 3.4-2b.

Table 4.4-3
Reactor Vessel Material
Irradiation Surveillance Schedule

CAPSULE	WITHDRAWAL SCHEDULE (EFPY)
W-97	3.0
W-97 (Flux Monitor)	10.0
W-104	10.0
W-83	15.3
W-277	EOL
W-263	Spare
W-284	Spare

3/4.4 REACTOR COOLANT SYSTEM

3/4.4.9 PRESSURE/TEMPERATURE LIMITS

BASES:

The number of reactor vessel irradiation surveillance specimens and the frequencies for removing and testing these specimens are provided in Table 4.4-3 to assure compliance with the requirements of Appendix H to 10 CFR Part 50. Removal of reactor vessel irradiation surveillance specimens does not constitute a CORE ALTERATION per Technical Specification 1.12.

REFERENCE:

1. License Amendment No. 272

2. NRC safety evaluation for approval of changes to Table 4.4-3, “Millstone Power Station, Unit No. 2 - Changes to the Reactor Pressure Vessel Surveillance Capsule Withdrawal Schedule (TAC No. MB9149),” dated October 1, 2003

3/4.4 REACTOR COOLANT SYSTEM

3/4.4.9.2 PRESSURIZER

TECHNICAL REQUIREMENT

3.4.9.2 The pressurizer temperature shall be limited to:

a. A maximum heatup of 100°F in any one hour period,

b. A maximum cooldown of 200°F in any one hour period, and

c. A maximum spray water temperature differential of 350°F.

APPLICABILITY:

MODES 1, 2, 3, 4 and 5.

ACTION:

With any of the above limits exceeded, perform the following:

a. Restore the temperature to within limit within 30 minutes.

AND

b. Perform an engineering evaluation to determine the effects of the out of limit condition on the structural integrity of the pressurizer and determine that the pressurizer remains acceptable for continued operation within 72 hours. Otherwise, be in at least MODE 3 within the next 6 hours and reduce pressurizer pressure to less than 500 psia within the following 30 hours.

TECHNICAL SURVEILLANCE REQUIREMENTS

4.4.9.2 The pressurizer temperature and spray water temperature differential shall be determined to be within the limits at least once per 30 minutes during system heatup or cooldown.

3/4.4 REACTOR COOLANT SYSTEM

3/4.4.9.2 PRESSURIZER

BASES:

The limitations imposed on the pressurizer heatup and cooldown rates and spray water temperature differential are provided to assure that the pressurizer is operated within the design criteria assumed for the fatigue analysis performed in accordance with the ASME Code requirements. Verification that pressurizer temperature conditions are within the limits of TECHNICAL REQUIREMENT 3.4.9.2, at least once per 30 minutes, is required when undergoing planned changes of ≥10°F. The 30 minute time interval permits assessment and correction for temperature deviations within a reasonable time.

REFERENCE:

1. License Amendment No. 266

3/4.4 REACTOR COOLANT SYSTEM

3/4.4.9.4 SHUTDOWN COOLING OVERPRESSURE PROTECTION

TECHNICAL REQUIREMENT

3.4.9.4 Shutdown Cooling System overpressure protection shall be provided as follows: (1)

a. All HPSI pumps shall be prevented from automatically injecting into the RCS when the RCS is not vented through a vent of ≥ 2.2 in^2.

b. A maximum of one HPSI pump may be capable of automatically injecting into the RCS when the RCS is vented through a vent of ≥ 2.2 in^2.

APPLICABILITY:

When the Shutdown Cooling System is connected to the RCS and the head is on the reactor vessel.

ACTION:

With more than the maximum allowed number of HPSI pumps capable of automatically injecting into the RCS, take immediate ACTION to comply with the TECHNICAL REQUIREMENT 3.4.9.4 above.

TECHNICAL SURVEILLANCE REQUIREMENTS

4.4.9.4 Verify all required HPSI pumps are prevented from automatically injecting into the RCS at least once per 12 hours by:(2)

a. Racking down the motor circuit breaker from the power supply circuit; or

b. Shutting and tagging the discharge valve with the key lock on the control panel (2-51-654 or 2-SI-656); or

c. Placing the pump control switch in the pull-to-lock position.

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(1) Refer to Technical Specification 3.4.9.3 for additional restrictions concerning HPSI pump operation.

(2) In MODE 4, Technical Specification 3.5.3 requires at least one HPSI pump to be OPERABLE. The only acceptable method to provide Shutdown Cooling System overpressure protection, without affecting the OPERABILITY of this HPSI pump, is to place the pump control switch in the pull-to-lock position.

3/4.4 REACTOR COOLANT SYSTEM

3/4.4.9.4 SHUTDOWN COOLING OVERPRESSURE PROTECTION

BASES:

An inadvertent start of a HPSI pump could result in the overpressurization of the SDC System. To prevent this, it is necessary to disable HPSI pump automatic injection capability into the RCS whenever the SDC System is connected to the RCS. If the RCS is not vented, the automatic injection capability of all HPSI pumps must be prevented. This restriction may be relaxed if the RCS is adequately vented. If a vent of $\geq 2.2 \text{ in}^2$ has been established, a maximum of one HPSI may be capable of automatically injecting into the RCS. If the reactor vessel head has been removed, there is no restriction on HPSI pump automatic injection capability.

If a loss of RCS inventory or reduction in SHUTDOWN MARGIN event occurs, the appropriate response will be to correct the situation by starting RCS makeup pumps. If the loss of inventory or SHUTDOWN MARGIN is significant, this may necessitate the use of HPSI pumps that are being maintained not capable of automatically injecting into the RCS in accordance with this requirement. The use of the HPSI pump(s) to restore RCS inventory or SHUTDOWN MARGIN will require entry into the associated ACTION statement. The ACTION statement requires immediate ACTION to comply with the requirements. The restoration of RCS inventory or SHUTDOWN MARGIN can be considered to be part of the immediate ACTION to restore the HPSI pump(s) to a not capable of automatically injecting status. While recovering RCS inventory or SHUTDOWN MARGIN, RCS pressure will be maintained below SDC design pressure. After RCS inventory or SHUTDOWN MARGIN has been restored, the HPSI pump(s) should be immediately made not capable of automatically injecting and the ACTION statement exited.

REFERENCE:

1. Technical Specification LCO 3.4.9.3

2. Technical Specification LCO 3.5.3

3. Condition Report M3-00-02659

3/4.4 REACTOR COOLANT SYSTEM

3/4.4.10 STRUCTURAL INTEGRITY - ASME CODE CLASS 1, 2, 3 COMPONENTS

TECHNICAL REQUIREMENT

3.4.10 The structural integrity of ASME Code Class 1, 2 and 3 components shall be maintained in accordance with TECHNICAL SURVEILLANCE REQUIREMENT 4.4.10.

APPLICABILITY:

MODES 1, 2, 3, 4, 5, and 6, except when a ASME Code Class 1, 2, or 3 component is not required to be FUNCTIONAL.

ACTION:

a. With one or more ASME Code Class 1, 2 and 3 component(s) in a degraded or nonconforming condition(s), perform the following ACTIONS within 72 hours:*

   1. Determine that structural integrity is still maintained in the degraded or nonconforming condition;

      or

   2. Isolate the affected component(s) from service.

b. If the above ACTION is not completed within 72 hours, immediately declare the affected component(s) nonfunctional.

* - For ASME Code Class 1 and 2 components which have PRESSURE BOUNDARY LEAKAGE, the affected component(s) must be immediately isolated from service or declared nonfunctional.

TECHNICAL SURVEILLANCE REQUIREMENTS

4.4.10 The structural integrity of ASME Code Classes 1, 2 and 3 components shall be inspected in accordance with the Inservice Inspection Program.

3/4.4 REACTOR COOLANT SYSTEM

3/4.4.10 STRUCTURAL INTEGRITY - ASME CODE CLASS 1, 2, 3 COMPONENTS

BASES:

The inservice inspection and testing programs for ASME Code Class 1, 2 and 3 components ensure that the structural integrity and operational readiness of these components will be maintained at an acceptable level throughout the life of the plant. These programs are in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda as required by 10 CFR Part 50.55a.

This TR requires that the structural integrity of ASME Code Class 1, 2 and 3 components be maintained. Structural integrity is the ability to withstand specified loading, with an acceptable margin, without collapse, rupture, brittle fracture, or unstable flaw growth.

Components that may experience unanalyzed loads, have a deficient original design analysis, or have pressure boundary wall loss, but nevertheless can be shown to meet the minimum requirements of the original construction Code or ASME Section III Appendix F, are considered to retain their structural integrity. For components with degraded material properties or relevant conditions as defined in ASME Section XI, the criteria for structural integrity are contained or referenced in Section XI.

Alternative evaluation criteria may be used to determine structural integrity when approved by the NRC. In addition to the initial discovery, supplemental NDE may be required to fully characterize the degraded condition. Preliminary judgments regarding structural integrity may be expressed considering the available information and the expectation that a final determination of structural integrity will result once all characterization, evaluation and documentation are complete.

For ASME Code Class 1 or 2 components which have PRESSURE-BOUNDARY LEAKAGE, the structural integrity of the component is considered not to be maintained and the affected component(s) must be immediately isolated from service. If the affected component(s) cannot be isolated from service, the affected component(s) is immediately declared nonfunctional and the required ACTIONS of the applicable TS and TRs apply. For all other structural integrity (i.e. non pressure boundary leakage) degraded or nonconforming conditions of Class 1 and Class 2 components, the structural integrity of the affected component will be evaluated consistent with the requirements of this TR.

If the required determination of structural integrity cannot be accomplished within 72 hours or the results are indeterminate or structural integrity is not maintained, or the affected component is not isolated, or cannot be isolated, ACTION must proceed to declare the affected component(s) nonfunctional, as specified in ACTION statement 'b.' The appropriate TS or TR shall be considered not met, as appropriate.

3/4.4 REACTOR COOLANT SYSTEM

3/4.4.10 STRUCTURAL INTEGRITY - ASME CODE CLASS 1, 2, 3 COMPONENTS

BASES: (Continued)

Surveillance Requirement 4.4.10 requires performing inservice inspections of ASME Section XI Code Class 1, 2 and 3 components in accordance with TS 4.0.5.

Inservice inspection of ASME Code Class 1, 2 and 3 components are performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda, as required by 10 CFR 50.55a(g), to ensure that the structural integrity of these components will be maintained at an acceptable level throughout the life of the plant. Exception to these requirements apply where relief has been granted by the Commission pursuant to 10 CFR 50.55a(a)(3) and (g)(6)(i). The surveillance intervals specified in Section XI of the ASME Code apply.

REFERENCE:

1. Generic Letter 91-18, "Information to Licensees Regarding Two NRC Inspection Manual Sections on Resolution of Degraded and Nonconforming Conditions and on Operability," November 7, 1991, and Revision 1, October 8, 1997.

2. 10 CFR 50.55a(b)(2)(xiii), "Flaws in Class 3 Piping," Federal Register (Vol. 64, No. 183), September 22,1999.

3. Generic Letter 90-05, "Guidance for Performing Temporary Non-Code Repair of ASME Code Class 1,2 and 3 Piping," June 15,1990; and August 16,1990.

4. Code Case N-513, "Evaluation Criteria for Temporary Acceptance of Flaws in Class 3 Piping."

5. Code Case N-523-1, "Mechanical Clamping Devices for Class 2 and 3 Piping."

6. Elinor G. Adensam, U.S. NRC to Martin L. Bowling, "Millstone Nuclear Power Station, Unit Nos. 2 and 3 - Request for an Alternative to the Requirements of the ASME Code," TAC Nos. MA3889 and MA3884, dated February 23,1999.

7. License Amendment No. 264. LBDCR 02-2-11 September 13, 2002.

3/4.4 REACTOR COOLANT SYSTEM

3/4.4.11 REACTOR COOLANT SYSTEM VENTS

TECHNICAL REQUIREMENT

3.4.11 At least one reactor coolant system vent path consisting of at least two valves in series capable of being powered from emergency buses shall be FUNCTIONAL at each of the following locations:

a. Reactor vessel head

b. Pressurizer steam space

APPLICABILITY:

MODES 1, 2, 3, and 4.

ACTION:

a. With any one of the PORVs or PORV block valves of the pressurizer steam space vent path nonfunctional in MODES 1, 2 or 3, follow the ACTION requirements of Technical Specification 3.4.3.

b. With any one of the PORVs or PORV block valves of the pressurizer steam space vent path nonfunctional in MODE 4, follow the ACTION requirements of Technical Specification 3.4.9.3.

c. With the reactor vessel head vent path nonfunctional, STARTUP and/or POWER OPERATION may continue provided that the nonfunctional vent path is maintained closed with power removed from the valve actuator of all the valves in the nonfunctional vent path. Restore the reactor vessel head vent path to FUNCTIONAL status within 30 days or otherwise enter the condition into the corrective action program.

TECHNICAL SURVEILLANCE REQUIREMENTS

4.4.11 Each reactor coolant system vent path shall be demonstrated FUNCTIONAL at least once per 18 months by:

1. Verifying all manual isolation valves in each vent path are locked in the open position.

2. Cycling each valve in the vent path through at least one complete cycle of full travel from the control room during COLD SHUTDOWN or REFUELING.

3. Verifying flow through the reactor coolant vent system vent paths during COLD SHUTDOWN or REFUELING.

3/4.4 REACTOR COOLANT SYSTEM

3/4.4.11 REACTOR COOLANT SYSTEM VENTS

BASES:

Reactor Coolant System Vents are provided to exhaust noncondensible gases and/or steam from the primary system that could inhibit natural circulation core cooling. The FUNCTIONALITY of at least one reactor coolant system vent path from the reactor vessel head and the pressurizer steam space ensures that the capability exists to perform this function.

The valve redundancy of the reactor coolant system vent paths serves to minimize the probability of inadvertent or irreversible actuation while ensuring that a single failure of a vent valve, power supply or control system does not prevent isolation of the vent path.

The flow test verifies that each flowpath for the reactor vessel head vent and the pressurizer steam space vent is FUNCTIONAL. This verification can be performed by using a series of overlapping tests to ensure flow is verified through all parts of the system.

REFERENCE:

1. License Amendment No. 266
2. DCR M2-02006
3. DCR M2-05002

3/4.5 EMERGENCY CORE COOLING SYSTEMS

3/4.5.2 ECCS SUBSYSTEMS - $T_{AVG} \geq 300°F$

TECHNICAL REQUIREMENT

3.5.2 In accordance with Technical Specification LCO 3.5.2, ECCS Subsystems - T_{avg} >300°F

APPLICABILITY: In accordance with Technical Specification LCO 3.5.2.

ACTION:

In accordance with Technical Specification LCO 3.5.2.

TECHNICAL SURVEILLANCE REQUIREMENTS

4.5.2 Each ECCS subsystem shall be demonstrated FUNCTIONAL:

a. By a visual inspection which verifies that no loose debris (rags, trash, clothing, etc.) is present in the containment which could be transported to the containment sump and cause restriction of the pump suctions during LOCA conditions. This visual inspection shall be performed:

1. For all accessible areas of the containment prior to establishing CONTAINMENT INTEGRITY, and

2. Of the areas affected within containment at the completion of containment entry when CONTAINMENT INTEGRITY is established.

b. By conducting a flow balance verification immediately prior to returning to service any portion of a subsystem after the completion of a modification that could alter system flow characteristics. The injection leg flow rate shall be as follows:

1. HPSI Headers - the sum of the three lowest injection flows must be ≥ 471 gpm. The sum of the four injection flows must be ≤ 675 gpm.

2. LPSI Header - the sum of the three lowest injection flows must be ≥ 2850 gpm. The sum of the four injection flows must be

$$\leq 4500 + \left[\frac{\text{RWST level (\%)} - 10(\%)}{90\%} \times 200\right]$$

3/4.5 EMERGENCY CORE COOLING SYSTEMS

ECCS SUBSYSTEMS - $T_{AVG} \geq 300°F$

TECHNICAL SURVEILLANCE REQUIREMENTS

BASES:

TECHNICAL SURVEILLANCE REQUIREMENT 4.5.2.a verifies by a visual inspection that no loose debris (rags, trash, clothing, etc.) is present in the containment that could be transported to the containment sumps and cause restriction of the pump suction during LOCA conditions. This is a good housekeeping item, which is an integral part of any maintenance or surveillance activity. It does not verify FUNCTIONALITY of the ECCS or any ECCS functions assumed in the safety analysis. This approach is consistent with NUREG-1432, which does not contain a requirement to inspect the containment sump prior to establishing CONTAINMENT INTEGRITY. In addition, the containment sump will continue to be inspected every 18 months as required by Technical Specification SR 4.5.2.j.

TECHNICAL SURVEILLANCE REQUIREMENT 4.5.2.b verifies proper flow distribution following any modifications that could alter system flow characteristics. The purpose of the ECCS throttle valve surveillance requirements is to provide assurance that proper ECCS flows will be maintained in the event of a LOCA. Maintenance of proper flow resistance and pressure drop in the piping system to each injection point is necessary to: (1) prevent total pump flow from exceeding runout conditions when the system is in its minimum resistance configuration, (2) provide the proper flow split between injection points in accordance with the assumptions used in the ECCS-LOCA analyses, and (3) provide an acceptable level of total ECCS flow to all injection points equal to or above that assumed in the ECCS-LOCA analyses.

Verification of the correct position for the mechanical and/or electrical valve stops can be performed by either of the following methods:

1. Visually verify the valve opens to the designated throttled position; or

2. Manually position the valve to the designated throttled position and verify that the valve does not move when the applicable valve control switch is placed to "OPEN."

Post maintenance testing associated with a system modification, which is controlled by plant procedures, will include verification of proper flow distribution if the associated modification could adversely affect the flow distribution. Without this verification, the respective system could not be declared FUNCTIONAL.

REFERENCE:

1. License Amendment 283

3/4.6 CONTAINMENT SYSTEMS

3/4.6.3 CONTAINMENT ISOLATION VALVES

TECHNICAL REQUIREMENT

3.6.3.1 The Containment Isolation Valves listed in TRM Table 3.6-1 Containment Isolation Valve List, shall be FUNCTIONAL.

APPLICABILITY:

In accordance with Technical Specification 3.6.3.1.

ACTION:

In accordance with Technical Specification 3.6.3.1.

TECHNICAL SURVEILLANCE REQUIREMENTS

4.6.3.1 In accordance with Technical Specification 3.6.3.1 Surveillance Requirements.

BASES:

In accordance with the Technical Specifications Bases section 3/4.6.3 (Containment Isolation Valves).

In addition, the attached TRM Table 3.6-1 provides a list of containment isolation valves which are a subset of those valves identified by the FSAR, Table 5.2-11, “Containment Structure Isolation Valve Information.” The containment isolation valves identified are main process isolation valves that are within the containment penetration boundary and conform to the requirements of 10 CFR 50 Appendix A (GDC 55, 56, or 57). Manual test, vent or drain valves within the containment penetration boundary are also identified. An explanation of the several notes included on TRM Table 3.6-1 follows:

Column 1 provides the containment penetration number and containment isolation valve description.

Column 2 provides the component local identification.

Column 3 provides the stroke time closure requirements.

Note “a” provides the extended allowed outage time of 72 hours for those isolation valves that are located on penetrations for closed systems as defined by the Standard Review Plan (SRP) 6.2.4. The 72 hour allowed outage time also applies to the RBCCW containment isolation valves, which are located on a closed system as defined by Millstone Unit 2 original design basis.

3/4.6 CONTAINMENT SYSTEMS

3/4.6.3 CONTAINMENT ISOLATION VALVES

Note “b” indicates the small (1 inch or less) valves used as Test, Drain or Vent valves, which are normally closed.

REFERENCE:

The attached TRM Table has been compiled from a review of the P&ID drawings, the FSAR Chapter 5 and has been supplemented by plant inspections of the listed penetrations.

1. MP2 Final Safety Analysis Report (FSAR) Sections 5.2.8.1.2, 5.2.8.2.1 and Table 5.2-11.b.

2. Condition Report M3-00-02659

3. Amendment 278 to Millstone Unit 2 Technical Specifications

Table 3.6-1
Containment Isolation Valve List

Pen. No. and Function Description	Valve No.	Maximum IsolationTime (seconds)
No. 1 - Demin Water to Ctmt Iso - Inner - check	2-PMW-3	NA
No. 1 - Demin Water to Ctmt Iso - Outer - AOV, CIAS	2-PMW-43	5
No. 1 - Demin Water to Ctmt Iso - Outer – manual	2-PMW-165	NA
No. 2 - RCS Letdown Iso - Inner - AOV, SIAS	2-CH-515	5
No. 2 - RCS Letdown Iso - Inner - AOV, CIAS	2-CH-516	5
No. 2 - RCS Letdown Iso - Outer- AOV, CIAS	2-CH-089	5
No. 2 - RCS Letdown Isolation - Inner - manual – b	2-CH-763	NA
No. 2 - RCS Letdown Isolation - Inner - manual – b	2-CH-658	NA
No. 2 - RCS Letdown Isolation - Inner - manual – b	2-CH-260	NA
No. 2 - RCS Letdown Isolation - Inner - manual – b	2-CH-082	NA
No. 2 - RCS Letdown Isolation - Inner - manual – b	2-CH-083	NA
No. 2 - RCS Letdown Isolation - Outer - manual – b	2-CH-067	NA
No. 2 - RCS Letdown Isolation - Inner - manual – b	2-CH-991	NA
No. 3 - RCS Charging Isolation - Inner - AOV	2-CH-517	NSR
No. 3 - RCS Charging Isolation - Inner - AOV	2-CH-518	NSR
No. 3 - RCS Charging Isolation - Inner - AOV	2-CH-519	NSR
No. 3 - RCS Charging Isolation - Outer - MOV	2-CH-429	NSR
No. 3 - RCS Charging Isolation - Inner - manual	2-CH-434	NA
No. 3 - RCS Charging Isolation - Inner - manual – b	2-CH-001	NA
No. 3 - RCS Charging Isolation - Inner - manual – b	2-CH-002	NA
No. 3 - RCS Charging Iso - Inner - manual – b	2-CH-003	NA
No. 3 - RCS Charging Iso - Inner - manual – b	2-CH-004	NA
No. 3 - RCS Charging Iso - Inner - manual – b	2-CH-443	NA
No. 3 - RCS Charging Iso - Outer - manual – b	2-CH-710	NA
No. 3 - RCS Charging Iso - Inner - manual – b	2-CH-714	NA
No. 3 - RCS Charging Iso - Inner - manual – b	2-CH-661	NA
No. 3 - RCS Charging Iso - Outer - Relief	2-CH-986	NA
No. 3 - RCS Charging Iso - Inner - manual	2-RC-071	NA
No. 4 - Containment Spray Iso - Outer - MOV-CSAS	2-CS-4.1A	NSR
No. 4 - Containment Spray Iso - Inner - check	2-CS-5A	NA
No. 4 - Containment Spray Iso - Outer - manual – b	2-CS-049A	NA
No. 4 - Containment Spray Iso - Outer - manual – b	2-CS-049C	NA

Table 3.6-1
Containment Isolation Valve List

Pen. No. and Function Description	Valve No.	Maximum IsolationTime (seconds)
No. 5 - Containment Spray Iso - Outer - MOV-CSAS	2-CS-4.1B	NSR
No. 5 - Containment Spray Iso - Inner - check	2-CS-5B	NA
No. 5 - Containment Spray Iso - Outer - manual – b	2-CS-101	NA
No. 6 - Safety Inj. Isolation - Inner - check	2-SI-706D	NA
No. 6 - Safety Inj. Isolation - Outer – manual – b	2-SI-095	NA
No. 6 - Safety Inj. Isolation - Outer - manual – b	2-SI-041F	NA
No. 6 - Safety Inj. Isolation - Outer - manual – b	2-SI-742D	NA
No. 6 - Safety Inj. Isolation - Outer - MOV - SIAS	2-SI-645	NSR
No. 6 - Safety Inj. Isolation - Outer - MOV - SIAS	2-SI-646	NSR
No. 6 - Safety Inj. Isolation - Outer - MOV - SIAS	2-SI-647	NSR
No. 6 - Safety Inj. Isolation - Outer - manual – b	2-SI-734	NA
No. 6 - Safety Inj. Isolation - Outer - manual – b	2-SI-735	NA
No. 6 - Safety Inj. Isolation - Outer - manual – b	2-SI-848	NA
No. 6 - Safety Inj. Isolation - Outer - manual	2-SI-160	NA
No. 6 - Safety Inj. Isolation - Outer - manual	2-SI-161	NA
No. 6 - Safety Inj. Isolation - Outer - manual – b	2-SI-163	NA
No. 7 - Safety Inj. Isolation - Inner – check	2-SI-706A	NA
No. 7 - Safety Inj. Isolation - Outer - manual – b	2-SI-742A	NA
No. 7 - Safety Inj. Isolation - Outer - manual – b	2-SI-107	NA
No. 7 - Safety Inj. Isolation - Outer - manual – b	2-SI-715	NA
No. 7 - Safety Inj. Isolation - Outer - manual – b	2-SI-717	NA
No. 7 - Safety Inj. Isolation - Outer -MOV SIAS	2-SI-615	NSR
No. 7 - Safety Inj. Isolation - Outer -MOV SIAS	2-SI-616	NSR
No. 7 - Safety Inj. Isolation - Outer -MOV SIAS	2-SI-617	NSR
No. 7 - Safety Inj. Isolation - Outer -manual – b	2-SI-041A	NA
No. 7 - Safety Inj. Isolation - Outer -manual – b	2-SI-716	NA
No. 7 - Safety Inj. Isolation - Outer -manual – b	2-SI-718	NA
No. 8 - Safety Inj. Isolation - Inner -check	2-SI-706C	NA
No. 8 - Safety Inj. Isolation - Outer - manual – b	2-SI-733	NA
No. 8 - Safety Inj. Isolation - Outer - manual – b	2-SI-041D	NA
No. 8 - Safety Inj. Isolation - Outer - manual – b	2-SI-742C	NA
No. 8 - Safety Inj. Isolation - Outer - MOV - SIAS	2-SI-635	NSR
No. 8 - Safety Inj. Isolation - Outer - MOV - SIAS	2-SI-636	NSR
No. 8 - Safety Inj. Isolation - Outer - MOV - SIAS	2-SI-637	NSR
No. 8 - Safety Inj. Isolation - Outer - manual – b	2-SI-041E	NA
No. 8 - Safety Inj. Isolation - Outer - manual – b	2-SI-110	NA
No. 8 - Safety Inj. Isolation - Outer - manual – b	2-SI-846	NA

Table 3.6-1
Containment Isolation Valve LisT

Pen. No. and Function Description	Valve No.	Maximum IsolationTime (seconds)
No. 9 - Safety Inj. Isolation - Inner - check	2-SI-706B	NA
No. 9 - Safety Inj. Isolation - Outer - manual – b	2-SI-722	NA
No. 9 - Safety Inj. Isolation - Outer - manual – b	2-SI-721	NA
No. 9 - Safety Inj. Isolation - Outer - manual – b	2-SI-742B	NA
No. 9 - Safety Inj. Isolation - Outer - MOV - SIAS	2-SI-625	NSR
No. 9 - Safety Inj. Isolation - Outer - MOV - SIAS	2-SI-626	NSR
No. 9 - Safety Inj. Isolation - Outer - MOV - SIAS	2-SI-627	NSR
No. 9 - Safety Inj. Isolation - Outer - manual – b	2-SI-723	NA
No. 9 - Safety Inj. Isolation - Outer - manual – b	2-SI-720	NA
No. 10 - RCS-SDC Suction Isolation - Inner - MOV	2-SI-651	NSR
No. 10 - RCS-SDC Suction Isolation - Inner - manual – b	2-SI-043A	NA
No. 10 - RCS-SDC Suction Isolation - Outer - manual – b	2-SI-102A	NA
No. 10 - RCS-SDC Suction Isolation - Outer - manual – b	2-SI-101A	NA
No. 10 - RCS-SDC Suction Isolation - Outer - manual	2-SI-709	NA
No. 11 - SIT Recirc & Test Line Isolation - Outer - manual – a	2-SI-463	NA
No. 12 - Ctmt Sump SI Recirc Line Iso - Outer - MOV-SRAS	2-CS-16.1A	NSR
No. 12 - Ctmt Sump SI Recirc Line Iso - Outer - manual – b	2-CS-130	NA
No. 12 - Ctmt Sump SI Recirc Line Iso - Outer - manual – b	2-CS-132	NA
No. 12 - Ctmt Sump SI Recirc Line Iso - Outer - manual – b	2-CS-133	NA
No. 12 - Ctmt Sump SI Recirc Line Iso - Outer - manual – b	2-CS-134	NA
No. 13 - Ctmt Sump SI Recirc Line Iso - Outer - MOV-SRAS	2-CS-16.1B	NSR
No. 13 - Ctmt Sump SI Recirc Line Iso - Outer - manual – b	2-CS-135	NA
No. 13 - Ctmt Sump SI Recirc Line Iso - Outer - manual – b	2-CS-137	NA
No. 13 - Ctmt Sump SI Recirc Line Iso - Outer - manual – b	2-CS-138	NA
No. 13 - Ctmt Sump SI Recirc Line Iso - Outer - manual – b	2-CS-139	NA
No. 14 - Ctmt Sump Drain Line Iso - Inner - AOV-CIAS	2-SSP-16.1	5
No. 14 - Ctmt Sump Drain Line Iso - Outer - AOV-CIAS	2-SSP-16.2	5
No. 14 - Ctmt Sump Drain Line Iso - Outer - manual – b	2-SSP-51	NA
No. 14 - Ctmt Sump Drain Line Iso - Outer - manual – b	2-SSP-73	NA

Table 3.6-1
Containment Isolation Valve LisT

Pen. No. and Function Description	Valve No.	Maximum IsolationTime (seconds)
No. 15 - Main Fd Iso - Outer - Check; Air Assist Open - AOV-MSI – a	2-FW-5A	NA
No. 15 - Aux Fd Iso - Outer - Check; Air Assist Open - AOV – a	2-FW-12A	NA
No. 15 - Main Fd Iso - Outer - manual – b, a	2-FW-86	NA
No. 15 - Main Fd Iso - Outer - manual - b, a	2-FW-261A	NA
No. 15 - Main Fd Iso - Outer - manual - Hydrazine supply – a	2-FW-15A	NA
No. 16 - Main Fd Iso - Outer - Check; Air Assist Open - AOV-MSI – a	2-FW-5B	NA
No. 16 - Main Fd Iso - Outer - Check; Air Assist Open - AOV – a	2-FW-12B	NA
No. 16 - Main Fd Iso - Outer - manual - Hydrazine supply – a	2-FW-15B	NA
No. 16 - Main Fd Iso - Outer - manual - b, a	2-FW-182	NA
No. 17 - Personnel Airlock LLRT Iso – b	2-AC-520	NA
No. 17 - Personnel Airlock LLRT Iso – b	2-AC-521	NA
No. 17 - Personnel Airlock LLRT Iso – b	2-AC-522	NA
No. 17 - Personnel Airlock Equalizing - Outer - Ball	2-AC-523	NA
No. 17 - Personnel Airlock Equalizing - Inner - Ball	2-AC-524	NA
No. 19 - Main Stm Iso - Outer -AOV - Steam dump valve – a	2-MS-190A	NSR
No. 19 - Main Stm Iso - Outer - manual – b, a	2-MS-371	NA
No. 19 - Main Stm Iso - Outer - MOV-Stm to AFW pump – a	2-MS-201	NSR
No. 19 - Main Stm Iso - Outer - manual bypass, a	2-MS-459	NA
No. 19 - Main Stm Iso - Outer -manual - b, a	2-MS-297	NA
No. 19 - Main Stm Iso - Outer - AOV - MSI closes valve – a	2-MS-265B	6
No. 19 - Main Stm Iso - Outer - Relief valves(8) – a	2-MS-247 thru 254	NA
No. 19 - Main Stm Iso - Outer - MSI - air open - check – a	2-MS-64A	6
No. 19 - Main Stm Iso - Outer - MOV - MSI closes – a	2-MS-65A	NSR
No. 19 - Main Stm Iso - Outer - manual – b, a	2-MS-255	NA
No. 20 - Main Stm Iso - Outer - AOV - Steam dump valve, – a	2-MS-190B	NSR
No. 20 - Main Stm Iso - Outer - manual - b, a	2-MS-369	NA
No. 20 - Main Stm Iso - Outer - MOV - Stm to AFW pump – a	2-MS-202	NSR
No. 20 - Main Stm Iso - Outer - manual bypass – a	2-MS-458	NA
No. 20 - Main Stm Iso - Outer - manual - b, a	2-MS-296	NA
No. 20 - Main Stm Iso - Outer - AOV - MSI closes valve – a	2-MS-266B	6
No. 20 - Main Stm Iso - Outer - Relief valves (8), a	2-MS-239 thru 246	NA
No. 20 - Main Stm Iso - Outer - MSI - air open - check – a	2-MS-64B	6

Table 3.6-1
Containment Isolation Valve LisT

Pen. No. and Function Description	Valve No.	Maximum IsolationTime (seconds)
No. 20 - Main Stm Iso - Outer - MOV - MSI closes – a	2-MS-65B	NSR
No. 20 - Main Stm Iso - Outer - manual - b, a	2-MS-258	NA
No. 21 - RCS Loop 1 smpl Iso. - Inner - AOV-CIAS	2-RC-001	5
No. 21 - RCS Pzr Surge Line smpl Iso - Inner - AOV-CIAS	2-RC-002	5
No. 21 - RCS Pzr Stm Space smpl Iso - Inner - AOV-CIAS	2-RC-003	5
No. 21 - RCS - PDT&QT smpl Iso - Inner - AOV-CIAS	2-LRR-61.1	5
No. 21 - RCS Sample Line Iso - Inner - sample valve - manual – b	2-RC-434	NA
No. 21 - RCS Sample Line Iso - Outer - AOV-CIAS	2-RC-045	5
No. 21 - RCS Sample Line Iso - Inner - sample valve - manual – b	2-RC-435	NA
No. 22 - SG No. 1 Blwdwn Iso - Outer - AOV-CIAS, AFAIS, Hi Rad – a	2-MS-220A	5
No. 23 - SG No. 2 Blwdwn Iso - Outer - AOV-CIAS, AFAIS, Hi Rad – a	2-MS-220B	5
No. 24 - RBCCW Sply to RCPs Iso - Outer - MOV – a	2-RB-30.1A	NSR
No. 24 - RBCCW Sply to RCPs - Outer - manual - b, a	2-RB-289	NA
No. 25 - RBCCW Sply to CAR coolers - Outer - AOV – a	2-RB-28.1D	NSR
No. 25 - RBCCW Sply to CAR coolers - Outer - manual - b, a	2-RB-282	NA
No. 26 - RBCCW Sply to CAR coolers - Outer - AOV – a	2-RB-28.1B	NSR
No. 26 - RBCCW Sply to CAR coolers - Outer - manual - b, a	2-RB-283	NA
No. 26 - RBCCW Sply to CAR coolers - Outer - manual - b, a	2-RB-345	NA
No. 27 - RBCCW Sply to CAR coolers - Outer - AOV – a	2-RB-28.1A	NSR
No. 27 - RBCCW Sply to CAR coolers - Outer - manual - b, a	2-RB-236	NA
No. 28 - RBCCW Sply to CAR coolers - Outer - AOV - a	2-RB-28.1C	NSR
No. 28 - RBCCW Sply to CAR coolers - Outer - manual - b, a	2-RB-237	NA
No. 29 - RBCCW Return fm RCPs - Outer - MOV – a	2-RB-37.2A	NSR
No. 29 - RBCCW Return fm RCPs - Outer - manual - b, a	2-RB-298	NA
No. 29 - RBCCW Return fm RCPs - Outer - manual - b, a	2-RB-297A	NA
No. 30 - RBCCW Ret fm CAR cooler - Outer - AOV – a	2-RB-28.2D	NSR

Table 3.6-1
Containment Isolation Valve LisT

Pen. No. and Function Description	Valve No.	Maximum IsolationTime (seconds)
No. 30 - RBCCW Ret fm CAR cooler - Outer – SIAS AOV – a	2-RB-28.3D	NSR
No. 31 - RBCCW Ret fm CAR cooler - Outer - AOV – a	2-RB-28.2B	NSR
No. 31 - RBCCW Ret fm CAR cooler - Outer – SIAS AOV – a	2-RB-28.3B	NSR
No. 32 - RBCCW Ret fm CAR cooler - Outer - AOV – a	2-RB-28.2A	NSR
No. 32 - RBCCW Ret fm CAR cooler - Outer - SIAS AOV – a	2-RB-28.3A	NSR
No. 33 - RBCCW Ret fm CAR cooler - Outer - AOV – a	2-RB-28.2C	NSR
No. 33 - RBCCW Ret fm CAR cooler - Outer - SIAS AOV – a	2-RB-28.3C	NSR
No. 34 - Nitrogen Sply to Ctmt Iso - Outer - AOV-CIAS	2-SI-312	5
No. 34 - Nitrogen Sply to Ctmt - Outer - manual – b	2-SI-045	NA
No. 35 - Prim Drain Tank Disch - Inner Iso - AOV-CIAS	2-LRR-43.1	5
No. 35 - Prim Drain Tank Disch - Outer Iso - AOV-CIAS	2-LRR-43.2	5
No. 35 - Prim Drain Tank Disch - Outer Iso - manual – b	2-LRR-291	NA
No. 35 - Prim Drain Tank Disch - Outer Iso - manual – b	2-LRR-293	NA
No. 35 - Prim Drain Tank Disch - Outer Iso - manual – b	2-LRR-295	NA
No. 36 - Instr Air BU to Ctmt - Inner Iso check	2-IA-569	NA
No. 36 - Instr Air BU to Ctmt - Inner - manual – b	2-IA-572	NA
No. 36 - Instr Air BU to Ctmt - Outer Iso - manual	2-IA-566	NA
No. 37 - Instr Air Sply to Ctmt - Inner - Iso - check	2-IA-43	NA
No. 37 - Instr Air Sply to Ctmt - Outer Iso - AOV	2-IA-27.1	NSR
No. 37 - Instr Air Sply to Ctmt - Outer - Manual – b	2-IA-40	NA
No. 38 - Station Air Sply to Ctmt - Inner - manual – b	2-SA-28	NA
No. 38 - Station Air Sply to Ctmt - Outer Iso - manual	2-SA-19	NA
No. 38 - Station Air Sply to Ctmt - Inner Iso - check	2-SA-22	NA
No. 39 - Ctmt Air PURGE Sply - Outer Iso - AOV-HiRad	2-AC-4	NSR
No. 39 - Ctmt Air PURGE Sply - Inner Iso - AOV-HiRad	2-AC-5	NSR
No. 39 - Ctmt Air PURGE Sply - Outer Iso - manual – b	2-AC-21	NA

Table 3.6-1
Containment Isolation Valve LisT

Pen. No. and Function Description	Valve No.	Maximum IsolationTime (seconds)
No. 40 - Ctmt Air PURGE Sply - Outer Iso - AOV-HiRad	2-AC-7	NSR
No. 40 - Ctmt Air PURGE Sply - Inner Iso - AOV-HiRad	2-AC-6	NSR
No. 40 - Ctmt Air PURGE Sply - Inner - manual – b	2-AC-31	NA
No. 42 - Fuel Transfer Tube - Inner - manual	Blank Flange	NA
No. 42 - Fuel Transfer Tube Flange Test - Inner - manual – b	2-RW-31	NA
No. 42 - Fuel Transfer Tube - Inner - manual – b	2-RW-291	NA
No. 42 - Sleeve Drain Valve - Inner - manual – b	2-RW-292	NA
No. 43 - RCP seals bleedoff Inner AOV-CIAS	2-CH-506	5
No. 43 - RCP seals bleedoff Outer AOV-CIAS	2-CH-505	5
No. 43 - RCP seals bleedoff Outer AOV-CIAS	2-CH-198	5
No. 43 - RCP seals bleedoff Line Outer - manual - b	2-CH-744	NA
No. 43 - RCP seals bleedoff Line Outer - manual - b	2-CH-768	NA
No. 43 - RCP seals bleedoff Line Outer - manual - b	2-CH-758	NA
No. 43 - RCP seals bleedoff Line Outer - manual - b	2-CH-701	NA
No. 49 - Fire Header Ctmt Sply - Outer Iso - manual	2-FIRE-108	NA
No. 49 - Fire Header Ctmt Sply - Outer - manual – b	2-FIRE-125	NA
No. 49 - Fire Header Ctmt Sply - Inner Iso - check	2-FIRE-109	NA
No. 51 - Waste Gas fm Ctmt - Inner Iso - AOV-CIAS	2-GR-11.1	5
No. 51 - Waste Gas fm Ctmt - Outer - manual – b	2-GR-63	NA
No. 51 - Waste Gas fm Ctmt - Outer Iso - AOV-CIAS	2-GR-11.2	5
No. 53 - RBCCW Sply to RCPs - Outer - MOV -a	2-RB-30.1B	NSR
No. 53 - RBCCW Sply to RCPs - Outer - manual - b, a	2-RB-291	NA
No. 54 - RBCCW Return fm RCPs - Outer - MOV – a	2-RB-37.2B	NSR
No. 54 - RBCCW Return fm RCPs - Outer - manual - b, a	2-RB-300	NA
No. 54 - RBCCW Return fm RCPs - Outer - manual - b, a	2-RB-299A	NA
No. 61 - Ctmt Air Monitor Sply - Inner Iso - AOV, CIAS	2-EB-88	5
No. 61 - Ctmt Air Monitor Sply - Outer - manual – b	2-AC-101	NA
No. 61 - Ctmt Air Monitor Sply - Outer Iso - AOV, CIAS	2-AC-12	5

Table 3.6-1
Containment Isolation Valve LisT

Pen. No. and Function Description	Valve No.	Maximum IsolationTime (seconds)
No. 62 - Ctmt Air Monitor Rtrn - Inner Iso - check	2-AC-54	5
No. 62 - Ctmt Air Monitor Rtrn - Outer Iso - manual – b	2-AC-103	NA
No. 62 - Ctmt Air Monitor Rtrn - Outer Iso - AOV, CIAS	2-AC-15	5
No. 63 - Ctmt ILRT Instrument Test - Inner Iso - manual	2-AC-117	NA
No. 63 - Ctmt ILRT Instrument Test - Outer Iso - manual	2-AC-114	NA
No. 63 - Ctmt ILRT Instr. - Outer Test Flange	Blank Flange	NA
No. 64 - Ctmt ILRT Instrument Test - Inner Iso - manual	2-AC-116	NA
No. 64 - Ctmt ILRT Instrument Test - Outer Iso - manual	2-AC-112	NA
No. 64 - Ctmt ILRT Instr. - Outer Test Flange	Blank Flange	NA
No. 65 - SG #1 Bldn Sample - Outer Iso - AOV, CIAS a	2-MS-191A	5
No. 67 - Refueling Water Purif. Rtrn - Inner Iso - manual	2-RW-232	NA
No. 67 - Refueling Water Purif. Rtrn - Outer Iso - manual	2-RW-21	NA
No. 67 - Refueling Water Purif. Rtrn - Outer - manual – b	2-RW-158	NA
No. 68 - Refueling Water Purif. Sply - Inner Iso - manual	2-RW-154	NA
No. 68 - Refueling Water Purif. Sply - Outer Iso - manual	2-RW-63	NA
No. 68 - Refueling Water Purif. Sply - Outer - manual – b	2-RW-159	NA
No. 72 - SG #2 Bldn Sample - Outer Iso - AOV, CIAS a	2-MS-191B	5
No. 82 - Hyd. PURGE - Inner Iso - AOV - CIAS, HiRad	2-EB-91	5
No. 82 - Hyd. PURGE - Outer Iso - AOV - CIAS, HiRad	2-EB-92	5
No. 82 - Hyd. PURGE -Outer - manual – b	2-EB-120	NA
No. 82 - Hyd. PURGE - Inner - manual	2-EB-86	NA
No. 83 - Hyd. PURGE - Inner Iso - AOV - CIAS, HiRad	2-EB-100	5
No. 83 - Hyd. PURGE - Outer Iso - AOV - CIAS, HiRad	2-EB-99	5
No. 83 - Hyd. PURGE -Outer - manual – b	2-EB-121	NA
No. 85 - Ctmt ILRT Pressurization - Outer Iso. - manual	SF-01 Sp. Flnge	NA
No. 85 - Ctmt ILRT Pressurization - Outer - manual – b	2-AC-107	NA
No. 85 - Ctmt ILRT Pressurization - Inner Iso Flange	Blank Flange	NA

Table 3.6-1
Containment Isolation Valve LisT

Pen. No. and Function Description	Valve No.	Maximum IsolationTime (seconds)
No. 86 - Ctmt Air Monitor Sply - Inner Iso - AOV, CIAS	2-EB-89	5
No. 86 - Ctmt Air Monitor Sply - Outer - manual – b	2-AC-102	NA
No. 86 - Ctmt Air Monitor Sply - Outer Iso - AOV, CIAS	2-AC-47	5
No. 87 - Ctmt Air Monitor Rtrn - Inner Iso - check	2-AC-55	NA
No. 87 - Ctmt Air Monitor Rtrn - Outer - manual – b	2-AC-104	NA
No. 87 - Ctmt Air Monitor Rtrn - Outer Iso - AOV, CIAS	2-AC-20	5

a = The Allowed Outage Time = 72 hours

b = Vent, Drain, or Test Connection

NA = Closure Time is Not Applicable to Manual Valves, Relief Valves, Blind Flanges and Check Valves

NSR = No Stroke time Required. This is applicable for valves that are open, go open, open during an accident or valves that are normally shut and stay shut during an accident.

3/4.6 CONTAINMENT SYSTEMS

3/4.6.4 COMBUSTIBLE GAS CONTROL

HYDROGEN MONITORS

TECHNICAL REQUIREMENT

3.6.4.1 Two independent containment hydrogen monitors shall be FUNCTIONAL.

APPLICABILITY: MODES 1 and 2.

ACTION:

a. With one hydrogen monitor nonfunctional, restore the nonfunctional monitor to FUNCTIONAL status within 30 days or otherwise initiate corrective actions.

b. With both hydrogen monitors nonfunctional, restore at least one monitor to FUNCTIONAL status within 72 hours or otherwise initiate corrective actions.

TECHNICAL SURVEILLANCE REQUIREMENTS

4.6.4.1 Each hydrogen monitor shall be demonstrated FUNCTIONAL:

a. By the performance of a CHANNEL FUNCTIONAL TEST at least once per 31 days, and

b. By the performance of a CHANNEL CALIBRATION at least once per 92 days on a STAGGERED TEST BASIS.

BASES:

The containment hydrogen monitors are used to assess the degree of core damage during beyond-design-basis accidents and to confirm that random or deliberate ignition of hydrogen in the containment atmosphere has taken place. Each containment hydrogen monitor is required to be FUNCTIONAL within 90 minutes after initiation of safety injection. The requirement that monitors be FUNCTIONAL within 90 minutes is based on the NRC's expectation outlined in Regulatory Guide 1.7, Revision 3, "Control of Combustible Gas Concentration in Containment Following a LOCA." If an explosive gas mixture threatens CONTAINMENT INTEGRITY during beyond-design-basis events, then severe accident management guidelines use the hydrogen monitors to implement strategies that protect the integrity of the containment boundary.

3/4.6 CONTAINMENT SYSTEMS

3/4.6.4 COMBUSTIBLE GAS CONTROL

HYDROGEN MONITORS

BASES: (Continued)

The equipment for monitoring containment hydrogen levels must be FUNCTIONAL, reliable and capable of continuously measuring the concentration of hydrogen in the containment atmosphere following beyond-design-basis accidents to facilitate accident management, including emergency planning. Since these monitors are not required to mitigate the effects of design basis events, entry into other operational MODES is permitted while taking ACTIONS to restore these monitors to service.

The hydrogen monitors are connected directly to the containment boundary and are an extension of the containment boundary during post accident conditions. When placed into service, any leakage from these monitors would bypass the enclosure building filtration region and discharge to atmosphere. Therefore, pressure boundary integrity is subject to Technical Specification 6.13 "Systems Integrity," which establishes a program to reduce leakage from those portions of systems outside containment that could contain highly radioactive fluids during a serious transient or accident to as low as practical levels.

The TECHNICAL SURVEILLANCE REQUIREMENT To perform a CHANNEL CALIBRATION at least every 92 days is based upon vendor recommendations to maintain sensor calibration. This calibration consists of a two-point calibration, utilizing the following sample gases:

a. One volume percent hydrogen, balance nitrogen

b. Four volume percent hydrogen, balance nitrogen

The ACTION requirement to initiate corrective actions means that the problem is entered into the Millstone Corrective Action Program and addresses why the hydrogen monitor(s) was (were) not restored to FUNCTIONAL status within the specified time. Use of the corrective action process in this situation will ensure management attention and oversight to minimize the additional time the containment hydrogen monitor(s) is (are) nonfunctional. ACTIONS shall be taken in a timely manner to establish alternate methods for determining hydrogen concentration levels as needed and determined by management.

3/4.6 CONTAINMENT SYSTEMS

3/4.6.4 COMBUSTIBLE GAS CONTROL

HYDROGEN MONITORS

REFERENCE:

1. Amendment No. 287, dated June 29, 2005

2. DCR M2-04009, "Implementation of Revised Combustible Gas (Hydrogen) Control Requirements in Containment"

3. Regulatory Commitment RCR-42915 as described in Letter Serial No. 04-386, dated September 8, 2004

4. Consolidated Line Item Improvement Process Notice of Availability, published September 25, 2003 (68 FR 55416) in support of TSTF-447

3/4.7 PLANT SYSTEMS

3/4.7.2 STEAM GENERATOR PRESSURE/TEMPERATURE LIMITATION

TECHNICAL REQUIREMENT

3.7.2.1 The temperatures of both the primary and secondary coolants in the steam generators shall be > 70°F when the pressure of either coolant in the steam generator is > 200 psig.

APPLICABILITY:

All MODES.

ACTION:

With the requirements of the above specification not satisfied:

a. Immediately reduce the steam generator pressure to ≤ 200 psig, and

b. Perform an analysis to determine the effect of the overpressurization on the structural integrity of the steam generator. Determine that the steam generator remains acceptable for continued operation prior to increasing its temperatures above 200°F.

TECHNICAL SURVEILLANCE REQUIREMENTS

4.7.2.1 The temperatures of both the primary and secondary coolants in the steam generators shall be determined to be > 70°F at least once per hour when pressures in the steam generators are > 200 psig and T_{avg} is < 200°F.

3/4.7 PLANT SYSTEMS

3/4.7.2 STEAM GENERATOR PRESSURE/TEMPERATURE LIMITATION

BASES:

The limitation on steam generator pressure and temperature ensures that the pressure-induced stresses in the steam generators do not exceed the maximum allowable fracture toughness stress limits. The limitations of 70°F and 200 psig are based on a steam generator RT_{NDT} of 50°F and are sufficient to prevent brittle fracture.

REFERENCE:

1. License Amendment No. 272

3/4.7 PLANT SYSTEMS

3/4.7.5 FLOOD LEVEL

TECHNICAL REQUIREMENT

3.7.5.1 At least one FUNCTIONAL service water pump motor shall be protected against flooding to a minimum elevation of 28 feet Mean Sea Level USGS datum if either:

a. The water level, including wave crest height, is exceeding plant grade level (14.0 feet Mean Sea level USGS datum), or

b. Three or more of the following conditions are occurring simultaneously:

1. The center of circulation of a storm with sustained winds greater than 60 miles per hour, as determined by radar, or reconnaissance, is presently located within the critical area as defined on Figure 3.7-1.

2. The projected track of a storm, with sustained winds greater than 60 miles per hour, which is expected to strike the facility within 12 hours as determined by radar, reconnaissance, or forecasted track projection, is from between 130° clockwise to 350°.

3. The central pressure of the storm expected to strike the facility within 12 hours is or is forecasted to be ≤ 28.0 in. Hg; or the measured 15 minute average wind speed at nominal elevation 33 feet from on site meteorological instrumentation exceeds 60 miles per hour.

4. A storm with sustained winds greater than 60 miles per hour is: expected to strike the facility within 12 hours; and the 15 minute average wind direction at nominal elevation 33 feet from on site meteorological instrumentation is from the sector 150° clockwise to 300°.

APPLICABILITY:

ALL MODES.

ACTION:

With the water level, including wave crest height, exceeding either plant grade or with three or more of the above specified meteorological conditions being exceeded simultaneously, immediately initiate ACTION to protect at least one service water pump motor against flooding to a minimum elevation of 28 feet; complete this protective ACTION within 2 hours.

3/4.7 PLANT SYSTEMS

3/4.7.5 FLOOD LEVEL

TECHNICAL SURVEILLANCE REQUIREMENTS

4.7.5.1.1 The water level, including wave crest height, shall be determined to be below plant grade at least once per hour when the center of circulation of a storm with sustained winds greater than 60 miles per hour is expected to strike the facility within 12 hours.

4.7.5.1.2 The following conditions shall be determined at least once per 2 hours when the center of circulation of a storm with sustained winds greater than 60 miles per hour is expected to strike the facility within 12 hours. The meteorological conditions shall be determined from weather service forecasts and/or from the site meteorological instrumentation:

- location of center of storm
- forecasted time storm is expected to strike
- storm track (actual and forecasted)
- storm approach angle
- central pressure of storm
- 33 feet 15 minute average wind speed
- 33 feet 15 minute average wind direction

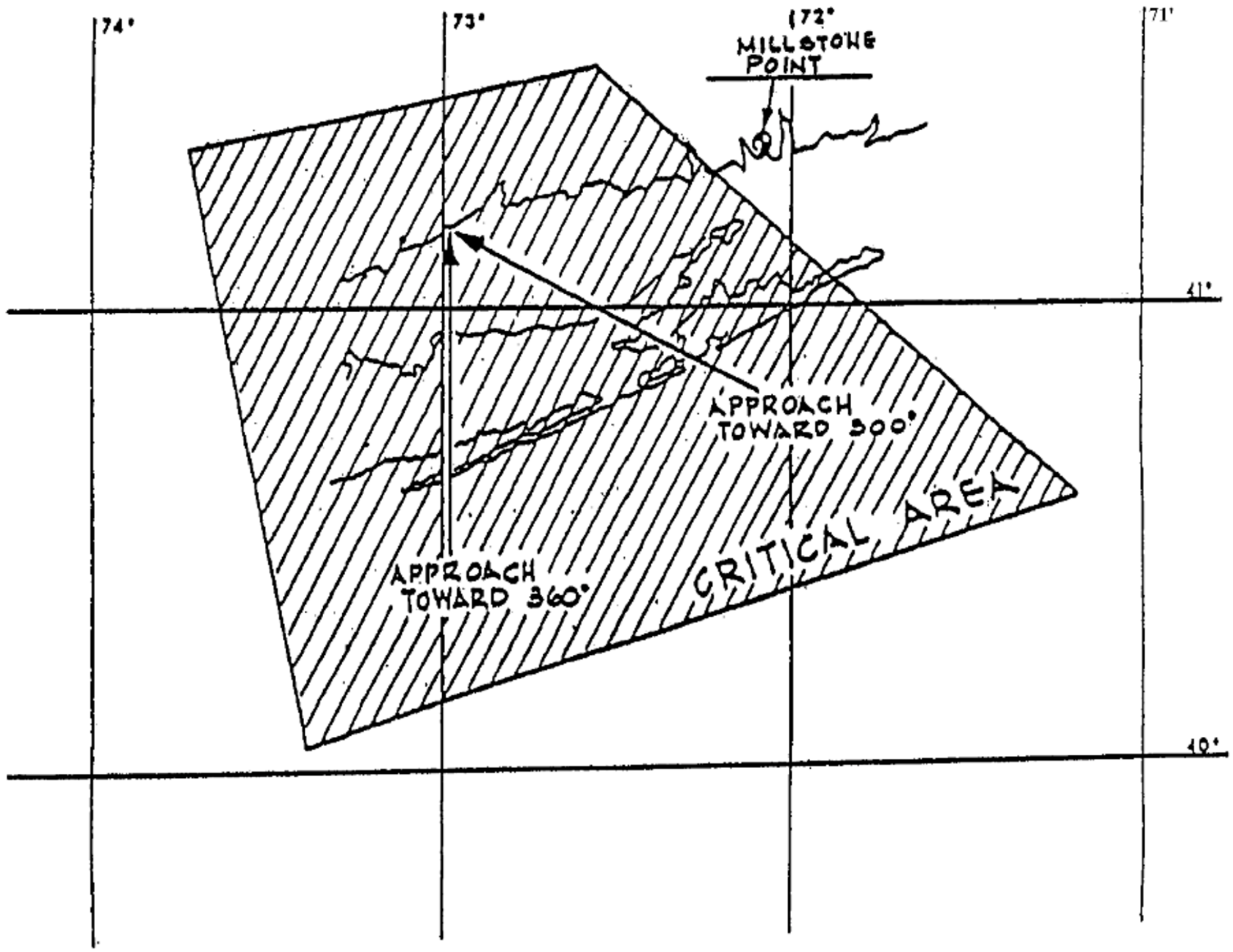

FIGURE 3.7-1
CRITICAL AREA

3/4.7 PLANT SYSTEMS

3/4.7.5 FLOOD LEVEL

BASES:

Water level must rise above 22 feet above mean sea level before reaching the base of the service water pump motors. Therefore service water pump motors are normally protected against water damage to an elevation of 22 feet. If the water level is exceeding plant grade level or if a severe storm is approaching the plant site, one service water pump motor will be protected against flooding to a minimum elevation of 28 feet. This will ensure that this pump will continue to be capable of removing decay heat from the reactor. In order to ensure accessibility to the intake structure, ACTION to provide pump motor protection will be initiated when the water level including wave crest height reaches plant grade level. Entry into the ACTION to protect one service water pump from the flooding precludes any need to perform surveillance requirements.

REFERENCE:

1. License Amendment No. 272

3/4.7 PLANT SYSTEMS

3/4.7.7 SEALED SOURCE CONTAMINATION

TECHNICAL REQUIREMENT

3.7.7.1 Each sealed source containing radioactive material either in excess of 100 microcuries of beta and/or gamma emitting material or 5 microcuries of alpha emitting material shall be free of ≥ 0.005 microcuries of removable contamination.

APPLICABILITY:

AT ALL TIMES.

ACTION:

a. Each sealed source having removable contamination in excess of the above limit shall be immediately withdraw from use and:

1. Either decontaminated and repaired, or

2. Disposed of in accordance with Commission Regulations.

b. The provisions of TECHNICAL REQUIREMENT 3.0.3 are not applicable.

TECHNICAL SURVEILLANCE REQUIREMENTS

4.7.7.1.1 Test Requirements - Each sealed source shall be tested for leakage and/or contamination by:

a. The licensee, or

b. Other persons specifically authorized by the Commission or an Agreement State.

The test method shall have a detection sensitivity of at least 0.005 microcuries per test sample.

4.7.7.1.2 Test Frequencies - Each category of sealed sources shall be tested at the frequencies described below.

a. Sources in use (excluding STARTUP sources previously subjected to core flux) - At least once per six months for all sealed sources containing radioactive materials:

3/4.7 PLANT SYSTEMS

3/4.7.7 SEALED SOURCE CONTAMINATION

TECHNICAL SURVEILLANCE REQUIREMENTS (Continued)

1) With a half-life greater than 30 days (excluding Hydrogen 3), and

2) In any form other than gas.

b. Stored sources not in use - Each sealed source shall be tested prior to use or transfer to another licensee unless tested within the previous six months. Sealed sources transferred without a certificate indicating the last test date shall be tested prior to being placed into use.

c. STARTUP sources - Each sealed STARTUP source shall be tested prior to being subjected to core flux and following repair or maintenance to the source.

3/4.7 PLANT SYSTEMS

3/4.7.7 SEALED SOURCE CONTAMINATION

BASES:

The limitations on sealed source removable contamination ensure that the total body or individual organ irradiation does not exceed allowable limits in the event of ingestion or inhalation of the source material. The limitations on removable contamination for sources requiring leak testing, including alpha emitters, is based on 10 CFR 70.39(a)(3) limits for plutonium. Leakage of sources excluded from the requirements of this specification represent less than one maximum permissible body burden for total body irradiation if the source material is inhaled or ingested.

Sealed sources are classified into three groups according to their use, with TECHNICAL SURVEILLANCE REQUIREMENTS commensurate with the probability of damage to a source in that group. Those sources, which are not frequently handled, are required to be tested more often than those which are not. Sealed sources, which are continuously enclosed within a shielded mechanism (i.e., sealed sources within radiation monitoring or boron measuring devices), are considered to be stored and need not be tested unless they are removed from the shield mechanism.

REFERENCE:

1. License Amendment No. 272

3/4.7 PLANT SYSTEMS

3/4.7.9 FIRE PROTECTION SYSTEMS

3/4.7.9.1 FIRE SUPPRESSION WATER SYSTEM

TECHNICAL REQUIREMENT

3.7.9.1 The fire suppression water system shall be FUNCTIONAL with:

a. Three high pressure fire pumps, each with a capacity of at least 1,800 gpm, with pump discharge aligned to the fire suppression header,

b. Two water supplies, each with a minimum contained volume of 200,000 gallons, and

c. A FUNCTIONAL flow path capable of taking suction from the fire water tanks and transferring the water through distribution piping with FUNCTIONAL sectionalizing control or isolation valves to the yard hydrant curb valves and the first valve ahead of the water flow alarm device on each sprinkler, hose standpipe or spray system riser required to be FUNCTIONAL per TECHNICAL REQUIREMENTS 3.7.9.2 (Spray/Sprinkler TECHNICAL REQUIREMENT) and 3.7.9.3 (Fire Hose Stations TECHNICAL REQUIREMENT).

APPLICABILITY:

At all times.

ACTION:

a. With one pump and/or one water supply nonfunctional:

1. Restore the nonfunctional equipment to FUNCTIONAL status within 7 days **OR**

2. Provide an alternate backup pump or water supply within 24 hours **AND** develop a plan and schedule, within 14 days, for restoring the system to FUNCTIONAL status.

b. With two pumps nonfunctional:

1. Establish a continuous fire watch in the Turbine Building with backup suppression within 1 hour **AND**

2. Provide an alternate backup pump within 24 hours **AND**

3/4.7 PLANT SYSTEMS

3/4.7.9 FIRE PROTECTION SYSTEMS

3/4.7.9.1 FIRE SUPPRESSION WATER SYSTEM

TECHNICAL SURVEILLANCE REQUIREMENTS

3. Restore the nonfunctional equipment to FUNCTIONAL status within 7 days **OR** develop a plan and schedule, within 14 days, for returning the equipment to FUNCTIONAL status.

c. With the Fire Suppression Water System otherwise nonfunctional:

1. Establish a continuous fire watch in the Turbine Building with backup suppression within 1 hour **AND**

2. Restore the fire suppression water distribution system to FUNCTIONAL within 24 hours **OR**

3. Establish a backup Fire Suppression Water System within 24 hours **AND** develop a plan and schedule, within 14 days, for restoring the system to FUNCTIONAL status.

4.7.9.1 The fire suppression water system shall be demonstrated FUNCTIONAL:

a. At least once per 7 days, by verifying the contained water supply volume.

b. At least once per 31 days, on a STAGGERED TEST BASIS, by starting each electric motor driven pump and operating it for at least 15 minutes on recirculation flow.

c. At least once per 31 days, by verifying that each valve (manual, power operated or automatic) in the flow path is in its correct position.

d. At least once per 12 months, by cycling each testable valve in the flow path through at least one complete cycle of full travel.

e. At least once per 18 months, by performing a system FUNCTIONAL test which includes simulated automatic actuation of the system throughout its operating sequence,

and:

1. Verifying that each pump develops at least 1800 gpm at a pump differential pressure of 100 psid, and

3/4.7 PLANT SYSTEMS

3/4.7.9 FIRE PROTECTION SYSTEMS

3/4.7.9.1 FIRE SUPPRESSION WATER SYSTEM

TECHNICAL SURVEILLANCE REQUIREMENTS

2. Cycling each valve in the flow path that is not testable during plant operation through at least one complete cycle of full travel, and

3. Verifying that each pump starts (sequentially) to maintain the fire suppression water system pressure greater than or equal to 75 psig.

f. At least once per 3 years, by performing a flow test of the system in accordance with Chapter 5, Section 11, of the Fire Protection Handbook, 14th Edition, published by the National Fire Protection Association.

g. The fire pump diesel engine shall be demonstrated FUNCTIONAL:

1. At least once per 31 days, by verifying:

    a. The fuel storage tank contains at least 125 gallons of fuel; and

    b. The engine starts from ambient conditions and operates for at least 30 minutes, while loaded with the fire pump on recirculation flow.

2. By verifying:

    a. At least once per 92 days, a sample of diesel fuel from the fuel storage tank, obtained in accordance with ASTM D270-65, is within the acceptable limits specified in Table 1 of ASTM D975-74 when checked for viscosity, water, and sediment.

    b. At least once per 18 months, by subjecting the engine to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for the class of service.

3. The diesel engine starting 12-volt batteries and charger shall be demonstrated FUNCTIONAL:

    a. At least once per 7 days, by verifying:

        1. The electrolyte level of each battery cell is above the plates.

        2. The voltage of each battery is greater than or equal to 12 volts.

3/4.7 PLANT SYSTEMS

3/4.7.9 FIRE PROTECTION SYSTEMS

3/4.7.9.1 FIRE SUPPRESSION WATER SYSTEM

b. At least once per 92 days, by verifying the specific gravity is appropriate for continued service of the batteries.

c. At least once per 18 months, by verifying:

1. The batteries, cell plates, and battery racks show no visual indication of physical damage or abnormal deterioration; and

2. The battery-to-battery and terminal connections are clean, tight, free of corrosion, and coated with anti-corrosion material.

BASES:

1. The FUNCTIONALITY of the fire suppression system ensures adequate fire suppression capability is available to confine and extinguish fires occurring in any portion of the facility where safety related equipment is located. The fire suppression system consists of the high pressure fire pumps, water supply tanks, fire hydrants, fire hose stations, distribution piping and valves, spray and/or sprinkler systems and Halon systems.

   In the event that portions of the fire suppression systems are nonfunctional, alternate backup fire fighting equipment is required to be made available in the affected areas until the nonfunctional equipment is restored to service.

   In the event the fire suppression water system becomes nonfunctional, immediate corrective measures must be taken since this system provides the major fire suppression capability of the plant.

2. It is the intent of monthly diesel engine fire pump testing to conduct this test during a different week than electric motor pump testing. Nominal monthly (“once per 31 days”) and 18 month surveillance requirements are consistent with the Unit 1 and 3 surveillance requirements. The surveillance procedures for each of the three fire pumps are common to Units 1, 2, and 3.

   (See AR 97026324-03 for additional information).

REFERENCE:

1. Condition Report M3-00-2659

3/4.7 PLANT SYSTEMS

3/4.7.9 FIRE PROTECTION SYSTEMS

3/4.7.9.2 SPRAY AND/OR SPRINKLER SYSTEMS

TECHNICAL REQUIREMENT

3.7.9.2 The following spray and/or sprinkler systems shall be FUNCTIONAL:

a. Diesel Generator Rooms
b. Diesel Generator Day Tank Rooms
c. Cable Vault (Aux. Building)
   1. Sprinkler (in tray)
   2. Sprinkler (ceiling level)
d. Cable Vault (Turbine Building)
   1. Automatic Wet Pipe Sprinkler System (45’0”)
   2. Automatic Deluge System (vertical cable shaft and elevation 25’0” cable vault)
e. Hydrogen Seal Oil Unit
f. Turbine Building Northeast Corner
g. Turbine Building 31’6”/14’6” - North
h. Turbine Building 31’6”/14’6” - South
i. Lube Oil Room
j. Aux. Building (-45’6”) General Area
k. Aux. Building (14’6”) Truck Access
l. Turbine Bearing
m. Steam Generator Feed Pumps
n. Aux. Bldg. (14’6”) at MCC B-61
o. Aux. Bldg. (-25’6”) at Charging Pump Cubicle
p. Aux. Bldg. (14’6”) General Area

APPLICABILITY:

Whenever equipment in the spray/sprinkler protected areas is required to be FUNCTIONAL.

ACTION:

a. With one or more of the above required spray and/or sprinkler systems nonfunctional, establish a continuous fire watch with backup fire suppression equipment for the unprotected area(s) within 1 hour. Restore the nonfunctional equipment to FUNCTIONAL status within 14 days, or develop a plan and schedule for restoring the equipment to FUNCTIONAL status.

3/4.7 PLANT SYSTEMS

3/4.7.9 FIRE PROTECTION SYSTEMS

3/4.7.9.2 SPRAY AND/OR SPRINKLER SYSTEMS

TECHNICAL SURVEILLANCE REQUIREMENTS

4.7.9.2 Each of the above required spray and/or sprinkler systems shall be demonstrated FUNCTIONAL:

a. At least once per 12 months by cycling each testable valve in the flow path through at least one complete cycle of full travel.

b. At least once per 18 months:

   1. By performing a system FUNCTIONAL test which includes simulated automatic actuation of the system; and:

      a) Verifying that the automatic valves in the flow path actuate to their correct positions on a simulated test signal, and

      b) Cycling each valve in the flow path that is not testable during plant operation through at least one complete cycle of full travel.

   2. By inspection of the spray headers to verify their integrity, and

   3. By inspection of each nozzle to verify no blockage.

c. At least once per 3 years by performing an air or water flow test through each open head spray/sprinkler header and verifying each open head spray/sprinkler nozzle is unobstructed.

3/4.7 PLANT SYSTEMS

3/4.7.9 FIRE PROTECTION SYSTEMS

3/4.7.9.2 SPRAY AND/OR SPRINKLER SYSTEMS

BASES:

The FUNCTIONALITY of the fire suppression system ensures that adequate fire suppression capability is available to confine and extinguish fires occurring in any portion of the facility where safety related equipment is located. The fire suppression system consists of the water system, spray and/or sprinklers and fire hose stations. The collective capability of the fire suppression systems is adequate to minimize potential damage to safety related equipment and is a major element in the facility fire protection program.

In the event that portions of the fire suppression systems are nonfunctional, alternate backup fire fighting equipment is required to be made available in the affected areas until the nonfunctional equipment is restored to service.

In the event the fire suppression water system becomes nonfunctional, immediate corrective measures must be taken since this system provides the major fire suppression capability of the plant.

REFERENCE:

1. Condition Report M3-00-2659

3/4.7 PLANT SYSTEMS

3/4.7.9 FIRE PROTECTION SYSTEMS

3/4.7.9.3 FIRE HOSE STATIONS

TECHNICAL REQUIREMENT

3.7.9.3 The fire hose stations shown in TRM Table 4.7-5 shall be FUNCTIONAL.

APPLICABILITY:

Whenever equipment in the areas protected by the fire hose stations is required to be FUNCTIONAL*.

ACTION:

With one or more of the fire hose stations shown in TRM Table 4.7-5 nonfunctional, route an additional equivalent capacity fire hose to the unprotected area(s) from an FUNCTIONAL hose station within 1 hour or establish a continuous fire watch with backup fire suppression equipment for the unprotected area(s). If the nonfunctional hose station(s) is not the primary means of fire suppression, then route the additional fire hose(s) or establish a continuous fire watch with fire suppression equipment within 24 hours.

TECHNICAL SURVEILLANCE REQUIREMENTS

4.7.9.3 Each of the fire hose stations shown in TRM Table 4.7-5 shall be demonstrated FUNCTIONAL.

a. At least once per 31 days by visual inspection of the station to assure all required equipment is at the station. The exception to the above will be the containment hose stations. The equipment will be located outside containment except when the unit is in COLD SHUTDOWN.

b. At least once per 18 months by:

1. Removing the hose for inspection and re-racking, and
2. Replacement of all degraded gaskets in couplings.

c. At least once per 3 years by:

1. Partially opening each hose station valve to verify valve FUNCTIONALITY and no flow blockage.
2. Conducting a hose hydrostatic test at a pressure at least 50 psig greater than the maximum pressure available at that hose station.

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* Containment hose stations shall be FUNCTIONAL in MODE 5 when required to support maintenance activities and MODE 6.

3/4.7 PLANT SYSTEMS

3/4.7.9 FIRE PROTECTION SYSTEMS

3/4.7.9.3 FIRE HOSE STATIONS

BASES:

The FUNCTIONALITY of the fire suppression system ensures that adequate fire suppression capability is available to confine and extinguish fires occurring in any portion of the facility where safety related equipment is located. The fire suppression system consists of the water system, spray and/or sprinklers and fire hose stations. The collective capability of the fire suppression systems is adequate to minimize potential damage to safety related equipment and is a major element in the facility fire protection program.

In the event that portions of the fire suppression systems are nonfunctional, alternate backup fire fighting equipment is required to be made available in the affected areas until the nonfunctional equipment is restored to service.

In the event the fire suppression water system becomes nonfunctional, immediate corrective measures must be taken since this system provides the major fire suppression capability of the plant.

REFERENCE:

1. Condition Report M3-00-2659

Table 4.7-5
Fire Hose Stations

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3/4.7 PLANT SYSTEMS

3/4.7.9 FIRE PROTECTION SYSTEMS

3/4.7.9.4 HALON FIRE SUPPRESSION SYSTEM

TECHNICAL REQUIREMENT

3.7.9.4 The following Halon 1301 fire suppression systems shall be FUNCTIONAL with an intact gas boundary, a FUNCTIONAL activation system, and a container having a net weight of not less than 95% of full charge weight at 325 psig minimum (corrected to 70°F).

a. West D.C. Switchgear Room.

b. East D.C. Switchgear Room.

APPLICABILITY:

At all times.

ACTION:

With one or more of the above systems nonfunctional, establish a continuous fire watch with backup fire suppression equipment for the unprotected area(s) within 1 hour. Restore the system to FUNCTIONAL status within 14 days, or develop a plan and schedule for restoring the system to FUNCTIONAL status.

TECHNICAL SURVEILLANCE REQUIREMENTS

4.7.9.4 Each of the above halon fire suppression systems shall be demonstrated FUNCTIONAL.

a. At least once per 6 months:

   1. By performing a system FUNCTIONAL test which includes simulated automatic operation of the system; and,

      a. Simulated manual actuation of the system.

      b. Verifying that the storage containers have a net weight of not less than 95% of full charge weight at 325 psig (corrected to 70°F).

      c. Verifying the associated dampers close.

b. At least once per 18 months;

   1. By performing a visual inspection of the discharge nozzles to assure no blockage.

   2. By performing a visual inspection to assure the gas boundary is intact.

3/4.7 PLANT SYSTEMS

3/4.7.9 FIRE PROTECTION SYSTEMS

3/4.7.9.4 HALON FIRE SUPPRESSION SYSTEM

BASES:

The FUNCTIONALITY of the fire suppression system ensures that adequate fire suppression capability is available to confine and extinguish fires occurring in any portion of the facility where safety related equipment is located. The fire suppression system consists of the water system, spray and/or sprinklers, halon fire suppression system and fire hose stations. The collective capability of the fire suppression systems is adequate to minimize potential damage to safety related equipment and is a major element in the facility fire protection program.

In the event that portions of the fire suppression systems are nonfunctional, alternate backup fire fighting equipment is required to be made available in the affected areas until the nonfunctional equipment is restored to service.

REFERENCE:

1. Condition Report M3-00-2659

3/4.7 PLANT SYSTEMS

3/4.7.10 PENETRATION FIRE BARRIERS

TECHNICAL REQUIREMENT

3.7.10 All fire rated assemblies (walls, floor/ceilings, cable tray enclosures, and other fire barriers) separating safety-related fire areas or separating portions of redundant systems important to safe shutdown within a fire area and all sealing devices in fire rated assembly penetrations (fire doors, fire windows, fire dampers, cable, piping, and ventilation duct penetration seals) shall be FUNCTIONAL.

APPLICABILITY:

At all times unless otherwise determined that the separation of safety-related fire areas or separating portions of redundant systems important to safe shutdown within a fire area is not required based on the MODE of operation.

ACTION:

With one or more of the above required fire rated assemblies and/or penetration sealing devices nonfunctional, within 1 hour:

1. Verify the fire areas/zones on at least one side of the affected fire rated assembly contains a FUNCTIONAL fire detection or automatic suppression system at the fire barrier and establish a fire watch patrol that inspects both areas at least once per hour. Roving fire watches must monitor the area of the device in question, as a minimum, within the specified time frame, plus or minus 25% of the time interval specified in the ACTION statement for periodic roving fire watches. The 25% extension of the time interval specified does not degrade the reliability that results from performing the rove at the specified interval, based on plant experience, and Fire Protection Engineering analysis as documented in Technical Evaluation M3-EV-02-2005, or

2. Establish a continuous fire watch on at least one side of the affected fire rated assembly and/or penetration seal, or

3. Temporarily repair the nonfunctional fire rated assembly and/or sealing device and classify it as temporary.

All temporary repairs of nonfunctional fire rated assemblies and/or sealing devices shall be permanently repaired within 30 days, or implement ACTION 1 or 2 above.

3/4.7 PLANT SYSTEMS

3/4.7.10 PENETRATION FIRE BARRIERS

TECHNICAL SURVEILLANCE REQUIREMENTS

4.7.10 The above required fire rated assemblies and penetration sealing devices shall be verified to be FUNCTIONAL by a visual inspection:

a. At least once per 18 months for fire doors.

b. At least once per 18 months for fire barrier penetration seals, on at least 10% of the total number of penetration seals. If any of the penetration seals in the inspection sample are found to be nonfunctional, then an additional 10% sample of the total number of penetration seals shall be visually inspected. Sampling and inspection shall continue until all of the seals in a sample are found FUNCTIONAL or 100% of the seals are inspected.

c. At least once per 18 months for fire dampers, on at least 10% of the total number of fire dampers. If any of the fire dampers in the inspection sample are found to be nonfunctional, then an additional 10% sample of the total number of dampers shall be inspected. Sampling and inspection shall continue until all the fire dampers in a sample are found FUNCTIONAL or 100% of the fire dampers are inspected.

d. Prior to returning a fire rated assembly and/or penetration sealing device to FUNCTIONAL

e. status following repairs or maintenance.

BASES:

The FUNCTIONAL integrity of the penetration fire barriers ensures that fires will be confined or adequately retarded from spreading to adjacent portions of the facility. This design feature minimizes the possibility of a single fire rapidly involving several areas of the facility prior to detection and extinguishment. The penetration fire barriers are a passive element in the facility fire protection program and are subject to periodic inspections.

During a period of time when a barrier is not FUNCTIONAL, alternate measures are taken to prevent the possible spread of fire. These measures include verifying the FUNCTIONALITY of fire detection or suppression systems on one side of the affected barrier and establishing a fire watch patrol, or posting a continuous, fire watch in the vicinity of the affected barrier, or installation of a temporary fire stop pending restoration of the permanent seal.

3/4.7 PLANT SYSTEMS

3/4.7.10 PENETRATION FIRE BARRIERS

BASES: (Continued)

Roving fire watches must monitor the area of the device in question, as a minimum, within the specified time frame, plus or minus 25% of the time interval specified in the ACTION statement for periodic roving fire watches. The 25% extension of the time interval specified does not degrade the reliability that results from performing the rove at the specified interval, based on plant experience, and Fire Protection Engineering analysis as documented in Technical Evaluation M3-EV-02-2005.

REFERENCE:

1. Condition Report M3-00-2659
2. TRM Table 7-1: Barrier Fire Watch Matrix

Table 7-1
Barrier Fire Watch Matrix
Firewatch Determination - Index of Fire Areas/Zones

[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
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Table 7-1
Barrier Fire Watch Matrix
Firewatch Determination - Index of Fire Areas/Zones

FIRE [redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
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Table 7-1
Barrier Fire Watch Matrix
Firewatch Determination - Index of Fire Areas/Zones

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[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

SECURITY-RELATED-INFORMATION—Withheld under 10 CFR 2.390 (d) (1)

Table 7-1
Barrier Fire Watch Matrix
Firewatch Determination - Index of Fire Areas/Zones

FIRE [redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
		[redacted]					
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
		[redacted]					
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

SECURITY-RELATED-INFORMATION—Withheld under 10 CFR 2.390 (d) (1)

Table 7-1
Barrier Fire Watch Matrix
Firewatch Determination - Index of Fire Areas/Zones

[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

[redacted]

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A.C. SOURCES

EMERGENCY DIESEL GENERATOR FUEL OIL SUPPLY

TECHNICAL REQUIREMENT

3.8.1.1.c The diesel oil storage tank (T-148) shall contain at least 17,662 total gallons of fuel.

APPLICABILITY:

MODES 1, 2, 3, and 4.

ACTION:

a. With the diesel oil storage tank volume less than 17,662 total gallons, restore diesel oil storage tank level within 48 hours or declare one emergency diesel generator nonfunctional.

b. With the diesel oil storage tank fuel oil volume less than 12,567 total gallons, declare one emergency diesel generator nonfunctional.

TECHNICAL SURVEILLANCE REQUIREMENTS

4.8.1.1.3 Verify the diesel oil storage tank contains at least 17,662 total gallons of fuel at least once per 31 days.

BASES:

There are two emergency diesel generators (EDG) for Millstone Nuclear Power Station Unit No. 2. Each EDG is provided with a separate fuel oil supply system, which consists of a diesel oil supply tank and associated piping, valves, and instrumentation controls. Technical Specifications require a minimum of 12,000 gallons of fuel oil to be stored in each diesel oil supply tank (T-48A and T-48B).

A cross-tie with two locked-closed valves for the diesel oil supply tanks is provided so that a total inventory of 24,000 gallons would be available to either one of the EDGs. In addition, a 25,000 gallon above ground fuel oil storage tank (T-148), which is common for both EDGs, is provided to receive fuel oil from delivery trucks prior to placing fuel oil in the diesel oil supply tanks.

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A.C. SOURCES

EMERGENCY DIESEL GENERATOR FUEL OIL SUPPLY

BASES: (Continued):

Calculation 97-DES-01787-M2,[1] Rev. 4, determined that a total useable fuel oil volume of 41,195 gallons is necessary to support initial operation of both EDGs for 24 hours and then allow one of the EDGs to continue operation at its rated load for a total of 7 days. This 41,195 gallon requirement for total minimum fuel oil inventory is greater than the combined usable capacity of 24,000 gallons available from the two supply tanks.

The EDG supply tanks require an additional 17,195 gallons[2] to satisfy the 41,195 gallon total minimum inventory of useable fuel oil. The 17,195 gallons of additional volume of fuel oil is supplied from the common storage tank T-148. A minimum volume of 17,195 useable gallons equates to a fuel oil level of approximately 80 inches above the bottom of tank T-148. To ensure a usable volume of 17,195 gallons is maintained in tank T-148, a tank low-level alarm based on maintaining 17,662 total gallons is necessary to annunciate whenever the stored volume decreases below this value.

TR ACTION Statement “b” requires the operator to declare one of the EDG’s nonfunctional if the total fuel oil inventory in tank T-148 decreases to 12,567 total gallons (i.e. six day supply) or less. A minimum volume of 12,567 total gallons (12,101 usable gallons) equates to a fuel oil level of approximately 60.4 inches above the bottom of the tank T-148. The Plant Process Computer (PPC) point L7004 will provide a low-low level alarm function based on the 12,567 gallon requirement whenever the stored volume decreases below this value.

Due to equipment uncertainties and oil density fluctuations, the low-level alarm setpoint corresponding to the 7-day requirement must be set to approximately 84 inches above the bottom of tank T-148 to ensure the low-level alarm occurs prior to actual tank level falling below the minimum fuel oil requirement. In terms of volume indication, the nominal setpoint corresponds to 18,673 gallons. Additionally, due to the same uncertainties and oil density fluctuations, the low-low-level alarm setpoint corresponding to the 6-day requirement must be set to approximately 65 inches above the bottom of tank t-148 to ensure the low-low level alarm occurs prior to the actual tank level falling below the

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(1) Calculation 97-DES-01787-M2, Rev. 4, “Minimum Level Required in MP2 Diesel Oil Storage Tank to Support Seven Day EDG Run”, dated 8/3/98.

(2) The 17,662 gallon minimum fuel oil volume requirement determined in Calculation No. 97-DES-01787-M2, Rev. 4, CCN-01 assumed fuel is initially stored at 24°F (delivered) and experiences a temperature elevation of 86°F. This assumption was made in order to address the effects elevated temperature has on volume, and consequently, the heating value of the oil.

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A.C. SOURCES

EMERGENCY DIESEL GENERATOR FUEL OIL SUPPLY

BASES: (Continued):

minimum fuel oil requirement. In terms of volume indication, the nominal setpoint corresponds to 13,810 gallons.

Alternate measures may be taken for verifying the minimum fuel oil volume requirement given failure of the level instrumentation or annunciator circuitry. Fuel oil volume may be verified by manual means by use of an oil dipstick or through the use of PPC point L7004.

A digital indicator, LI-7004A, is located on Control Room panel CO6F to provide the operator with a continuous indication of the fuel oil level in EDG storage tank T-148. This indicator is a dual bar graph style with the right side providing height of fuel in inches above the bottom of the tank and the left side providing net volume in gallons. The visible scale range of fuel height is 0-120 inches and the scale range for volume is 0-25 (x1000) gallons. Above each bar graph is a digital display of the scale reading. Also, the PPC has the capability of providing the operator with EDG storage tank T-148 fuel oil level and volume in terms of instrument range.

The above ground fuel oil storage tank T-148 contains a temperature element for monitoring the fuel oil bulk temperature. A low temperature alarm will annunciate when the fuel oil temperature falls below 40°F indicating the possible failure of the tank heating system and the need for compensatory ACTIONS to maintain the fuel oil temperature above the established cloud point. Should the fuel oil temperature fall below the cloud point, the quality of the fuel within the storage tank T-148 becomes questionable due to wax formation and the operator is to declare one of the EDG's nonfunctional in accordance with ACTION Statement "b" since the storage tank design volume cannot be considered available. The fuel oil temperature is available on the PPC to provide the operator with continuous temperature monitoring.

Calculations 97-DES-01787-M2, Rev. 4, including CCN-01 and 97-ENG-1804E2, Rev 4,[3] provide the basis for establishing the following correlation between components of level monitoring lop L7004:

TRM Table 3.8.1.1.c-1 provides a correlation between tank level in inches from the bottom of tank to volume indication for both the process minimum limit and the instrumentation setpoint associated with the 17,662 gallons requirement.

TRM Table 3.8.1.1.c-2 provides a correlation between tank level in inches from bottom of tank to volume indication for both the process minimum limit and the instrumentation setpoint associated with the 12,567 total gallons requirement.

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(3) Calculation 97-ENG-1804E2, Rev. 4, "Diesel Oil Storage Tank (T-148) Level Loop Uncertainty and Alarm Setpoint, L-7004."

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A.C. SOURCES

EMERGENCY DIESEL GENERATOR FUEL OIL SUPPLY

BASES: (Continued):

TRM TABLE 3.8.1.1.C-1
17,662 Total Gallons Requirement Corresponding Level Values

17,662 Total Gallons Requirement (17,195 Useable Gallons) (7 day supply)	T-148 level (inches above bottom of tank)	T-148 VOLUME GALLONS
Low-level Alarm Setpoint	≥ 84 inches	≥ 18,673
Fuel Volume @ minimum TRM limit of	79.9 inches	17,662

TRM TABLE 3.8.1.1.C-2
12,567 Total Gallons Requirement Corresponding Level Values

12,567 Total Gallons Requirement (12,101 Useable Gallons) (6 day supply)	T-148 Level (inches above bottom of tank)	T-148 VOLUME GALLONS
Low-Low Level Alarm Setpoint	≥ 65 inches	≥ 13,810
Fuel Volume @ minimum TRM limit	60.4 inches	12,567

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A.C. SOURCES

EMERGENCY DIESEL GENERATOR FUEL OIL SUPPLY

TECHNICAL REQUIREMENT

BASES: (Continued):

Following a loss of coolant accident, both EDGs will operate initially at the continuous rated loads of 2750 kW for 24 hours at which time (assuming no fuel oil replenishment is provided) one of the EDGs may be secured and the other EDG may continue operation at its rated load for an additional six (6) days. The total volume of fuel oil required for two EDGs to initially operate for 24 hours, and then allow one of the EDGs to continue to operate at its rated load for six additional days, is 41,195 useable gallons out of which 24,000 gallons are stored in diesel oil supply tanks (T-48A and T-48B). Therefore, the extra requirement of fuel oil of approximately 17,195 useable gallons will be stored in the diesel oil storage tank T-148. The value of 12,567 total gallons (12,101 useable gallons) corresponds to a reduced level of stored fuel oil equivalent to 6 days.(1)

The TECHNICAL REQUIREMENT cannot be met if less than the seven (7) days diesel oil supply for the EDG is available. However, the ACTION statement allows for temporarily maintaining a reduced diesel oil supply level for a maximum time duration of 48 hours before declaring one EDG nonfunctional. This temporary reduction in diesel oil supply level may be caused by events, such as full load operation required after an inadvertent start while at minimum required level, or feed and bleed operations which may be necessitated by increasing particulate levels or any number of other oil quality degradations. A period of 48 hours is considered sufficient to complete restoration of the required level prior to declaring the DG nonfunctional. This period is acceptable based on the remaining capacity (>6 days), the fact that ACTIONS will be initiated to obtain replenishment, and the low probability of an event during this brief period.

The TECHNICAL SURVEILLANCE REQUIREMENT provides verification that there is an adequate inventory of diesel fuel oil in the storage tank to support the operation of EDGs at the continuous rated load of 2750 kW for 24 hours, at which time (assuming no fuel oil replenishment is provided) one of the EDGs may be secured and the other EDG may continue operation at its rated load for an additional six (6) days. The seven (7) day period is sufficient time to place the unit in a safe condition and to bring in replenishment fuel from an offsite location. The 31 day frequency is adequate to ensure that a sufficient supply of oil is available, since low-level alarms are provided and unit operators would be aware of any large uses of fuel oil during this period.

The above requirement is consistent with NUREG-1432, “Standard Technical Specification 3.8.3, Diesel Fuel Oil, Lube Oil, and Starting Air.”

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A.C. SOURCES

EMERGENCY DIESEL GENERATOR FUEL OIL SUPPLY

REFERENCE:

1. Calculation 97-DES-01787-M2, Rev. 4, including CCN-01, “Minimum Level Required in MP2 Diesel Oil Storage Tank to Support Seven Day EDG Run”.

2. Calculation 97-ENG-1804E2, Rev. 4, “Diesel Oil Storage Tank (T-47A) Level Loop Uncertainty and Alarm Setpoint, L-7004.”

3. Condition Report M3-00-02659.

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A.C. SOURCES

OFFSITE LINE POWER SOURCES

TECHNICAL REQUIREMENT

3.8.1.2 The offsite lines to the Millstone Switchyard: 310, 348 (includes 3252 line), 371 (includes 364 line), and 383, shall be FUNCTIONAL.

APPLICABILITY:

When Millstone Power Station (MPS) electrical output exceeds 1650 MWe net.

ACTION:

a. With one offsite line nonfunctional, perform the following or reduce total station output to $\leq$ 1650 MWe net within the next 6 hours:

   1. Restore FUNCTIONALITY of the affected offsite line within 72 hours, or

   2. Establish the following ACTION requirements AND restore FUNCTIONALITY within 7 days for Lines 310, 348/3252, and 383, or within 14 days for Line 371/364.

      a. Once per shift, verify the remaining offsite lines to the MPS switchyard are FUNCTIONAL.

      b. Perform an initial weather assessment for the scheduled line outage duration and then once per shift thereafter.

         1. If the assessment predicts adverse or inclement weather will exist while the offsite line is nonfunctional (i.e., out of service), reduce total station output to $\leq$ 1650 MWe net prior to arrival of the adverse or inclement weather.

      c. Within one hour prior to or after entering this condition and at least once per 24 hours thereafter, verify that both the Millstone Unit 2 EDGs and the Millstone Unit 3 EDGs are OPERABLE and the Millstone Unit 3 SBO diesel generator is available. Restore any inoperable Millstone Unit 2 EDG or Millstone Unit 3 EDG to OPERABLE status and/or the Millstone Unit 3 SBO to available status within 72 hours or reduce total station output to $\leq$ 1650 MWe net within the next 6 hours.

b. With two offsite lines nonfunctional, reduce total station output to $\leq$ 1650 MWe net within the next 30 minutes.

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A.C. SOURCES

EMERGENCY DIESEL GENERATOR FUEL OIL SUPPLY

TECHNICAL SURVEILLANCE REQUIREMENTS

4.8.1.2 The four offsite lines to the Millstone Switchyard shall be determined to be FUNCTIONAL at least once per 7 days when station output exceeds 1650 MWe net.

BASES:

TR 3.8.1.2 requires that all four offsite 345 kV transmission lines are FUNCTIONAL when MPS electrical output exceeds 1650 MWe net. TR 3.8.1.2 contains ACTIONS that must be performed when one offsite 345 kV transmission line is nonfunctional.

TR 3.8.1.2 provides flexibility to preclude plant downpowers due to planned and unplanned offsite transmission line outages. The TRM requirements provide this flexibility while also maintaining adequate defense-in-depth to ensure grid reliability and stability are preserved and the ability of the plants to respond to design basis accidents is not adversely affected.

With one offsite line nonfunctional, ACTION a.1 allows 72 hours to restore FUNCTIONALITY. This 72-hour allowed outage time (AOT) is conservatively based on the loss of one offsite line being equal to the risk of losing one onsite connection to the offsite power system (i.e., TS 3.8.1.1).

With one offsite line nonfunctional, ACTION a.2 contains the provision to allow up to 7 days for Lines 310, 348/3252, and 383, or 14 days for Line 371/364 to restore FUNCTIONALITY if ACTIONS a.2.a, a.2.b, and a.2.c are met. The applicable AOT reduces the risk of a plant perturbation as a result of having to downpower the unit for short duration line outages and provides flexibility for conducting maintenance and improves operational safety margin by the following:

- Minimizes the number of plant downpowers for short duration 345 kV transmission line outages.
- Reduces the likelihood of a loss of offsite power event by establishing an AOT with additional defense-in-depth measures to minimize the potential for a double circuit failure scenario which can result in grid instability.

During the applicable AOT, ACTION a.2.a ensures there are no known issues that could threaten the reliability of the remaining 345 kV transmission lines. Verifying the remaining 345 kV offsite transmission lines to the MPS switchyard are FUNCTIONAL, increases confidence that the remaining 345 kV lines will remain FUNCTIONAL during the planned outage of the affected 345 kV line.

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A.C. SOURCES

EMERGENCY DIESEL GENERATOR FUEL OIL SUPPLY

BASES: (Continued):

During the applicable AOT, the action to perform weather assessments as required by ACTION a.2.b ensures appropriate actions are taken to minimize the potential for adverse or inclement weather event to impact grid reliability with one line nonfunctional. If adverse or inclement weather is predicted, the nonfunctional 345 kV line would be restored to FUNCTIONAL status or station output would be reduced to $\leq$ 1650 MWe net prior to the arrival of the adverse or inclement weather.

During the applicable AOT, ACTION a.2.c (i.e., both the Millstone Unit 2 and Millstone Unit 3 EDGs are operable and the Millstone Unit 3 SBO is available) provides assurance that AC power will be available to support required safety-related equipment in the unlikely event of a complete loss of offsite power during the time one of the 345 kV lines is nonfunctional. This ACTION ensures that electrical power will be available in a timely manner to perform the required functions to maintain cooling to the reactor core in the unlikely event a loss of offsite power was to occur during the AOT.

For the condition where the applicable AOT is in use for one nonfunctional transmission line and one or more of the following components is out-of-service:

- a Millstone Unit 2 EDG
- a Millstone Unit 3 EDG
- the Millstone Unit 3 SBO diesel generator

72 hours is allowed for restoration of the out-of-service component. If any one of these components is not restored within 72 hours, reduce total station output to $\leq$ 1650 MWe net within the next 6 hours.

The allowed outage times for Lines 310, 348/3252, 371/364, and 383 are based on the configuration of the transmission lines at Hunts Brook Junction where Lines 383 and 310 cross over Line 371/364 and Line 348/3252 runs to the west of the crossover. With Line 348/3252, 310, or 383 nonfunctional, the possibility exists that either Line 383 or 310 could drop on Line 371/364 and result in three lines nonfunctional. This condition would impact grid stability and therefore, a 7-day AOT is allowed with the specified ACTION requirements in place. When Line 371/364 is nonfunctional, if either Line 310 or 383 drops, two transmission lines remain FUNCTIONAL. Therefore, a 14-day AOT is allowed with the specified ACTION requirements in place.

REFERENCE:

1. License Amendment 328

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.2 ONSITE POWER AC DISTRIBUTION SYSTEMS

ELECTRICAL SWITCHGEAR ROOM VENTILATION

TECHNICAL REQUIREMENT

3.8.2.1.b The ventilation trains for the following switchgear rooms shall be FUNCTIONAL:

a. Upper and Lower 4160 VAC Switchgear Rooms.

b. East and West 480 VAC Switchgear Rooms.

c. B51 and B61 MCC Cubicles.

d. East and West DC Switchgear Rooms.

APPLICABILITY:

When associated switchgear is required to be OPERABLE. |

ACTION:

Note: Separate ACTION entry is allowed for each switchgear/MCC cubicle ventilation train.

- Upper and Lower 4160 VAC Switchgear Rooms,
- East and West 480 VAC Switchgear Rooms, and
- East and West DC Switchgear Rooms.

a. With a switchgear ventilation train nonfunctional, immediately implement the applicable switchgear ventilation system compensatory ACTIONS in accordance with the applicable operating procedure or enter the applicable Technical Specification ACTION Statement for the associated switchgear. If compensatory ACTIONS have been implemented, within 30 days, either restore the affected switchgear ventilation train to FUNCTIONAL status or prepare a FUNCTIONALITY assessment, including a Reasonable Assurance of Safety (RAS) determination. Applicable time constraints for continued operation with a switchgear ventilation train nonfunctional and the compensatory ACTIONS in place shall be identified and justified in the assessment. |

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.2 ONSITE POWER AC DISTRIBUTION SYSTEMS

ELECTRICAL SWITCHGEAR ROOM VENTILATION

TECHNICAL REQUIREMENT

ACTION: (Continued)

b. With both trains of a switchgear ventilation system nonfunctional, immediately implement the applicable switchgear ventilation system compensatory ACTIONS in accordance with the applicable operating procedure or enter the applicable Technical Specification ACTION Statement for the associated switchgear. If compensatory actions have been implemented, within 7 days, either restore at least one train of the switchgear ventilation system to FUNCTIONAL status or prepare a FUNCTIONALITY assessment, including a Reasonable Assurance of Safety (RAS) determination. Applicable time constraints for continued operation with both switchgear ventilation trains nonfunctional and the compensatory ACTIONS in place shall be identified and justified in the assessment.

- B51 and B61 MCC Cubicles.

Note: The compensatory ACTIONS contained in the applicable operating procedure for B51 and B61 MCC Cubicles switchgear ventilation trains may adversely affect enclosure building integrity. Evaluate and enter Technical Specification ACTION Statement 3.6.5.2, “Containment Systems - Enclosure Building,” as necessary.

c. With either B51 or B61 MCC switchgear ventilation train nonfunctional, immediately implement the applicable switchgear ventilation system compensatory ACTIONS in accordance with the applicable operating procedure and enter Technical Specification ACTION Statement 3.6.5.2, if necessary. Otherwise, enter the applicable Technical Specification ACTION Statement for the associated switchgear. If entry into Technical Specification ACTION Statement 3.6.5.2 is required as a result of the use of compensatory ACTIONS, restore the affected switchgear ventilation train to FUNCTIONAL status within 24 hours, or terminate the use of compensatory measures per the applicable operating procedure and enter the applicable Technical Specification ACTION Statement for the associated switchgear. If entry into Technical Specification ACTION Statement 3.6.5.2 is NOT required and compensatory ACTIONS have been implemented, within 30 days, either restore the affected switchgear ventilation train to FUNCTIONAL status or prepare a FUNCTIONALITY assessment, including a Reasonable Assurance of Safety (RAS) determination. Applicable time constraints for continued operation with a switchgear ventilation train nonfunctional and the compensatory ACTIONS in place shall be identified and justified in the assessment.

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.2 ONSITE POWER AC DISTRIBUTION SYSTEMS

ELECTRICAL SWITCHGEAR ROOM VENTILATION

TECHNICAL SURVEILLANCE REQUIREMENTS

d. With both B51 and B61 MCC switchgear ventilation trains nonfunctional and entry into Technical Specification ACTION Statement 3.6.5.2 is required, restore both trains of the switchgear ventilation system to FUNCTIONAL status and operation within 24 hours, or terminate the use of compensatory measures per the applicable operating procedure and enter the applicable Technical Specification ACTION Statement for the associated switchgear. With both B51 and B61 MCC switchgear ventilation trains nonfunctional and entry into Technical Specification ACTION Statement 3.6.5.2 is NOT required, within 7 days, either restore at least one train of the switchgear ventilation system to FUNCTIONAL status or prepare a FUNCTIONALITY assessment, including a Reasonable Assurance of Safety (RAS) determination. Applicable time constraints for continued operation with both switchgear ventilation trains nonfunctional and the compensatory ACTIONS in place shall be identified and justified in the assessment.

4.8.2.1b Normal daily plant equipment operator rounds verify the switchgear ventilation systems are FUNCTIONAL.

BASES:

This TECHNICAL REQUIREMENT provides guidance to address switchgear ventilation systems that are nonfunctional. If any switchgear ventilation train is nonfunctional the compensatory measures contained in the applicable operating procedure must be implemented immediately (pursued without delay and in a controlled manner) or the associated switchgear shall be declared INOPERABLE and the appropriate Technical Specification ACTION Statement (TSAS) entered. Since the compensatory measures contained in the applicable operating procedure will ensure the associated switchgear will remain OPERABLE for all design basis events, it is acceptable to address each switchgear ventilation train separately.

The ACTION requirements are preceded by a note that states separate ACTION entry for each switchgear/MCC cubicle ventilation train is allowed. This is acceptable since the required ACTIONS for each condition provide appropriate compensatory ACTIONS for each nonfunctional ventilation train.

- Upper and Lower 4160 VAC Switchgear Rooms,
- East and West 480 VAC Switchgear Rooms, and
- East and West DC Switchgear Rooms.

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.2 ONSITE POWER AC DISTRIBUTION SYSTEMS

ELECTRICAL SWITCHGEAR ROOM VENTILATION

BASES: (Continued)

a. If one switchgear ventilation train for any switchgear is under compensatory measures a 30 day allowed outage time (AOT) is specified. The use of compensatory ACTIONS for the AOT or other applicable time constraint is acceptable since the compensatory measures ensure the associated switchgear will remain OPERABLE for all design basis events.

b. If both switchgear ventilation trains for any switchgear are under compensatory measures, a 7 day AOT is specified to restore at least one of the switchgear ventilation trains to FUNCTIONAL status.

Within the specified AOT either restore the switchgear ventilation trains to FUNCTIONAL status or a FUNCTIONALITY assessment will be prepared, including a Reasonable Assurance of Safety (RAS) determination. Applicable time constraints for continued operation with both switchgear ventilation trains nonfunctional and the compensatory ACTIONS in place shall be identified and justified in the assessment.

- B51 and B61 MCC Cubicles:

The ACTION requirements are preceded by a note that states the compensatory ACTIONS contained in the applicable operating procedure for B51 and B61 MOC Cubicles switchgear ventilation trains may adversely affect enclosure building integrity. If enclosure building integrity is adversely affected, entry into Technical Specification ACTION Statement 3.6.5.2, “Containment Systems - Enclosure Building,” may be necessary. This ACTION statement requires restoration of enclosure building integrity within 24 hours or a plant shutdown to MODE 5 will be required.

a. If one switchgear ventilation train for either B51 or B61 switchgear is under compensatory measures and the compensatory measures result in a loss of enclosure building integrity, the ventilation train shall be restored to FUNCTIONAL status and operation within 24 hours. The use of a 24 hour AOT is specified to be consistent with the AOT for Technical Specification 3.6.5.2. If the ventilation train is not restored to FUNCTIONAL status within 24 hours, the use of compensatory measures shall be terminated to restore enclosure building integrity and the appropriate TSAS shall be entered for the affected switchgear. If the use of compensatory ACTIONS does not result in a loss of enclosure building integrity, a 30 day AOT is specified. The use of compensatory ACTIONS for the AOT or other applicable time constraint is acceptable since the compensatory measures ensure the associated switchgear will remain OPERABLE for all design basis events.

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.2 ONSITE POWER AC DISTRIBUTION SYSTEMS

ELECTRICAL SWITCHGEAR ROOM VENTILATION

BASES: (Continued)

b. If both B51 and B61 switchgear ventilation trains are under compensatory measures, and the compensatory measures result in a loss of enclosure building integrity, the ventilation trains shall be restored to FUNCTIONAL status within 24 hours. The use of a 24 hour AOT is specified to be consistent with the AOT for Technical Specification 3.6.5.2. If the ventilation trains are not restored to FUNCTIONAL status within 24 hours, the use of compensatory measures shall be terminated to restore enclosure building integrity and the appropriate TSAS shall be entered for the affected switchgear. If the use of compensatory ACTIONS does not result in a loss of enclosure building integrity, a 7 day AOT is specified to restore at least one of the switchgear ventilation trains to FUNCTIONAL status.

   Within the specified AOT either restore the switchgear ventilation trains to FUNCTIONAL status or a FUNCTIONALITY assessment will be prepared, including a Reasonable Assurance of Safety (RAS) determination. Applicable time constraints for continued operation with both switchgear ventilation trains nonfunctional and the compensatory ACTIONS in place shall be identified and justified in the assessment.

   - Upper and Lower 4160 VAC Switchgear Rooms
   - East and West 480 VAC Switchgear Rooms
   - B51 and B61 MCC Cubicles
   - East and West DC Switchgear Rooms.

a. Periodic testing of system valves and fans may interrupt cooling flow to one of these rooms for a short period of time (< 5 minutes). The ventilation for the affected room remains FUNCTIONAL during this testing. However, if the component being tested cannot be restored, i.e. ventilation/ventilation cooling cannot be restored, then the applicable ACTION statement for the affected ventilation train/system will be entered.

REFERENCE:

1. Technical Specification Section 3/4.8.2, Onsite Power Distribution Systems.
2. Technical Evaluation M2-EV-99-0093, Rev. 04.

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.2 ONSITE POWER AC DISTRIBUTION SYSTEMS

ELECTRICAL SWITCHGEAR ROOM VENTILATION

REFERENCE: (Continued)

3. Regulatory Issue Summary - RIS-05-020, Revision to Guidance Formerly Contained in NRC Generic Letter 91-18, information to Licensees regarding Two NRC Inspection Manual Sections on Resolution of Degraded and Nonconforming Conditions and on Operability.
4. NRR Staff Analysis response to Clinton Power Station regarding Technical Specification Requirements which were based on NRC Inspection Manuel, Part 9900, STS10 OP STS.
5. CR M2-98-2661, was initiated against OP2315 SD to re-evaluate compensatory measures established to enhance identified weaknesses. This TRM addition is a corrective action for CR M2-98-2661.
6. 10 CFR Part 50.59 Safety Evaluation S2-EV-99-0090.
7. Condition Report M3-00-02659.

3/4.9 REFUELING OPERATIONS

3/4.9.3.2 SPENT FUEL POOL TEMPERATURE

TECHNICAL REQUIREMENT

3.9.3.2 The spent fuel pool bulk temperature shall be maintained at less than or equal to 150°F.

APPLICABILITY:

Whenever irradiated fuel is stored in the spent fuel pool.

ACTION:

With the above conditions not satisfied:

a. Immediately initiate ACTIONS to restore the spent fuel pool temperature to less than or equal to 150°F, and

b. Within one hour, suspend all fuel movement in the spent fuel pool, and

c. At least once per 4 hours, record the spent fuel pool bulk temperatures.

TECHNICAL SURVEILLANCE REQUIREMENTS

4.9.3.2 The spent fuel pool bulk temperature shall be verified to be less than or equal to 150°F at least once per 12 hours.

BASES:

The requirement that the spent fuel pool bulk temperature be maintained at or below 150°F ensures that the bulk water temperature will not exceed 200°F with the loss of spent fuel pool cooling assumed following a design basis LOCA. This ensures the post-LOCA function of the spent fuel pool cooling system.

The requirements that the spent fuel pool bulk temperature be maintained at or below 150°F ensures that the temperature and humidity above the pool are compatible with personnel comfort and safety requirements. The maximum temperature limit of 150°F in the spent fuel pool ensures that the design temperature of the spent fuel pool cooling system, liner/building structures, and racks are not exceeded. The heat removal capacity of the spent fuel pool cooling system, and/or shutdown cooling system (in MODES 5 or 6, or with core defueled) is sufficient to maintain the spent fuel pool bulk water temperature to less than or equal to 150°F.

REFERENCE:

1. Condition Report M3-00-02659

2. DCR M2-01001, TRMCR 01-2-5

3/4.9 REFUELING OPERATIONS

3/4.9.3.3 SPENT FUEL POOL DECAY TIME

TECHNICAL REQUIREMENT

3.9.3.3 The reactor shall be maintained in MODE 5 or 6, or core defueled until either:

a. 616 hours has passed since sub-criticality for the fuel bundles remaining in the spent fuel pool which were discharged from the previous REFUELING*, of less than or equal to 81 fuel bundles, or

b. The heat load in the spent fuel pool is less than 10.16×10^6 BTU/hr.

APPLICABILITY:**

MODES 5 and 6, and core defueled.

ACTION:

With the above conditions not satisfied, immediately initiate ACTIONS to restore the reactor to MODE 5 or 6, or core defueled.

TECHNICAL SURVEILLANCE REQUIREMENTS

4.9.3.3 Prior to entry into MODE 4 from MODE 5, verify that either:

a. 616 hours has passed since sub-criticality for the fuel discharged from the previous REFUELING,* of less than or equal to 81 fuel bundles, or

b. The heat load in the spent fuel pool is less than 10.16×10^6 BTU/hr.

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* For the purpose of this requirement, the fuel bundles remaining in the spent fuel pool which were discharged from the previous REFUELING, is defined as the fuel bundles discharged at the end of the most recent REFUELING, that will not be reloaded into the next fuel cycle.

** When either TECHNICAL REQUIREMENT, Item (a) or (b) has been satisfied following a REFUELING, the TECHNICAL REQUIREMENT is satisfied for the remainder of the fuel cycle, until the next REFUELING.

3/4.9 REFUELING OPERATIONS

3/4.9.3.3 SPENT FUEL POOL DECAY TIME

BASES:

The requirement for the reactor to remain in MODE 5 or 6, or core defueled until either:

a. 616 hours has passed since sub-criticality for the fuel bundles remaining in the SFP which were discharged from the previous REFUELING of less than or equal to 81 fuel bundles, or

b. The heat load in the SFP is less than $10.16x10^6$ BTU/hr. At a SFP heat load of $10.16x10^6$ BTU/hr, adequate cooling is available to maintain the SFP bulk temperature less than or equal to 150°F should a single failure occur in the SFP cooling system.

This ensures that adequate cooling is available to maintain the SFP bulk temperature less than or equal to 150°F should a single failure occur in the SFP cooling system.

If either TECHNICAL REQUIREMENT Item (a) or (b) are met, then the SFP heat load will be less than $10.16x10^6$ BTU/hr. Once the SFP heat load is below this value, the SFP cooling system can accommodate a single failure and maintain the SFP bulk water temperature to less than 150°F. The decay time of 616 hours for recently discharge fuel is the bounding decay time for a discharge of less than or equal to 81 fuel bundles to assure a SFP decay heat load of less than or equal to $10.16x10^6$ BTU/hr.

If the spent fuel pool decay heat load is greater than $10.16x10^6$ BTU/hr, then entry into MODE 4 from MODE 5 is not allowed. The reason for this restriction on entering MODE 4 with this heat load, is that one train of shutdown cooling must be available to either supplement or replace SFP cooling, and thus could not also be aligned to support MODE 4 ECCS requirements. One train of the shutdown cooling system is capable of cooling both the core and the SFP, should a failure occur in the SFP cooling system, and maintain the SFP water temperature to less than 150°F.

REFERENCE:

1. Condition Report M3-00-02659
2. DCR M2-01001, TRMCR 01-2-5

3/4.9 REFUELING OPERATIONS

3/4.9.5 COMMUNICATIONS

TECHNICAL REQUIREMENT

3.9.5 Direct communications shall be maintained between the control room and personnel at the REFUELING station during fuel or CEA movement within the reactor pressure vessel.

APPLICABILITY:

MODE 6.

ACTION:

When direct communications between the control room and personnel at the REFUELING station cannot be maintained, suspend all operations involving fuel or CEA movement within the reactor pressure vessel.

TECHNICAL SURVEILLANCE REQUIREMENTS

4.9.5 Direct communications between the control room and personnel at the REFUELING station shall be demonstrated within one hour prior to the start of and at least once per 12 hours during fuel or CEA movement within the reactor pressure vessel.

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 fuel or CEA movement within the reactor pressure vessel.

REFERENCE:

1. Condition Report M3-00-02659

3/4.9 REFUELING OPERATIONS

3/4.9.6 CONTAINMENT BUILDING REFUELING MACHINE

TECHNICAL REQUIREMENT

3.9.6 The containment building REFUELING machine used for movement of fuel assemblies shall be FUNCTIONAL with:

a. A minimum capacity of 1600 pounds in the “fuel only” region,

b. An overload cutoff limit of less than or equal to 1700 pounds in the “fuel only” region.

c. A minimum capacity of 2900 pounds in the “fuel plus hoist” region, and

d. An overload cutoff limit of less than or equal to 3590 pounds in the “fuel plus hoist” region.

APPLICABILITY:

During movement of fuel assemblies.

ACTION:

With the requirements of TECHNICAL REQUIREMENT 3.9.6 listed above not satisfied, suspend all REFUELING machine operations involving movement of fuel assemblies.

TECHNICAL SURVEILLANCE REQUIREMENTS

4.9.6 The containment building REFUELING machine used for movement of fuel assemblies shall be demonstrated FUNCTIONAL within 72 hours prior to the start of moving fuel assemblies by performing applicable load tests of at least 1600 and 2900 pounds and demonstrating applicable automatic load cutoffs of less than or equal to 1700 and 3590 pounds.

3/4.9 REFUELING OPERATIONS

3/4.9.6 CONTAINMENT BUILDING REFUELING MACHINE

BASES:

The fuel hoist assembly is located on the REFUELING platform and is positioned over a specific core location using the joysticks located on the console shelf panel. The hoist and grapple assembly is lowered to a position over the fuel assembly (Upper Grapple Operate Zone - UGOZ). The operator turns the grapple selector switch to open the grapple at the bottom of the hoist assembly. The grapple is lowered over the fuel assembly to the Lower Grapple Operating Zone (LGOZ) and the operator turns the grapple selector switch to close the grapple, engaging the top fitting of the fuel assembly. The grapple and fuel assembly are raised using the joystick on the console shelf panel, as the fuel assembly is hoisted out of the core it is protected by an overload cutoff provided in the Programmable Logic Controller (PLC) software until it is safely inside the hoist box (fuel only region). This overload limit protects the fuel assembly, core internals and pressure vessel from excessive lifting force in the event they are inadvertently engaged during lifting operations.

After the fuel is inside the hoist box, the fuel and hoist box are lifted into the trolley mast with the loads carried by the hoist assembly (fuel plus hoist region). Overload cutoff settings are provided by the PLC software and an external hard wire setting in the load weighing system to prevent the forces from exceeding the maximum design lifting capacity of the refuel machine.

The basis for TECHNICAL REQUIREMENT 3/4.9.6 is to ensure that: 1) the REFUELING machine has sufficient load capacity to lift a fuel element, 2) the core internals and pressure vessel are protected from excessive lifting force in the event they are inadvertently engaged during lifting operations, and 3) the REFUELING machine is protected from excessive lifting forces that may exceed its design rated maximum load capacity.

REFERENCE:

1. Condition Report M3-00-2659.
2. TRMCR 00-2-19.
3. PaR Nuclear, Software Requirements Specification (SRS) Refueling Machine Millstone Power Station - Unit 2, Procedure No. 70587896.
4. DNC drawing 25203-39277 SH 354, Drive Assembly Hoist, Refuel Machine.

3/4.9 REFUELING OPERATIONS

3/4.9.7 SPENT FUEL POOL CASK CRANE TRAVEL LIMITS

TECHNICAL REQUIREMENT

3.9.7 Loads in excess of 1800 pounds shall be prohibited from travel over irradiated fuel assemblies in the storage pool spent fuel racks, with the following exceptions:

a. Heavy Dummy Fuel Assembly,

b. Consolidated Fuel Storage Box,

c. Single-failure-proof lifts in accordance with the guidelines of NUREG-0612.

APPLICABILITY:

With irradiated fuel assemblies in the storage pool spent fuel racks.

ACTION:

With the requirements of the above specification not satisfied, place cask crane load in a safe condition.

TECHNICAL SURVEILLANCE REQUIREMENTS

4.9.7 Crane interlocks and/or physical stops which prevent cask crane travel with loads in excess of 1800 pounds over irradiated fuel assemblies shall be demonstrated FUNCTIONAL at least once per calendar quarter.

BASES:

The restriction on movement of loads in excess of the combined nominal weight of a fuel assembly, CEA and associated handling tool over irradiated fuel assemblies in the storage pool spent fuel racks using the spent fuel pool cask crane ensures that no more than the contents of one fuel assembly will be ruptured in the event of a fuel handling accident. This assumption is consistent with the activity release assumed in the accident analysis. Specific analysis has been performed for the drop of a consolidated fuel storage box on an intact fuel assembly. The results of this analysis determined that the impacted assembly would not fail. The drop of the heavy dummy fuel assembly is bounded by the consolidated fuel storage box drop analysis.

3/4.9 REFUELING OPERATIONS

3/4.9.7 SPENT FUEL POOL CASK CRANE TRAVEL LIMITS

TECHNICAL REQUIREMENT

BASES: continued

With the cask crane design and application of single-failure-proof lifting devices that satisfy the increased design margins of NUREG-0612, a load drop onto irradiated fuel assemblies is not credible and need not be postulated. For other cranes capable of travel with loads in excess of 1800 pounds over irradiated fuel assemblies, administrative controls are in place to ensure compliance with the heavy loads guidelines of NUREG-0612.

REFERENCE:

1. Condition Report M3-00-02659.

6.0 ADMINISTRATIVE CONTROLS

6.2.2 FIRE PROTECTION ADMINISTRATIVE REQUIREMENTS

The following administrative requirements for staffing and training are applicable to support the Fire Protection System TECHNICAL REQUIREMENTS in the below listed TRM sections:

3/4.3.3.7 Fire Detection Instrumentation

3/4.7.9.1 Fire Suppression Water System

3/4.7.9.2 Spray and/or Sprinkler Systems

3/4.7.9.3 Fire Hose Stations

3/4.7.9.4 Halon Fire Suppression System

3/4.7.10 Penetration Fire Barriers

ADMINISTRATIVE REQUIREMENTS

a. A site Fire Brigade of at least five members* shall be maintained on site at all times. The Fire Brigade shall not include two members of the minimum shift crew necessary for safe shutdown of the unit and any personnel required for other essential functions during a fire emergency.

b. A training program for the Fire Brigade shall be maintained and shall meet or exceed the requirements of NFPA 27 - 1975, except for Fire Brigade training sessions which shall be held at least quarterly.

* The Fire Brigade composition may be less than the minimum requirements for a period of time not to exceed 2 hours, in order to accommodate unexpected absence, provided immediate ACTION is taken to fill the required positions.

6.0 ADMINISTRATIVE CONTROLS

6.13 SYSTEM INTEGRITY REQUIREMENTS

The licensee shall implement a program to reduce leakage from systems outside containment that would, or could, contain highly radioactive fluids during a serious transient, or accident, to as low as practical levels. This program shall include the following:

a. Provisions establishing preventive maintenance and periodic visual inspection requirements, and

b. Integrated leak test requirements for each system at a frequency not to exceed REFUELING cycle intervals.

PRIMARY COOLANT SOURCES OUTSIDE CONTAINMENT LEAKAGE REDUCTION PROGRAM

1. PURPOSE:

This program provides controls 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 shall include the following:

a. Preventive maintenance and periodic visual inspection requirements; and

b. Integrated leak test requirements for each system at REFUELING cycle intervals or less.

2. SCOPE:

The systems, or portions of the systems, included in this program are limited to those which penetrate containment and may contain highly radioactive fluids after a serious transient or accident. The applicable systems are:

a. Containment Spray System;

b. Low Pressure Safety Injection;

c. Shutdown Cooling System;

d. Chemical and Volume Control System (boron precipitation control only);

e. High Pressure Safety Injection System;

f. Reactor Coolant System Post Accident Sample System;

g. Containment Air Post Accident Sample System; and

h. Hydrogen Sampling System.

6.0 ADMINISTRATIVE CONTROLS

6.13 SYSTEMS INTEGRITY

PRIMARY COOLANT SOURCES OUTSIDE CONTAINMENT LEAKAGE REDUCTION PROGRAM

3. PREVENTIVE MAINTENANCE:

Each applicable system, or portion of the system is included in the plant Preventive Maintenance Program. Since LEAKAGE from these systems would have to penetrate welded or passive barriers (i.e. gaskets, packing, pump seals, etc.), and is subject to the visual inspections described below, the normal plant Preventive Maintenance Program satisfies the intent of this program.

4. PERIODIC VISUAL INSPECTIONS:

Each applicable system, or portion of the system is subject to periodic visual inspections. Periodic visual inspection are performed during such activities as ASME Section XI pressure tests, operator rounds, health physics surveillances, and for systems not routinely in service during FUNCTIONALITY surveillance testing. Any LEAKAGE or residual boric acid buildup is identified using a trouble report and corrected in accordance with the Corrective Action Program.

5. INTEGRATED LEAK TEST REQUIREMENTS:

Integrated leak test requirements for each system are performed at REFUELING cycle intervals, or less. This testing will verify the external leak tightness of the applicable systems, or portions of the systems, by inspecting the system or subsystem boundary, measuring visible LEAKAGE from mechanical joints, summing the total LEAKAGE, and comparing the individual and total LEAKAGE results with the acceptance criteria. In addition, testing is performed to verify system-to-system LEAKAGE is within the acceptance criteria. This testing is performed by the following procedures.

Procedure	Title	Frequency
SP 21157	HPSI System and ECCS Suction Piping Leakage Test	REFUELING
SP 21162	Volume Control Portion of the CVCS Leakage Test	REFUELING
SP 21198	Containment Spray System Leakage Test	REFUELING
SP 21199	LPSI System and Shutdown Cooling Heat Exchangers Leakage Test	REFUELING
SP 2849	Surveillance Test for Reactor Coolant PASS	REFUELING
SP 2608G	Leak Test of the Containment Air Post-Accident Sample System	REFUELING
SP 2608H	Leak Check of the Hydrogen Sampling System	REFUELING

6.0 ADMINISTRATIVE CONTROLS

6.13 SYSTEMS INTEGRITY

PRIMARY COOLANT SOURCES OUTSIDE CONTAINMENT LEAKAGE REDUCTION PROGRAM

6. REFERENCES:

1. NUREG 0737, “Clarification of TMI Action Plan Requirements,” Section III.D.1.1, “Integrity of Systems Outside Containment Likely to Contain Radioactive Material for Pressurized Water Reactors.”
2. NRC Information Notice 91-56, “Potential Radioactive Leakage to Tank Vented to Atmosphere,” dated September 19, 1991
3. Millstone Unit No. 2 Technical Specification 6.13, “Systems Integrity.”
4. Condition Report M3-00-02659.

7.1 APPENDIX R SAFE SHUTDOWN REQUIREMENTS

REFERENCE TECHNICAL SPECIFICATION: As Identified In Each TECHNICAL REQUIREMENT

TECHNICAL REQUIREMENT IS AS SPECIFIED IN THE FOLLOWING COMPONENT SECTIONS.

APPLICABILITY:

Is as specified in the following component sections.

ACTION:

With an Appendix R Safe Shutdown Related (ARSR) component listed in the following component tables nonfunctional (unable to meet its intended Appendix R shutdown function), perform the following:

a. Restore FUNCTIONALITY of the affected component(s) within 14 days*, or

b. Establish the following compensatory measures to satisfy the FUNCTIONALITY requirements of ARSR components listed in the following component tables unless other compensatory measures are stated:

1. Establish a one-hour roving fire watch for all affected areas identified in the following component tables (except the control room, containment, waste gas decay tanks room, spent resin tank area, ion exchange room, spent fuel pool and cask laydown area and service water cable tunnels). Refer to the Appendix R Compliance Report for fire watch patrol areas. Roving fire watches must monitor the area of the device in question, as a minimum, within the specified time frame, plus or minus 25% of the time interval specified in the ACTION statement for periodic roving fire watches. The 25% extension of the time interval specified does not degrade the reliability that results from performing the rove at the specified interval, based on plant experience, and Fire Protection Engineering analysis as documented in Technical Evaluation M3-EV-02-2005.

2. Verify the FUNCTIONALITY of all fire suppression and detection systems, note required transient combustibles, and verify the lack of substantial new transient combustibles, in the affected areas (except containment) on a Daily Basis. Bring any changes to the attention of the Shift Manager. Establishment of the above compensatory measures will allow continued operation for up to sixty (60) days pending restoration of the component(s) FUNCTIONALITY, or

* Compensatory measures will be established prior to the end of the 14 day window when it is apparent that the 14 day restoration period cannot be met.

7.1 APPENDIX R SAFE SHUTDOWN REQUIREMENTS

REFERENCE TECHNICAL SPECIFICATION: As Identified In Each TECHNICAL REQUIREMENT

TECHNICAL REQUIREMENT IS AS SPECIFIED IN THE FOLLOWING COMPONENT SECTIONS. (Continued)

ACTION: (continued)

c. Prepare a FUNCTIONALITY assessment, including a Reasonable Assurance of Safety (RAS) determination, if warranted, for the function described in the Appendix R Compliance Report, if component FUNCTIONALITY cannot be established within 60 days per ACTION Statement b. Applicable time constraints for continued operation with ARSR component(s) nonfunctional will be identified and justified in the assessment.

d. Restore FUNCTIONALITY of the affected Risk Significant component within 72 hours, or

e. Establish the following risk management action (RMA) Defense-In-Depth compensatory measures for the next 30 days to limit transient combustible material and ignition sources identified in the following component tables:

1. Review existing transient combustible material permits for the affected areas.
2. Review existing ignition source permits for the affected areas.
3. Perform an area walkdown of the affected areas.
4. Evaluate all work requiring transient combustibles, hot work, or racking of breakers in the affected areas.
5. On a daily basis, brief the shift operators and the fire brigade lead on the significance of a fire in the affected areas.
6. Restore FUNCTIONALITY of the affected Risk Significant component within the 30 days or prepare a RAS determination for the Risk Significant component out of service.

f. For ARSR components requiring prompt action, establish compensatory measures within the time specified in the component table.

7.1 APPENDIX R SAFE SHUTDOWN REQUIREMENTS

REFERENCE TECHNICAL SPECIFICATION: As Identified In Each TECHNICAL REQUIREMENT

ADMINISTRATIVE REQUIREMENT:

During Modes 1, 2, 3, or 4, each on duty operating shift shall have one licensed or nonlicensed operator in addition to the minimum shift crew composition required by Section 6.2.2 of the Millstone Unit 2 Safety Technical Specifications. The shift manager shall call in personnel to meet this requirement, if needed. If this requirement cannot be met within eight hours, TECHNICAL REQUIREMENT ACTION Statement “b” shall be implemented for Appendix R Fire Areas R-1, R-2, R-3, R-14, and R-16 within the next four hours.

BASES:

1. ARSR equipment are those components used in plant systems to achieve and maintain HOT STANDBY and COLD SHUTDOWN when a fire disables any area or system(s) at Millstone Unit 2. This Appendix R Safe Shutdown TECHNICAL REQUIREMENTS section addresses the FUNCTIONALITY of ARSR equipment not addressed in Millstone Unit 2 Technical Specifications. Specifically, this document:

   a. Identifies ARSR equipment not addressed in Technical Specifications required to support plant safe shutdown following a fire.

   b. Identifies the FUNCTIONALITY requirements for the ARSR equipment.

   c. Identifies the conditions (such as local or remote) and plant location (fire areas) in which ARSR equipment FUNCTIONALITY is required.

   d. Provides compensatory measures in the event ARSR equipment becomes nonfunctional.

   e. Provides TECHNICAL SURVEILLANCE REQUIREMENTS for ARSR equipment.

   f. Provides a basis for establishing administrative controls over ARSR equipment.

BASES (Continued)

2. The consequences of a fire at a nuclear plant are considered to be less severe than those for Design Basis Accidents. The 14-day window for restoration of ARSR component FUNCTIONALITY, the establishment of compensatory measures, and the once per cycle TECHNICAL SURVEILLANCE REQUIREMENT reflect this decreased level of risk. Compensatory measures will be established prior to the 14-day window when it is apparent that the 14-day restoration period cannot be met.

3. ARSR equipment which are addressed in more restrictive technical specifications are not addressed in this document. Exceptions include shutdown process instrumentation which are allowed to be out of service by technical specifications based upon the availability of redundant channels. If the redundant channel(s) are not ARSR equipment, the redundant channel cannot be credited as “ARSR redundant” and the instrumentation is included in this document for further administrative control.

4. The compensatory measures are intended to ensure that either an alternative component is available to fulfill the shutdown function after a fire, or to minimize the possibility that a fire will occur in an area of the plant which relies on the particular component for safe shutdown. Roving fire watches must monitor the area of the device in question, as a minimum, within the specified time frame, plus or minus 25% of the time interval specified in the ACTION statement for periodic roving fire watches. The 25% extension of the time interval specified does not degrade the reliability that results from performing the rove at the specified interval, based on plant experience, and Fire Protection Engineering analysis as documented in Technical Evaluation M3-EV-02-2005.

5. The lack of fire watch requirements for the control room is based upon continuous staffing by trained operators. The lack of fire watch requirements for containment is based upon the administrative control of transient combustibles and the low potential of introducing transient combustibles or ignition sources, since containment is not normally accessible during POWER OPERATION. The lack of fire watch requirements for the waste gas decay tanks room, spent resin tank area and ion exchange area is based upon the fact that the areas contain negligible combustible loading and are normally inaccessible, limiting the potential of introducing combustibles or ignition sources. The lack of fire watch requirements for the spent fuel pool and cask laydown area is based upon the fact that the area is underwater. Further, these areas contain no ARSR components or cables. The lack of fire watch requirements for the service water cable tunnels is based upon the low potential of introducing transient combustibles or ignition sources, since these tunnels are normally inaccessible. While this area contains ARSR cables, alternate shutdown methods are available were a fire to affect both cable tunnels.

7.1 APPENDIX R SAFE SHUTDOWN REQUIREMENTS

BASES (Continued)

6. The FUNCTIONALITY Assessment, including a Reasonable Assurance of Safety (RAS) determination, if warranted, for continued plant operation is intended to ensure the nonfunctionality of the ARSR equipment has been thoroughly evaluated in accordance with existing engineering guidelines and that the appropriate level of plant management is cognizant of the status of the equipment.

7.1 APPENDIX R SAFE SHUTDOWN REQUIREMENTS

BASES (Continued)

7. Entry into MODE 4 or higher is permitted with ARSR components nonfunctional. The ACTIONS identified in the "Compensatory Measures" column of the component FUNCTIONALITY Requirements and Compensatory Measures tables shall be implemented at the time of entry into MODE 4 for components found to be nonfunctional during MODES 5 or 6. Compensatory ACTIONS shall be implemented when the component is declared nonfunctional for components found to be nonfunctional during MODES 1, 2, 3, or 4.

8. TECHNICAL SURVEILLANCE REQUIREMENT of the Turbine Driven Auxiliary Feedwater Pump (P4) cannot be implemented before entering MODE 3. If the previous TECHNICAL SURVEILLANCE REQUIREMENT was satisfactory, and P4 has not been declared nonfunctional for other reasons, MODES 3 and 4 can be entered without restriction. This approach is consistent with Technical Specification 4.7.1.2.a.2.b which allows entry into MODE 3, even though the Technical Specification surveillance for the Turbine Driven Auxiliary Feedwater Pump is not performed prior to MODE 3 entry.

9. Electrical Breaker TECHNICAL SURVEILLANCE REQUIREMENT Testing

   a. TECHNICAL SURVEILLANCE REQUIREMENT Frequency

      TECHNICAL SURVEILLANCE REQUIREMENT frequency are as specified in the Preventive Maintenance Program. Changes in the frequency for breaker PM's, as allowed by the Preventive Maintenance Program, continue to fulfill the Appendix R TECHNICAL SURVEILLANCE REQUIREMENT and prove FUNCTIONALITY of these breakers. The electrical breaker TECHNICAL SURVEILLANCE REQUIREMENTS may be performed in any MODE when preventive maintenance on the breakers is allowed by either the Preventive Maintenance Program or by breaker availability, such as during a train outage.

   b. Breaker Manual Cycling

      Manual cycling of a breaker is defined as cycling the breaker via the mechanical trip and close buttons.

   c. ARSR Equipment Isolation

      When ARSR equipment (not a breaker) is removed from service for maintenance, repairs, testing, etc. and its associated power supply breaker(s) and/or control power breaker(s) are intentionally opened, no additional Appendix R compensatory ACTIONS specifically for the opened breakers are required since removal of the ARSR equipment from service already has adequate compensatory ACTIONS.

d. NON-ARSR Equipment Isolation

   When equipment not listed as ARSR equipment is removed from service but its associated power supply breaker(s) and/or control power breaker(s) is listed as ARSR equipment, no Appendix R compensatory ACTION is required for the open breaker(s) since the component is not credited for operation in any Appendix R shutdown scenario.

e. When D0105 is out for maintenance, D0111 will be used to jumper out D0105 to supply panel DV10.

   When D0108 is out for maintenance, D0111 will be used to jumper out D0108 to supply panel DV30.

   When D0205 is out for maintenance, D0211 will be used to jumper out D0205 to supply panel DV40.

   When D0208 is out for maintenance, D0211 will be used to jumper out D0208 to supply panel DV20.

10. Existing compensatory ACTION(s) for a nonfunctional fire suppression and/or detection system may be utilized in lieu of FUNCTIONALITY for that suppression and/or detection system when equal compensatory ACTIONS are required for additional ARSR equipment TECHNICAL REQUIREMENT for the same fire area.

11. ACTION c requires that the impact be managed by performance of a FUNCTIONALITY Assessment, including a Reasonable Assurance of Safety (RAS) determination, if warranted, if ARSR component FUNCTIONALITY cannot be established within 60 days. The use of a FUNCTIONALITY Assessment, including a RAS determination, if warranted, assures the FUNCTIONALITY of ARSR components through evaluation or the use of compensatory measures if needed.

12. The intent of limiting transient combustibles as a compensatory measure is to create a heightened awareness of potential fire hazards (combustibles), limit to the extent possible the introduction of new hazards, and limit existing hazards through removal as work is completed. This would be accomplished by the fire watch, and the administrate controls of the permitting process. It is not the intent to prevent the introduction of materials required for repair of the system(s) in question, or fire protection systems used as compensatory measures.

    (See AR 06000479-02 for additional information)

13. Risk Significant Components

According to Regulatory Guide 1.160, Revision 3 “Monitoring the Effectiveness of Maintenance at Nuclear Power Plants,” the NRC determined additional guidance was necessary to adequately assess and manage the risk from internal fires in the conduct of activities required by MRule (a)(4). Revision 4A of NUMARC 93-01, “Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants,” addresses this concern by providing methods licensees can use to identify equipment important to mitigation of risk of core damage from fire initiators. The revision also describes approaches to developing and implementing fire Risk Management Actions (RMAs) and the tools for effective implementation of the guidance.

The risk associated with the performance of maintenance activities having the potential to cause a fire (e.g., welding, use of cutting and grinding tools, transient combustibles, etc.), removal of fire detection or suppression equipment from service, and removal or impairment of fire barriers (e.g., opening of fire doors to facilitate maintenance, removal of protective barriers on cable trays or conduit, etc.) are all addressed by the existing Appendix R program. No additional action is warranted under MRule (a)(4) for these items. However, under the new guidance, removal of equipment from service important to core damage mitigation requires additional action to ensure adequate risk assessment for the impact of fire risk.

According to NUMARC 93-01, Revision 4A, the identification of equipment important for mitigating core damage resulting from fire initiating events can come from either: 10 CFR 50.58/Appendix R, a screening analysis (e.g. Fire Induced Vulnerability Evaluation), or a fire Probability Risk Assessment (PRA). MPS3 does not have fire PRAs, so Appendix R was used as the basis to identify the equipment within the existing MRule (a)(4) scope that is found to have appreciable impact on core damage mitigation for fire initiators.

The Fire Related Safe Shutdown Component list was compared with the PRA Internal Events model list of components which are risk significant for core damage frequency. Those components that were common to both lists, comprised the population of components considered for inclusion in the MRule (a)(4) program for fire risk impact. This component list was further refined down to a risk-informed list through site-specific working groups and a fleet expert panel. Once the appropriate scope of components was determined, RMAs to compensate for the reduction of the fire Safe Shutdown Capability when the component is removed from service, were developed based on guidance provided in NUMARC 93-01, Section 11.3.7.5.

The RMAs will be implemented using the method detailed in NUMARC 93-01, Section 11.3.7.3, Item 2. If a component important for mitigating core damage

7.1 APPENDIX R SAFE SHUTDOWN REQUIREMENTS

BASES (Continued)

13. (continued)

resulting from fire initiating events is out of service for 72 hours, RMAs must be implemented. Within 30 days, the component is to be returned to service. If the component is not returned to service within 30 days, additional risk evaluations to determine additional actions must be performed.

It is important to note, the RMAs developed under the new guidance only address incremental risk from fire events. It is not appropriate to utilize the fire risk RMA implementation methods to address aggregate risk from fire and internal events. Risk from internal events will continue to be evaluated under the current MRule (a)(4) program.

REFERENCE:

1. Condition Report M3-00-02659.
2. RP-5, Operability Determinations.

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Appendix R Safe Shutdown TECHNICAL REQUIREMENTS
Index (Continued)

7.1 APPENDIX R SAFE SHUTDOWN REQUIREMENTS

REFERENCE TECHNICAL REQUIREMENT: 3.1.2.4 - Charging Pumps

TECHNICAL REQUIREMENT

7.1.1 The Appendix R Safe Shutdown Related (ARSR) equipment listed in the TRM Table 7.1.1-1 shall be FUNCTIONAL.

APPLICABILITY:

MODES 1, 2, 3, and 4.

ACTION:

With an ARSR component listed in the above referenced component table nonfunctional (unable to meet its intended Appendix R shutdown function), take the ACTION as specified in the above table under Compensatory Measures.

TECHNICAL SURVEILLANCE REQUIREMENTS

7.1.1 The capability of equipment listed in TRM Table 7.1.1-1 to meet its Appendix R shutdown related FUNCTIONALITY requirements shall be verified per the TECHNICAL SURVEILLANCE REQUIREMENTS of TRM Table 7.1.1-2.

Table 7.1.1-1
CVCS Components
FUNCTIONALITY Requirements and Compensatory Measures

TR Item	Comp ID	FUNCTIONALITY Description	Compensatory Measures if Component Not Restored in 14 Days (see ACTION "a")	Risk Significant Component Not Restored in 72 Hours (see Action "d")
A	P18A Charging Pump	Pump must be FUNCTIONAL from control room	With P18A nonfunctional perform ACTIONS b.1, b.2 for Fire Area R-2.	With P18A pump nonfunctional, Risk Mitigation Areas are: R-2 (FHA A-8B, A-8D, A-13 and T-10), R-3 (FHA T-1A, T-1C and T-1F), R-5 (FHA A-8A), R-8 (FHA A-16), R-10 (FHA A-21 and A-23) and R-11 (FHA A-28)
B	P18B Charging Pump	Pump must be controllable from panel C10	1. With P18B nonfunctional from C10 ensure P18C is FUNCTIONAL from C10 or perform ACTIONS b.1, b.2 for Fire Areas R-1 & R-13. 2. With P18B nonfunctional from panel C10 perform ACTIONS b.1, b.2 for fire area R-4.	N/A
C	P18C Charging Pump	1. Pump must be controllable from panel C10. 2. Pump must be FUNCTIONAL from control room	1. With P18C nonfunctional from C10 ensure P18B is FUNCTIONAL from C10 or perform ACTIONS b.1, b.2 for Fire Areas R-1 & R-13. 2. With P18C nonfunctional from CR perform ACTIONS b.1, b.2 for Fire Area R-4.	N/A
D	Z2 Powered Charging Pump	At least one pump must be powered from facility Z2.	N/A	With Z2 pump nonfunctional, Risk Mitigation Areas are: R-1 (FHA A-1B, A-24 and A-25), R-4 (FHA A-6A), R-7 (FHA A-15), R-9 (FHA A-20 and A-22), R-13 (FHA T-6, R-14 (FHA T-7 and T-9) and R-17 (FHA A-10B)
E	CH-089 Regen HX Outlet Iso	Valve must be controllable from panel C10	Perform ACTIONS b.1, b.2 for Fire Area R-1	N/A

Table 7.1.1-1
CVCS Components
FUNCTIONALITY Requirements and Compensatory Measures

TR Item	Comp ID	FUNCTIONALITY Description	Compensatory Measures if Component Not Restored in 14 Days (see ACTION "a")	Risk Significant Component Not Restored in 72 Hours (see Action "d")
F	CH-518 Charging to RCS	Valve must be capable of being cycled by local manual hand-wheel	Verify that valve CH-518 & 519 can be cycled from the CR and BU air bottles are available or perform ACTIONS b.1, b.2 for all fire areas except R-1.	N/A
G	CH-519 Charging to RCS	1. Valve must be capable of being cycled by local manual hand-wheel. 2. Valve must be controllable from panel C10.	1. Verify that valve CH-518 & 519 can be cycled from the CR and BU air bottles are available or perform ACTIONS b.1, b.2 for all fire areas except R-1. 2. Perform ACTIONS b.1, b.2 for fire area R-1.	N/A
H	CH-517 Auxiliary Spray to Pressurizer AOV	1. Valve must be capable of being cycled by local manual hand-wheel. 2. Valve must be capable of being cycled using BU air bottles by remote CR operation. 3. Valve must be controllable from panel C10 using BU air bottles. 4. Valve must fail closed when solenoid is de-energized.	1. With hand-wheel nonfunctional perform ACTIONS b.1, b.2 for fire areas R-2, R-10 & R-15. 2. Verify valve can be cycled by local manual hand-wheel or perform ACTIONS b.1, b.2 for ALL fire areas except R-1. 3. With valve nonfunctional perform ACTIONS b.1, b.2 for Fire area R-1. 4. With valve nonfunctional perform ACTIONS b.1, b.2 for Fire areas R-2 & R-15	N/A
I	CH-429 Charging Pp Hdr Iso MOV	1. Valve must be capable of being cycled by local manual hand-wheel. 2. Valve must be controllable from panel C10	1. With valve nonfunctional perform ACTIONS b.1, b.2 for fire areas R-1 & R-2. 2. With valve nonfunctional, ensure manual capability is available.	N/A

Table 7.1.1-1
CVCS Components
FUNCTIONALITY Requirements and Compensatory Measures

TR Item	Comp ID	FUNCTIONALITY Description	Compensatory Measures if Component Not Restored in 14 Days (see ACTION "a")	Risk Significant Component Not Restored in 72 Hours (see Action "d")
J	CH-501 VCT Outlet MOV	Valve must be capable of being cycled by local manual hand-wheel.	With valve nonfunctional perform ACTIONS b.1, b.2 for fire areas R-1,R-4, R-7, R-9, R-13, R-14, R-16 & R-17.	N/A
K	CH-504 Chrg Pps Suct fm RWST	Valve must be capable of being cycled by local manual hand-wheel.	With valve nonfunctional perform ACTIONS b.1, b.2 for fire areas R-1.	N/A
L	CH-192 Charging Pps Suct fm RWST AOV	Valve must be capable of being cycled by local manual hand-wheel.	1. With the hand-wheel nonfunctional perform ACTIONS b.1, b.2 for fire areas R-1, R-4, R-7, R-9, R-13, R-14, R-16 & R-17; and 2. Verify valve can be operated using BU air or perform ACTIONS b.1, b.2 for fire areas R-2, R-3,R-5, R-6, R-8, R-10, R-11, R-12 & R-15.	N/A

Table 7.1.1-2
CVCS Components
TECHNICAL SURVEILLANCE REQUIREMENTS

TSR No.	Comp ID	TECHNICAL SURVEILLANCE REQUIREMENT	Frequency
A	P18A Charging Pump	Verify P18A can be operated from the control room.	Once per REFUELING cycle
B	P18B Charging Pump	Verify control of P18B can be isolated from the control room and that it can be operated from C10.	Once per REFUELING cycle
C	P18C Charging Pump	1. Verify control of P18C can be isolated from the control room and that it can be operated from C10. 2. Verify P18C can be operated from the control room.	Once per REFUELING cycle
D	Z2 Powered Charging Pump	N/A	N/A
E	CH-089 Regen HX Outlet Iso	Verify control can be isolated from the control room and operated room C10.	Once per REFUELING cycle
F	CH-518 Charging to RCS	Verify valve can be manually cycled using its hand-wheel.	Once every 48 months.
G	CH-519 Charging to RCS	1. Verify valve can be manually cycled using its hand- wheel. 2. Verify control of 2-CH-519 can be isolated from the control room and operated from panel C10.	1. Once every 48 months. 2. Once per REFUELING cycle.
H	CH-517 Auxiliary Spray to Pressurizer	1. Verify valve can be manually cycled using its hand-wheel. 2. Verify valve can be operated from control room using backup air bottles. 3. Verify valve control can be isolated from control room and operated from C10, using backup air bottles. 4. Verify valve fails closed on loss of control power.	1. Once every 48 months. 2. Once per REFUELING cycle 3. Once per REFUELING cycle 4. Once per REFUELING cycle

Table 7.1.1-2
CVCS Components
TECHNICAL SURVEILLANCE REQUIREMENTS

TSR No.	Comp ID	TECHNICAL SURVEILLANCE REQUIREMENT	Frequency
I	CH-429 Charging Pp Hdr Iso MOV	1. Verify valve can be manually cycled using its hand-wheel. 2. Verify valve control can be isolated from control room and operated from Panel C10.	1. In accordance with the MOV surveillance frequency established by the PM Program. 2. Once per REFUELING cycle
J	CH-501 VCT Outlet MOV	Verify valve can be manually cycled using its hand-wheel.	In accordance with the MOV surveillance frequency established by the PM Program.
K	CH-504 Chrg Pps Suct fm RWST	Verify valve can be manually cycled using its hand-wheel	In accordance with the MOV surveillance frequency established by the PM Program
L	CH-192 Chrg Pps Suct fm RWST AOV	Verify valve can be manually cycled using its hand-wheel	Once every 48 months.

7.1 APPENDIX R SAFE SHUTDOWN REQUIREMENTS

REFERENCE TECHNICAL REQUIREMENT: 3.1.2.8.a - Boric Acid Storage Tanks |

TECHNICAL REQUIREMENT

7.1.2 The Appendix R Safe Shutdown Related (ARSR) equipment listed in the TRM Table 7.1.2-1 shall be FUNCTIONAL.

APPLICABILITY:

MODES 1, 2, 3, and 4.

ACTION:

With an ARSR component listed in the above referenced component table nonfunctional (unable to meet its intended Appendix R shutdown function), take the ACTION as specified in the above table under Compensatory Measures.

TECHNICAL SURVEILLANCE REQUIREMENTS

7.1.2 The capability of equipment listed in TRM Table 7.1.2-1 to meet its Appendix R shutdown related FUNCTIONALITY requirements shall be verified per the TECHNICAL SURVEILLANCE REQUIREMENTS of TRM Table 7.1.2-2.

Table 7.1.2-1
BAST Local Level Instruments
FUNCTIONALITY Requirements and Compensatory Measures

TR Item	Comp ID	FUNCTIONALITY Description	Compensatory Measures if Component Not Restored in 14 Days (see ACTION "a")
A	LI-206A Local BAST Level Ind	Local level indicator must be FUNCTIONAL.	With local level indication nonfunctional, perform ACTIONS b.1, b.2 listed for Fire Areas R-2 and R-10.
B	LI-208A Local BAST Level Ind	Local level indicator must be FUNCTIONAL.	With local level indication nonfunctional, perform ACTIONS b.1, b.2 listed for Fire Areas R-2 and R-10.

Table 7.1.2-2
BAST Local Level Indicators
TECHNICAL SURVEILLANCE REQUIREMENTS

TSR Item	Comp ID	TECHNICAL SURVEILLANCE REQUIREMENT	Frequency
A	LI-206A Local BAST Level Ind	Verify the instrument is calibrated.	Once per REFUELING cycle
B	LI-208A Local BAST Level Ind	Verify the instrument is calibrated.	Once per REFUELING cycle

7.1 APPENDIX R SAFE SHUTDOWN REQUIREMENTS

REFERENCE TECHNICAL SPECIFICATION: 3.3.2.1 Engineered Safety Feature Actuation System Instrumentation

TECHNICAL REQUIREMENT

7.1.3 The Appendix R Safe Shutdown Related (ARSR) equipment listed in the TRM Table 7.1.3-1 shall be FUNCTIONAL.

APPLICABILITY:

MODES 1, 2, 3, and 4.

ACTION:

With an ARSR component listed in the above referenced component table nonfunctional (unable to meet its intended Appendix R shutdown function), take the ACTION as specified in the above table under Compensatory Measures.

TECHNICAL SURVEILLANCE REQUIREMENTS

7.1.3 The capability of equipment listed in TRM Table 7.1.3-1 to meet its Appendix R shutdown related FUNCTIONALITY requirements shall be verified per the TECHNICAL SURVEILLANCE REQUIREMENTS of TRM Table 7.1.3-2.

Table 7.1.3-1
MSI Components
Functionality Requirements And Compensatory Measures

TR Item	Comp ID	FUNCTIONALITY Description	Compensatory Measures if Component Not Restored in 14 Days (see ACTION "a")
A	2-MS-265B Mn Steam Low Point Drain	Valve must be capable of failing closed when the solenoid is de-energized.	With valve nonfunctional, perform ACTIONS b.1, b.2 for Fire Areas R-1 and R-17.
B	2-MS-266B Mn Steam Low Point Drain	Valve must be capable of failing closed when the solenoid is de-energized.	With valve nonfunctional, perform ACTIONS b.1, b.2 for Fire Areas R-1 and R-2.

Table 7.1.3-2
MSIV Components Technical Surveillance Requirements

TSR No.	Comp ID	TECHNICAL SURVEILLANCE REQUIREMENT	Frequency
A	2-MS-265B Mn Steam Low Point Drain	Verify valve will fail closed on loss of control power	Once per REFUELING cycle
B	2-MS-266B Mn Steam Low Point Drain	Verify valve will fail closed on loss of control power	Once per REFUELING cycle

7.1 APPENDIX R SAFE SHUTDOWN REQUIREMENTS

REFERENCE TECHNICAL SPECIFICATION: 3.3.3.5 REMOTE SHUTDOWN INSTR'S

TECHNICAL REQUIREMENT

7.1.4 The Appendix R Safe Shutdown Related (ARSR) equipment listed in the TRM Table 7.1.4-1 shall be FUNCTIONAL.

APPLICABILITY:

MODES 1, 2, 3, and 4.

ACTION:

With an ARSR component listed in the above referenced component table nonfunctional (unable to meet its intended Appendix R shutdown function), take the ACTION as specified in the above table under Compensatory Measures.

TECHNICAL SURVEILLANCE REQUIREMENTS

7.1.4 The capability of equipment listed in TRM Table 7.1.4-1 to meet its Appendix R shutdown related FUNCTIONALITY requirements shall be verified per the TECHNICAL SURVEILLANCE REQUIREMENTS of TRM Table 7.1.4-2.

Table 7.1.4-1
Remote Shutdown Instruments, Appendix R Components
FUNCTIONALITY Requirements and Compensatory Measures

TR Item	Comp ID	FUNCTIONALITY Description	Compensatory Measures if Component Not Restored in 14 Days (see ACTION "a")
A	PT-102B-1 Pressurizer Pressure	Instrument loop and pressure indicator must be FUNCTIONAL at Panel C10.	With loop nonfunctional from Panel C10, perform ACTIONS b.1, b.2 for fire area R-1.
B	PT-1023B Stm Gen # 2 Pressure	Instrument loop must be FUNCTIONAL at Panel C10.	With loop nonfunctional from Panel C10, perform ACTIONS b.1, b.2 for fire area R-1.
C	QEXC2PDA (WR-DET-B), QEXC4PDA (WR-DET-D), QEXC1PDA (WR-DET-A), QEXC3PDA (WR-DET-C)	Instrument loops must be FUNCTIONAL from the Control Room.	1. With both B and D loops nonfunctional from the Control Room, perform ACTIONS b.1, b.2 for fire areas R-7, R-9, R-14, R-16, and R-17. 2. With loop D nonfunctional from the Control Room, perform ACTIONS b.1, b.2 for fire area R-13 3. With both A and C loops nonfunctional from the Control Room, perform ACTIONS b.1, b.2 for fire areas R-2 and R-10 4. With all loops (A,B,C,D) nonfunctional from the Control Room, perform ACTIONS b.1, b.2 for fire areas R-2, R-3, R-4, R-5, R-6, R-7, R-8, R-9, R-10, R-11, R-12, R-13, R-14, R-15, R-16 and R-17.
D	PT-103, PT-103-1 Pressurizer Pressure Low Range	Instrument loops must be FUNCTIONAL from the Control Room.	1. With 103 loop nonfunctional from Control Room, perform ACTIONS b.1, b.2 for fire areas R-7, R-9, R-13, R-14, R-16 and R-17. 2. With 103-1 loop nonfunctional from Control Room, perform ACTIONS b.1, b.2 for fire areas R-2, R-3, and R-10. 3. With loops 103 and 103-1 nonfunctional from Control Room, perform ACTIONS b.1, b.2 for fire areas R-4, R-5, R-6, R-8, R-11, and R-12.

Table 7.1.4-1
Remote Shutdown Instruments, Appendix R Components
FUNCTIONALITY Requirements and Compensatory Measures

TR Item	Comp ID	FUNCTIONALITY Description	Compensatory Measures if Component Not Restored in 14 Days (see ACTION "a")
E	LT-103 (Cold) LT-110X LT-110Y Pressurizer Level	1. Loop LT-103 must be FUNCTIONAL from Panel C10. 2. Loop LT-110X must be FUNCTIONAL from Control Room. 3. Loop LT-110Y must be FUNCTIONAL from Control Room.	1. With loop LT-103 nonfunctional from Panel C10, perform ACTIONS b.1, b.2 for fire area R-1. 2. With loop LT-110X nonfunctional from Control Room, perform ACTIONS b.1, b.2 for fire area R-2, R-10, and R-15. 3. With loop LT-110Y nonfunctional from Control Room, perform ACTIONS b.1, b.2 for fire area R-7, R-9, R-14, R-15, R-16, and R-17.
F	LT-1123B SG 2 Water Level Narrow Range LT-1124A LT-1124B SG2 Water Level Wide Range	1. Loops L-1123B and F-5278B must be FUNCTIONAL from Panel C10. 2. SG WR Level, or AFW Flow and NR Level for same SG must be FUNCTIONAL from Control Room.	1. With either loop F-5278B or L-1123B nonfunctional from Panel C10, perform ACTIONS b.1, b.2 for fire area R-1. 2. With loop L-1124A nonfunctional from Control Room, perform ACTIONS b.1, b.2 for fire area R-2. 3. With loops L-1124A and F-5278A nonfunctional from Control room perform ACTIONS b.1, b.2 for fire area R-10. 4. With Loop L-1124B nonfunctional from Control Room, perform ACTIONS b.1, b.2 for Fire Area R-13. 5. With loops L-1124B & F-5278B nonfunctional from Control Room, perform ACTIONS b.1, b.2 for fire areas R-7, 9, 14, 16 and R-17.

Table 7.1.4-1
Remote Shutdown Instruments, Appendix R Components
FUNCTIONALITY Requirements and Compensatory Measures

TR Item	Comp ID	FUNCTIONALITY Description	Compensatory Measures if Component Not Restored in 14 Days (see ACTION "a")
G	LT-1114A LT-1114B SG 1 Water Level Wide Range	SG Wide Range Water Level or AFW Flow must be FUNCTIONAL from Control Room	1. With loop L-1114A nonfunctional from Control Room, perform ACTIONS b.1, b.2 for fire area R-2. 2. With loops L-1114A and F-5277A nonfunctional from Control room perform ACTIONS b.1, b.2 for fire area R-10. 3. With loops L-1114B and F-5277B nonfunctional from Control room perform ACTIONS b.1, b.2 for fire area R-7, 9, 13, 14, 16 & R-17.

Table 7.1.4-2
Remote Shutdown Instruments, Appendix R Components
TECHNICAL SURVEILLANCE REQUIREMENTS

TSR Item	Comp ID	TECHNICAL SURVEILLANCE REQUIREMENT	Frequency
A	PT-102B-1 Pressurizer Pressure	Perform a CHANNEL CALIBRATION to verify that the instrument is calibrated.	Once per REFUELING cycle.
B	PT-1023B Stm Gen # 2 Pressure	Perform a CHANNEL CALIBRATION to verify that the instrument is calibrated.	Once per REFUELING cycle.
C	QEXC2PDA (WR-DET-B), QEXC4PDA (WR-DET-D), QEXC1PDA (WR-DET-A), QEXC3PDA (WR-DET-C)	Perform a CHANNEL CALIBRATION to verify that the instrument is calibrated.	Once per REFUELING cycle.
D	PT-103, PT-103-1 Pressurizer Pressure Low Range	Perform a CHANNEL CALIBRATION to verify that the instrument is calibrated.	Once per REFUELING cycle.
E	LT-103 (Cold) LT-110X LT-110Y Pressurizer Level	Perform a CHANNEL CALIBRATION to verify that the instrument is calibrated.	Once per REFUELING cycle.
F	LT-1123B LT-1124A SG 2 Water Level Wide Range LT-1124B	Perform a CHANNEL CALIBRATION to verify that the instrument is calibrated.	Once per REFUELING cycle.
G	LT-1114A LT-1114B SG 1 Water Level Wide Range	Perform a CHANNEL CALIBRATION to verify that the instrument is calibrated.	Once per REFUELING cycle.

7.1 APPENDIX R SAFE SHUTDOWN REQUIREMENTS

REFERENCE TECHNICAL SPECIFICATION: 3.3.3.8 Accident Monitor Instr's

TECHNICAL REQUIREMENT

7.1.5 The Appendix R Safe Shutdown Related (ARSR) equipment listed in the TRM Table 7.1.5-1 shall be FUNCTIONAL.

APPLICABILITY:

MODES 1, 2, 3, and 4.

ACTION:

With an ARSR component listed in the above referenced component table nonfunctional (unable to meet its intended Appendix R shutdown function), take the ACTION as specified in the above table under Compensatory Measures.

TECHNICAL SURVEILLANCE REQUIREMENTS

7.1.5 The capability of equipment listed in TRM Table 7.1.5-1 to meet its Appendix R shutdown related FUNCTIONALity requirements shall be verified per the TECHNICAL SURVEILLANCE REQUIREMENTS of TRM Table 7.1.5-2.

Table 7.1.5-1
Accident Monitoring Instrumentation, Appendix R Components
FUNCTIONALITY Requirements and Compensatory Measures

TR Item	Comp ID	FUNCTIONALITY Description	Compensatory Measures if Component Not Restored in 14 Days (see ACTION "a")
A	TE-121X RCS Hot Leg 2 Temperature	1. Loop must be FUNCTIONAL at Panel C10. 2. Loop must be FUNCTIONAL at Control Room.	1. With loop nonfunctional from Panel C10, perform ACTIONS b.1, b.2 for fire area R-1. 2. With loop nonfunctional from the Control Room, perform ACTIONS b.1, b.2 for all fire areas EXCEPT R-1, R-2, and R-10.
B	TE-111X RCS Hot Leg 1 Temperature	Loop must be FUNCTIONAL at Control Room.	With loop nonfunctional from Control Room, perform ACTIONS b.1, b.2 for fire areas R-2, R-3, R-4, R-5, R-6, R-8, R-10, R-11, R-12, and R-15.
C	TE-125 RCS Cold Leg 2 Temperature	1. Loop must be FUNCTIONAL at Panel C10. 2. Loop must be FUNCTIONAL at Control Room.	1. With loop nonfunctional from Panel C10, perform ACTIONS b.1, b.2 for fire area R-1. 2. With loop nonfunctional from Control Room, perform ACTIONS b.1, b.2 for all fire areas EXCEPT R-1, R-2, and R-10.
D	TE-115 RCS Cold Leg 1 Temperature	Loop must be FUNCTIONAL at Control Room.	With loop nonfunctional from Control Room, perform ACTIONS b.1, b.2 for fire areas R-2, R-3, R-4, R-5, R-6, R-8, R-10, R-11, R-12, and R-15.

Table 7.1.5-1
Accident Monitoring Instrumentation, Appendix R Components
FUNCTIONALITY Requirements and Compensatory Measures

TR Item	Comp ID	FUNCTIONALITY Description	Compensatory Measures if Component Not Restored in 14 Days (see ACTION "a")
E	FT-5278A, FT-5278B AFW Flow to SG 2.	1. Loops F-5278B and L-1123B must be FUNCTIONAL from Panel C10. 2. SG WR Level, or AFW Flow and NR Level for same SG must be FUNCTIONAL from Control Room.	1. With either loop F-5278B or L-1123B nonfunctional from Panel C10, perform ACTIONS b.1, b.2 for fire area R-1. 2. With loop L-1124A nonfunctional from Control Room, perform ACTIONS b.1, b.2 for fire area R-2. 3. With loops L-1124A and F-5278A nonfunctional from Control room perform ACTIONS b.1, b.2 for fire area R-10. 4. With Loop L-1124B nonfunctional from Control Room, perform ACTIONS b.1, b.2 for Fire Area R-13. 5. With loops L-1124B & F-5278B nonfunctional from Control Room, perform ACTIONS b.1, b.2 for fire areas R-7, 9, 14, 16 & R-17.
F	FT-5277A, FT-5277B AFW Flow to SG 1	SG Wide Range Water Level or AFW Flow must be FUNCTIONAL from Control Room	1. With loop L-1114A nonfunctional from Control Room, perform ACTIONS b.1, b.2 for fire area R-2. 2. With loops L-1114A and F-5277A nonfunctional from Control room perform ACTIONS b.1, b.2 for fire area R-10. 3. With loops L-1114B and F-5277B nonfunctional from Control room perform ACTIONS b.1, b.2 for fire area R-7, 9, 13, 14, 16 & R-17.

Table 7.1.5-2
Accident Monitoring Instrumentation, Appendix R Components
TECHNICAL SURVEILLANCE REQUIREMENTS

TSR Item	Comp ID	TECHNICAL SURVEILLANCE REQUIREMENT	Frequency
A	TE-121X RCS Hot Leg 2 Temperature	1. Perform CHANNEL CALIBRATION to verify the instrument is calibrated. 2. Perform CHANNEL CALIBRATION as presently stated.	Once per REFUELING cycle.
B	TE-111X RCS Hot Leg 1 Temperature	Perform CHANNEL CALIBRATION to verify the instrument is calibrated.	Once per REFUELING cycle.
C	TE-125 RCS Cold Leg 2 Temperature	1. Perform CHANNEL CALIBRATION to verify the instrument is calibrated. 2. Perform CHANNEL CALIBRATION as presently stated.	Once per REFUELING cycle.
D	TE-115 RCS Cold Leg 1 Temperature	Perform CHANNEL CALIBRATION to verify the instrument is calibrated.	Once per REFUELING cycle.
E	FT-5278A, FT-5278B AFW Flow to SG 2.	Perform a CHANNEL CALIBRATION to verify that the instruments are calibrated.	Once per REFUELING cycle.
F	FT-5277A, FT-5277B AFW Flow to SG 1	Perform a CHANNEL CALIBRATION to verify that the instruments are calibrated.	Once per REFUELING cycle.

7.1 APPENDIX R SAFE SHUTDOWN REQUIREMENTS

REFERENCE TECHNICAL SPECIFICATION: 3.4.1.2 Coolant Loops and Circulation

TECHNICAL REQUIREMENT

7.1.6 The Appendix R Safe Shutdown Related (ARSR) equipment listed in the TRM Table 7.1.6-1 shall be FUNCTIONAL.

APPLICABILITY:

MODES 1, 2, 3, and 4.

ACTION:

With an ARSR component listed in the above referenced component table nonfunctional (unable to meet its intended Appendix R shutdown function), take the ACTION as specified in the above table under Compensatory Measures.

TECHNICAL SURVEILLANCE REQUIREMENTS

7.1.6 The capability of equipment listed in TRM Table 7.1.6-1 to meet its Appendix R shutdown related FUNCTIONALITY requirements shall be verified per the TECHNICAL SURVEILLANCE REQUIREMENTS of TRM Table 7.1.6-2.

Table 7.1.6-1
6900 Volt Bus 25A (H1) and 25B (H2) Switchgear - RCP Breakers
FUNCTIONALITY Requirements and Compensatory Measures

TR Item	Comp ID	FUNCTIONALITY Description	Compensatory Measures if Component Not Restored in 14 Days (see ACTION "a")
A	6900 Volt RCP Breaker H104	RCP Breaker must be capable of being cycled (tripped) by local manual operation.	With local breaker control nonfunctional, perform ACTIONS b.1, b.2 for fire areas R-9 and R-17.
B	6900 Volt RCP Breaker H105	RCP Breaker must be capable of being cycled (tripped) by local manual operation.	With local breaker control nonfunctional, perform ACTIONS b.1, b.2 for fire areas R-9 and R-17.
C	6900 Volt RCP Breaker H201	RCP Breaker must be capable of being cycled (tripped) by local manual operation.	With local breaker control nonfunctional, perform ACTIONS b.1, b.2 for fire area R-10.
D	6900 Volt RCP Breaker H202	RCP Breaker must be capable of being cycled (tripped) by local manual operation.	With local breaker control nonfunctional, perform ACTIONS b.1, b.2 for fire area R-10.

Table 7.1.6-2
6900 Volt Bus 25A (H1) and 25B (H2) Switchgear - RCP Breakers
TECHNICAL SURVEILLANCE REQUIREMENTS

TSR Item	Comp ID	TECHNICAL SURVEILLANCE REQUIREMENT	Frequency
A	6900 Volt RCP Breaker H104	Verify that the circuit breaker can be cycled (tripped) by local manual operation.	In accordance with the surveillance frequency established by the Preventive Maintenance Program: See Bases item No. 9.
B	6900 Volt RCP Breaker H105	Verify that the circuit breaker can be cycled (tripped) by local manual operation.	In accordance with the surveillance frequency established by the Preventive Maintenance Program: See Bases item No. 9.
C	6900 Volt RCP Breaker H201	Verify that the circuit breaker can be cycled (tripped) by local manual operation.	In accordance with the surveillance frequency established by the Preventive Maintenance Program: See Bases item No. 9.
D	6900 Volt RCP Breaker H202	Verify that the circuit breaker can be cycled (tripped) by local manual operation.	In accordance with the surveillance frequency established by the Preventive Maintenance Program: See Bases item No. 9.

7.1 APPENDIX R SAFE SHUTDOWN REQUIREMENTS

REFERENCE TECHNICAL SPECIFICATION: 3.4.1.3 Coolant Loops and Circulation |

TECHNICAL REQUIREMENT

7.1.7 The Appendix R Safe Shutdown Related (ARSR) equipment listed in the TRM Table 7.1.7-1 shall be FUNCTIONAL.

APPLICABILITY:

MODES 1, 2, 3, and 4.

ACTION:

With an ARSR component listed in the above referenced component table nonfunctional (unable to meet its intended Appendix R shutdown function), take the ACTION as specified in the above table under Compensatory Measures.

TECHNICAL SURVEILLANCE REQUIREMENTS

7.1.7 The capability of equipment listed in TRM Table 7.1.7-1 to meet its Appendix R shutdown related FUNCTIONALITY requirements shall be verified per the TECHNICAL SURVEILLANCE REQUIREMENTS of TRM Table 7.1.7-2.

Table 7.1.7-1
Shutdown Cooling Components, Hot Shutdown
FUNCTIONALITY Requirements and Compensatory Measures

TR Item	Comp ID	FUNCTIONALITY Description	Compensatory Measures if Component Not Restored in 14 Days (see ACTION "a")
A	2-SI-306 SDC HX Bypass AOV	Valve must be capable of being cycled by local manual hand-wheel operation.	With the valve nonfunctional, perform ACTIONS b.1, b.2 for all fire areas.
B	2-SI-651,2-SI-652 SDC Suction Isolation MOVs	1. Each valve must be closed and electrically disconnected or made nonfunctional. Valve 2-SI-651 shall have manual disconnect switch NSI651 locked open. Valve 2-SI-652 shall have manual disconnect switch 89-SI-652 open. 2. Each valve must be capable of being electrically opened. 3. Each valve must be capable of being opened by local manual hand-wheel operation.	1. N/A NOTES: For plant operation in MODES 1 - 4, Technical Specification LCO 3.6.3.1, Containment Isolation Valves, also applies. Thus for MODES 1 - 4, valves must be OPERABLE to satisfy Technical Specifications and FUNCTIONAL to satisfy Appendix R requirements. 2. With one valve nonfunctional, perform ACTIONS b.1, b.2 fire area R-1. 3. With one valve nonfunctional, perform ACTIONS b.1, b.2 for fire area R-2, R-3, R- 7, R-8, R-9, R-10, R-11,R-13, R-14, R-15, R-16, R-17.
C	TE-351X, TE-351Y SDC combined suction/ return header temperature	Both instrument loops must be FUNCTIONAL from Control Room.	With either instrument loop nonfunctional from the Control Room, perform ACTIONS b.1, b.2 for fire areas R-2, R-3, R-5, R-6, R-8, R-10, R-11, R-12, and R-15.

Table 7.1.7-1
Shutdown Cooling Components, Hot Shutdown
FUNCTIONALITY Requirements and Compensatory Measures

TR Item	Comp ID	FUNCTIONALITY Description	Compensatory Measures if Component Not Restored in 14 Days (see ACTION "a")
D	TE-303X, TE-303Y SDC Heat Exchanger Outlets Temperature	Both instrument loops must be FUNCTIONAL from the Control Room.	1. With instrument loop TE-303X nonfunctional from the Control Room, perform ACTIONS b.1, b.2 for fire areas R-2, R-3, R-4, R-6, R-8, R-10, and R-11. 2. With instrument loop TE-303Y nonfunctional from the Control Room, perform ACTIONS b.1, b.2 for fire areas R-5, R-7, R-9, R-13, R-14, R-16, and R-17.

Table 7.1.7-2
Shutdown Cooling Components, Hot Shutdown
TECHNICAL SURVEILLANCE REQUIREMENTS

TSR Item	Comp ID	TECHNICAL SURVEILLANCE REQUIREMENT	Frequency
A	2-SI-306 SDC HX Bypass AOV	Verify that the valve can be manually cycled using its hand-wheel.	Once every 48 months.
B	2-SI-651, 2-SI-652 SDC Suction Isolation MOVs	1. Administrative control over manual disconnect switch NSI651 locked open, for 2-SI-651, and manual disconnect switch 89-SI-652 operation for 2-SI-652 are provided in plant heat-up and cool-down procedures. 2. Verify that each valve can be remotely cycled from the Control Room. Valves are electrically cycled when entering shutdown cooling and when securing from shutdown cooling, during plant heat-up. No additional surveillance testing needs to be performed. 3. Verify that each valve can be manually cycled using its hand-wheel.	8. N/A 9. Once per REFUELING cycle. 10. In accordance with the MOV surveillance frequency established by the PM Program.
C	TE-351X, TE-351Y SDC combined suction/return header temperature	Perform CHANNEL CALIBRATION to verify each instrument loop is calibrated.	Once per REFUELING cycle.
D	TE-303X, TE-303Y SDC Heat Exchanger Outlets Temperature	Perform CHANNEL CALIBRATION to verify each instrument loop is calibrated.	Once per REFUELING cycle.

7.1 APPENDIX R SAFE SHUTDOWN REQUIREMENTS

REFERENCE TECHNICAL SPECIFICATION: 3.4.3 RCS Relief Valves

TECHNICAL REQUIREMENT

7.1.8 The Appendix R Safe Shutdown Related (ARSR) equipment listed in the TRM Table 7.1.8-1 shall be FUNCTIONAL.

APPLICABILITY:

MODES 1, 2, 3, and 4.

ACTION:

With an ARSR component listed in the above referenced component table nonfunctional (unable to meet its intended Appendix R shutdown function), take the ACTION as specified in the above table under Compensatory Measures.

TECHNICAL SURVEILLANCE REQUIREMENTS

7.1.8 The capability of equipment listed in TRM Table 7.1.8-1 to meet its Appendix R shutdown related FUNCTIONALITY requirements shall be verified per the TECHNICAL SURVEILLANCE REQUIREMENTS of TRM Table 7.1.8-2.

Table 7.1.8-1
RCS Relief Valves - PORVs
FUNCTIONALITY Requirements and Compensatory Measures

TR Item	Comp ID	FUNCTIONALITY Description	Compensatory Measures if Component Not Restored in 14 Days (see ACTION "a")
A	2-RC-402, Pressurizer Relief Valve (PORV)	Valve 2-RC-402 must be capable of closure from Panel C70A.	With 2-RC-402 nonfunctional perform ACTIONS b.1, b.2 for fire areas R-1, R-9, and R-15.
B	2-RC-404, Pressurizer Relief Valve (PORV)	Valve 2-RC-404 must be capable of closure from Panel C70B.	With 2-RC-404 nonfunctional perform ACTIONS b.1, b.2 for fire areas R-1, R-10, and R-15.

Table 7.1.8-2
RCS Relief Valves - PORVs
TECHNICAL SURVEILLANCE REQUIREMENTS

TSR Item	Comp ID	TECHNICAL SURVEILLANCE REQUIREMENT	Frequency
A	2-RC-402, Pressurizer Relief Valve (PORV)	Verify that valve 2-RC-402 can be closed at Panel C70A.	Once per REFUELING cycle.
B	2-RC-404, Pressurizer Relief Valve (PORV)	Verify that valve 2-RC-404 can be closed at Panel C70b.	Once per REFUELING cycle.

7.1 APPENDIX R SAFE SHUTDOWN REQUIREMENTS

REFERENCE TECHNICAL SPECIFICATION: 3.5.1.a SIT Isolation Valves

TECHNICAL REQUIREMENT

7.1.9 The Appendix R Safe Shutdown Related (ARSR) equipment listed in the TRM Table 7.1.9-1 shall be FUNCTIONAL.

APPLICABILITY:

MODES 1, 2, 3, and 4.

ACTION:

With an ARSR component listed in the above referenced component table nonfunctional (unable to meet its intended Appendix R shutdown function), take the ACTION as specified in the above table under Compensatory Measures.

TECHNICAL SURVEILLANCE REQUIREMENTS

7.1.9 The capability of equipment listed in TRM Table 7.1.9-1 to meet its Appendix R shutdown related FUNCTIONALITY requirements shall be verified per the TECHNICAL SURVEILLANCE REQUIREMENTS of TRM Table 7.1.9-2.

Table 7.1.9-1
Safety Injection Tank Isolation Valves
FUNCTIONALITY Requirements and Compensatory Measures

TR Item	Comp ID	FUNCTIONALITY Description	Compensatory Measures if Component Not Restored in 14 Days (see ACTION "a")
A	2-SI-614 2-SI-624 2-SI-634 2-SI-644 SIT Block Valve (MOVs)	Each valve must be capable of being closed by local manual hand-wheel operation.	With one valve nonfunctional, perform ACTIONS b.1, b.2 for all fire areas EXCEPT R-1, R- 2, R-15, R-17.
B	2-SI-613 2-SI-623 2-SI-633 2-SI-643 SIT Vent Valve (AOVs)	Each valve must be capable of being electrically opened.	With any valve nonfunctional, perform ACTIONS b.1, b.2 for fire area R-1.

Table 7.1.9-2
Safety Injection Tank Isolation Valves
TECHNICAL SURVEILLANCE REQUIREMENTS

TSR Item	Comp ID	TECHNICAL SURVEILLANCE REQUIREMENT	Frequency
A	2-SI-614 2-SI-624 2-SI-634 2-SI-644 SIT Block Valve (MOVs)	Verify the MOV can be manually cycled.	In accordance with the MOV surveillance frequency established by the PM Program.
B	2-SI-613 2-SI-623 2-SI-633 2-SI-643 SIT Vent Valve (AOVs)	Verify that each valve can be remotely opened from the Control Room.	Once per REFUELING cycle

7.1 APPENDIX R SAFE SHUTDOWN REQUIREMENTS

REFERENCE TECHNICAL SPECIFICATION: 3.4.1.3 Coolant Loops and Circulation |

TECHNICAL REQUIREMENT

7.1.10 The Appendix R Safe Shutdown Related (ARSR) equipment listed in the TRM Table 7.1.10-1 shall be FUNCTIONAL.

APPLICABILITY:

MODES 1, 2, 3, and 4.

ACTION:

With an ARSR component listed in the above referenced component table nonfunctional (unable to meet its intended Appendix R shutdown function), take the ACTION as specified in the above table under Compensatory Measures.

TECHNICAL SURVEILLANCE REQUIREMENTS

7.1.10 The capability of equipment listed in TRM Table 7.1.10-1 to meet its Appendix R shutdown related FUNCTIONALITY requirements shall be verified per the TECHNICAL SURVEILLANCE REQUIREMENTS of TRM Table 7.1.10-2.

Table 7.1.10-1
ECCS - LPSI Valves
FUNCTIONALITY Requirements and Compensatory Measures

TR Item	Comp ID	FUNCTIONALITY Description	Compensatory Measures if Component Not Restored in 14 Days (see ACTION "a")
A	2-SI-615 2-SI-625 2-SI-635 2-SI-645 LPSI Flow MOV	Each valve must be capable of being cycled by local manual hand-wheel operation.	1. With either 2-SI-615 or 2-SI-625 nonfunctional, perform ACTIONS b.1, b.2 for fire areas R-1, R- 2,R-3, R-7, R-9, R-13, R-14,R-16,and R-17. 2. With either 2-SI-635 or 2-SI-645 nonfunctional, perform ACTIONS b.1, b.2 for fire areas R-1, R- 2,R-8, R-10, and R-11.
B	2-SI-449 2-SI-450 LPSI (SDC) Min Flow AOV	Each valve must be capable of being closed by local manual hand-wheel operation.	With one valve nonfunctional, perform ACTIONS b.1, b.2 for all fire areas.
C	2-SI-657 (LPSI) SDC HX Outlet AOV	Valve must be capable of being cycled by local manual hand-wheel operation.	With the valve nonfunctional, perform ACTIONS b.1, b.2 for all fire areas.
D	2-SI-432 2-SI-444 LPSI Suction from RWST AOV	Each valve must be capable of being closed by local manual hand-wheel operation.	1. With 2-SI-432 nonfunctional, perform ACTIONS b.1, b.2 for fire areas R-1, R-5, R-7, R-9, R-13, R- 14, R-16,and R-17. 2. With 2-SI-444 nonfunctional, perform ACTIONS b.1, b.2 for fire areas R-2, R-3, R-6, R-8, R-10, and R-11.
E	2-SI-440 2-SI-441 LPSI/SDC Suction from RCS AOV	Each valve must be capable of being opened by local manual hand-wheel operation.	1. With 2-SI-441 nonfunctional, perform ACTIONS b.1, b.2 for fire areas R-2, R-3, R-6, R-8, R-10, and R-11. 2. With 2-SI-440 nonfunctional, perform ACTIONS b.1, b.2 for fire areas R-1, R-5, R-7, R-9, R-13, R-14,R-16, and R-17.

Table 7.1.10-1
ECCS - LPSI Valves
FUNCTIONALITY Requirements and Compensatory Measures

TR Item	Comp ID	FUNCTIONALITY Description	Compensatory Measures if Component Not Restored in 14 Days (see ACTION “a”)
F	2-SI-452 2-SI-453 LPSI disch to SDC HX AOV	Each valve must be capable of being opened by local manual hand-wheel operation.	1. With 2-SI-452 nonfunctional, perform ACTIONS b.1, b.2 for fire areas R-2, R-3, R-6, R-8, R-10, and R-11. 2. With 2-SI-453 nonfunctional, perform ACTIONS b.1, b.2 for fire areas R-1, R-5, R-7, R-9, R-13, R-14,R-16, and R-17.
G	2-SI-456 2-SI-457 SDC HX outlet AOV	Each valve must be capable of being opened by local manual hand-wheel operation.	1. With 2-SI-456 nonfunctional, perform ACTIONS b.1, b.2 for fire areas R-2, R-3, R-6, R-8, R-10, and R-11. 2. With 2-SI-457 nonfunctional, perform ACTIONS b.1, b.2 for fire areas R-1, R-5, R-7, R-9, R-13, R-14,R-16, and R-17.

Table 7.1.10-2
ECCS - LPSI Valves
TECHNICAL SURVEILLANCE REQUIREMENTS

TSR Item	Comp ID	TECHNICAL SURVEILLANCE REQUIREMENT	Frequency
A	2-SI-615 2-SI-625 2-SI-635 2-SI-645 LPSI Flow MOV	Verify that each valve can be manually cycled using its hand-wheel.	In accordance with the MOV surveillance frequency established by the PM Program.
B	2-SI-449 2-SI-450 LPSI (SDC) Min Flow AOV	Verify that each valve can be manually cycled using its hand-wheel. Valves are manually cycled when entering shutdown cooling, and securing from shutdown cooling during plant heat-up. No additional surveillance testing needs to be performed.	Once every 48 months.
C	2-SI-657 (LPSI) SDC HX Outlet AOV	Verify that the valve can be manually cycled using its hand-wheel.	Once every 48 months.
D	2-SI-432 2-SI-444 LPSI Suction from RWST AOV	Verify that each valve can be manually cycled using its hand-wheel. Valves are manually cycled when entering shutdown cooling. No additional surveillance testing needs to be performed.	Once every 48 months.
E	2-SI-440 2-SI-441 LPSI/SDC Suction from RCS AOV	Verify that each valve can be manually cycled using its hand-wheel. Valves are manually cycled when entering shutdown cooling. No additional surveillance testing needs to be performed.	Once every 48 months.
F	2-SI-452 2-SI-453 LPSI disch to SDC HX AOV	Verify that each valve can be manually cycled using its hand-wheel. Valves are manually cycled when entering shutdown cooling. No additional surveillance testing needs to be performed.	Once every 48 months.
G	2-SI-456 2-SI-457 SDC HX outlet AOV	Verify that each valve can be manually cycled using its hand-wheel. Valves are manually cycled when entering shutdown cooling. No additional surveillance testing needs to be performed.	Once every 48 months.

7.1 APPENDIX R SAFE SHUTDOWN REQUIREMENTS

REFERENCE TECHNICAL SPECIFICATION: None

TECHNICAL REQUIREMENT

7.1.11 The Appendix R Safe Shutdown Related (ARSR) equipment listed in the TRM Table 7.1.11-1 shall be FUNCTIONAL.

APPLICABILITY:

MODES 1, 2, 3, and 4.

ACTION:

With an ARSR component listed in the above referenced component table nonfunctional (unable to meet its intended Appendix R shutdown function), take the ACTION as specified in the above table under Compensatory Measures.

TECHNICAL SURVEILLANCE REQUIREMENTS

7.1.11 The capability of equipment listed in TRM Table 7.1.11-1 to meet its Appendix R shutdown related FUNCTIONALITY requirements shall be verified per the TECHNICAL SURVEILLANCE REQUIREMENTS of TRM Table 7.1.11-2.

Table 7.1.11-1
ECCS - RWST Outlet Valve
FUNCTIONALITY Requirements and Compensatory Measures

TR Item	Comp ID	FUNCTIONALITY Description	Compensatory Measures	
			Component Not Restored in 14 Days (see ACTION "a")	Risk Significant Component Not Restored in 72 Hours (see ACTION "d")
A	2-CS-13.1B RWST Stop (outlet) MOV	Valve must be capable of being opened by local manual handwheel operation.	With the valve nonfunctional, perform ACTIONS b.1, b.2 for fire areas R-1, and R-2.	With valve nonfunctional, Risk Mitigation Areas are: R-1 (FHA A-1G, A-12A and A-24)

Table 7.1.11-2
ECCS - RWST Outlet Valve
TECHNICAL SURVEILLANCE REQUIREMENTS

TSR Item	Comp ID	TECHNICAL SURVEILLANCE REQUIREMENT	Frequency
A	2-CS-13.1B RWST Stop (outlet) MOV	Verify that the valve can be manually cycled using its hand-wheel.	In accordance with the MOV surveillance frequency established by the PM Program.

7.1 APPENDIX R SAFE SHUTDOWN REQUIREMENTS

REFERENCE TECHNICAL REQUIREMENT: 3.1.2.2.a Reactivity Control System Flow Paths - Operating

TECHNICAL REQUIREMENT

7.1.12 The Appendix R Safe Shutdown Related (ARSR) equipment listed in the TRM Table 7.1.12-1 shall be FUNCTIONAL.

APPLICABILITY:

MODES 1, 2, 3, and 4.

ACTION:

With an ARSR component listed in the above referenced component table nonfunctional (unable to meet its intended Appendix R shutdown function), take the ACTION as specified in the above table under Compensatory Measures.

TECHNICAL SURVEILLANCE REQUIREMENTS

7.1.12 The capability of equipment listed in TRM Table 7.1.12-1 to meet its Appendix R shutdown related FUNCTIONALITY requirements shall be verified per the TECHNICAL SURVEILLANCE REQUIREMENTS of TRM Table 7.1.12-1.

Table 7.1.12-1
ECCS - Boric Acid Gravity Feed Valves
FUNCTIONALITY Requirements and Compensatory Measures

TR Item	Comp ID	FUNCTIONALITY Description	Compensatory Measures if Component Not Restored in 14 Days (see ACTION "a")
A	2-CH-508 2-CH-509, Boric Acid Gravity Feed MOVs	Both valves must be capable of being cycled by local manual hand-wheel operation.	With one valve nonfunctional, establish minimum TECHNICAL REQUIREMENT (3.1.2.7) inventory in the Boric Acid Storage Tank (BAST) associated with the FUNCTIONAL valve, or perform ACTIONS b.1, b.2 for fire areas R-1, R-7, R-9, R-13, R-14, R-16, and R-17.

Table 7.1.12-2
ECCS - Boric Acid Gravity Feed Valves
TECHNICAL SURVEILLANCE REQUIREMENTS

TSR Item	Comp ID	TECHNICAL SURVEILLANCE REQUIREMENT	Frequency
A	2-CH-508 2-CH-509, Boric Acid Gravity Feed MOVs	Verify that both valves can be manually cycled using their hand-wheels.	In accordance with the MOV surveillance frequency established by the PM Program.

7.1 APPENDIX R SAFE SHUTDOWN REQUIREMENTS

REFERENCE TECHNICAL SPECIFICATION: 3.6.1.5 Containment Air Temperature

TECHNICAL REQUIREMENT

7.1.13 The Appendix R Safe Shutdown Related (ARSR) equipment listed in the TRM Table 7.1.13-1 shall be FUNCTIONAL.

APPLICABILITY:

MODES 1, 2, 3, and 4.

ACTION:

With an ARSR component listed in the above referenced component table nonfunctional (unable to meet its intended Appendix R shutdown function), take the ACTION as specified in the above table under Compensatory Measures.

TECHNICAL SURVEILLANCE REQUIREMENTS

7.1.13 The capability of equipment listed in TRM Table 7.1.13-1 to meet its Appendix R shutdown related FUNCTIONALITY requirements shall be verified per the TECHNICAL SURVEILLANCE REQUIREMENTS of TRM Table 7.1.13-2.

Table 7.1.13-1
Containment Systems - Air Temperature Indication
FUNCTIONALITY Requirements and Compensatory Measures

TR Item	Comp ID	FUNCTIONALITY Description	Compensatory Measures if Component Not Restored in 14 Days (see ACTION "a")
A	TE-8108 Containment Ambient Temperature Indication	Instrument loop must be FUNCTIONAL from the Control Room.	With instrument loop nonfunctional from Control Room, perform ACTIONS b.1, b.2 for fire areas R-2, R-3, R-4, R-5, R-6, R-8, R-10, R-11, and R-12.

Table 7.1.13-2
Containment Systems - Air Temperature Indication
TECHNICAL SURVEILLANCE REQUIREMENTS

TSR Item	Comp ID	TECHNICAL SURVEILLANCE REQUIREMENT	Frequency
A	TE-8108 Containment Ambient Temperature Indication	Perform CHANNEL CALIBRATION to verify the instrument loop is calibrated.	Once per REFUELING cycle

7.1 APPENDIX R SAFE SHUTDOWN REQUIREMENTS

REFERENCE TECHNICAL SPECIFICATION: 3.6.2.1 Containment Spray and Cooling Systems

TECHNICAL REQUIREMENT

7.1.14 The Appendix R Safe Shutdown Related (ARSR) equipment listed in the TRM Table 7.1.14-1 shall be FUNCTIONAL.

APPLICABILITY:

MODES 1, 2, 3, and 4.

ACTION:

With an ARSR component listed in the above referenced component table nonfunctional (unable to meet its intended Appendix R shutdown function), take the ACTION as specified in the above table under Compensatory Measures.

TECHNICAL SURVEILLANCE REQUIREMENTS

7.1.14 The capability of equipment listed in TRM Table 7.1.14-1 to meet its Appendix R shutdown related FUNCTIONALITY requirements shall be verified per the TECHNICAL SURVEILLANCE REQUIREMENTS of TRM Table 7.1.14-2.

Table 7.1.14-1
Containment Systems - Containment Spray and Cooling Systems
FUNCTIONALITY Requirements and Compensatory Measures

TR Item	Comp ID	FUNCTIONALITY Description	Compensatory Measures if Component Not Restored in 14 Days (see ACTION "a")
A	2-CS-4A 2-CS-4B Containment Spray Stop Valves	Each valve must be capable of being closed by local manual hand-wheel operation.	With valve 2-CS-4A nonfunctional, perform ACTIONS b.1, b.2 for fire area R-2. With valve 2-CS-4B nonfunctional, perform ACTIONS b.1, b.2 for fire areas R-1, and R-17.

Table 7.1.14-2
Containment Systems - Containment Spray and Cooling Systems
TECHNICAL SURVEILLANCE REQUIREMENTS

TSR Item	Comp ID	TECHNICAL SURVEILLANCE REQUIREMENT	Frequency
A	2-CS-4A 2-CS-4B Containment Spray Stop Valves	Verify that each valve can be manually cycled using its hand-wheel. Valves are manually cycled when entering shutdown cooling, and securing from shutdown cooling during plant heat-up. No additional surveillance testing needs to be done.	Once every 48 months.

7.1 APPENDIX R SAFE SHUTDOWN REQUIREMENTS

REFERENCE TECHNICAL SPECIFICATION: 3.7.1.2 Auxiliary Feedwater Pumps

TECHNICAL REQUIREMENT

7.1.15 The Appendix R Safe Shutdown Related (ARSR) equipment listed in the TRM Table 7.1.15-1 shall be FUNCTIONAL.

APPLICABILITY:

MODES 1, 2, 3, and 4.

ACTION:

With an ARSR component listed in the above referenced component table nonfunctional (unable to meet its intended Appendix R shutdown function), take the ACTION as specified in the above table under Compensatory Measures.

TECHNICAL SURVEILLANCE REQUIREMENTS

7.1.15 The capability of equipment listed in TRM Table 7.1.15-1 to meet its Appendix R shutdown related FUNCTIONALITY requirements shall be verified per the TECHNICAL SURVEILLANCE REQUIREMENTS of TRM Table 7.1.15-2.

Table 7.1.15-1
Plant System - Auxiliary Feedwater Pumps
FUNCTIONALITY Requirements and Compensatory Measures

TR Item	Comp ID	FUNCTIONALITY Description	Compensatory Measures: Component Not Restored in 14 Days (see ACTION "a")	Compensatory Measures: Risk Significant Component Not Restored in 72 Hours (see ACTION "d")
A	SV-4188 AFW Pump Turbine Stm Supply Valve	Valve must be capable of being operated from Panel C10.	With valve nonfunctional from Panel C10, perform ACTIONS b.1, b.2 for fire areas R-1 and R-13.	With valve nonfunctional, Risk Mitigation Areas are: R-1 (FHA A-24), R-3 (FHA T-1A)
B	P4 & H-21 AFW Pump and Turbine Governor Control	1. Pump/Turbine must be FUNCTIONAL from the Control Room. 2. Pump/Turbine must be FUNCTIONAL from Panel C10.	With Pump/Turbine nonfunctional, from either location, perform ACTIONS b.1, b.2 for fire areas R-3, R-11, R-16, and R-17.	With Pump/Turbine nonfunctional, Risk Mitigation Areas are: R-1 (FHA A-24), R-3 (FHA T-1A)
C	2-MS-202 AFW Steam Supply from SG 2, MOV	Valve must be open, incapable of remote operation with disconnect switch opened ("off" position).	With the valve closed and/or disconnect closed, perform ACTIONS b.1, b.2 for fire areas R-1, R-2, and R-13.	N/A
D	P-9A P-9B Motor Driven AFW pumps	Pumps must be FUNCTIONAL from the Control Room.	1. With P-9A nonfunctional: a) Perform ACTIONS b.1, b.2 for fire areas R-2 and R-10 b) Verify P4 FUNCTIONAL, or Perform ACTIONS b.1, b.2 for fire area R-8 c) Verify P9B FUNCTIONAL, or Perform ACTIONS b.1, b.2 for fire area R-12. 2. With P-9B nonfunctional, verify P4 FUNCTIONAL, or Perform ACTIONS b.1, b.2 for fire areas R-7 and R-14.	1. With P-9A nonfunctional Risk Mitigation Areas are: R-2 (FHA A-8D, T-8, T-10) 2. With P-9B nonfunctional Risk Mitigation Areas are: R-14 (FHA T-7, T-9)

Table 7.1.15-1
Plant System - Auxiliary Feedwater Pumps
FUNCTIONALITY Requirements and Compensatory Measures

TR Item	Comp ID	FUNCTIONALITY Description	Compensatory Measures	
			Component Not Restored in 14 Days (see ACTION "a")	Risk Significant Component Not Restored in 72 Hours (see ACTION "d")
E	2-FW-44 AFW Pump P4 Discharge Iso MOV	Valve must be capable of being opened by local manual handwheel operation.	With valve nonfunctional, perform ACTIONS b.1, b.2 for fire areas R-1 and R-13.	N/A
F	2-FW-43A 2-FW-43B AFW Flow Control (AOVs)	1. Each valve must be capable of local manual handwheel operation, and failing open when de-energized. 2. Valve 2-FW-43B must be capable of remote operation from Panel C10.	1. Verify that the applicable AFW regulating valve bypass valves 2-FW-56A and/or 2-FW-56B, and isolation valves 2-FW-10A/10B and/or 2-FW-11A/B can be manually cycled. 2. Verify that the AFW regulating valve bypass valve 2-FW-56B, and isolation valves 2-FW-10B or 2-FW-11B can be manually cycled.	N/A

Table 7.1.15-2
Plant System - Auxiliary Feedwater Pumps
Components
TECHNICAL SURVEILLANCE REQUIREMENTS

TSR Item	Comp ID	TECHNICAL SURVEILLANCE REQUIREMENT	Frequency
A	SV-4188 AFW Pump Turbine Stm Supply Valve	Verify that control of the steam supply valve SV-4188 can be isolated from the Control Room and operated from Panel C10.	Once per REFUELING cycle.
B	P4 & H-21 AFW Pump and Turbine Governor Control	1. In accordance with Technical Specification 4.7.1.2.a.1 and 4.7.1.2.a.2.b. 2. In accordance with Technical Specification 4.7.1.2.a.2.b.	1. In accordance with Technical Specification 4.7.1.2.a. 2. In accordance with Technical Specification 4.7.1.2.a.
C	2-MS-202 AFW Steam Supply from SG 2, MOV	Administrative control over the disconnect switch key found in procedure SP-2610C, and plant heatup procedure.	N/A
D	P-9A P-9B Motor Driven AFW pumps	In accordance with Technical Specification 4.7.1.2.a.1 and 4.7.1.2.a.2.a for each motor driven pump.	In accordance with Technical Specification 4.7.1.2.a.
E	2-FW-44 AFW Pump P4 Discharge Iso MOV.	Verify that the valve can be manually cycled using its handwheel.	In accordance with the MOV surveillance frequency established by the PM Program.
F	2-FW-43A 2-FW-43B AFW Flow Control (AOVs)	1.a. Verify that each valve can be manually cycled using its handwheel, and 1.b. That each valve will fail open on loss of control power. 2. Verify that 2-FW-43B can be isolated from the Control Room and operated from Panel C10.	1. Once every 48 months. 2. Once per REFUELING cycle.

7.1 APPENDIX R SAFE SHUTDOWN REQUIREMENTS

REFERENCE TECHNICAL SPECIFICATION: 3.7.1.3 Condensate Storage Tank

TECHNICAL REQUIREMENT

7.1.16 The Appendix R Safe Shutdown Related (ARSR) equipment listed in the TRM Table 7.1.16-1 shall be FUNCTIONAL.

APPLICABILITY:

MODES 1, 2, 3, and 4.

ACTION:

With an ARSR component listed in the above referenced component table nonfunctional (unable to meet its intended Appendix R shutdown function), take the ACTION as specified in the above table under Compensatory Measures.

TECHNICAL SURVEILLANCE REQUIREMENTS

7.1.16 The capability of equipment listed in TRM Table 7.1.16-1 to meet its Appendix R shutdown related FUNCTIONALITY requirements shall be verified per the TECHNICAL SURVEILLANCE REQUIREMENTS of TRM Table 7.1.16-2.

Table 7.1.16-1
Condensate Storage Tank (CST) Components
FUNCTIONALITY Requirements and Compensatory Measures

TR Item	Comp ID	FUNCTIONALITY Description	Compensatory Measures if Component Not Restored in 14 Days (see ACTION "a")
A	LT-5282 CST Level Indication	1. Instrument loop must be FUNCTIONAL at Panel C10. 2. Instrument loop must be FUNCTIONAL from the Control Room.	1. With loop nonfunctional from Panel C10, perform ACTIONS b.1, b.2 for fire areas R-1 & R-13. 2. With loop nonfunctional from Control Room, verify that the local CST level indicator (LIS-5489) is FUNCTIONAL, or perform ACTIONS b.1, b.2 for all fire areas.
B	LIS-5489 CST local Level Indicator	Local CST Level Indication must be available.	With local indication nonfunctional, perform ACTIONS b.1, b.2 for fire areas R-2, R-3, and R-10.

Table 7.1.16-2
Condensate Storage Tank Components
TECHNICAL SURVEILLANCE REQUIREMENTS

TSR Item	Comp ID	TECHNICAL SURVEILLANCE REQUIREMENT	Frequency
A	LT-5282 CST Level Indication	Perform CHANNEL CALIBRATION to verify the instrument loop is calibrated.	Once per REFUELING cycle.
B	LIS-5489 CST local Level Indication	Perform Instrument Calibration to verify the instrument is calibrated.	Once per REFUELING cycle.

7.1 APPENDIX R SAFE SHUTDOWN REQUIREMENTS

REFERENCE TECHNICAL SPECIFICATION: 3.7.1.5 Main Steam Isolation Valves

TECHNICAL REQUIREMENT

7.1.17 The Appendix R Safe Shutdown Related (ARSR) equipment listed in the TRM Table 7.1.17-1 shall be FUNCTIONAL.

APPLICABILITY:

MODES 1, 2, 3, and 4.

ACTION:

With an ARSR component listed in the above referenced component table nonfunctional (unable to meet its intended Appendix R shutdown function), take the ACTION as specified in the above table under Compensatory Measures.

TECHNICAL SURVEILLANCE REQUIREMENTS

7.1.17 The capability of equipment listed in TRM Table 7.1.17-1 to meet its Appendix R shutdown related FUNCTIONALITY requirements shall be verified per the TECHNICAL SURVEILLANCE REQUIREMENTS of TRM Table 7.1.17-2.

Table 7.1.17-1
Main Steam Isolation Valves
FUNCTIONALITY Requirements and Compensatory Measures

TR Item	Comp ID	FUNCTIONALITY Description	Compensatory Measures if Component Not Restored in 14 Days (see ACTION "a")
A	2-MS-64A 2-MS-64B Main Steam Iso Valves (AOVs)	2-MS-64A must be capable of closure from Bottle-up Panel C70A. 2-MS-64B must be capable of closure from Bottle-up Panel C70B.	With one valve nonfunctional, perform ACTIONS b.1, b.2 for fire areas R-1, R-2, and R-17.
B	2-MS-65A SG MSIV Bypass Valve (MOV)	Valve must be closed with its disconnect switch locked open.	With 2-MS-65A open or disconnect closed, perform ACTIONS b.1, b.2 for fire areas R-1 and R-17.
C	2-MS-65B SG MSIV Bypass Valve (MOV)	Valve must be closed with its disconnect switch locked open.	With 2-MS-65B open or disconnect closed, perform ACTIONS b.1, b.2 for fire areas R-1 and R-2.

Table 7.1.17-2
Main Steam Isolation Valves
TECHNICAL SURVEILLANCE REQUIREMENTS

TSR Item	Comp ID	TECHNICAL SURVEILLANCE REQUIREMENT	Frequency
A	2-MS-64A 2-MS-64B Main Steam Iso Valves (AOVs)	1. Verify that 2-MS-64A can be closed from Bottle-up Panel C70A. 2. Verify that 2-MS-64B can be closed from Bottle-up Panel C70B.	Once per REFUELING cycle.
B	2-MS-65A SG MSIV Bypass Valve (MOV)	Administrative control for disconnect switch key provided in plant start-up procedure.	N/A
C	2-MS-65B SG MSIV Bypass Valve (MOV)	Administrative control for the opening coil provided in plant start-up procedure.	N/A

7.1 APPENDIX R SAFE SHUTDOWN REQUIREMENTS

REFERENCE TECHNICAL SPECIFICATION: 3.7.1.7 Atmospheric Dump Valves

TECHNICAL REQUIREMENT

7.1.18 The Appendix R Safe Shutdown Related (ARSR) equipment listed in the TRM Table 7.1.18-1 shall be FUNCTIONAL.

APPLICABILITY:

MODES 1, 2, 3, and 4.

ACTION:

With an ARSR component listed in the above referenced component table nonfunctional (unable to meet its intended Appendix R shutdown function), take the ACTION as specified in the above table under Compensatory Measures.

TECHNICAL SURVEILLANCE REQUIREMENTS

7.1.18 The capability of equipment listed in TRM Table 7.1.18-1 to meet its Appendix R shutdown related FUNCTIONALITY requirements shall be verified per the TECHNICAL SURVEILLANCE REQUIREMENTS of TRM Table 7.1.18-2.

Table 7.1.18-1
Atmospheric Dump Valves
FUNCTIONALITY Requirements and Compensatory Measures

TR Item	Comp ID	FUNCTIONALITY Description	Compensatory Measures if Component Not Restored in 14 Days (see ACTION "a")
A	2-MS-190A 2-MS-190B Atmospheri c Steam Dump Valves (AOVs)	1. Each valve must be capable of failing closed when the valves' solenoid is deenergized. 2.a. Valve 2-MS-190A must be capable of closure from Panel C70A, and, 2.b. Valve 2-MS-190B must be capable of closure from Panel C70B. 3. Each valve must be capable of local manual handwheel operation. 4. Valve 2-MS-190B must be capable of remote operation from panel C10.	1. Failure to close with solenoid deenergized requires isolation of instrument air to the affected valve, for fire area R-11. 2.a. With 2-MS-190A nonfunctional from C70A perform ACTIONS b.1, b.2 for fire areas R-1, R-13 and R-17. 2.b. With 2-MS-190B nonfunctional from C70B, perform ACTIONS b.1, b.2 for fire areas R-1, and R-2. 3. With one valve nonfunctional, perform ACTIONS b.1, b.2 for **all** fire areas. 4. With loss of remote operation from Panel C10 for 2-MS-190B, ensure local manual operation is available.

Table 7.1.18-2
Atmospheric Dump Valves
TECHNICAL SURVEILLANCE REQUIREMENTS

TSR Item	Comp ID	TECHNICAL SURVEILLANCE REQUIREMENT	Frequency
A	2-MS-190A 2-MS-190B Atmospheric Steam Dump Valves (AOVs)	1. From the Control room verify each valve will close when its quick open solenoid is de-energized and its valve positioning instrument loop is FUNCTIONAL and set to “close”. 2.a. Verify that valve 2-MS-190A can be closed at Panel C70A. 2.b. Verify that valve 2-MS-190B can be closed at Panel C70B 3. Addressed under Tech. Spec. 4.7.1.7. 4. Verify that 2-MS-190B can be operated from Panel C10.	Once per REFUELING cycle.

7.1 APPENDIX R SAFE SHUTDOWN REQUIREMENTS

REFERENCE TECHNICAL SPECIFICATION: 3.7.1.8 Steam Generator Blowdown Isolation Valves

TECHNICAL REQUIREMENT

7.1.19 The Appendix R Safe Shutdown Related (ARSR) equipment listed in the TRM Table 7.1.19-1 shall be FUNCTIONAL.

APPLICABILITY:

MODES 1, 2, 3, and 4.

ACTION:

With an ARSR component listed in the above referenced component table nonfunctional (unable to meet its intended Appendix R shutdown function), take the ACTION as specified in the above table under Compensatory Measures.

TECHNICAL SURVEILLANCE REQUIREMENTS

7.1.19 The capability of equipment listed in TRM Table 7.1.19-1 to meet its Appendix R shutdown related FUNCTIONALITY requirements shall be verified per the TECHNICAL SURVEILLANCE REQUIREMENTS of TRM Table 7.1.19-2.

Table 7.1.19-1
Steam Generator Blowdown Isolation Valves
FUNCTIONALITY Requirements and Compensatory Measures

TR Item	Comp ID	FUNCTIONALITY Description	Compensatory Measures if Component Not Restored in 14 Days (see ACTION "a")
A	2-MS-220A 2-MS-220B SG Blowdown Isolation AOVs	1.b. Valve 2-MS-220A must be capable of closure from Panel C70A, and 1.c. Valve 2-MS-220B must be capable of closure from Panel C70B. 2. Each valve must be capable of failing closed when the valves' solenoid is deenergized.	1. With one valve nonfunctional, perform ACTIONS b.1, b.2 for fire areas R-1, and R-17. 2. With one valve nonfunctional, perform ACTIONS b.1, b.2 for fire area R-11.

Table 7.1.19-2
Steam Generator Blowdown Isolation Valves
TECHNICAL SURVEILLANCE REQUIREMENTS

TSR Item	Comp ID	TECHNICAL SURVEILLANCE REQUIREMENT	Frequency
A	2-MS-220A 2-MS-220B (SG Blowdown Isolation AOVs)	1.b. Verify that valve 2-MS-220A can be closed at Panel C70A. 1.c. Verify that valve 2-MS-220B can be closed at Panel C70B. 2. Verify that each valve will fail closed on loss of control power.	Once per REFUELING cycle.

7.1 APPENDIX R SAFE SHUTDOWN REQUIREMENTS

REFERENCE TECHNICAL SPECIFICATION: 3.7.3.1 RBCCW System

TECHNICAL REQUIREMENT

7.1.20 The Appendix R Safe Shutdown Related (ARSR) equipment listed in the TRM Table 7.1.20-1 shall be FUNCTIONAL.

APPLICABILITY:

MODES 1, 2, 3, and 4.

ACTION:

With an ARSR component listed in the above referenced component table nonfunctional (unable to meet its intended Appendix R shutdown function), take the ACTION as specified in the above table under Compensatory Measures.

TECHNICAL SURVEILLANCE REQUIREMENTS

7.1.20 The capability of equipment listed in TRM Table 7.1.20-1 to meet its Appendix R shutdown related FUNCTIONALITY requirements shall be verified per the TECHNICAL SURVEILLANCE REQUIREMENTS of TRM Table 7.1.20-2.

Table 7.1.20-1
Reactor Building Closed Cooling Water (RBCCW) System
FUNCTIONALITY Requirements and Compensatory Measures

TR Item	Comp ID	FUNCTIONALITY Description	Compensatory Measures	
			Component Not Restored in 14 Days (see ACTION "a")	**Risk Significant Component Not Restored in 72 Hours (see ACTION "d")**
A	2-RB-13.1A 2-RB-13.1B Shutdown HX Disch Header AOVs	Each Valve must be capable of being cycled by local manual handwheel operation.	With valve 2-RB-13.1A nonfunctional, verify that 2-RB-14A is FUNCTIONAL, or perform ACTIONS b.1, b.2 for fire areas R-2, R-3, R-6, R-8, R-10, and R-11. With valve 2-RB-13.1B nonfunctional, verify that 2-RB-14B is FUNCTIONAL, or perform ACTIONS listed for fire areas R-1, R-5, R-7, R-9, R-13, R-14, R-16, and R-17. With valves 2-RB-13.1A and 2-RB-13.1B nonfunctional, verify that valves 2-RB-14A and 2-RB-14B are FUNCTIONAL, or perform ACTIONS listed for all fire areas.	N/A
B	2-RB-211A 2-RB-211B RBCCW Pump A inlet AOVs	Each Valve must be capable of being cycled by local manual handwheel operation.	Verify that RBCCW System can be manually aligned to provide cooling flow from P-11A to SDC HX 'A', or perform ACTIONS listed for Fire Areas R-2, and R-3. Verify that RBCCW System can be manually aligned to provide cooling flow from P-11A or P-11B to SDC HX 'A', or perform ACTIONS listed for Fire Areas R-8, R-10, and R-11. Verify that RBCCW System can be manually aligned to provide cooling flow from P-11B or P-11C to SDC HX 'B', or perform ACTIONS listed for Fire Areas R-7, R-9, R-13, R-14, R-16, and R-17.	N/A

Table 7.1.20-1
Reactor Building Closed Cooling Water (RBCCW) System
FUNCTIONALITY Requirements and Compensatory Measures

TR Item	Comp ID	FUNCTIONALITY Description	Compensatory Measures	
			Component Not Restored in 14 Days (see ACTION "a")	Risk Significant Component Not Restored in 72 Hours (see ACTION "d")
C	2-RB-211C 2-RB-211D RBCCW Pump B inlet AOVs	Each Valve must be capable of being cycled by local manual handwheel operation.	Verify that RBCCW System can be manually aligned to provide cooling flow from P-11A to SDC HX 'A', or perform ACTIONS listed for Fire Areas R-2, and R-3. Verify that RBCCW System can be manually aligned to provide cooling flow from P-11A or P-11B to SDC HX 'A', or perform ACTIONS listed for Fire Areas R-8, R-10, and R-11. Verify that RBCCW System can be manually aligned to provide cooling flow from P-11B or P-11C to SDC HX 'B', or perform ACTIONS listed for Fire Areas R-7, R-9, R-13, R-14, R-16, and R-17.	N/A
D	2-RB-211E 2-RB-211F RBCCW Pump C inlet AOVs	Each Valve must be capable of being cycled by local manual handwheel operation.	Verify that RBCCW System can be manually aligned to provide cooling flow from P-11A to SDC HX 'A', or perform ACTIONS listed for Fire Areas R-2, and R-3. Verify that RBCCW System can be manually aligned to provide cooling flow from P-11A or P-11B to SDC HX 'A', or perform ACTIONS listed for Fire Areas R-8, R-10, and R-11. Verify that RBCCW System can be manually aligned to provide cooling flow from P-11B or P-11C to SDC HX 'B', or perform ACTIONS listed for Fire Areas R-7, R-9, R-13, R-14, R-16, and R-17.	N/A

Table 7.1.20-1
Reactor Building Closed Cooling Water (RBCCW) System
FUNCTIONALITY Requirements and Compensatory Measures

TR Item	Comp ID	FUNCTIONALITY Description	Compensatory Measures	
			Component Not Restored in 14 Days (see ACTION “a”)	**Risk Significant Component Not Restored in 72 Hours (see ACTION “d”)**
E	2-RB-4.1A 2-RB-4.1B RBCCW HX A Outlet AOVs	Each Valve must be capable of being cycled by local manual handwheel operation.	Verify that RBCCW System can be manually aligned to provide cooling flow from P-11A to SDC HX ‘A’, or perform ACTIONS listed for Fire Areas R-2, and R-3. Verify that RBCCW System can be manually aligned to provide cooling flow from P-11A or P-11B to SDC HX ‘A’, or perform ACTIONS listed for Fire Areas R-8, R-10, and R-11. Verify that RBCCW System can be manually aligned to provide cooling flow from P-11B or P-11C to SDC HX ‘B’, or perform ACTIONS listed for Fire Areas R-7, R-9, R-13, R-14, R-16, and R-17.	N/A
F	2-RB-4.1C 2-RB-4.1D RBCCW HX B Outlet AOVs	Each Valve must be capable of being cycled by local manual handwheel operation.	Verify that RBCCW System can be manually aligned to provide cooling flow from P-11A to SDC HX ‘A’, or perform ACTIONS listed for Fire Areas R-2, and R-3. Verify that RBCCW System can be manually aligned to provide cooling flow from P-11A or P-11B to SDC HX ‘A’, or perform ACTIONS listed for Fire Areas R-8, R-10, and R-11. Verify that RBCCW System can be manually aligned to provide cooling flow from P-11B or P-11C to SDC HX ‘B’, or perform ACTIONS listed for Fire Areas R-7, R-9, R-13, R-14, R-16, and R-17.	N/A

Table 7.1.20-1
Reactor Building Closed Cooling Water (RBCCW) System
FUNCTIONALITY Requirements and Compensatory Measures

TR Item	Comp ID	FUNCTIONALITY Description	Compensatory Measures	
			Component Not Restored in 14 Days (see ACTION "a")	Risk Significant Component Not Restored in 72 Hours (see ACTION "d")
G	2-RB-4.1E 2-RB-4.1F RBCCW HX C Outlet AOVs	Each Valve must be capable of being cycled by local manual handwheel operation.	Verify that RBCCW System can be manually aligned to provide cooling flow from P-11A to SDC HX 'A', or perform ACTIONS listed for Fire Areas R-2, and R-3. Verify that RBCCW System can be manually aligned to provide cooling flow from P-11A or P-11B to SDC HX 'A', or perform ACTIONS listed for Fire Areas R-8, R-10, and R-11. Verify that RBCCW System can be manually aligned to provide cooling flow from P-11B or P-11C to SDC HX 'B', or perform ACTIONS listed for Fire Areas R-7, R-9, R-13, R-14, R-16, and R-17.	N/A
H	P11A P11B P11C RBCCW Pumps	Each RBCCW Pump must be FUNCTIONAL from the control room.	With P11A nonfunctional, perform ACTIONS listed for fire areas R-2 and R-3. With P11B nonfunctional, perform ACTIONS listed for fire area R-11. With P11C nonfunctional, perform ACTIONS listed for fire areas R-3 and R-14.	With P11B supplying A train, Risk Mitigation Areas are: R-2 (FHA T-8, T-10), R-3 (FHA T-1A, T-1C), R-16 (FHA I-1A, I-1C). With P11B supplying B train, Risk Mitigation Areas are: R-11 (FHA A-28), R-14 (FHA T-7).

Table 7.1.20-1
Reactor Building Closed Cooling Water (RBCCW) System
FUNCTIONALITY Requirements and Compensatory Measures

TR Item	Comp ID	FUNCTIONALITY Description	Compensatory Measures	
			Component Not Restored in 14 Days (see ACTION "a")	Risk Significant Component Not Restored in 72 Hours (see ACTION "d")
I	2-RB-251A 2-RB-251B RBCCW Pump Disch. Cross-connect AOVs	Each Valve must be capable of being cycled by local manual handwheel operation.	Verify that RBCCW System can be manually aligned to provide cooling flow from P-11A to SDC HX 'A', or perform ACTIONS listed for Fire Areas R-2, and R-3. Verify that RBCCW System can be manually aligned to provide cooling flow from P-11A or P-11B to SDC HX 'A', or perform ACTIONS listed for Fire Areas R-8, R-10, and R-11. Verify that RBCCW System can be manually aligned to provide cooling flow from P-11B or P-11C to SDC HX 'B', or perform ACTIONS listed for Fire Areas R-7, R-9, R-13, R-14, R-16, and R-17.	N/A

Table 7.1.20-2
Reactor Building Closed Cooling Water (RBCCW) System Components
TECHNICAL SURVEILLANCE REQUIREMENTS

TSR Item	Comp ID	TECHNICAL SURVEILLANCE REQUIREMENT	Frequency
A	2-RB-13.1A 2-RB-13.1B Shutdown HX Disch Header AOVs	Verify that each valve can be manually cycled using is handwheel.	Once every 48 months.
B	2-RB-211A 2-RB-211B RBCCW Pump A inlet AOVs	Verify that each valve can be manually cycled using is handwheel.	Once every 48 months.
C	2-RB-211C 2-RB-211D RBCCW Pump B inlet AOVs	Verify that each valve can be manually cycled using is handwheel.	Once every 48 months.
D	2-RB-211E 2-RB-211F RBCCW Pump C inlet AOVs	Verify that each valve can be manually cycled using is handwheel.	Once every 48 months.
E	2-RB-4.1A 2-RB-4.1B RBCCW HX A Outlet AOVs	Verify that each valve can be manually cycled using is handwheel.	Once every 48 months.
F	2-RB-4.1C 2-RB-4.1D RBCCW HX B Outlet AOVs	Verify that each valve can be manually cycled using is handwheel.	Once every 48 months.
G	2-RB-4.1E 2-RB-4.1F RBCCW HX C Outlet AOVs	Verify that each valve can be manually cycled using is handwheel.	Once every 48 months.
H	P11A P11B P11C RBCCW Pumps	In accordance with Technical Specification Surveillance Requirement 4.0.5.	In accordance with Technical Specification Surveillance Requirement 4.0.5
I	2-RB-251A 2-RB-251B RBCCW Pump Disch. Cross-connect AOVs	Verify that each valve can be manually cycled using is handwheel.	Once every 48 months.

7.1 APPENDIX R SAFE SHUTDOWN REQUIREMENTS

REFERENCE TECHNICAL SPECIFICATION: 3.7.4.1 Service Water System

TECHNICAL REQUIREMENT

7.1.21 The Appendix R Safe Shutdown Related (ARSR) equipment listed in the TRM Table 7.1.21-1 shall be FUNCTIONAL.

APPLICABILITY:

MODES 1, 2, 3, and 4.

ACTION:

With an ARSR component listed in the above referenced component table nonfunctional (unable to meet its intended Appendix R shutdown function), take the ACTION as specified in the above table under Compensatory Measures.

TECHNICAL SURVEILLANCE REQUIREMENTS

7.1.21 The capability of equipment listed in TRM Table 7.1.21-1 to meet its Appendix R shutdown related FUNCTIONALITY requirements shall be verified per the TECHNICAL SURVEILLANCE REQUIREMENTS of TRM Table 7.1.21-2.

Table 7.1.21-1
Service Water System Components
FUNCTIONALITY Requirements and Compensatory Measures

TR Item	Comp ID	FUNCTIONALITY Description	Compensatory Measures	
			Compensatory Measures if Component Not Restored in 14 Days (see ACTION "a")	Risk Significant Component Not Restored in 72 Hours (see ACTION "d")
A	P5A & L1A P5C & L1C SW Pumps & Strainers	Each Service Water Pump and its associated Strainer must be FUNCTIONAL from the Control Room.	With P5A or its Strainer L1A nonfunctional, perform ACTIONS b.1, b.2 for fire areas R-2, R-3, R-8, R-10, and R-11. With P5C or its Strainer L1C nonfunctional, perform ACTIONS b.1, b.2 for fire areas R-1, R-7, R-9, R-13, R-14, R-16 and R-17.	With P5B supplying A train, Risk Mitigation Areas are: R-2 (FHA T-8,T-10), R-3 (FHA T-1A, T-1C) With P5B supplying B train, Risk Mitigation Areas are: R-11 (FHA A-28) R-14 (FHA T-7)
B	2-SW-97A 2-SW-97B SW Pump Discharge Hdr Crossconn. AOVs	1. Each Valve must be capable of being cycled by local manual handwheel operation. 2. Valve 2-SW-97A must be maintained in the closed position.	1. With one or both valve(s) nonfunctional, perform ACTIONS b.1, b.2 for fire areas R-1, R-3 and R-16. 2. When 2-SW-97A is open remove the instrument air source from 2-SW-97B so it cannot spuriously open due to a fire or perform ACTIONS b.1, b.2 for fire area R-2.	N/A

Table 7.1.21-1
Service Water System Components
FUNCTIONALITY Requirements and Compensatory Measures

TR Item	Comp ID	FUNCTIONALITY Description	Compensatory Measures	
			Compensatory Measures if Component Not Restored in 14 Days (see ACTION "a")	Risk Significant Component Not Restored in 72 Hours (see ACTION "d")
C	2-SW-2A 2-SW-2B 2-SW-2C SW Pump Disch Valve	Each Valve must be capable of being cycled by local manual handwheel operation.	With 2-SW-2A nonfunctional, align SW pump P5B to cool Train A, or perform ACTIONS b.1, b.2 for fire areas R-3 and R-11. With 2-SW-2B nonfunctional, align SW pump P5A to cool Train A and P5C to cool Train B, or perform ACTIONS b.1, b.2 for fire areas R-1, R-3, R-11, and R-16. With 2-SW-2C nonfunctional, align SW pump P5B to cool Train B, or perform ACTIONS b.1, b.2 for fire areas R-1 and R-16.	N/A
D	2-SW-3.1A 2-SW-3.1B RBCCW HX Inlet AOVs	Each Valve must be capable of being cycled by local manual handwheel operation.	With 2-SW-3.1A nonfunctional, perform ACTIONS b.1, b.2 for fire area R-1 and R-14. With 2-SW-3.1B nonfunctional, perform ACTIONS b.1, b.2 for fire area R-1 and R-2.	N/A

Table 7.1.21-1
Service Water System Components
FUNCTIONALITY Requirements and Compensatory Measures

TR Item	Comp ID	FUNCTIONALITY Description	Compensatory Measures	
			Compensatory Measures if Component Not Restored in 14 Days (see ACTION "a")	**Risk Significant Component Not Restored in 72 Hours (see ACTION "d")**
E	2-SW-9A 2-SW-9B 2-SW-9C RBCW HX Outlet Valves	Each Valve must be capable of being closed by local manual handwheel operation.	With valves 2-SW-9A and 2-SW-9B nonfunctional, perform ACTIONS b.1, b.2 for fire areas R-2, R-3, R-8, R-10, and R-11. With valves 2-SW-9B and 2-SW-9C nonfunctional, perform ACTIONS b.1, b.2 for fire areas R-1, R-7, R-9, R-13, R-14, R-16, and R-17. With all valves nonfunctional, perform ACTIONS b.1, b.2 for all fire areas.	N/A
F	2-SW-5A 2-SW-5B 2-SW-5C TBCCW HX A, B & C Inlet Valves	Each Valve must be capable of being closed by local manual handwheel operation.	With a valve nonfunctional, perform ACTIONS b.1, b.2 for all fire areas except R-12.	N/A
G	2-SW-12B 2-SW-12C SW Isolation to EDG A and EDG B	Valve must be capable of being closed by local manual handwheel operation.	With 2-SW-12B nonfunctional, perform ACTIONS b.1, b.2 for fire area R-3 and R-14. With 2-SW-12C nonfunctional, perform ACTIONS b.1, b.2 for fire area R-2.	N/A

Table 7.1.21-1
Service Water System Components
FUNCTIONALITY Requirements and Compensatory Measures

TR Item	Comp ID	FUNCTIONALITY Description	Compensatory Measures	
			Compensatory Measures if Component Not Restored in 14 Days (see ACTION “a”)	Risk Significant Component Not Restored in 72 Hours (see ACTION “d”)
H	2-SW-296 Fire Water Cross-Tie to “A” EDG Service Water Header	Valve must be capable of being cycled by local manual handwheel operation.	With 2-SW-296 nonfunctional, perform ACTIONS b.1, b.2 for fire area R-3.	N/A

Table 7.1.21-2
Service Water System Components
TECHNICAL SURVEILLANCE REQUIREMENTS

TSR Item	Comp ID	TECHNICAL SURVEILLANCE REQUIREMENT	Frequency
A	P5A & L1A P5C & L1C S.W. Pumps & Strainers	In accordance with Technical Specification Surveillance Requirement 4.0.5.	In accordance with Technical Specification Surveillance Requirement 4.0.5.
B	2-SW-97A 2-SW-97B SW Pump Discharge Hdr Cross-conn. AOVs	Verify that each valve can be manually cycled using its handwheel.	Once every 48 months.
C	2-SW-2A 2-SW-2B 2-SW-2C SW Pump Disch Valves.	Verify that each valve can be manually cycled using its handwheel.	Once every 48 months.
D	2-SW-3.1A 2-SW-3.1B RBCCW HX Inlet AOVs	Verify that each valve can be manually cycled using its handwheel.	Once every 48 months.
E	2-SW-9A 2-SW-9B 2-SW-9C RBCW HX Outlet Valves	Verify that each valve can be manually cycled using its handwheel.	Once every 48 months.
F	2-SW-5A 2-SW-5B 2-SW-5C TBCCW HX A, B & C Inlet Valves	Verify that each valve can be manually cycled using its handwheel.	Once every 48 months.
G	2-SW-12B 2-SW-12C SW Isolation to EDG A and EDG B	Verify that each valve can be manually cycled using its handwheel.	Once every 48 months.
H	2-SW-296 Drain on SW to EDG B	Verify valve can be manually cycled using its handwheel.	Once every 48 months.

7.1 APPENDIX R SAFE SHUTDOWN REQUIREMENTS

REFERENCE TECHNICAL SPECIFICATION: 3.8.1.1 Electrical Power Systems AC Sources

TECHNICAL REQUIREMENT

7.1.22 The Appendix R Safe Shutdown Related (ARSR) equipment listed in the TRM Table 7.1.22-1 shall be FUNCTIONAL.

APPLICABILITY:

MODES 1, 2, 3, and 4.

ACTION:

With an ARSR component listed in the above referenced component table nonfunctional (unable to meet its intended Appendix R shutdown function), take the ACTION as specified in the above table under Compensatory Measures.

TECHNICAL SURVEILLANCE REQUIREMENTS

7.1.22 The capability of equipment listed in TRM Table 7.1.22-1 to meet its Appendix R shutdown related FUNCTIONALITY requirements shall be verified per the TECHNICAL SURVEILLANCE REQUIREMENTS of TRM Table 7.1.22-2.

Table 7.1.22-1
Electrical Power, AC Sources
FUNCTIONALITY Requirements and Compensatory Measures

TR Item	Comp ID	FUNCTIONALITY Description	Compensatory Measures if Component Not Restored in 14 Days (see ACTION "a")
A	Station Blackout (SBO) Alternate AC Diesel Gen.	The Unit 3 Alternate AC (Station Blackout) Diesel Generator must be capable of powering Unit 2 Bus 24E.	With the Unit 3 Alternate AC (SBO) Diesel Generator nonfunctional, perform ACTIONS b.1, b.2 for fire areas R-1, R-11, and R-16.

Table 7.1.22-2
Electrical Power, AC Sources
TECHNICAL SURVEILLANCE REQUIREMENTS

TSR Item	Comp ID	TECHNICAL SURVEILLANCE REQUIREMENT	Frequency
A	Station Blackout (SBO) Alternate AC Diesel Gen.	1. Verify availability of Unit 3 Alternate AC (SBO) Diesel Generator. 2. Verify that breakers required to align electric power from Unit 3 SBO Diesel Generator to Unit 2 can be manually cycled.	1. Once per REFUELING cycle. 2. In accordance with the breaker surveillance frequency established by the Preventive Maintenance Program (Refer to TRM Appendix R Bases, item No. 9).

7.1 APPENDIX R SAFE SHUTDOWN REQUIREMENTS

REFERENCE TECHNICAL SPECIFICATION: 3.8.2.1 Onsite AC PWR Distribution

TECHNICAL REQUIREMENT

7.1.23 The Appendix R Safe Shutdown Related (ARSR) equipment listed in the TRM Table 7.1.23-1 shall be FUNCTIONAL.

APPLICABILITY:

MODES 1, 2, 3, and 4.

ACTION:

With an ARSR component listed in the above referenced component table nonfunctional (unable to meet its intended Appendix R shutdown function), take the ACTION as specified in the above table under Compensatory Measures.

TECHNICAL SURVEILLANCE REQUIREMENTS

7.1.23 The capability of equipment listed in TRM Table 7.1.23-1 to meet its Appendix R shutdown related FUNCTIONALITY requirements shall be verified per the TECHNICAL SURVEILLANCE REQUIREMENTS of TRM Table 7.1.23-2.

Table 7.1.23-1
Onsite Power - AC Distribution System Components
FUNCTIONALITY Requirements and Compensatory Measures

TR Item	Comp ID	FUNCTIONALITY Description	Compensatory Measures if Component Not Restored in 14 Days (see ACTION "a")
A	Bus 24C (A3) 4160 V Switchgear Facility Z1	All 4160 V breakers must be capable of being cycled using local manual controls.	1. With any local breaker control nonfunctional, perform ACTIONS b.1, b.2 for fire area R-11; and in addition if: 2. With breaker A302 nonfunctional, perform ACTIONS b.1, b.2 for fire areas R-1 and R-9; 3. With breaker A303 nonfunctional, perform ACTIONS b.1, b.2 for fire area R-13; 4. With breaker A304 nonfunctional, perform ACTIONS b.1, b.2 for fire area R-1; 5. With breaker A305 nonfunctional, perform ACTIONS b.1, b.2 for fire areas R-1, R-2, R-3, and R-16; 6. With breaker A307 nonfunctional, perform ACTIONS b.1, b.2 for fire area R-13; 7. With breaker A310 nonfunctional, perform ACTIONS b.1, b.2 for fire areas R-7, 9, 10, 13, 16 and R-17; 8. With breaker A312 nonfunctional, perform ACTIONS b.1, b.2 for fire area R-1.

Table 7.1.23-1
Onsite Power - AC Distribution System Components
FUNCTIONALITY Requirements and Compensatory Measures

TR Item	Comp ID	FUNCTIONALITY Description	Compensatory Measures if Component Not Restored in 14 Days (see ACTION "a")
B	Bus 24D (A4) 4160 V Switchgear Facility Z2	All 4160 V breakers must be capable of being cycled using local manual controls.	1. With any local breaker control nonfunctional, perform ACTIONS b.1, b.2 for fire area R-1, and R-16; and in addition if: 2. With breaker A401 nonfunctional, perform ACTIONS b.1, b.2 for fire areas R-14; 3. With breaker A408 nonfunctional, perform ACTIONS b.1, b.2 for fire area R-14; 4. With breaker A410 nonfunctional, perform ACTIONS b.1, b.2 for fire area R-14; 5. With breaker A405 nonfunctional, perform ACTIONS b.1, b. 2 for fire areas R-7, R-9, R-10, 13, 14, and R-17; 6. With breaker A406 nonfunctional, perform ACTIONS b.1, b.2 for fire area R-13; 7. With breaker A409 nonfunctional, perform ACTIONS b.1, b.2 for fire area R-11; 8. With breaker A411 nonfunctional, perform ACTIONS b.1, b.2 for fire areas R-10, and R-14.
C	Bus 24E (A5) 4160 V Switchgear Facility Z5	All 4160 V breakers must be capable of being cycled using local manual controls.	With any local breaker control nonfunctional, perform ACTIONS b.1, b.2 for fire areas R-1, R-11, and R-16.

Table 7.1.23-1
Onsite Power - AC Distribution System Components
FUNCTIONALITY Requirements and Compensatory Measures

TR Item	Comp ID	FUNCTIONALITY Description	Compensatory Measures if Component Not Restored in 14 Days (see ACTION "a")
D	Bus 24A (A1) 4160 V Switchgear Facility 1	4160 V feeder breakers A102, A103, and A104 must be capable of being cycled using local manual controls.	1. With breaker A102 local control nonfunctional, perform ACTIONS b.1, b.2 for fire area R-1. 2. With breaker A103 local control nonfunctional, perform ACTIONS b.1, b.2 for fire areas R-3 and R-13. 3. With breaker A104 local control nonfunctional, perform ACTIONS b.1, b.2 for fire areas R-11 and R-13.
E	Bus 24B (A2) 4160 V Switchgear Facility 2	4160 V feeder breakers A204, A205, and A206 must be capable of being cycled using local manual controls.	1. With breaker A204 local control nonfunctional, perform ACTIONS b.1, b.2 for fire area R-13. 2. With breaker A205 local control nonfunctional, perform ACTIONS b.1, b.2 for fire areas R-11 and R-13. 3. With breaker A206 local control nonfunctional, perform ACTIONS b.1, b.2 for fire area R-1.
F	Bus 22A (B01) 480 V load center	MCC feeder breaker B0105 must be capable of being tripped using local manual controls.	With breaker B0105 nonfunctional, perform ACTIONS b.1, b.2 for fire areas R-2, R-3 and R-16.
G	Bus 22B (B02) 480 V load center	MCC feeder breaker B0205 must be capable of being tripped using local manual controls.	With breaker B0205 nonfunctional, perform ACTIONS b.1, b.2 for fire areas R-2, R-3 and R-16.

Table 7.1.23-1
Onsite Power - AC Distribution System Components
FUNCTIONALITY Requirements and Compensatory Measures

TR Item	Comp ID	FUNCTIONALITY Description	Compensatory Measures if Component Not Restored in 14 Days (see ACTION "a")
H	Bus 22E (B05) 480 V Switchgear Facility Z1	Breakers B0504 and B0505 must be capable of being cycled using local manual controls.	With any one of these breakers nonfunctional, perform ACTIONS b.1, b.2 for fire area R-11.
I	Bus 22F (B06) 480 V Switchgear Facility Z2	Breakers B0603, B0605, B0606, B0608, B0609, and B0611 must be capable of being cycled using local manual controls.	With any one of these breakers nonfunctional, perform ACTIONS b.1, b.2 for fire areas R-1 and R-16.
J	MCC B51 (MCC-22- 1E)	Breakers B5105, B5110, B5111, B5112, B5118, B5119, and B5145 must be capable of being cycled using local manual controls.	1. With breaker B5105 nonfunctional perform ACTIONS b.1, b.2 fire areas R-2 and R-4. 2. With breaker B5110, B5111, or B5112 nonfunctional perform ACTIONS b.1, b.2 fire area R-15. 3. With breaker B5118, or B5119 nonfunctional perform ACTIONS b.1, b.2 fire area R-2. 4. With breaker B5145 nonfunctional perform ACTIONS b.1, b.2 fire area R-4.
K	MCC B52 (MCC-22- 2E)	Breaker B5222 must be capable of being cycled using local manual controls.	With breaker B5222 nonfunctional perform ACTIONS b.1, b.2 fire areas R-2,R-3, and R-16.

Table 7.1.23-1
Onsite Power - AC Distribution System Components
FUNCTIONALITY Requirements and Compensatory Measures

TR Item	Comp ID	FUNCTIONALITY Description	Compensatory Measures if Component Not Restored in 14 Days (see ACTION "a")
L	MCC B61 (MCC-22- 1F)	Breakers B6105, B6109, B6110, and B6119 must be capable of being cycled using local manual controls.	1. With breaker B6105 nonfunctional, perform ACTIONS b.1, b.2 for fire area R-4. 2. With breaker B6109, B6110 or B6119 nonfunctional, perform ACTIONS b.1, b.2 for fire area R-15 and R-17.
M	MCC B62 (MCC-22- 2F)	Breakers B6203 and B6226 must be capable of being cycled using local manual controls.	1. With breaker B6203 nonfunctional, perform ACTIONS b.1, b.2 for fire area R-13. 2. With breaker B6226 nonfunctional, perform ACTIONS b.1, b.2 for fire areas R-2, R-3 and R-16.
N	VA 20 120VAC Instrument Panel VIAC-2	All 120 VAC breakers must be capable of being cycled using local manual operation.	1. With any local breaker control nonfunctional, perform ACTIONS b.1, b.2 for fire area R-1, and if 2. Breaker VA2004 is nonfunctional, perform LCO 3.7.13.23 ACTION Statement for fire area R-2.

Table 7.1.23-1
Onsite Power - AC Distribution System Components
FUNCTIONALITY Requirements and Compensatory Measures

TR Item	Comp ID	FUNCTIONALITY Description	Compensatory Measures if Component Not Restored in 14 Days (see ACTION "a")
R	Emergency Lighting Units (ELUs)	All ELUs must be capable of at least 8 hours of illumination.	With any ELUs nonfunctional, replace defective ELUs with battery powered lanterns, and verify proper placement on a daily basis.

Table 7.1.23-2
Onsite Power - AC Distribution System Components
TECHNICAL SURVEILLANCE REQUIREMENTS

TSR Item	Comp ID	TECHNICAL SURVEILLANCE REQUIREMENT	Frequency
A	Bus 24C (A3) 4160 V Switchgear Facility Z1	Verify that each breaker can be manually cycled.	In accordance with the breaker surveillance frequency established by the Preventive Maintenance Program (Refer to TRM Appendix R Bases, item No. 9).
B	Bus 24D (A4) 4160 V Switchgear Facility Z2	Verify that each breaker can be manually cycled.	In accordance with the breaker surveillance frequency established by the Preventive Maintenance Program (Refer to TRM Appendix R Bases, item No. 9).
C	Bus 24E (A5) 4160 V Switchgear Facility Z5	Verify that each breaker can be manually cycled.	In accordance with the breaker surveillance frequency established by the Preventive Maintenance Program (Refer to TRM Appendix R Bases, item No. 9).
D	Bus 24A (A1) 4160 V Switchgear Facility 1	Verify that breakers A102, A103, and A104 can be manually cycled.	In accordance with the breaker surveillance frequency established by the Preventive Maintenance Program (Refer to TRM Appendix R Bases, item No. 9).
E	Bus 24B (A2) 4160 V Switchgear Facility 2	Verify that breakers A204, A205, and A206 can be manually cycled.	In accordance with the breaker surveillance frequency established by the Preventive Maintenance Program (Refer to TRM Appendix R Bases, item No. 9).
F	Bus 22A (B01) 480 V load center	Verify that breaker B0105 can be manually cycled.	In accordance with the breaker surveillance frequency established by the Preventive Maintenance Program (Refer to TRM Appendix R Bases, item No. 9).
G	Bus 22B (B02) 480 V load center	Verify that breaker B0205 can be manually cycled.	In accordance with the breaker surveillance frequency established by the Preventive Maintenance Program (Refer to TRM Appendix R Bases, item No. 9).
H	Bus 22E (B05) 480 V Switchgear Facility Z1	Verify that breakers B0504 and B0505 can be manually cycled.	In accordance with the breaker surveillance frequency established by the Preventive Maintenance Program (Refer to TRM Appendix R Bases, item No. 9).

Table 7.1.23-2
Onsite Power - AC Distribution System Components
TECHNICAL SURVEILLANCE REQUIREMENTS

TSR Item	Comp ID	TECHNICAL SURVEILLANCE REQUIREMENT	Frequency
I	Bus 22F (B06) 480 V Switchgear Facility Z2	Verify that breakers B0603, B0605, B0606, B0608, B0609, and B0611 can be manually cycled.	In accordance with the breaker surveillance frequency established by the Preventive Maintenance Program (Refer to TRM Appendix R Bases, item No. 9).
J	MCC B51 (MCC-22-1E)	Verify that Breakers B5105, B5110, B5111, B5112, B5118, B5119, and B5145 can be manually cycled.	In accordance with the breaker surveillance frequency established by the Preventive Maintenance Program (Refer to TRM Appendix R Bases, item No. 9).
K	MCC B52 (MCC-22-2E)	Verify that breakers that supply Appendix R loads are capable of being manually cycled.	In accordance with the breaker surveillance frequency established by the Preventive Maintenance Program (Refer to TRM Appendix R Bases, item No. 9).
L	MCC B61 (MCC-22-1F)	Verify that breakers B6105, B6109, B6110, and B6119 can be manually cycled.	In accordance with the breaker surveillance frequency established by the Preventive Maintenance Program (Refer to TRM Appendix R Bases, item No. 9).
M	MCC B62 (MCC-22-2F)	Verify that breakers that supply Appendix R loads are capable of being manually cycled.	In accordance with the breaker surveillance frequency established by the Preventive Maintenance Program (Refer to TRM Appendix R Bases, item No. 9).
N	VA 20 120VAC Instrument Panel VIAC-2	Verify that breakers are capable of being manually cycled.	In accordance with the breaker surveillance frequency established by the Preventive Maintenance Program (Refer to TRM Appendix R Bases, item No. 9).
R	Emergency Lighting Units (ELUs)	Verify capability of ELUs to provide at least 8 hours of operation.	In accordance with the Emergency Lighting Unit (ELU) surveillance frequency established by the Preventive Maintenance Program.

7.1 APPENDIX R SAFE SHUTDOWN REQUIREMENTS

REFERENCE TECHNICAL SPECIFICATION: 3.8.2.3 DC Power Distribution

TECHNICAL REQUIREMENT

7.1.24 The Appendix R Safe Shutdown Related (ARSR) equipment listed in the TRM Table 7.1.24-1 shall be FUNCTIONAL.

APPLICABILITY:

MODES 1, 2, 3, and 4.

ACTION:

With an ARSR component listed in the above referenced component table nonfunctional (unable to meet its intended Appendix R shutdown function), take the ACTION as specified in the above table under Compensatory Measures.

TECHNICAL SURVEILLANCE REQUIREMENTS

7.1.24 The capability of equipment listed in TRM Table 7.1.24-1 to meet its Appendix R shutdown related FUNCTIONALITY requirements shall be verified per the TECHNICAL SURVEILLANCE REQUIREMENTS of TRM Table 7.1.24-2.

Table 7.1.24-1
Electric Power - D.C. Distribution Components
FUNCTIONALITY Requirements and Compensatory Measures

TR Item	Comp ID	FUNCTIONALITY Description	Compensatory Measures if Component Not Restored in 14 Days (see ACTION "a")
B	D01 BUS 201A 125 VDC Switchgear	Breakers D0103, D0104, D0105, D0108, and D0111 must be capable of being cycled using local manual operation.	1. With breaker D0103 nonfunctional, perform ACTIONS b.1, b.2 for fire area R-1. 2. With breaker D0104 or D0111 nonfunctional, perform ACTIONS b.1, b.2 for fire areas R- 3, R-8 and R-11. 3. With breaker D0105 nonfunctional, perform ACTIONS b.1, b.2 for fire areas R-3, R-13, R-14 and R-17. 4. With breaker D0108 nonfunctional, perform ACTIONS b.1, b.2 for fire area R-15.
C	D02 BUS 201B 125 VDC Switchgear	All breakers on this panel must be capable of being cycled using local manual operation.	1. With any breaker nonfunctional, perform ACTIONS b.1, b.2 for fire area R-1. 2. With breaker D0204 nonfunctional, perform ACTIONS b.1, b.2 for fire areas R-3, R-8 and R-11. 3. With breaker D0205 nonfunctional, perform ACTIONS b.1, b.2 for fire area R-15. 4. With breaker D0208 nonfunctional, perform ACTIONS b.1, b.2 for fire areas R-2 and R-8.

Table 7.1.24-1
Electric Power - D.C. Distribution Components
FUNCTIONALITY Requirements and Compensatory Measures

TR Item	Comp ID	FUNCTIONALITY Description	Compensatory Measures if Component Not Restored in 14 Days (see ACTION "a")
D	DV10 Panel 201A-1V 125 VDC Vital Instrument Panel.	All 125 VDC breakers on Panel DV10 must be capable of being cycled using local manual operation.	1. With any breaker nonfunctional perform ACTIONS b.1, b.2 for fire area R-15, and in addition if: 2. Breakers DV1011, DV1015, DV1017, or DV1020 are nonfunctional perform ACTIONS b.1, b.2 for fire area R-17; 3. Breaker DV1008 is nonfunctional perform ACTIONS b.1, b.2 for fire area R-3; 4. Breaker DV1013 is nonfunctional perform ACTIONS b.1, b.2 for fire areas R-4 and R-17; 5. Breaker DV1014 is nonfunctional perform ACTIONS b.1, b.2 for fire areas R-2, 4, 5, 6, 8, 10, 11 and R-17; 6. Breaker DV1018 is nonfunctional perform ACTIONS b.1, b.2 for fire areas R-2, 3, 11, 13 and R-14; 7. Breaker DV1019 is nonfunctional perform ACTIONS b.1, b.2 for fire area R-13; 8. Breaker DV1008 is nonfunctional perform ACTIONS b.1, b.2 for fire areas R-3, 13 and R-14.

Table 7.1.24-1
Electric Power - D.C. Distribution Components
FUNCTIONALITY Requirements and Compensatory Measures

TR Item	Comp ID	FUNCTIONALITY Description	Compensatory Measures if Component Not Restored in 14 Days (see ACTION "a")
E	DV20 Panel 201B-1V 125 VDC Vital Instrument Panel.	All 125 VDC breakers on Panel DV20 must be capable of being cycled using local manual operation.	1. With any breaker nonfunctional perform ACTIONS b.1, b.2 for fire areas R-1 and R-15, and in addition if: 2. Breaker DV2014 is nonfunctional perform ACTIONS b.1, b.2 for fire areas R-4, 5, 6, 7, 9, 13, 14, 16 and R-17; 3. Breaker DV2015 is nonfunctional perform ACTIONS b.1, b.2 for fire area R-8; 4. Breaker DV2018 is nonfunctional perform ACTIONS b.1, b.2 for fire areas R-3, 11 and R- 14; 5. Breaker DV2020 is nonfunctional perform ACTIONS b.1, b.2 for fire area R-8; 6. Breaker DV2021 is nonfunctional perform ACTIONS b.1, b.2 for fire areas R-13 and R- 14.
F	D11 Panel 201A-1 125 VDC Distribution	All 125 VDC breakers on Panel D11must be capable of being cycled using local manual operation.	1. With any breaker nonfunctional perform ACTIONS b.1, b.2 for fire area R-15, and in addition if: 2. Breaker D1104 is nonfunctional perform ACTIONS b.1, b.2 for fire area R-11.
G	D12 Panel 201A-2 125 VDC Distribution	All 125 VDC breakers on Panel D12 must be capable of being cycled using local manual operation.	With any local breaker control nonfunctional perform ACTIONS b.1, b.2 for fire area R-15.

Table 7.1.24-1
Electric Power - D.C. Distribution Components
FUNCTIONALITY Requirements and Compensatory Measures

TR Item	Comp ID	FUNCTIONALITY Description	Compensatory Measures if Component Not Restored in 14 Days (see ACTION “a”)
H	D21 Panel 201B-1 125 VDC Distribution	All 125 VDC breakers on Panel D21 must be capable of being cycled using local manual operation.	1. With any breaker nonfunctional perform ACTIONS b.1, b.2 for fire area R-15, and in addition if: 2. Breaker D2104 is nonfunctional perform ACTIONS b.1, b.2 for fire areas R-3 and R-11.
I	D22 Panel 201B-2 125 VDC Distribution	All 125 VDC breakers on Panel D22 must be capable of being cycled using local manual operation.	1. With any breaker nonfunctional perform ACTIONS b.1, b.2 for fire area R-15, and in addition if: 2. Breaker D2216 is nonfunctional perform ACTIONS b.1, b.2 for fire area R-2.

Table 7.1.24-2
Electric Power - D.C. Distribution Components
TECHNICAL SURVEILLANCE REQUIREMENTS

TSR Item	Comp ID	TECHNICAL SURVEILLANCE REQUIREMENT	Frequency
B	D01 BUS 201A 125 VDC Switchgear	Verify that breakers D0103, D0104, D0105, D0108, and D0111 can be manually cycled.	In accordance with the breaker surveillance frequency established by the Preventive Maintenance Program (Refer to TRM Appendix R Bases, item No. 9).
C	D02 BUS 201B 125 VDC Switchgear	Verify that breakers D0204, D0205, and D0208 and D0211 can be manually cycled.	In accordance with the breaker surveillance frequency established by the Preventive Maintenance Program (Refer to TRM Appendix R Bases, item No. 9).
D	DV10 Panel 201A-1V 125 VDC Vital Instrument Panel.	Verify that all breakers on Panel DV10 can be manually cycled.	In accordance with the breaker surveillance frequency established by the Preventive Maintenance Program (Refer to TRM Appendix R Bases, item No. 9).
E	DV20 Panel 201B-1V 125 VDC Vital Instrument Panel.	Verify that all breakers on Panel DV20 can be manually cycled.	In accordance with the breaker surveillance frequency established by the Preventive Maintenance Program (Refer to TRM Appendix R Bases, item No. 9).
F	D11 Panel 201A-1 125 VDC Distribution	Verify that all breakers on Panel D11 can be manually cycled.	In accordance with the breaker surveillance frequency established by the Preventive Maintenance Program (Refer to TRM Appendix R Bases, item No. 9).
G	D12 Panel 201A-2 125 VDC Distribution	Verify that all breakers on Panel D12 can be manually cycled.	In accordance with the breaker surveillance frequency established by the Preventive Maintenance Program (Refer to TRM Appendix R Bases, item No. 9).
H	D21 Panel 201B-1 125 VDC Distribution	Verify that all breakers on Panel D21 can be manually cycled.	In accordance with the breaker surveillance frequency established by the Preventive Maintenance Program (Refer to TRM Appendix R Bases, item No. 9).
I	D22 Panel 201B-2 125 VDC Distribution	Verify that all breakers on Panel D22 can be manually cycled.	In accordance with the breaker surveillance frequency established by the Preventive Maintenance Program (Refer to TRM Appendix R Bases, item No. 9).

7.1 APPENDIX R SAFE SHUTDOWN REQUIREMENTS

REFERENCE TECHNICAL SPECIFICATION: None

TECHNICAL REQUIREMENT

7.1.25 The Appendix R Safe Shutdown Related (ARSR) equipment listed in the TRM Table 7.1.25-1 shall be FUNCTIONAL.

APPLICABILITY:

MODES 1, 2, 3, and 4.

ACTION:

With an ARSR component listed in the above referenced component table nonfunctional (unable to meet its intended Appendix R shutdown function), take the ACTION as specified in the above table under Compensatory Measures.

TECHNICAL SURVEILLANCE REQUIREMENTS

7.1.25 The capability of equipment listed in TRM Table 7.1.25-1 to meet its Appendix R shutdown related FUNCTIONALITY requirements shall be verified per the TECHNICAL SURVEILLANCE REQUIREMENTS of TRM Table 7.1.25-2.

Table 7.1.25-1
Fire Protection Miscellaneous System Components
FUNCTIONALITY Requirements and Compensatory Measures

TR Item	Comp ID	FUNCTIONALITY Description	Compensatory Measures if Component Not Restored in 14 Days (see ACTION "a")	Risk Significant Component Not Restored in 72 Hours (see Action "d")
A	2-FIRE-258 2-FIRE-259 2-FIRE-559 2-FIRE-560 Fire Prot. Cross-tie to EDG SW Cooling	1. Valve 2-FIRE-258 must be capable of being opened, and; 2. Valves 2-FIRE-259, 2-FIRE-559, and 2-FIRE-560 must be capable of being closed, by local manual handwheel operation.	With any valve nonfunctional, perform ACTIONS b.1, b.2 for fire area R-3. Evaluation for continued operation.	N/A
B	Fire Suppression Systems	Refer to the following TRs: 3.7.9.1 Fire Suppression Water 3.7.9.2 Spray/Sprinkler Systems 3.7.9.3 Fire Hose Stations 3.7.9.4 Halon System	As specified in the ACTION Statements for the following: TR 3.7.9.1 TR 3.7.9.2 TR 3.7.9.3 TR 3.7.9.4	N/A
C	2-FIRE-34 Cross-tie to AFW suction	Valve 2-FIRE-34 must be capable of being opened.	N/A	With 2-FIRE-34 nonfunctional, Risk Mitigation Areas are: R-1 (FHA A-1A, A-1B, A-1G, A-12A and A-24), R-3 (FHA T-1A), R-11 (FHA A-28 and R-16 (FHA I-1A and I-1B)

Table 7.1.25-2
Fire Protection Miscellaneous System Components
TECHNICAL SURVEILLANCE REQUIREMENTS

TSR Item	Comp ID	TECHNICAL SURVEILLANCE REQUIREMENT	Frequency
A	2-FIRE-258 2-FIRE-259 2-FIRE-559 2-FIRE-560 Fire Prot. Crosstie to EDG SW Cooling	Verify that each valve can be manually cycled by local manual handwheel operation.	Once every 48 months.
B	Fire Suppression Systems	Refer to the following TSRs: 4.7.9.1 Fire Suppression Water 4.7.9.2 Spray/Sprinkler Systems 4.7.9.3 Fire Hose Stations 4.7.9.4 Halon System	As specified in the TSRs for the following: 4.7.9.1 Fire Suppression Water 4.7.9.2 Spray/Sprinkler Systems 4.7.9.3 Fire Hose Stations 4.7.9.4 Halon System
C	2-FIRE-34 Cross-tie to AFW suction	N/A	N/A

7.1 APPENDIX R SAFE SHUTDOWN REQUIREMENTS

REFERENCE TECHNICAL SPECIFICATION: None

TECHNICAL REQUIREMENT

7.1.26 The Appendix R Safe Shutdown Related (ARSR) equipment listed in the TRM Table 7.1.26-1 shall be FUNCTIONAL.

APPLICABILITY:

MODES 1, 2, 3, and 4.

ACTION:

With an ARSR component listed in the above referenced component table nonfunctional (unable to meet its intended Appendix R shutdown function), take the ACTION as specified in the above table under Compensatory Measures.

TECHNICAL SURVEILLANCE REQUIREMENTS

7.1.26 The capability of equipment listed in TRM Table 7.1.26-1 to meet its Appendix R shutdown related FUNCTIONALITY requirements shall be verified per the TECHNICAL SURVEILLANCE REQUIREMENTS of TRM Table 7.1.26-2.

Table 7.1.26-1
Support Equipment, Appendix R Components
FUNCTIONALITY Requirements and Compensatory Measures

TR Item	Comp ID	FUNCTIONALITY Description	Compensatory Measures if Component Not Restored in 14 Days (see ACTION "a")	Compensatory Measures for Components Requiring Prompt Action (see ACTION "f")
A	Hand-held Radios	1. At least eight (8) hand-held radios must be FUNCTIONAL. Three (3) in the Control Room, and five (5) in the Fire Shutdown Storage Box. 2. Communications from manual action locations to Control Room base station (using Main Communications Console and hand-held radios) must be FUNCTIONAL. 3. Communications from manual action locations to dedicated Control Room portable radio unit (with hardwired external antenna) must be FUNCTIONAL. 4. Primary or Backup (800 MHz) Repeaters must be FUNCTIONAL.	1. With less than 8 hand-held radios FUNCTIONAL, replace or restore radios to FUNCTIONALITY within 7 days or perform ACTIONS b.1, b.2 for all fire areas EXCEPT R-12. 2. With Main Communication Console nonfunctional, perform ACTIONS b.1, b.2 for all fire areas EXCEPT R-3, R-11, R-12, and R-16. 3. With dedicated portable radio nonfunctional, perform ACTIONS b.1, b.2 for fire areas R-3, R-11, and R-16. 4. If the primary repeater is nonfunctional, verify that the Backup Repeater is FUNCTIONAL, or perform ACTIONS b.1, b.2 for all fire areas. 5. If the Backup repeater is nonfunctional, verify that the Primary Repeater is FUNCTIONAL, and perform ACTIONS b.1, b.2 for fire area R-3. 6. If neither repeater is FUNCTIONAL, immediately attempt to restore one repeater to operation, and perform ACTIONS b.1, b.2 for all fire areas.	N/A

Table 7.1.26-1
Support Equipment, Appendix R Components
FUNCTIONALITY Requirements and Compensatory Measures

TR Item	Comp ID	FUNCTIONALITY Description	Compensatory Measures if Component Not Restored in 14 Days (see ACTION "a")	Compensatory Measures for Components Requiring Prompt Action (see ACTION "f")
B	HOT SHUTDOWN (HSD) Storage Box Inventory	All items on inventory must be available to support COLD SHUTDOWN for fire area R-2. Refer to applicable station procedure for inventory.	With any inventory item missing, perform ACTIONS b.1, b.2 for fire area R- 2.	N/A
C	Fire Shutdown (FSD) Storage Box Inventory	All items on inventory must be available to support COLD SHUTDOWN for fire area(s) where required. Refer to applicable station procedure for inventory.	With any inventory item missing, perform ACTIONS b.1, b.2 for fire area(s) where required.	N/A
D	COLD SHUTDOWN Repair Material	All materials required to support COLD SHUTDOWN repairs must be available in the Unit 2 Appendix R storage area. Repair Material shall not be utilized as plant spare material. Refer to applicable station procedure for materials required.	With any inventory item missing or non-functional perform ACTION b.1 for fire areas where item is required. This ACTION is in addition to the Prompt ACTION b.2 taken. See applicable station procedure for fire area identification. Note: Some items are shared with Unit 3. Notify the Shift Manager of any impacts.	Within 12 hours of any inventory item identified as missing or non-functional, perform ACTION b.2 for fire area where item is required. See applicable station procedure for fire area identification. Note: Some items are shared with Unit 3. Notify the Shift Manager of any impacts.

Table 7.1.26-1
Support Equipment, Appendix R Components
FUNCTIONALITY Requirements and Compensatory Measures

TR Item	Comp ID	FUNCTIONALITY Description	Compensatory Measures if Component Not Restored in 14 Days (see ACTION "a")	Compensatory Measures for Components Requiring Prompt Action (see ACTION "f")
E	F156A, F156B, F156C, F156D Portable Fans	1. A minimum of two fans shall be FUNCTIONAL and stored in designated cabinets in the corridor, el. 14'-6" adjacent to the Turbine Bldg entrance. 2. Power shall be available at the dedicated 480V outlets in both DC Switchgear Rooms.	1. With less than 2 fans FUNCTIONAL, or the dedicated power supply (REC-1,2 and 3) in the East (Z1) DC Switchgear Room nonfunctional, perform ACTIONS b.1, b.2 for fire area R-3. 2. With less than 2 fans FUNCTIONAL, or the dedicated power supply (REC-7, 8, and 9) in the West (Z2) DC Switchgear Room nonfunctional, perform ACTIONS b.1, b.2 for fire areas R-1 and R-16.	N/A
F	F157A, F157B, F157C, F157D Portable Fans	1. A minimum of two fans shall be FUNCTIONAL, and stored in designated cabinet on the platform (El.46'-10") in the West 480V Switchgear Room. 2. Power shall be available at the dedicated 480V outlets in both 480V Switchgear Rooms.	1. With less than 2 fans FUNCTIONAL, or the dedicated power supply (REC-4, 5, and 6) in the West (Z1) 480V Switchgear Room nonfunctional, perform ACTIONS b.1, b.2 for fire areas R-2 and R-3. 2. With less than 2 fans FUNCTIONAL, or the dedicated power supply (REC-10, 11, and 12) in the East (Z2) 480V Switchgear Room nonfunctional, perform ACTIONS b.1, b.2 for fire area R-1.	N/A

Table 7.1.26-1
Support Equipment, Appendix R Components
FUNCTIONALITY Requirements and Compensatory Measures

TR Item	Comp ID	FUNCTIONALITY Description	Compensatory Measures if Component Not Restored in 14 Days (see ACTION "a")	Compensatory Measures for Components Requiring Prompt Action (see ACTION "f")
G	Compressed air bottle 3A and valves 2-IA-601, 598, 600, 891, 910, 566, and 2- IA-599 (regulator). Compressed air bottle 3B and valves 2-IA-603, 590, 595, 566 and 2-IA-591 (regulator). Compressed air bottle 3C and valves 2-IA-885, 887, 889, 910, 566, and 2-IA-886 (regulator).	A minimum of one compressed air bottle shall be FUNCTIONAL (1000 psig min.) and capable of alignment to 2-CH-517, 2-CH-518, and 2-CH-519 using indicated valving.	With all three compressed air bottles nonfunctional, 1. Perform ACTIONS b.1, b.2 for fire area R-1, AND 2. Verify that 2-CH-517, 2-CH-518, and 2-CH-519 can be cycled by manual operation or perform ACTIONS b.1, b.2 for ALL remaining fire areas.	N/A

Table 7.1.26-2
Support Equipment, Appendix R Components
TECHNICAL SURVEILLANCE REQUIREMENTS

TSR Item	Comp ID	TECHNICAL SURVEILLANCE REQUIREMENT	Frequency
A	Hand-held Radios	1. Verify FUNCTIONALITY of the portable radios from all remote shutdown areas. 2. Verify FUNCTIONALITY of both Control Room base stations and repeaters.	Once per REFUELING cycle
B	HOT SHUTDOWN (HSD) Storage Box Inventory	Verify all items are available to support COLD SHUTDOWN.	Once per REFUELING cycle
C	Fire Shutdown (FSD) Storage Box Inventory	Verify all items are available to support COLD SHUTDOWN.	Once per REFUELING cycle
D	COLD SHUTDOWN Repair Material	Verify all materials available in the Unit 2 Appendix R Storage Area to support COLD SHUTDOWN.	Once per REFUELING cycle
E	F156A, F156B, F156C, F156D Portable Appendix R fans	Verify each fan can be powered from the outlets in both DC Switchgear Rooms, and fans are stored in their designated location.	Once per REFUELING cycle
F	F157A, F157B, F157C, F157D Portable Appendix R fans	Verify each fan can be powered from the outlets in both 480 V Switchgear Rooms, and fans are stored in their designated location.	Once per REFUELING cycle
G	Compressed air bottle 3A and valves 2-IA-601, 598, 600, 891, 910, 566, and 2-IA-599 (regulator). Compressed air bottle 3B and valves 2-IA-603, 590, 595, 566, and 2-IA-591 (regulator). Compressed air bottle 3C and valves 2-IA-885, 887, 889, 910, 566, and 2-IA-886 (regulator).	1. Verify each required instrument air valve and regulator can be manually opened. 2. Verify each compressed air bottle is FUNCTIONAL.	Once per REFUELING cycle

7.1 APPENDIX R SAFE SHUTDOWN REQUIREMENTS

REFERENCE TECHNICAL SPECIFICATION: 3.8.1.1 - A. C. Sources Operating

TECHNICAL REQUIREMENT

7.1.27 The Appendix R Safe Shutdown Related (ARSR) equipment listed in the TRM Table 7.1.27-1 shall be FUNCTIONAL.

APPLICABILITY:

MODES 1, 2, 3, and 4.

ACTION:

With an ARSR component listed in the above referenced component table nonfunctional (unable to meet its intended Appendix R shutdown function), take the ACTION as specified in the above table under Compensatory Measures.

TECHNICAL SURVEILLANCE REQUIREMENTS

7.1.27 The capability of equipment listed in TRM Table 7.1.27-1 to meet its Appendix R shutdown related FUNCTIONALITY requirements are verified per the SURVEILLANCE REQUIREMENTS of TS 4.8.1.1.2.a & b.

Table 7.1.27-1
Plant System - Emergency Diesel Generators
FUNCTIONALITY Requirements and Compensatory Measures

TR Item	Comp ID	FUNCTIONALITY Description	Component Not Restored in 14 Days (see ACTION "a")	Risk Significant Component Not Restored in 72 Hours (see ACTION "d")
A	H7A (includes F38A, A312, 2-SW-89A, 2-SW-231A)	The 'A' Emergency Diesel Generator must be capable of powering Bus 24C	(Tech Spec Limiting)	With 'A' EDG nonfunctional, Risk Mitigation Areas are: R-1 (FHA A-12A, A-14B, A-14D, A-17, A-24) R-2 (FHA A-13, T-8, T-10) R-3 (FHA T-1A, T-1C, T-1F) R-10 (FHA A-21) R16 (FHA I-1A)
B	H7B (includes F38B, A401, 2-SW-89B, 2-SW-231B)	The 'B' Emergency Diesel Generator must be capable of powering Bus 24D	(Tech Spec Limiting)	With 'B' EDG nonfunctional, Risk Mitigation Areas are: R-1 (FHA A-12A, A-14B, A-14D, A-24) R-3 (FHA T-1A) R-7 (FHA A-15, A-31) R-9 (FHA A-20) R-14 (FHA T-7, T-9) R16 (FHA I-1A) R-17 (FHA A-15)

APPENDIX 8.1
CORE OPERATING LIMITS REPORT, CYCLE 25

1. CORE OPERATING LIMITS REPORT

This CORE OPERATING LIMITS REPORT for Millstone 2 has been prepared in accordance with the requirements of Technical Specification 6.9.1.8 a through 6.9.1.8 d. The Technical Specifications affected by this report are listed below:

Section	Specification	
2.1	3/4.1.1.1	SHUTDOWN MARGIN – (SDM)
2.2		Deleted (Ref. License Amendment 280)
2.3	3/4.1.1.4	Moderator Temperature Coefficient (MTC)
2.4	3/4.1.3.6	Regulating CEA Insertion Limits
2.5	3/4.2.1	Linear Heat Rate
2.6	3/4.2.3	TOTAL UNRODDED INTEGRATED RADIAL PEAKING FACTOR -- F_r^T
2.7	3/4.2.6	DNB Margin

Terms appearing in capitalized type are DEFINED TERMS as defined in Section 1.0 of the Technical Specifications.

2. OPERATING LIMITS

The cycle-specific parameter limits for the specifications listed in Section 1.0 are presented in the following subsections. These limits have been developed using the NRC approved methodologies specified in Section 3.

2.1 SHUTDOWN MARGIN – (SDM) (Specification 3/4.1.1.1)

The SHUTDOWN MARGIN shall be $\geq$ 3.6% ΔK/K

2.2 Deleted

2.3 Moderator Temperature Coefficient (Specification 3/4.1.1.4)

The moderator temperature coefficient shall be:

a. Less positive than 0.7×10^{-4} ΔK/K/°F whenever THERMAL POWER is $\leq$70% of RATED THERMAL POWER,

b. Less positive than 0.4×10^{-4} ΔK/K/°F whenever THERMAL POWER is > 70% of RATED THERMAL POWER,

c. Less negative than -3.0×10^{-4} ΔK/K/°F at RATED THERMAL POWER.

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CORE OPERATING LIMITS REPORT, CYCLE 25

2.4 Regulating CEA Insertion Limits (Technical Specification 3/4.1.3.6)

The regulating CEA groups shall be limited to the withdrawal sequence and to the insertion limits shown in Figure 2.4-1. CEA insertion between the Long Term Steady State Insertion Limits and the Transient Insertion Limits is restricted to:

a. ≤ 4 hours per 24 hour interval,

b. ≤ 5 Effective Full Power Days per 30 Effective Full Power Day interval, and

c. ≤ 14 Effective Full Power Days per 365 Effective Full Power Day interval.

2.5 Linear Heat Rate (Technical Specification 3/4.2.1)

The linear heat rate, including heat generated in the fuel, clad and moderator, shall not exceed:

a. 15.1 kw/ft whenever the reactor coolant flow rate (determined per Technical Specification 3/4.2.1) is ≥ 360,000 gpm.

b. 15.0 kw/ft whenever the reactor coolant flow rate (determined per Technical Specification 3/4.2.1) is < 360,000 gpm and ≥ 354,600 gpm.

c. 14.9 kw/ft whenever the reactor coolant flow rate (determined per Technical Specification 3/4.2.1) is < 354,600 gpm and ≥ 349,200 gpm.

During operation with the linear heat rate being monitored by the Excore Detector Monitoring System, the AXIAL SHAPE INDEX shall remain within the limits of Figure 2.5-1.

During operation with the linear heat rate being monitored by the Incore Detector Monitor System, the alarm setpoints shall be adjusted to less than or equal to the limit when the following factors are appropriately included in the setting of the alarms:

1. A measurement-calculational uncertainty factor of 1.07,
2. An engineering uncertainty factor of 1.03, and
3. A THERMAL POWER measurement uncertainty factor of 1.02.

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CORE OPERATING LIMITS REPORT, CYCLE 25

2.6 TOTAL UNRODDED INTEGRATED RADIAL PEAKING FACTOR -- F_r^T (Technical Specification 3/4.2.3)

The calculated value of F_r^T at RATED THERMAL POWER shall be:

≤ 1.690 whenever the reactor coolant flow rate is ≥ 360,000 gpm.

≤ 1.664 whenever the reactor coolant flow rate is < 360,000 gpm and ≥ 354,600 gpm.

≤ 1.639 whenever the reactor coolant flow rate is < 354,600 gpm and ≥ 349,200 gpm.

2.6.1 The Power Dependent F_r^T limits, whenever the reactor coolant flow rate is ≥ 360,000 gpm, are shown in Figure 2.6-1.

2.6.2 The Power Dependent F_r^T limits, whenever the reactor coolant flow rate is < 360,000 gpm and ≥ 354,600 gpm, are shown in Figure 2.6-2.

2.6.3 The Power Dependent F_r^T limits, whenever the reactor coolant flow rate is < 354,600 gpm and ≥ 349,200 gpm, are shown in Figure 2.6-3.

2.7 DNB Margin (Technical Specification 3/4.2.6)

The DNB margin shall be preserved by maintaining the cold leg temperature, pressurizer pressure, reactor coolant flow rate, and AXIAL SHAPE INDEX within the following limits:

Parameter	Limits
	Four Reactor Coolant Pumps Operations
a. Cold Leg Temperature	≤ 549°F
b. Pressurizer Pressure	> 2225 psia*
c. Reactor Coolant Flow Rate	≥ 360,000 gpm with Linear Heat Rate and F_r^T limits as specified in Sections 2.5 and 2.6. or ≥ 354,600 gpm with Linear Heat Rate and F_r^T limit reductions as specified in Sections 2.5 and 2.6. or ≥ 349,200 gpm with Linear Heat Rate and F_r^T limit reductions as specified in Sections 2.5 and 2.6.
d. AXIAL SHAPE INDEX	Figure 2.7-1

* Limit not applicable during either the THERMAL POWER ramp increase in excess of 5% of RATED THERMAL POWER per minute or a THERMAL POWER step increase of greater than 10% of RATED THERMAL POWER.

APPENDIX 8.1
CORE OPERATING LIMITS REPORT, CYCLE 25

3. ANALYTICAL METHODS

The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC, specifically those described in the following documents:

3.1 EMF-96-029(P)(A) Volumes 1 and 2, “Reactor Analysis System for PWRs Volume 1 - Methodology Description, Volume 2 - Benchmarking Results,” Siemens Power Corporation, January 1997.

Methodology for:

TS 3.1.1.1 – Shutdown Margin – (SDM)
TS 3.1.1.4 – Moderator Temperature Coefficient (MTC)
TS 3.1.3.6 – Regulating CEA Insertion Limits
TS 3.2.1 – Linear Heat Rate
TS 3.2.3 – Total Unrodded Integrated Radial Peaking Factor – F^T_r

3.2 ANF-84-73 Revision 5 Appendix B(P)(A), “Advanced Nuclear Fuels Methodology for Pressurized Water Reactors: Analysis of Chapter 15 Events,” Advanced Nuclear Fuels, July 1990.

Methodology for:

TS 3.1.1.1 – Shutdown Margin – (SDM)
TS 3.1.3.6 – Regulating CEA Insertion Limits
TS 3.2.1 – Linear Heat Rate
TS 3.2.3 – Total Unrodded Integrated Radial Peaking Factor – F^T_r

3.3 XN-NF-82-21(P)(A) Revision 1, “Application of Exxon Nuclear Company PWR Thermal Margin Methodology to Mixed Core Configurations,” Exxon Nuclear Company, September 1983.

Methodology for:

TS 3.2.1 – Linear Heat Rate
TS 3.2.3 – Total Unrodded Integrated Radial Peaking Factor – F^T_r

3.4 XN-75-32(P)(A) Supplements 1 through 4, “Computational Procedure for Evaluating Fuel Rod Bowing,” Exxon Nuclear Company, October 1983.

Methodology for:

TS 3.1.3.6 – Regulating CEA Insertion Limits
TS 3.2.1 – Linear Heat Rate
TS 3.2.3 – Total Unrodded Integrated Radial Peaking Factor – F^T_r

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3.5 EMF-2328(P)(A), Revision 0 and Supplement 1(P)(A), “PWR Small Break LOCA Evaluation Model S-RELAP5 Based,” Framatome ANP, September 2015.

Methodology for:

TS 3.1.3.6 – Regulating CEA Insertion Limits
TS 3.2.1 – Linear Heat Rate
TS 3.2.3 – Total Unrodded Integrated Radial Peaking Factor – F^T_r

3.6 EMF-2087(P)(A), “SEM/PWR-98: ECCS Evaluation Model for PWR LBLOCA Applications,” Siemens Power Corporation, June 1999.

Methodology for:

TS 3.1.3.6 – Regulating CEA Insertion Limits
TS 3.2.1 – Linear Heat Rate
TS 3.2.3 – Total Unrodded Integrated Radial Peaking Factor – F^T_r

3.7 XN-NF-78-44(NP)(A), “A Generic Analysis of the Control Rod Ejection Transient for Pressurized Water Reactors,” Exxon Nuclear Company, October 1983.

Methodology for:

TS 3.1.3.6 – Regulating CEA Insertion Limits
TS 3.2.1 – Linear Heat Rate
TS 3.2.3 – Total Unrodded Integrated Radial Peaking Factor – F^T_r

3.8 XN-NF-621(P)(A) Revision 1, “Exxon Nuclear DNB Correlation for PWR Fuel Designs,” Exxon Nuclear Company, September 1983.

Methodology for:

TS 3.2.1 – Linear Heat Rate
TS 3.2.3 – Total Unrodded Integrated Radial Peaking Factor – F^T_r

3.9 XN-NF-82-06(P)(A) Revision 1 and Supplements 2, 4, and 5, “Qualification of Exxon Nuclear Fuel for Extended Burnup,” Exxon Nuclear Company, October 1986.

Methodology for:

TS 3.1.3.6 – Regulating CEA Insertion Limits
TS 3.2.1 – Linear Heat Rate
TS 3.2.3 – Total Unrodded Integrated Radial Peaking Factor – F^T_r

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3.10 ANF-88-133(P)(A) and Supplement 1, “Qualification of Advanced Nuclear Fuels PWR Design Methodology for Rod Burnups of 62 GWd/MTU,” Advanced Nuclear Fuels Corporation, December 1991.

Methodology for:

TS 3.1.3.6 – Regulating CEA Insertion Limits
TS 3.2.1 – Linear Heat Rate
TS 3.2.3 – Total Unrodded Integrated Radial Peaking Factor – F^T_r

3.11 XN-NF-85-92(P)(A) “Exxon Nuclear Uranium Dioxide/Gadolinia Irradiation Examination and Thermal Conductivity Results,” Exxon Nuclear Company, November 1986.

Methodology for:

TS 3.1.3.6 – Regulating CEA Insertion Limits
TS 3.2.1 – Linear Heat Rate
TS 3.2.3 – Total Unrodded Integrated Radial Peaking Factor – F^T_r

3.12 ANF-89-151(P)(A), “ANF-RELAP Methodology for Pressurized Water Reactors: Analysis of Non-LOCA Chapter 15 Events,” Advanced Nuclear Fuels Corporation, May 1992.

Methodology for:

TS 3.1.1.4 – Moderator Temperature Coefficient (MTC)
TS 3.1.3.6 – Regulating CEA Insertion Limits
TS 3.2.1 – Linear Heat Rate
TS 3.2.3 – Total Unrodded Integrated Radial Peaking Factor – F^T_r

3.13 EMF-1961(P)(A) Revision 0, “Statistical Setpoint/Transient Methodology for Combustion Engineering Type Reactors,” Siemens Power Corporation, July 2000.

Methodology for:

TS 3.1.3.6 – Regulating CEA Insertion Limits
TS 3.2.1 – Linear Heat Rate
TS 3.2.3 – Total Unrodded Integrated Radial Peaking Factor – F^T_r
TS 3.2.6 – DNB Margin

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3.14 EMF-2310(P)(A), Revision 1, “SRP Chapter 15 Non-LOCA Methodology for Pressurized Water Reactors,” Framatome ANP, May 2004.

Methodology for:

TS 3.1.1.4 – Moderator Temperature Coefficient (MTC)
TS 3.1.3.6 – Regulating CEA Insertion Limits
TS 3.2.1 – Linear Heat Rate
TS 3.2.3 – Total Unrodded Integrated Radial Peaking Factor – F^T_r

3.15 EMF-92-153(P)(A), Revision 1, “HTP: Departure from Nucleate Boiling Correlation for High Thermal Performance Fuel,” Siemens Power Corporation, January 2005.

Methodology for:

TS 3.2.1 – Linear Heat Rate
TS 3.2.3 – Total Unrodded Integrated Radial Peaking Factor – F^T_r

3.16 EMF-92-116(P)(A) Revision 0 and Supplement 1(P)(A), “Generic Mechanical Design Criteria for PWR Fuel Designs,” Siemens Power Corporation, February 2015.

Methodology for:

TS 3.1.3.6 – Regulating CEA Insertion Limits
TS 3.2.1 – Linear Heat Rate
TS 3.2.3 – Total Unrodded Integrated Radial Peaking Factor – F^T_r

3.17 BAW-10240(P)(A), Revision 0, “Incorporation of M5™ Properties in Framatome ANP Approved Methods,” Framatome ANP, Inc., May 2004.

Methodology for:

TS 3.2.1 – Linear Heat Rate
TS 3.2.3 – Total Unrodded Integrated Radial Peaking Factor – F^T_r

3.18 EMF-2103(P)(A), Revision 3, “Realistic Large Break LOCA Methodology for Pressurized Water Reactors,” AREVA Inc., June 2016.

Methodology for:

TS 3.1.3.6 – Regulating CEA Insertion Limits
TS 3.2.1 – Linear Heat Rate
TS 3.2.3 – Total Unrodded Integrated Radial Peaking Factor – F^T_r

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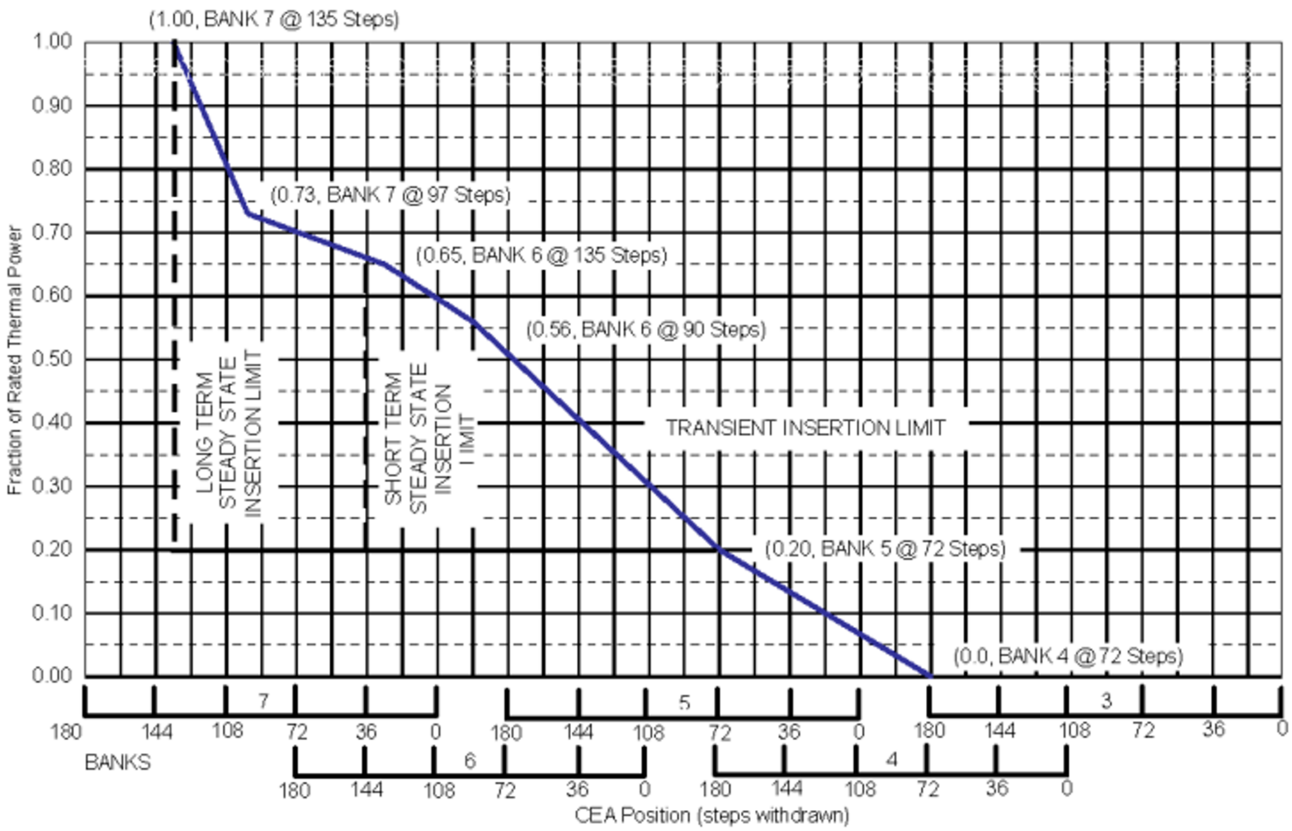
CORE OPERATING LIMITS REPORT, CYCLE 25



Note: Regulating CEAs that are ≥ 176 steps withdrawn are considered fully withdrawn and are acceptable per this figure.

Figure 2.4-1
CEA Insertion Limit vs. THERMAL POWER With Four Reactor Coolant Pumps Operating

APPENDIX 8.1
CORE OPERATING LIMITS REPORT, CYCLE 25

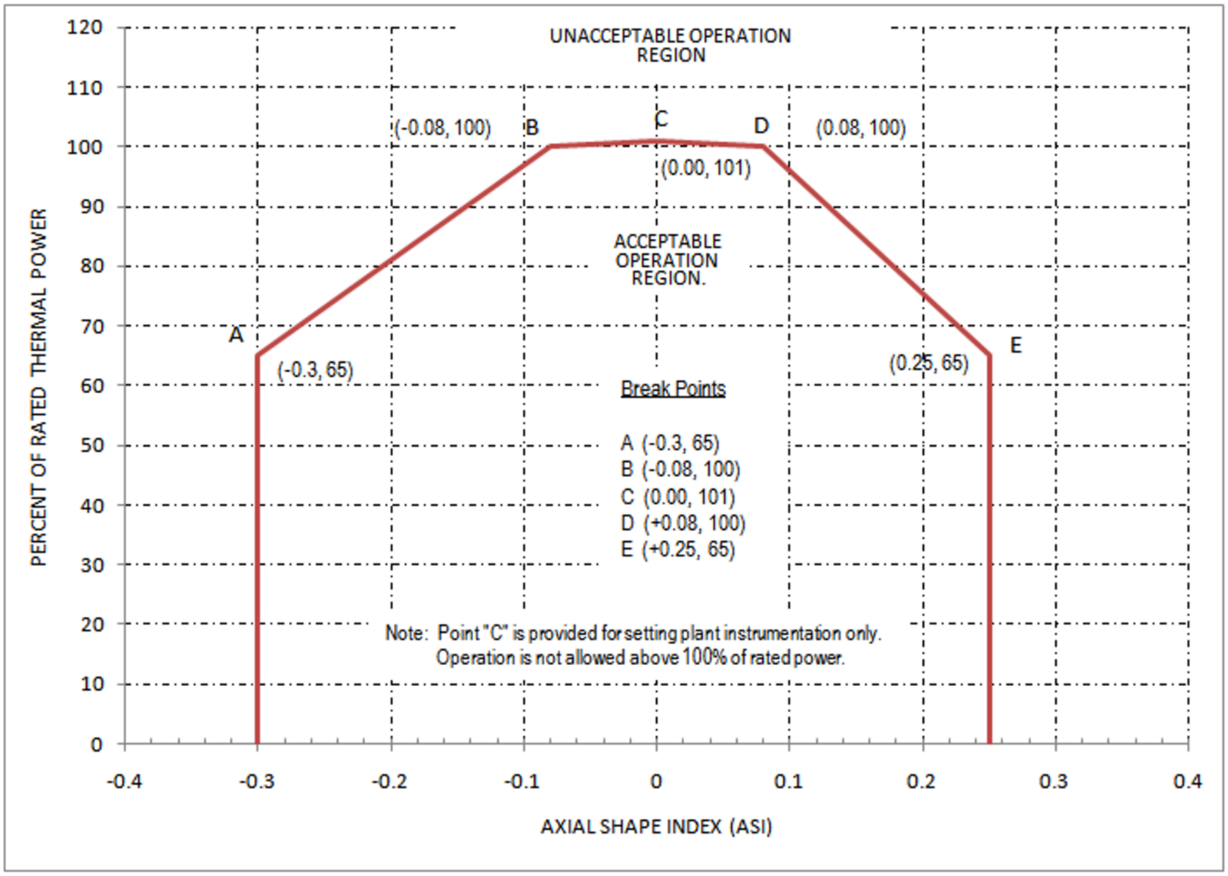
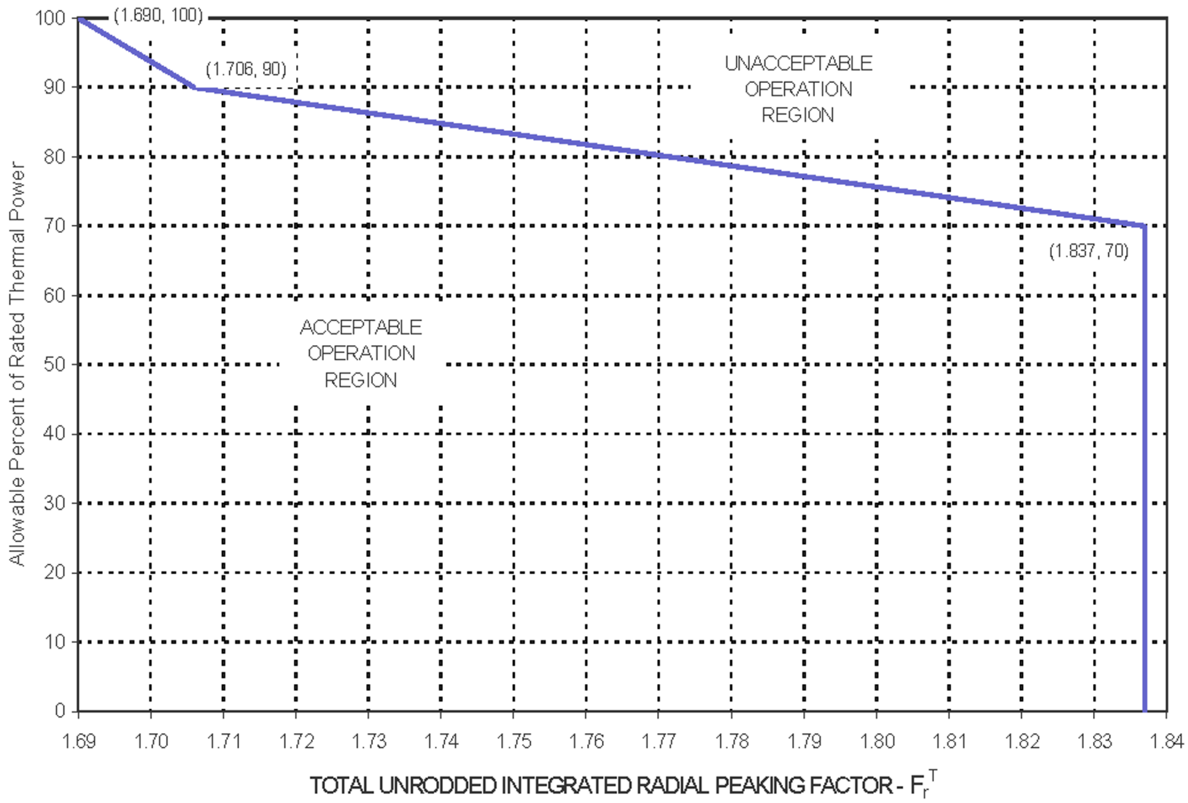


Figure 2.5-1
AXIAL SHAPE INDEX vs.
PERCENT OF ALLOWABLE POWER LEVEL

APPENDIX 8.1
CORE OPERATING LIMITS REPORT, CYCLE 25



Note: The F_r^T limit should be reduced for reactor coolant flow rates ≥ 349,200 gpm and < 360,000 gpm (see Section 2.6).

Figure 2.6-1
TOTAL UNRODDED INTEGRATED RADIAL PEAKING FACTOR
vs. Allowable RATED THERMAL POWER
For Reactor Coolant Flow Rates ≥ 360,000 gpm

APPENDIX 8.1
CORE OPERATING LIMITS REPORT, CYCLE 25

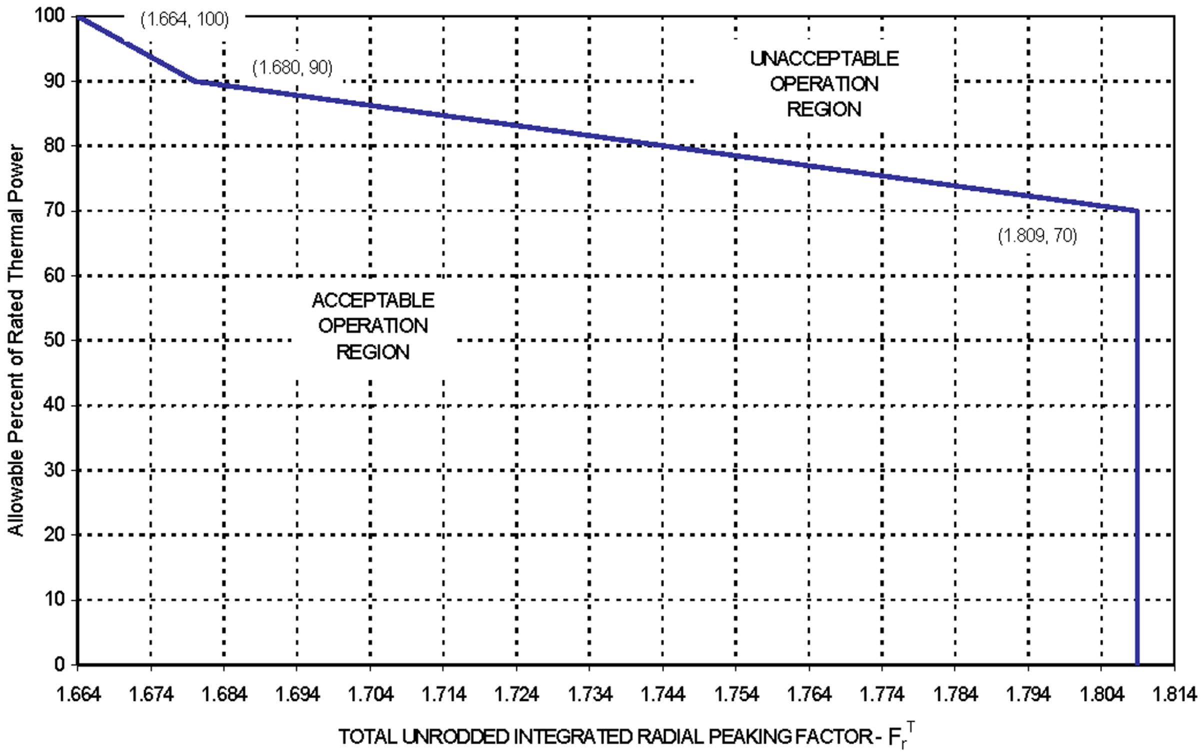


Figure 2.6-2
TOTAL UNRODDED INTEGRATED RADIAL PEAKING FACTOR
vs. Allowable RATED THERMAL POWER
For Reactor Coolant Flow Rates < 360,000 gpm and ≥ 354,600 gpm

APPENDIX 8.1
CORE OPERATING LIMITS REPORT, CYCLE 25

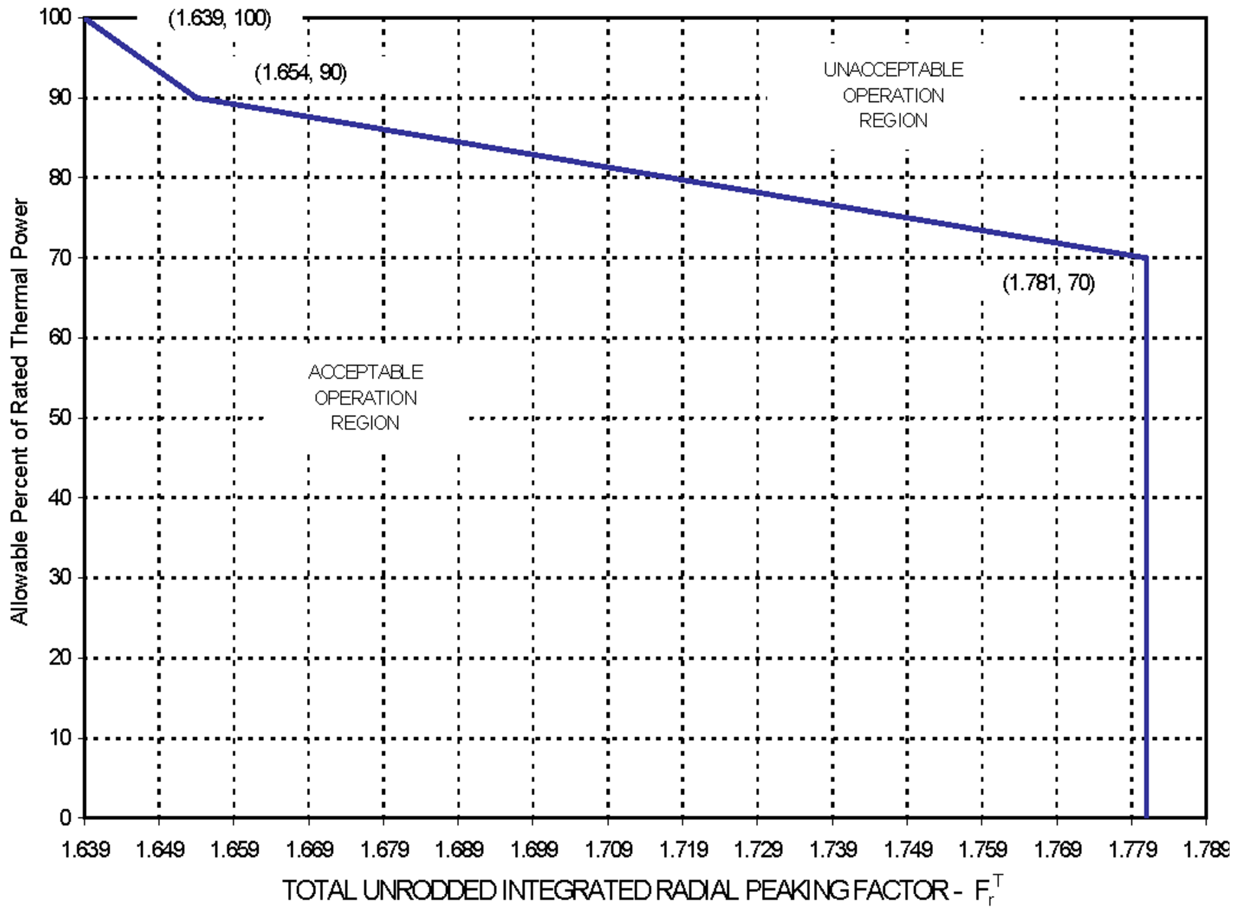


Figure 2.6-3
TOTAL UNRODDED INTEGRATED RADIAL PEAKING FACTOR
vs. Allowable RATED THERMAL POWER
For Reactor Coolant Flow Rates < 354,600 gpm and ≥ 349,200 gpm

APPENDIX 8.1
CORE OPERATING LIMITS REPORT, CYCLE 25

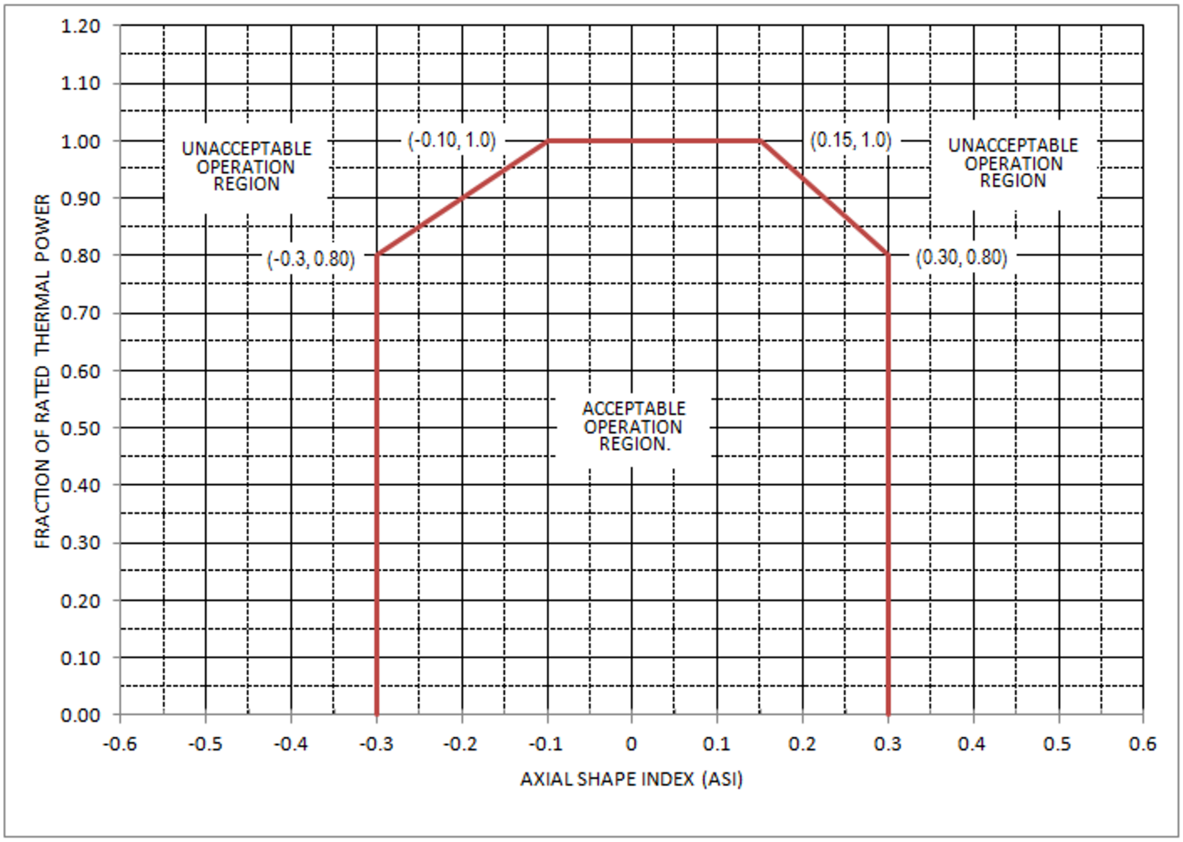


Figure 2.7-1
AXIAL SHAPE INDEX Operating Limits With Four Reactor Coolant Pumps Operating