William T. O'Connor, Jr.
Vice President, Nuclear Generation

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Detroit Edison
A DTE Energy Company

November 15, 2000
NRC-00-0068

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington D C 20555-0001

References: 1) Fermi 2
NRC Docket No. 50-341
NRC License No. NPF-43

2) Fermi 2 Letter to NRC (NRC-98-0156) dated October 16,1998, "Status of the Fermi 2 UFSAR Validation and other 50.54(f) Response Initiatives"

3) Fermi 2 Letter to NRC (NRC-98-0092) dated June 29, 1998, "Issuance of Technical Requirements Manual Volume 1 to the Holders of the Updated Final Safety Analysis Report"

Subject: Submittal of Revision 10 to the Fermi 2 Updated Final Safety Analysis Report

Pursuant to 10 CFR 50.71(e) and 10 CFR 50.4(b)(6), Detroit Edison hereby submits Revision 10 to the Fermi 2 Updated Final Safety Analysis Report (UFSAR).

One original and ten additional copies of the UFSAR, Revision 10, are being submitted to the Document Control Desk. In addition, one copy is being submitted to Region III and one copy to the NRC Resident Inspector. Changes associated with Revision 10 are annotated by revision bars in the appropriate margin. All revised pages are marked "REV 10 11/00" in the lower right-hand corner.

In accordance with 10 CFR 50.71(e) the information provided in this submittal describes the plant configuration through May 23, 2000 as a minimum and reflects changes made since Revision 9 that were made under the provisions of 10 CFR 50.59. This revision also includes the correction of a number of discrepancies that

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13 copies UFSAR

were identified during the UFSAR validation initiative. As discussed in Reference 2, the remaining discrepancies are being corrected within Fermi's Corrective Action Program.

This submittal also includes a summary description of the changes to the Quality Assurance Program. This summary (Enclosure 1) is being submitted in accordance with the requirements of 10 CFR 50.54(a)(3).

Enclosure 2 is the Safety Evaluation Summary Report containing a brief description of safety evaluations performed for changes to plant design, procedures, tests, experiments, temporary modifications, Technical Requirements Manual (TRM), and the UFSAR. This report is being submitted to meet the 10 CFR 50.59(b)(2) requirement.

Detroit Edison's Fermi 2 administrative programs and procedures are consistent with NEI's "Guideline for Managing NRC Commitment Changes" 99-04 Revision 0, dated July 1999. Consistent with these guidelines a Commitment Management Report update (Enclosure 3) is included which provides a brief summary of commitments that have been changed by Detroit Edison using these guidelines since the previous report submitted with UFSAR, Revision 9.

Enclosure 4 provides a summary of the changes that were made to Volume 1 of the Technical Requirements Manual (TRM) from October 29, 1999 through May 23, 2000. Also included is an information copy of the TRM pages that were revised and issued during this period. This meets the Edison commitment included in Reference 3.

Enclosure 5 provides a summary of the changes that were made to the Technical Specifications Bases from October 31, 1999 through May 23, 2000.

Enclosure 6 provides a summary of information determined to be excessive detail and removed from the UFSAR under Fermi 2 programs implementing NEI guidance 98-03 and Regulatory Guide 1.181.

Should you have any questions or require additional information, please contact Mr. Norman K. Peterson of my staff at (734) 586-4258.

Sincerely,

William J. O'Connor

Enclosures (6)

cc: D. Hood
M. Ring
NRC Resident Office
Regional Administrator, Region III

I, WILLIAM T. O'CONNOR, do hereby affirm that the foregoing statements are based on facts and circumstances which are true and accurate to the best of my knowledge and belief.

WILLIAM T. O'CONNOR
Vice President, Nuclear Generation

On this 15th day of November, 2000 before me personally appeared William T. O'Connor, being first duly sworn and says that he executed the foregoing as his free act and deed.

Karen M Reed-Ockerman
Notary Public

KAREN M. REED-OCKERMAN
Notary Public, Monroe County, MI
My Commission Expires Sep. 2, 2003

bcc:	G. D. Cerullo	(w/o Enclosure 2)
	P. Fessler	(w/o Enclosure 2)
	K. J. Hlavaty	(w/o Enclosure 2)
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Electronic Licensing Library (ELL) (200 TAC) (w/Enclosures)
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Chief, Nuclear Facilities Unit (MDEQ) (w/o Enclosure 2)
NSRG Secretary/ISEG Coordinator (220 TAC) (w/Enclosures)

NRR Chron File	(w/Enclosures)
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ENCLOSURE 1 TO
NRC-00-0068

DESCRIPTION OF CHANGES TO THE QUALITY ASSURANCE PROGRAM INCORPORATED IN REVISION 10 OF THE FERMI 2 UFSAR, SECTION 17.2

DESCRIPTION OF CHANGES TO THE QUALITY ASSURANCE PROGRAM INCORPORATED IN REVISION 10 OF THE FERMI 2 UFSAR, SECTION 17.2

Included in UFSAR Revision 10 are changes made to the Fermi 2 Quality Assurance Program described in Section 17.2 of the UFSAR. These changes are consistent with the requirements of 10CFR50.54(a)(3) in that they do not constitute a reduction in commitment. The Quality Assurance Program continues to satisfy the criteria of Appendix B and the commitments of the Safety Analysis Report previously accepted by the NRC. A description of these changes and the applicable Licensing Change Request (LCR) reference are provided below.

- **LCR 99-066-UFS:** Section 17.2.1.7 was revised to delete reference to UFSAR Section 13.4. Section 17.2.1.7.2.2 was revised to delete the requirement that the Senior Vice President appoint at least nine Nuclear Safety Review Group (NSRG) members. Section 17.2.1.7.2.6 was revised to add that the NSRG minimum quorum be a Chairman and four NSRG members (including up to two alternates).

- **LCR 99-115-UFS:** Section 17.2.5.1.2.2 was revised to change Current Technical Specification (CTS) 6.8.1.h through j reference to Improved Technical Specification (ITS) 5.4.1.c and 5.5.1 reference. Also changed CTS 6.8.1.j reference to ITS 5.4.1.c reference.

- **LCR 99-156-UFS:** Section 17.2.18.5 was revised to add a statement that allows Fermi 2 a 90-day grace period for completion of the 24-month audits. UFSAR A.1.58 was revised to add an exception to Regulatory Guide 1.58 in reference to ANSI N45.2.6-1978. This exception allows a 90 day grace period beyond one year for the purpose of maintaining inspector qualifications. UFSAR A.1.33 was revised to delete reference to "Technical Specification". UFSAR A.1.144 was revised to add the following two exceptions to the UFSAR for Regulatory Guide 1.144:

    1) A grace period of 90 days for completing annually required documented supplier evaluations and the completion of the triennial audits.

    2) Detroit Edison to perform vendor evaluations on an ongoing basis instead of performing them on an annual basis.

  Section 17.2.18.1 was revised to change reference to ANSI N45.2.23 to Regulatory Guide 1.146 (August 1980). UFSAR A.1.146 was revised to add an exception to ANSI N45.2.23, 1978 to allow a grace period of 90 days for completing the annual assessment of each lead auditor qualification. UFSAR A.1.146 was revised to add an exception to the requirements for prospective lead auditors to perform at least one Nuclear Quality Assurance Audit within a year proceeding the effective date of qualification. Upon successful demonstration of the

ability to implement the audit process and lead audits, and having met other requirements of ANSI N45.2.23-1978, the individual may be certified as a lead auditor.

- **LCR 00-007-UFS:** Section 17.2.1.1 was revised to change the title of Senior Vice President, Nuclear Generation to Vice President, Nuclear Generation, reporting to the Executive Vice President, Power Generation. A statement was added that the Vice President, Nuclear Generation has access to the Chairman and Chief Executive Officer, DTE Energy for the reporting of nuclear safety problems. Added an asterisk: the titles of Vice President, Nuclear Generation and Senior Vice President, Nuclear Generation have the same functional responsibility.

  Sections 17.2.1.5.2, 17.2.1.7.1.6f and j, 17.2.1.7.1.7, 17.2.1.7.1.8.c, 17.2.1.7.1.9, 17.2.1.7.2.1, 17.2.1.7.2.2, 17.2.1.7.2.9.a, b, and c, 17.2.2.1, 17.2.2.2, 17.2.2.3.i, 17.2.2.6, 17.2.18.3, and 17.2.18.5.g were revised to change the title of Senior Vice President - Nuclear Generation to Vice President - Nuclear Generation.

  Figure 17.2-1 was revised to add a box for President and Chief Operating Officer, DTE Energy Resources, to add a box for Executive Vice President, Power Generation, and to change the title Senior Vice President, Nuclear Generation to Vice President, Nuclear Generation. Figure 17.2-1 was also revised to add an access reporting line from the Vice President, Nuclear Generation to the Chairman and Chief Executive Officer, DTE Energy.

- **LCR 00-035-UFS:** Section 17.2.1.7.3.2 was revised to allow personnel without a bachelor's degree in engineering or related science to perform the Independent Safety Engineering Group (ISEG) function, as long as equivalent requirements are met, for example, those specified in ANS-3.1-1981 Section 4.1. An editorial change was made changing personal pronoun "his" to "his/her" in this section.

- **LCR 00-101-UFS:** Section 17.2.11 was revised to change the title Nuclear Shift Supervisor (NSS) to Shift Manager (SM). Section 17.2.14 was revised to change the title Nuclear Shift Supervisor to Shift Manager.

ENCLOSURE 2 TO
NRC-00-0068

SAFETY EVALUATION SUMMARY REPORT

(This is in a separate binder attached to NRC-00-0068 as Enclosure 2)

ENCLOSURE 3 TO
NRC-00-0068

COMMITMENT MANAGEMENT REPORT

Commitment Management Report

Fermi 2 administrative programs and procedures are consistent with NEI's "Guidelines for Managing NRC Commitment Changes" NEI 99-04 Revision 0, dated July 1999. These Guidelines discuss the need for a report to be submitted either annually or along with the FSAR updates required by 10 CFR 50.71(e). This Enclosure constitutes the update to Fermi 2 Commitment Management Report submitted with Revision 9 of the UFSAR.

The NEI process also provides for notifying the NRC of commitment changes when certain criteria are met. These criteria have been incorporated in Fermi 2 procedures for managing commitments. For example, a revised schedule for implementing commitments made in response to a Generic Letter would require specific and timely NRC notification. The purpose of this report is to provide a record of those commitment changes that did not require a notification at the time of the change.

The report consists of three tables as described below. Each table includes a brief statement of the commitment subject and origin. The changes being reported in these tables do not in any way affect or change commitments or descriptions included in the UFSAR. Furthermore, in many cases the only "change" being made is that the activity will no longer be tracked by Fermi 2 as a regulatory commitment. These two points are very important and are discussed further in the following paragraphs.

This report involves <u>only</u> changes that have been made in the Fermi 2 commitment management program (referred to as the Regulatory Action Commitment and Tracking System or RACTS). Some commitments identified in this report as being revised by this process may also be redundant to similar statements or licensing basis "commitments" included in the Fermi 2 UFSAR. Including a change in this report does <u>not</u>, however, infer that the commitment or statement in the UFSAR has been revised. Application of the NEI Guidelines ensure that changes to such commitments in the UFSAR, including the Quality Assurance Program, would continue to be made and reported using the appropriate regulatory process (i.e. 10 CFR 50.59 or 10 CFR 50.54).

Many of the "changes" being reported do not actually involve a change in the underlying activity or item that was the subject of the original commitment. The activity itself may be continued; however, Detroit Edison will no longer track the individual item as a regulatory commitment. This action, in effect, "withdraws" or eliminates the original commitment. This practice is consistent with the NEI Guidelines that recognize that licensees need the flexibility to change or eliminate commitments they determine are no longer necessary. One of the criteria suggested by the Guidelines as an acceptable basis for eliminating a commitment is when it has been "captured as part of an ongoing program or other administrative control that is subject to a revision review process." Commitment changes being reported are included in the following three tables:

- TABLE 1: Commitments that were deleted from the Fermi 2 commitment tracking program because they are included in an ongoing program or procedure that is subject to a revision review process. Table 1 may also include commitments that were deleted from the tracking program because they were redundant to commitments in the UFSAR.

- TABLE 2: Commitments that were deleted from the Fermi 2 commitment tracking program for reasons other than those listed for Table 1.

- TABLE 3: Commitments that were not deleted, but were revised in the commitment tracking program. A statement of the original commitment and reference is given along with a brief description of the revision.

Table 1

Regulatory Commitments Included in the UFSAR, Procedures or Programs and Deleted from RACTS Commitment Tracking Program

RACTS NO	ORIG. DATE	REFERENCE DOC	DESCRIPTION
1409	1974	MES28	OBSERVE HEAT EXCHANGER PERFORMANCE AFTER PLANT START UP
2227	1982	32.000.07	ALL ACTIONS IN SECTION 2.2.4.A OF EF2-57432 WILL BE IMPLEMENTED PRIOR TO FUEL LOAD
2230	1982	35.717.001	PROCEDURES FOR CRAINE INSPECTION, TESTING, AND MAINTENANCE PROGRAMS WILL BE IN ACCORDANCE WITH NUREG-0612
2240	1982	35.717.001	THE RX BLDG CRAINE, MAIN AUX HOISTS, CRAINE INSPECTION, TESTING, AND MAINTENANCE PROCEDURES WILL COMPLY WITH ANSI B30.2-1976
2241	1982	35.717.001	THE ANSI B30.2-1976 REQUIREMENTS WILL BE INCORPORATED INTO REACTOR BUILDING CRAINE GENERAL MAINTENANCE PROCEDURES
2964	1982	32.000.07	HEAVY LOADS ARE NOT TO BE HANDLED OVER THE EQUIPMENT HATCH EXCEPT WHEN EQIPMENT NEEDS TO BE MOVED TO DIFFERENT FLOOR
2977	1982	35.717.001	THE RX BLDG CRAINE, MAIN AUX HOISTS, CRAINE INSPECTION, TESTING, AND MAINTENANCE PROCEDURES WILL COMPLY WITH ANSI B30.2-1976
2978	1982	35.717.001	SHOULD ANY HEAVY LOAD DEVIATIONS FROM THE STANDARD BE REQUIRED, THEY WILL BE EQUIVALENT TO THE REQUIREMENTS OF ANSI B30.2-1976
2981	1984	32.000.07	THE LOAD LIMIT IS PLACED IN IT'S RESTRICTED MODE BY A SWITCH ON THE CRANE CAB OPERATING PANEL
2982	1984	32.000.07	TO ALERT PERSONNEL ON REFUEL FLOOR THAT THE 2000 LB LOAD LIMIT IS IN EFFECT, A RED LIGHT ON CONTROL PANEL AND SECOND LIGHT OUTSIDE CAB ARE ENERGIZED
2983	1984	32.000.07	WHEN CONTROL CAB SWITCH IS PLACED IN THE BYPASS POSITION, SIMILARLY LOCATED GREEN LIGHTS ARE ENERGIZED TO ALERT THAT THE 2000 LB LIMIT IS BYPASSED
2985	1984	32.000.07	PROVIDE SPECIFIC DIRECTION FOR CONTROLLING LOAD LIMIT SWITCH TO LIMIT LOADS BY AUX HOIST OVER FUEL POOL FROM EXCEEDING 2000 LBS
3001	1984	32.000.07	AN ENERGY ABSORPTION MAT WILL BE PLACED ON THE FIRST FLOOR UNDER THE SUSPENDED LOAD
3002	1984	32.000.07	HEAVY LOADS WILL BE HANDLED BY THE MAIN HOIST IN ACCORDANCE WITH SINGLE FAILURE PROOF GUIDELINES
3019	1984	32.000.07	MAINTENANCE PROCEDURE PROVIDES RIGID ADMINISTRATIVE CONTROLS FOR THE AUXILIARY HOIST TO ENSURE COMPLIANCE WITH THE LOAD RESTRICTIONS
4141	1984	20.000.18	MULTIPLE SHORTS POTENTIALLY RAPIDLY REDUCE THE REACTOR PRESSURE AND LEVEL IF NO OPERATOR ACTIONS ARE PERFORMED
4142	1984	20.000.18	IN THE EVENT OF SPURIOUS OPERATION, AN ABNORMAL OPERATING PROCEDURE WILL REQUIRE THE OPERATORS TO DE-ENERGIZE THE SRV SOLENOIDS AT A LOCAL PANEL
4611	1984	20.000.18	TO PREVENT INADVERTENT OPENING OF THE SRV'S THE FOLLOWING OPERATOR ACTIONS ARE REQUIRED
5848	1984	35.717.001	GREEN LIGHTS ON OUTSIDE OF CAB AND CONTROL PANEL INFORM PERSONELL ON REFUEL FLOOR THAT LOAD LIMIT IS BEING BYPASSED AND HOIST IS NOT TO BE OPERATED
5849	1984	35.717.001	RED LIGHT OUTSIDE CAB AND ON OPERATORS PANEL NOTIFIES PERSONNEL ON REFUELING FLOOR THAT THE 2000 LB LOAD LIMIT IS IN EFFECT
6020	1985	MMA03	REVISE PM PROCEDURE TO EMPHASIZE THAT THE RESPONSIBILITY FOR RESCHEDULING CANCELLED OR INCOMPLETED PM TASKS RESTS WITH THE RESPONSIBLE SECTION HEAD
6442	1986	20.000.18	PROCEDURES GOVERNING SHUTDOWN IN THE EVENT OF A FIRE IN ZONE AB-2 WILL BE MODIFIED TO REFLECT AFOREMENTED INDICATIONS AT ALTERNATE SHUTDOWN PANEL

Table 1

Regulatory Commitments Included in the UFSAR, Procedures or Programs and Deleted from RACTS Commitment Tracking Program

RACTS NO	ORIG. DATE	REFERENCE DOC	DESCRIPTION
6466	1986	20.000.18	REVISE PROCEDURE 20.000.18 TO ENSURE THAT POWER IS RESTORED TO A YARD LIGHTING MCC FROM A CTG DURING CONTROL ROOM FIRE SCENARIO
6718	1986	20.000.18	INCLUDE INSTRUCTIONS IN OPERATORS NIGHT ORDER BOOK OR PROCEDURE TO UTILIZE TWO OPERATORS FOR REMOTE SHUTDOWN PANEL
6875		35.318.007	FERMI 2 COMMITS TO VERIFY THE ACCURACY OF CONTACT MAKING INSTRUMENTS AT LEAST ONCE EVERY THREE YEARS AS OF 6/5/90
7056	1982	35.717.001	COMPLETE VISUAL INSPECTION OF RX BUILDING CRAINE, SLINGS, AND LIFTING DEVICES USED FOR RX REASSEBLY AFTER INITIAL FUEL LOAD
7057	1982	35.717.001	DETECTED FLAWS OR DEFECTS WILL BE CORRECTED TO REACTOR BUILDING CRAINE BEFORE ANY HEAVY LOAD HANDLING IS ATTEMPTED
7915	1986	23.707	REVISE FILTER DEMIN BACKWASH PROCEDURE TO PREVENT INADVERTENT INITIATION WHEN AFFECTED FILTER DEMIN VESSEL IS PRESSURIZED
8021	1987	MOP03	PROCEDURE 21.000.01 WAS UPDATED TO PROVIDE GUIDELINES TO CONTROL ON SHIFT TRAINING
8070	1987	24.425.01	PROCEDURES WERE REVISED TO INCLUDE THE TVD'S AND THE BONNET TAPS IN THEIR SCOPE
87409	1987	3D44	PLANT PROCEDURES THAT AFFECT POWER SUPPLY TO RAD MONITORING SYSTEM WILL BE REVIEWED
88154	1988	23.718.05	LER 88-012: REQUIRED READING DESCRIBING THIS EVENT WILL BE ISSUED TO MAINTENANCE AND OPERATIONS
88276	1988	24.000.01	RESPOND TO NOTICE OF VIOLATION 88-006-01: FAILURE TO ACCOMPLISH ACTIVITIES IN ACCORDANCE WITH PROCEDURES
88381	1988	23.601	SUBMIT RESPONSE FOR VIOLATION 88-102-09, FAILURE TO TRIP ROSEMOUNT UNIT CHANNEL UPON FAILURE
88396	1988	35.304.003	DEVELOP INFARED INSPECTION PROCEDURE
88415	1988	23.601	PREPLANNED INSTRUCTIONS FOR PLACING CERTAN INSTRUMENTS IN A TRIPPED CONDITION OR TAKING OTHER ACTIONS ARE BEING DEVELOPED
88416	1988	MOP12	AN ONGOING EFFORT TO PRODUCE A LIBRARY OF PREPLANNED TAGGING SCHEMES IS IN PLACE
88469	1988	23.601	SUBMIT RESPONSE FOR VIOLATION 88-012-09, DEVELOP TRIP SHEETS AND PROCEDURES FOR TECH SPEC INSTRUMENTS
88505	1988	35.304.003	REVISION OF MI-253 FOR INCORPORATION OF REFINED ACCEPTANCE CRITERIA
89028	1989	MMA03	DEVELOP CORCTIVE ACTIONS FOR RECIRC MG SET BREAKER FAILURE
89104	1989	27.206.02	LACK OF OVERSPEED TESTING OF RCIC TURBINE, REVISE PROCEDURE TO TEST OVERSPEED TRIP SETTING
89109	1989	MES28	RESOLVE NRC CONCERNS WITH PEP PROGRAM
89113	1989	MMA11	OPEN ITEM 88-037-19: NRC CONCERNS WITH THE ADEQUACY OF POST MAINTENANCE TESTING FOR OPERABILITY
89136	1989	MMA03	REVISE PREVENTIVE MAINTENANCE PROGRAM PROCEDURE NPP-MA1-02
89241	1989	MMA10	NRC LETTER APPROVING SYSTEM CLEANLINESS COMMITMENT CHANGES PRIOR TO OR CONCURRENT WITH MODIFYING CURRENT PROCESS
89450	1989	20.000.18	ADDITIONAL PROCEDURAL CONTROL TO ASSURE VALVE E11-F027A IS CLOSED AND ANALYZED
89454	1989	20.000.18	REVISE PROCEDURE WITH CAUTION STATEMENT SO OPERATORS ARE AWARE OF CST STAND PIPE AND POTENTIAL TO LOSE SUCTION
89515	1989	35.000.217	IDENTIFY WHO WILL BE RESPONSIBLE FOR DETERMINING TYPE, QUANTITY AND PERIOD OF LUBRICATION
89516	1989	MMA04	PROCEDURE REVISED TO ADDRESS METHODS FOR CHECKING OUT M&TE AFTER NORMAL WORKING HOURS
89526	1989	35.306.006	NRC CONCERNS WITH HANDLING OF THRUST VALUE DATA

Table 1

Regulatory Commitments Included in the UFSAR, Procedures or Programs and Deleted from RACTS Commitment Tracking Program

RACTS NO	ORIG. DATE	REFERENCE DOC	DESCRIPTION
89632	1989	35.306.006	REVISE THE MOTOR OPERATED VALVE MAINTENANCE PROCEDURES TO DIRECT THE USERS TO CECO FOR THRUST VALUES ONCE THE INFORMATION IS AVAILABLE ON CECO
90011	1990	MMA11	COMMITMENTS MADE ON MOV'S IN RESPONSE TO GENERIC LETTER 89-10
90047	1990	44.020.151	LER 89-036: PROCEDURE 44.020.151 WILL BE REVISED TO IDENTIFY THE METHOD FOR RESETTING DIV I AND II MSIV LOGIC
90142	1990	23.601	SUBMIT RESPONSE FOR VIOLATION 89-036-02: IMPROPER INSTALLATION OF A WIDE RANGE REACTOR WATER LEVEL TRANSMITTER
90162	1990	MMA04	PROCEDURE REVISED TO REQUIRE ISSUER OF M&TE ENTER CALIBRATION DATE EACH TIME IT IS ISSUED
90172	1990	MQA11	RESPONSE TO VIOLATION 89-024-03 FOR IMPROVING TIMELINESS AND EFFECTIVENESS OF CORRECTIVE ACTIONS
90293	1990	44.030.299	TEST POINTS FOR SURVEILLANCE 44.030.299 NEED TO BE BROUGHT OUT OF PANELS HEE-P626 AND P627 TO MAKE THEM MORE ACCESSIBLE TO REPAIRMEN
90305	1990	MMA03	COMMITMENT CHANGES FROM NRC VIOLATION 87-009-03 ON IN SERVICE TEST PROGRAM NOTIFICATIONS
91052	1991	63.000.200	REVIEW INFO NOTICE 82-31 FOR APPLICABILITY AND TAKE ACTIONS AS APPROPRIATE
91315	1991	9D117	FERMI 2 HAS WRITTEN PROCEDURES FOR RESPONSE T0 ALARMS FOR DC BUS UNDER VOLTAGE AND OVER VOLTAGE
92149	1992	23.127	EECW AUTO INITIATION DUE TO LOW DIFFERENTIAL PRESSURE
92190	1992	43.000.002	NOZZLE RING SETTINGS ON LOW PRESSURE WATER RELIEF VALVES
92222	1992	23.308	LER 92-010, REVISE OPERATING PROCEDURE 23.308 TO ACCURATELY REFLECT THE IMPACT OF SHUTTING DOWN MPU-3
92264	1992	46.000.044	REVISE PROCEDURE 46.000.044 TO SPECIFY WHICH LEADS ARE TO BE LIFTED
93264	1993	23.131	VALVE P41F601 IS NOW DEENERGIZED TO PREVENT UNINTENTIONAL OPERATION
94197	1994	35.306.003	FAILURE OF RX RECIRC PUMP "B" DISCHARGE VALVE B3105-F031B TO CLOSE
96067	1996	INSPRT 96-002	FERMI 2 WILL SUPPORT FERMI 1 STAFF WITH APPROPRIATE AUDIT PERSONNEL AND THE RELATED DOCUMENTATION OF FERMI 1 REGULATORY AND ADMINISTRATIVE REQUIREMENTS

Table 2
Commitments Deleted from RACTS Commitment Tracking Program For Other Reasons

RACTS NO	ORIG. DATE	REFERENCE DOC	DESCRIPTION	REASON FOR DELETING COMMITMENT
3827	1985	MES02	"AS BUILT" INFORMATION IS COMMUNICATED BACK TO ENGINEERING AFTER THE MODIFICATION IMPLEMENTATION	FERMI 2'S PAST AND CURRENT DESIGN AND WORK CONTROL PROCESSES FOR SAFETY RELATED DESIGN MODIFICATIONS DO NOT ALLOW DEVIATIONS FROM APPROVED DESIGN CHANGE DOCUMENTS, THEREFORE, THERE IS NO PROCESS TO CONTROL OR CREATE AS-BUILT DOCUMENTATION AND TRANSMIT IT TO ENGINEERING
97179	1997	MLS08	ORIGINATOR OF TECH SPEC CLARIFICATION MUST ENSURE CLARIFICATION DOES NOT CONTRADICT OR CHANGE TECH SPEC REQUIREMENT	TECH SPEC CLARIFICATION PROCESS IS NO LONGER USED

Table 3
Revised Commitments

RACTS NO	REFERENCE DOC	ORIG. DATE	DESCRIPTION	REVISED COMMITMENT
89440	MES08	1989	CONTACT SELECTED VENDORS ON A 2 YEAR CYLE TO ASSURE TECH ISSUES ARE EVALUATED AND INCORPORATED	CONTACT SELECTED VENDORS ON A 3 YEAR CYLCE TO ASSURE TECH ISSUES ARE EVALUATED AND INCORPORATED
91153	35.304.006	1991	EVALUATE DEFICIENCIES IDENTIFIED DURING ELECTRICAL DISTRIBUTION SYSTEM FUNCTIONAL INSPECTIONS AT OTHER PLANTS	DESCRIPTION CHANGED TO BE MORE CONCISE
92237	MMA08	1992	REQUIRE SRO, SENIOR CERTIFIED OPERATOR, OR PREVIOUSLY LICENSED SRO INSPECT SCAFFOLD FOR IMPACT TO SAFETY RELATED EQUIPMENT	TO ALLOW REACTOR OPERATORS TO INSPECT SCAFFOLD

ENCLOSURE 4 TO
NRC-00-0068

SUMMARY OF THE CHANGES MADE TO VOLUME 1
OF THE TECHNICAL REQUIREMENTS MANUAL AFTER OCTOBER 29, 1998
THROUGH JUNE 22, 2000

SUMMARY OF TECHNICAL REQUIREMENTS MANUAL (TRM) VOLUME I CHANGES

The following is a summary of changes made to the TRM from October 29, 1998 through June 22, 2000.

Revision 27 12/10/1998	1. Revised TRM Bases 3/4 3.7.8 to incorporate information from Technical Specification Clarification 89-020. 2. Revised Table 4.3.7.2-1 to show one installed location (switchgear room) of the passive triaxial peak shock recorder in the Residual Heat Removal (RHR) Building.
Revision 28 12/11/00	Issued page 3/4 3-22 to reflect correct page number.
Revision 29 2/12/99	Revised TRM Table 3.6.3-1 to change the maximum allowed stroke time of valves E1150F008 and E1150F009.
Revision 30 5/6/99	Relocated TS 4.4.1.1.2 for setting the reactor recirculation system motor generator set scoop tube stops to TRM 3/4.4
Revision 31 10/31/99	Incorporation of relocated Technical Specifications per Amendment 134 and reformatting of existing TRM.
Revision 32 12/14/99	Revised TRM Table TR 3.8.6-1 and TR B3.8.6 regarding the abandoned-in -place Standby Liquid Control (SLC) Tank Heater A.
Revision 33 2/24/00	Revised Table TR3.6.3-1 to change the closure stroke time of G3352F001 and G3352F004. Revised TRM Table TR 3.8.6-1 to remove reference to the abandoned-in -place SLC Tank Heater A.
Revision 34 4/24/00	Revised Table 3.3.1.1-1 and Section 3.4.1 to reflect the changes made by EDP-28916 which activates the Oscillation Power Range Monitor (OPRM) function of Average Power Range Monitor (APRM).
Revision 35 4/28/00	Added Core Operating Limits Report for Cycle 8, Revision 0
Revision 36 5/30/00	Revised TRLCO 3.4.1 to reflect changes made by EDP 27412 which deleted the Master Controller function for Reactor Recirculation Control System (RRCS) as a result of digital Upgrade of RRCS.
Revision 37 5/10/00	Revised TRM Table TR3.12.1-1 to reflect two new fire/smoke detectors added to control by EDP 29977.
Revision 38 6/8/00	Revised Table TR3.12.1-1 to reflect changes made by EDP-30314, which replaced main control room, computer room under-floor ionization detectors with photoelectric detectors.
Revision 39 6/22/00	Revised typographical errors in TRM Tables 3.8.4-1, 3.3.1.1-1 and 3.3.6.1-1

The following pages are information only copies of the revised TRM pages for the above revisions, with the exception of Revision 35.

TR 3.3 INSTRUMENTATION

TR 3.3.6.5 Narrow Range Suppression Pool Water Level Instrumentation

TRLCO 3.3.6.5 Two narrow range suppression pool water level instrumentation channels shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One channel inoperable.	A.1	Restore channel to OPERABLE status.	7 days
	OR		
	A.2	Verify suppression pool water level is within limits.	Once per 12 hours
B. Two channels inoperable.	B.1	Restore one channel to OPERABLE status.	8 hours
C. Required Action and associated Completion Time of Condition B not met.	C.1	Perform OPERABILITY assessment on Technical Specification LCO 3.6.2.2, Suppression Pool Water Level.	Immediately

ACTIONS (Continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Two or more suppression pool water temperature instrumentation channels inoperable.	B.1 Restore at least seven temperature instrumentation channels to OPERABLE status.	8 hours
C. Required Action and associated Completion Time of Condition B not met.	C.1 Perform OPERABILITY assessment on Technical Specification LCO 3.6.2.1, Suppression Pool Average Temperature.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
TRSR 3.3.6.4.1 Perform CHANNEL CHECK.	24 hours
TRSR 3.3.6.4.2 Perform CHANNEL FUNCTIONAL TEST.	31 days
TRSR 3.3.6.4.3 Perform CHANNEL CALIBRATION. The water high temperature alarm setpoint is ≤ 105°F.	18 months

TR 3.3 INSTRUMENTATION

TR 3.3.6.4 Suppression Pool Water Temperature Instrumentation

TRLCO 3.3.6.4 Eight suppression pool water temperature instrumentation channels shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One suppression pool water temperature instrument channel inoperable.	------------NOTES------------ 1. If an SRV actuation has occurred since the channel was declared inoperable, for a period of 48 hours following the SRV actuation, the average suppression pool water temperature shall be computed as follows: The maximum temperature indication of the seven OPERABLE channels shall be increased by 45°F and shall be used as the temperature indication of the inoperable channel in computing the average water temperature in the suppression pool. 2. After 48 hours or if no SRV actuation has occurred since the channel was declared inoperable, the average suppression pool water temperature shall be computed as follows: The maximum temperature indication of the seven OPERABLE channels shall be used as the temperature indication of the inoperable channel in computing the average water temperature in the suppression pool. -----------------------------	
	A.1 Verify suppression pool water temperature to be within limits.	Once per 12 hours

(continued)

TR 3.3 INSTRUMENTATION

TR 3.3.6.3 Low-Low Set (LLS) Instrumentation

The LLS instrumentation trip setpoints are listed in Table TR3.3.6.3-1.

TABLE TR3.3.6.3-1 (Page 1 of 1)
Low-Low Set Instrumentation

FUNCTION	TRIP SETPOINT
1. Reactor Steam Dome Pressure - High	Not controlled by TRM
2. Low-Low Set Pressure Setpoints	Low: Open 1017 psig Close 905 psig High: Open 1047 psig Close 935 psig
3. Tailpipe Pressure Switch	Not controlled by TRM

TR 3.3 INSTRUMENTATION

TR 3.3.6.2 Secondary Containment Isolation Instrumentation

The secondary containment isolation instrumentation trip setpoints are listed in Table TR3.3.6.2-1.

TABLE TR3.3.6.2-1 (Page 1 of 1)
Secondary Containment Isolation Instrumentation

FUNCTION	TRIP SETPOINT
1. Reactor Vessel Water Level - Low Low, Level 2	≥ 110.8 inches[a]
2. Drywell Pressure - High	≤ 1.68 psig
3. Fuel Pool Ventilation Exhaust Radiation-High	≤ 5 mR/hr
4. Manual Initiation	NA

(a) As referenced to instrument zero Top of Active Fuel (TAF).

TABLE TR3.3.6.1-1 (Page 3 of 3)
Primary Containment Isolation Instrumentation

FUNCTION	TRIP SETPOINT	RESPONSE TIME (seconds)
6. Shutdown Cooling System Isolation		
a. Reactor Steam Dome Pressure - High	≤ 89.5 psig[a]	NA
b. Reactor Vessel Water Level - Low, Level 3	≥ 173.4 inches[f]	NA
c. Manual Initiation	NA	NA

(a) Represents steam dome pressure; actual trip setpoint is corrected for cold water head with reactor vessel flooded.

(f) As referenced to instrument zero Top of Active Fuel (TAF).

TABLE TR3.3.6.1-1 (Page 2 of 3)
Primary Containment Isolation Instrumentation

FUNCTION	TRIP SETPOINT	RESPONSE TIME (seconds)
3. High Pressure Coolant Injection (HPCI) System Isolation		
a. HPCI Steam Line Flow - High	≤ 395 inches of water with time delay of 3 seconds	NA
b. HPCI Steam Supply Line Pressure - Low	≥ 100 psig	NA
c. HPCI Turbine Exhaust Diaphragm Pressure - High	≤ 10 psig	NA
d. HPCI Equipment Room Temperature - High	≤ 154°F	NA
e. Drywell Pressure - High	≤ 1.68 psig	NA
f. Manual Initiation	NA	NA
4. Reactor Core Isolation Cooling (RCIC) System Isolation		
a. RCIC Steam Line Flow-High	≤ 87.0 inches of water with a time delay of 3 seconds	NA
b. RCIC Steam Supply Line Pressure - Low	≥ 62 psig	NA
c. RCIC Turbine Exhaust Diaphragm Pressure - High	≤ 10 psig	NA
d. RCIC Equipment Room Temperature - High	≤ 154°F	NA
e. Drywell Pressure - High	≤ 1.68 psig	NA
f. Manual Initiation	NA	NA
5. Reactor Water Cleanup (RWCU) System Isolation		
a. Differential Flow - High[d]	≤ 55.1 gpm	NA
b. Area Temperature - High	≤ 175°F	NA
c. Area Ventilation Differential Temperature - High	≤ 50°F	NA
d. SLC System Initiation	NA	NA
e. Reactor Vessel Water Level - Low Low, Level 2	≥ 110.8 inches[f]	NA
f. Manual Initiation	NA	NA

(continued)

(d) With time delay of 45 seconds.

(f) As referenced to instrument zero Top of Active Fuel (TAF).

TR 3.3 INSTRUMENTATION

TR 3.3.6.1 Primary Containment Isolation Instrumentation

The primary containment isolation instrumentation trip setpoints are listed in Table TR3.3.6.1-1.

TABLE TR3.3.6.1-1 (Page 1 of 3)
Primary Containment Isolation Instrumentation

FUNCTION	TRIP SETPOINT	RESPONSE TIME (seconds)
1. Main Steam Line Isolation		
a. Reactor Vessel Water Level - Low Low Low, Level 1	≥ 31.8 inches(f)	≤ 1.0(b)(c)
b. Main Steam Line Pressure - Low	≥ 756 psig	NA
c. Main Steam Line Flow - High	≤ 115.4 psid	≤ 0.5(b)(c)
d. Condenser Pressure - High	≤ 6.85 psia	NA
e. Main Steam Tunnel Temperature - High	≤ 200°F	NA
f. Main Steam Line Radiation - High	≤ 3.0 x full power background(e)	NA
g. Turbine Building Area Temperature - High	≤ 200°F	NA
h. Manual Initiation	NA	NA
2. Primary Containment Isolation		
a. Reactor Vessel Water Level - Low, Level 3	≥ 173.4 inches(f)	NA
b. Reactor Vessel Water Level - Low Low, Level 2	≥ 110.8 inches(f)	NA
c. Drywell Pressure - High	≤ 1.68 psig	NA
d. Manual Initiation	NA	NA

(continued)

(b) Isolation system instrumentation response time for MSIVs Only. No diesel generator delays assumed for MSIVs.

(c) The sensor response time need not be measured and may be assumed to be the design sensor response time. Prior to return to service of a new transmitter or following refurbishment of a transmitter (e.g., sensor cell or variable damper components), a hydraulic response time test will be performed to determine an initial sensor-specific response time value.

(e) A new "full power background" level is established for hydrogen water chemistry based on 100% power operation with the established hydrogen injection rate. Actual background radiation levels may be less depending on actual power level or hydrogen injection rate setpoint adjustment is not necessary for variations in power or hydrogen injection rate, including interruptions in hydrogen flow.

(f) As referenced to instrument zero Top of Active Fuel (TAF).

TR 3.3 INSTRUMENTATION

TR 3.3.5.2 Reactor Core Isolation Cooling (RCIC) System Instrumentation

The RCIC instrumentation trip setpoints are listed in Table TR3.3.5.2-1.

TABLE TR3.3.5.2-1 (Page 1 of 1)
Reactor Core Isolation Cooling System Instrumentation

	FUNCTION	TRIP SETPOINT
1.	Reactor Vessel Water Level - Low Low, Level 2	≥ 110.8 inches[a]
2.	Reactor Vessel Water Level- High, Level 8	≤ 214 inches[a]
3.	Condensate Storage Tank Level - Low	≥ 3 inches (27 inches above tank bottom)
4.	Manual Initiation	NA

(a) As referenced to instrument zero Top of Active Fuel (TAF).

TABLE TR3.3.5.1-1 (Page 3 of 3)
Emergency Core Cooling System Instrumentation

FUNCTION	TRIP SETPOINT	RESPONSE TIME (seconds)
5. Automatic Depressurization System Initiation System (ADS) Trip System B		
a. Reactor Vessel Water Level - Low Low Low, Level 1	≥ 31.8 inches[c]	NA
b. Drywell Pressure - High	≤ 1.68 psig	NA
c. Automatic Depressurization System Initiation Timer	≤ 105 seconds	NA
d. Reactor Vessel Water Level - Low Level 3 (Confirmatory)	≥ 173.4 inches[c]	NA
e. Core Spray Pump Discharge Pressure - High	≥ 145 psig, Increasing	NA
f. Low Pressure Coolant Injection Pump Discharge Pressure - High	≥ 125 psig, Increasing	NA
g. Drywell Pressure - High Bypass	≤ 420 seconds	NA
h. Manual Inhibit	NA	NA
i. Manual Initiation	NA	NA

(c) As referenced to instrument zero Top of Active Fuel (TAF).

TABLE TR3.3.5.1-1 (Page 2 of 3)
Emergency Core Cooling System Instrumentation

	FUNCTION	TRIP SETPOINT	RESPONSE TIME (seconds)
3.	High Pressure Coolant Injection (HPCI) System		
	a. Reactor Vessel Water Level - Low Low, Level 2	$\geq$ 110.8 inches[c]	$\leq$ 30[a]
	b. Drywell Pressure - High	$\leq$ 1.68 psig	NA
	c. Reactor Vessel Water Level - High, Level 8	$\leq$ 214 inches[c]	NA
	d. Condensate Storage Tank Level - Low	$\geq$ 3 inches (27 inches above tank bottom)	NA
	e. Suppression Pool Water Level - High	$\leq$ 2 inches[d]	NA
	f. Manual Initiation	NA	NA
4.	Automatic Depressurization System Initiation System (ADS) Trip System A		
	a. Reactor Vessel Water Level - Low Low Low, Level 1	$\geq$ 31.8 inches[c]	NA
	b. Drywell Pressure - High	$\leq$ 1.68 psig	NA
	c. Automatic Depressurization System Initiation Timer	$\leq$ 105 seconds	NA
	d. Reactor Vessel Water Level - Low, Level 3 (Confirmatory)	$\geq$ 173.4 inches[c]	NA
	e. Core Spray Pump Discharge Pressure - High	$\geq$ 145 psig, increasing	NA
	f. Low Pressure Coolant Injection Pump Discharge Pressure - High	$\geq$ 125 psig, increasing	NA
	g. Drywell Pressure - High Bypass	$\leq$ 420 seconds	NA
	h. Manual Inhibit	NA	NA
	i. Manual Initiation	NA	NA

(continued)

(a) Response time need not be measured and may be assumed to be the design instrumentation response time. Prior to return to service of a new transmitter or following refurbishment of a transmitter (e.g., sensor cell or variable damping components), a hydraulic response time test will be performed to determine an initial sensor-specific response time value.

(c) As referenced to instrument zero Top of Active Fuel (TAF).

(d) Suppression Pool Water Level instrument zero is 14 ft 6 inches above bottom of Torus at elevation 557 ft 0 inches.

TR 3.3 INSTRUMENTATION

TR 3.3.5.1 Emergency Core Cooling System (ECCS) Instrumentation

The ECCS instrumentation trip setpoints are listed in Table TR3.3.5.1-1.

TABLE TR3.3.5.1-1 (Page 1 of 3)
Emergency Core Cooling System Instrumentation

FUNCTION	TRIP SETPOINT	RESPONSE TIME (seconds)
1. Core Spray System		
a. Reactor Vessel Water Level - Low Low Low, Level 1	≥ 31.8 inches[c]	≤ 30[a]
b. Drywell Pressure - High	≤ 1.68 psig	≤ 30[a]
c. Reactor Steam Dome Pressure - Low (Injection Permissive)	≥ 461 psig, decreasing	NA[b]
d. Manual Initiation	NA	NA
2. Low Pressure Coolant Injection (LPCI) System		
a. Reactor Vessel Water Level - Low Low Low, Level 1	≥ 31.8 inches[c]	≤ 72[a]
b. Drywell Pressure - High	≤ 1.68 psig	≤ 72[a]
c. Reactor Steam Dome Pressure - Low (Injection Permissive)	≥ 461 psig, decreasing	NA[b]
d. Reactor Vessel Water Level - Low Low, Level 2 (Loop Select Logic)	≥ 110.8 inches[c]	NA
e. Reactor Steam Dome Pressure - Low (Break Detection Logic)	≥ 906 psig, decreasing	NA
f. Riser Differential Pressure - High (Break Detection)	≤ 0.627 psid	NA
g. Recirculation Pump Differential Pressure - High (Break Detection)	≤ 1.627 psid	NA
h. Manual Initiation	NA	NA

(continued)

(a) Response time need not be measured and may be assumed to be the design instrumentation response time. Prior to return to service of a new transmitter or following refurbishment of a transmitter (e.g., sensor cell or variable damping components), a hydraulic response time test will be performed to determine an initial sensor-specific response time value.

(b) These are permissive signals only. They do not activate ECCS initiation.

(c) As referenced to instrument zero Top of Active Fuel (TAF).

TR 3.3 INSTRUMENTATION

TR 3.3.4.2 Traversing In-Core Probe (TIP) System

TRLCO 3.3.4.2 The TIP system shall be OPERABLE.

APPLICABILITY: When the TIP system is used for recalibration of the LPRM detectors,
When the TIP system is used for monitoring the APLHGR, LHGR, or MCPR.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. TIP System inoperable.	A.1	Suspend use of the TIP System for monitoring or calibration functions.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
TRSR 3.3.4.2.1	Normalize each of the required TIP detector outputs.	72 hours prior to use for recalibration of the LPRM detectors

TR 3.3 INSTRUMENTATION

TR 3.3.4.1 Anticipated Transient Without Scram Recirculation Pump Trip (ATWS-RPT) Instrumentation

The ATWS-RPT instrumentation trip setpoints are listed in Table TR3.3.4.1-1.

TABLE TR3.3.4.1-1 (Page 1 of 1)
Anticipated Transient Without Scram Recirculation Pump Trip (ATWS-RPT) Instrumentation

FUNCTION	TRIP SETPOINT
1. Reactor Vessel Water Level - Low Low, Level 2	≥ 110.8 inches[a]
2. Reactor Vessel Pressure - High	≤ 1133 psig

(a) As referenced to instrument zero Top of Active Fuel (TAF).

TABLE TR3.3.3-1 (Page 1 of 1)
Non-Type A, Non-Category 1 Post Accident Monitoring Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS
1. Suppression Chamber Air Temperature	1,2	2
2. Suppression Chamber Pressure	1,2	2
3. Drywell Air Temperature	1,2	2
4. Safety/Relief Valve Position Indicators	1,2	1 pressure switch per valve
5. Standby Gas Treatment (SGT) System Radiation Monitors		
a. Noble Gas (Low-range)[a]	1,2,3	1 per subsystem
b. Noble Gas (Mid-range)	1,2,3	1 per subsystem
c. AXM-Noble Gas (Mid-range)	1,2,3	1 per subsystem
d. AXM-Noble Gas (High-range)	1,2,3	1 per subsystem

(a) Also included in the ODCM.

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. For Functions 5.a, 5.b, 5.c, and 5.d, one or more Functions with one or more required channels inoperable.	E.1 Initiate the preplanned alternate method of monitoring the appropriate parameter(s). AND E.2 Restore channel(s) to OPERABLE status.	72 hours 7 days
F. Required Action and associated Completion Time of Condition E not met.	F.1 Submit a Corrective Action Document outlining the action taken, the cause of the inoperability, and the plans and schedule for restoring the system to OPERABLE status.	14 days

SURVEILLANCE REQUIREMENTS

---------------------------------NOTE---------------------------------
These SRs apply to each Function in Table TR3.3.3-1.

SURVEILLANCE		FREQUENCY
TRSR 3.3.3.1	Perform CHANNEL CHECK.	31 days
TRSR 3.3.3.2	Perform CHANNEL CALIBRATION.	18 months

TR 3.3 INSTRUMENTATION

TR 3.3.3 Accident Monitoring Instrumentation

TRLCO 3.3.3 The Non-Type A, Non-Category 1 Post Accident Monitoring Instrumentation for each Function in Table TR3.3.3-1 shall be OPERABLE.

APPLICABILITY: According to Table TR3.3.3-1.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. For Functions 1, 2, and 3, one or more Functions with one required channel inoperable.	A.1 Restore required channel to OPERABLE status.	7 days
B. For Functions 1, 2, and 3, one or more Functions with more than one required channel inoperable.	B.1 Restore one required channel to OPERABLE status.	48 hours
C. For Function 4, one or more required channels inoperable.	C.1 Restore the required channel(s) to OPERABLE status.	48 hours
D. Required Action and associated Completion Time of Condition A, B, or C not met.	D.1 Submit a Corrective Action Document for evaluation of the degraded condition.	Immediately

(continued)

TR 3.3 INSTRUMENTATION

TR 3.3.2.2 Feedwater and Main Turbine High Water Level Trip Instrumentation

The feedwater and main turbine high water level trip instrumentation trip setpoints are listed in Table TR3.3.2.2-1.

TABLE TR3.3.2.2-1 (Page 1 of 1)
Feedwater and Main Turbine High Water Level Trip Instrumentation

FUNCTION	TRIP SETPOINT
1. Reactor Vessel Water Level - High, Level 8	$\leq$ 214 inches[a]

(a) As referenced to instrument zero Top of Active Fuel (TAF).

TABLE TR3.3.2.1-2 (Page 1 of 1)
Control Rod Block Instrumentation

FUNCTION	TRIP SETPOINT
1. Source Range Monitors	
a. Detector not full in	NA
b. Upscale	$\leq$ 1.0 X 10^5 cps
c. Inop	NA
d. Downscale	$\geq$ 3 cps[b]
2. Intermediate Range Monitors	
a. Detector not full in	NA
b. Upscale	$\leq$ 108/125 divisions of full scale
c. Inop	NA
d. Downscale	$\geq$ 5/125 divisions of full scale
3. Average Power Range Monitor	
a. Simulated Thermal Power - Upscale	
1) Flow Biased	$\leq 0.63(W - \Delta W)^{(a)} + 55.6\%$,
2) High Flow Clamped	with a maximum of 108% RTP
b. Inop	NA
c. Neutron Flux - Downscale	$\geq$ 5% RTP
d. Simulated Thermal Power - Upscale (Setdown)	$\leq$ 12% RTP
e. Flow - Upscale	$\leq$ 110% rated flow
4. Scram Discharge Volume	
a. Water Level - High	$\leq$ 589 ft. 11 ½ inches
b. Scram Trip Bypass	NA

(a) The APRM Simulated Thermal Power - Upscale Flow Biased Rod Block setpoint varies as a function of recirculation loop drive flow (W). ΔW is defined as the difference in indicated drive flow (in percent of drive flow which produces rated core flow) between two loop and single loop operation at the same core flow. ΔW = 0% for two loop operation. ΔW = 8% for single loop operation.

(b) May be reduced to $\geq$ 0.7 cps provided the signal to noise ratio $\geq$ 20.

TABLE TR3.3.2.1-1 (Page 3 of 3)
Control Rod Block Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
4. Scram Discharge Volume				
a. Water Level - High	1, 2, 5[h]	2	TRSR 3.3.2.1.3 TRSR 3.3.2.1.7	≤ 591 ft. 0 inches
b. Scram Trip Bypass	2, 5[h]	2	TRSR 3.3.2.1.6	NA

(h) With more than one control rod withdrawn. Not applicable to control rods removed per Technical Specification 3.10.5 or 3.10.6.

TABLE TR3.3.2.1-1 (Page 2 of 3)
Control Rod Block Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
2. Intermediate Range Monitors				
a. Detector not full in	2, 5(k)	6	TRSR 3.3.2.1.2	NA
b. Upscale	2, 5(k)	6	TRSR 3.3.2.1.1 TRSR 3.3.2.1.2 TRSR 3.3.2.1.5	$\leq$ 110/125 divisions of full scale
c. Inop	2, 5(k)	6	TRSR 3.3.2.1.2	NA
d. Downscale(f)	2, 5(k)	6	TRSR 3.3.2.1.1 TRSR 3.3.2.1.2 TRSR 3.3.2.1.5	$\geq$ 3/125 divisions of full scale
3. Average Power Range Monitors				
a. Simulated Thermal Power - Upscale	1	3	TRSR 3.3.2.1.4 TRSR 3.3.2.1.8	
1. Flow Biased				$\leq 0.63(W - \Delta W)^{(g)} + 58.5\%$
2. High Flow Clamped				with a maximum of 110% RTP
b. Inop	1, 2	3	TRSR 3.3.2.1.4	NA
c. Neutron Flux - Downscale	1	3	TRSR 3.3.2.1.4 TRSR 3.3.2.1.8	$\geq$ 3% RTP
d. Simulated Thermal Power - Upscale (Setdown)	2	3	TRSR 3.3.2.1.4 TRSR 3.3.2.1.8	$\leq$ 14% RTP
e. Flow - Upscale	1	3	TRSR 3.3.2.1.4 TRSR 3.3.2.1.8	$\leq$ 113% rated flow

(continued)

(f) This Function shall be automatically bypassed when the IRM channels are on range 1.

(g) The APRM Simulated Thermal Power - Upscale Flow Biased Rod Block setpoint varies as a function of recirculation loop drive flow (W). ΔW is defined as the difference in indicated drive flow (in percent of drive flow which produces rated core flow) between two loop and single loop operation at the same core flow. $\Delta W = 0\%$ for two loop operation. $\Delta W = 8\%$ for single loop operation.

(k) With any control rod withdrawn from a core cell containing one or more fuel assemblies.

TABLE TR3.3.2.1-1 (Page 1 of 3)
Control Rod Block Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Source Range Monitors				
a. Detector not full in[a]	2[j]	3	TRSR 3.3.2.1.2	NA
	5	2[d]	TRSR 3.3.2.1.2	NA
b. Upscale[b]	2[j]	3	TRSR 3.3.2.1.1 TRSR 3.3.2.1.2 TRSR 3.3.2.1.5	$\leq$ 1.6 x 10^5 cps
	5	2[d]	TRSR 3.3.2.1.1 TRSR 3.3.2.1.2 TRSR 3.3.2.1.5	$\leq$ 1.6 x 10^5 cps
c. Inop [b]	2[j]	3	TRSR 3.3.2.1.2	NA
	5	2[d]	TRSR 3.3.2.1.2	NA
d. Downscale[c]	2[j]	3	TRSR 3.3.2.1.1 TRSR 3.3.2.1.2 TRSR 3.3.2.1.5	$\geq$ 2.0 cps[e]
	5	2[d]	TRSR 3.3.2.1.1 TRSR 3.3.2.1.2 TRSR 3.3.2.1.5	$\geq$ 2.0 cps[e]

(continued)

(a) This Function shall be automatically bypassed if detector count rate is > 100 cps or the IRM channels are on range 3 or higher.

(b) This Function shall be automatically bypassed when the associated IRM channels are on range 8 or higher.

(c) This Function shall be automatically bypassed when the IRM channels are on range 3 or higher.

(d) These two Source Range Monitors shall be OPERABLE as per Technical Specification 3.3.1.2.

(e) May be reduced to $\geq$ 0.7 cps provided the signal-to-noise ratio $\geq$ 20.

(j) SRM Surveillance Requirements are not required to be met until the IRMs are $\leq$ range 2.

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
TRSR 3.3.2.1.5	-------------------NOTES------------------- 1. For Function 1, not required to be performed until 12 hours after IRMs on Range 2 or below. 2. For Function 2, not required to be performed when entering MODE 2 from MODE 1 until 12 hours after entering MODE 2. 3. Neutron detectors are excluded. --- Perform CHANNEL CALIBRATION.	184 days
TRSR 3.3.2.1.6	Perform CHANNEL FUNCTIONAL TEST.	18 months
TRSR 3.3.2.1.7	Perform CHANNEL CALIBRATION.	18 months
TRSR 3.3.2.1.8	-------------------NOTE------------------- Neutron detectors are excluded. --- Perform CHANNEL CALIBRATION.	24 months

SURVEILLANCE REQUIREMENTS

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

1. Refer to Table TR3.3.2.1-1 to determine which SRs apply to each Control Rod Block Function.

2. When a Control Rod Block Instrument channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains control rod block capability.

SURVEILLANCE		FREQUENCY
TRSR 3.3.2.1.1	Perform CHANNEL CHECK.	12 hours
TRSR 3.3.2.1.2	------------------NOTES------------------ 1. For Function 1, not required to be performed until 12 hours after IRMs on Range 2 or below. 2. For Function 2, not required to be performed when entering MODE 2 from MODE 1 until 12 hours after entering MODE 2. --- Perform CHANNEL FUNCTIONAL TEST.	7 days
TRSR 3.3.2.1.3	Perform CHANNEL FUNCTIONAL TEST.	92 days
TRSR 3.3.2.1.4	------------------NOTE------------------ For Function 3.d, not required to be performed when entering MODE 2 from MODE 1 until 12 hours after entering MODE 2. --- Perform CHANNEL FUNCTIONAL TEST.	184 days

(continued)

TR 3.3 INSTRUMENTATION

TR 3.3.2.1 Control Rod Block Instrumentation

TRLCO 3.3.2.1 The control rod block instrumentation for each Function in Table TR3.3.2.1-1 shall be OPERABLE.

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

1. For Function 3.a, required allowable value modification for single loop operation may be delayed for up to 4 hours after transition from two recirculation loop operation to single recirculation loop operation.

2. TRM control rod block instrumentation trip setpoints are listed in Table TR3.3.2.1-2.

APPLICABILITY: According to Table TR3.3.2.1-1.

ACTIONS

---------------------------NOTE---------------------------

Separate Condition entry is allowed for each channel.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. For Functions 1, 2, and 3, one required channel inoperable.	A.1 Restore channel to OPERABLE status.	7 days
B. For Function 4, one or more required channels inoperable. <u>OR</u> For Functions 1, 2, and 3, more than one required channel inoperable. <u>OR</u> Required Action and associated Completion Time not met.	B.1 Place channel in trip.	1 hour

TR 3.3 INSTRUMENTATION

TR 3.3.1.2 Reactor Protection System (RPS) Shorting Links

TRLCO 3.3.1.2 The RPS shorting links shall be removed from the RPS circuitry.

APPLICABILITY: MODE 5 with two or more control rods withdrawn from core cells containing one or more fuel assemblies and SHUTDOWN MARGIN not demonstrated for the current core configuration.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Shorting links not removed from RPS circuitry.	A.1 Suspend CORE ALTERATIONS except for control rod insertion.	Immediately
	AND	
	A.2 Initiate action to fully insert all insertable control rods in core cells containing one or more fuel assemblies.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
TRSR 3.3.1.2.1 Verify RPS shorting links removed.	12 hours

TABLE TR3.3.1.1-1 (Page 2 of 2)
Reactor Protection System Instrumentation

	FUNCTION	TRIP SETPOINT	RESPONSE TIME (seconds)
8.	Scram Discharge Volume Water Level - High		
	a. Level Transmitter	≤ 592 ft. 6 inches	NA
	b. Float Switch	≤ 594 ft. 8 inches	NA
9.	Turbine Stop Valve-Closure	≤ 5% closed	≤ 0.06
10.	Turbine Control Valve Fast Closure	Initiation of fast closure	≤ 0.08[e]

(e) Measured from de-energization of K37 relay, which inputs the turbine control valve closure signal, to the RPS.

TR 3.3 INSTRUMENTATION

TR 3.3.1.1 Reactor Protection System (RPS) Instrumentation

The RPS instrumentation trip setpoints and response times are listed in Table TR3.3.1.1-1.

TABLE TR3.3.1.1-1 (Page 1 of 2)
Reactor Protection System Instrumentation

FUNCTION	TRIP SETPOINT	RESPONSE TIME (seconds)
1. Intermediate Range Monitors		
a. Neutron Flux - High	≤ 120/125 divisions of full scale	NA
b. Inop	NA	NA
2. Average Power Range Monitors[a]		
a. Neutron Flux-Upscale (Setdown)	≤ 15% RTP	NA
b. Simulated Thermal Power - Upscale		NA
1. Flow Biased	≤ 0.63 (W-ΔW)[b] + 61.4%,	
2. High Flow Clamped	with a maximum of ≤ 113.5% of RTP	
c. Neutron Flux - Upscale	≤ 118% RTP	NA
d. Inop	NA	NA
e. 2-out-of-4 Voters	NA	≤ 0.05[a]
3. Reactor Vessel Steam Dome Pressure - High	≤ 1093 psig	≤ 0.55[c]
4. Reactor Vessel Water Level - Low, Level 3	≥ 173.4 inches[d]	≤ 1.05[c]
5. Main Steam Isolation Valve - Closure	≤ 8% closed	≤ 0.06
6. Main Steam Line Radiation - High	≤ 3.0 x full power background	NA
7. Drywell Pressure - High	≤ 1.68 psig	NA

(continued)

(a) Neutron detectors, APRM channel, and 2-out-of-4 Trip Voter digital electronics are exempt from response time testing. Response time shall be measured from activation of the 2-out-of-4 Trip Voter output relay.

(b) ΔW = 0% for two loop operation. ΔW = 8% for single loop operation.

(c) The sensor response time need not be measured and may be assumed to be the design sensor response time. Prior to return to service of a new transmitter or following refurbishment of a transmitter (e.g., sensor cell or variable damping components), a hydraulic response time test will be performed to determine an initial sensor-specific response time value.

(d) As referenced to instrument zero Top of Active Fuel (TAF).

SECTION 3.3
DETAILED INDEX OF SECTION

(continued)

(continued)

SECTION 3.3
DETAILED INDEX OF SECTION

(continued)

TR 3.2 POWER DISTRIBUTION LIMITS

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TR 3.1 REACTIVITY CONTROL SYSTEMS

TR 3.1.1 Control Rod Drive Housing Support

TRLCO 3.1.1 The control rod drive housing support shall be in place.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Control rod drive housing support not in place.	A.1 Enter TRLCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
TRSR 3.1.1.1	Verify the control rod drive housing support is in place by visual inspection.	Prior to startup any time the control rod drive housing support has been disassembled OR Prior to startup when maintenance has been performed in the control rod drive housing support area

TR 3.0 TRSR APPLICABILITY (continued)

TRSR 3.0.4	Entry into a MODE or other specified condition in the Applicability of a TRLCO shall not be made unless the TRLCO's Surveillances have been met within their specified Frequency. This provision shall not prevent entry into MODES or other specified conditions in the Applicability that are required to comply with Actions or that are part of a shutdown of the unit. TRSR 3.0.4 is only applicable for entry into a MODE or other specified condition in the Applicability in MODES 1, 2, and 3.

TR 3.0 SURVEILLANCE REQUIREMENT (TRSR) APPLICABILITY

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

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

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

If a Completion Time requires periodic performance on a "once per…" basis, the above Frequency extension applies to each performance after the initial performance.

Exceptions to this Specification are stated in the individual Specifications.

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

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

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

(continued)

TR 3.0 TRLCO APPLICABILITY (continued)

TRLCO 3.0.4 Entry into a MODE or other specified condition shall not be made when the conditions for the TRLCO are not met and the associated ACTION requires a shutdown if they are not met within a specified time interval. Entry into a MODE or other specified condition may be made in accordance with the ACTION statement(s) when conformance to them permits continued operation of the facility for an unlimited time. This provision shall not prevent passage through or to MODES as required to comply with the ACTION statement(s). Exceptions to these conditions are stated in the individual Technical Requirements.

TR 3.0 LIMITING CONDITION FOR OPERATION (TRLCO) APPLICABILITY

TRLCO 3.0.1 Compliance with the TRLCO in the succeeding Technical Requirements is required during the MODE or other conditions specified therein; except that upon failure to meet the TRLCO, the associated ACTION statement(s) shall be met.

TRLCO 3.0.2 Where corrective measures are completed that permit operation under the ACTION statement(s), the ACTION may be taken in accordance with the specified time limits as measured from the time of failure to meet the TRLCO.

TRLCO 3.0.3 Noncompliance with a Technical Requirement shall exist when the TRLCO and associated ACTION statement(s) are not met within the specified time intervals.

Once a degraded or nonconforming condition of specific SSCs is identified, an operability determination should be made as soon as possible consistent with the safety importance of the SSC affected. In most cases, it is expected that the decision can be made immediately (e.g., loss of motive power, etc.). In other cases it is expected the decision can be made within approximately 24 hours of discovery even though complete information may not be available. Some few exceptional cases may take longer. Engineering judgement must be used to determine safety significance. The decision should be based on the best information available and must be predicated on the licensee's reasonable expectation that the SSC is operable and that the prompt determination process will support that expectation. When reasonable expectation does not exist, the SSC should be declared inoperable and the safe course of action should be taken.

Conditions of noncompliance are to documented and evaluated via the corrective action program to determine operability status. If the TRLCO is restored prior to expiration of the specified time intervals, completion of the ACTION statement(s) is not required.

(continued)

SECTION 3.0
DETAILED INDEX OF SECTION

TR 2.0 SAFETY LIMITS (SLs)

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TR 1.0 USE AND APPLICATION

TR 1.1 Definitions

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

1. Refer to Technical Specification 1.1 for terms defined in Technical Specifications that are also applicable to the Technical Requirements Manual.

2. Refer to Technical Specification 1.2 for Logical Connectors defined in Technical Specifications that are also applicable to the Technical Requirements Manual.

3. Refer to Technical Specification 1.3 for Completion Times defined in Technical Specifications that are also applicable to the Technical Requirements Manual.

4. Refer to Technical Specification 1.4 for Frequencies defined in Technical Specifications that are also applicable to the Technical Requirements Manual.

SECTION 1.0
DETAILED INDEX OF SECTION

3/4.4.1 RECIRCULATION SYSTEM
RECIRCULATION LOOPS

The purpose of the mechanical high speed stops is to terminate a postulated dual reactor recirculation pump slow flow runout transient which is not terminated by a reactor scram (the design basis event for the Maximum Extended Operating Domain (MEOD) analysis documented in NEDC-31843P, "Fermi 2 Maximum Extended Operating Domain Analysis", dated July 1990). This event stabilizes at a new core power level, corresponding to the maximum possible core flow along the Maximum Extended Load Line Limit (MELLL) rod line, which is dictated by the actual MG set scoop tube mechanical high speed stops. The mechanical high speed stops protect the fuel cladding by limiting the reactor power increase which would result from this postulated increase in recirculation flow such that neither the one-percent plastic strain limit nor the Minimum Critical Power Ratio (MCPR) Safety Limit are violated. This analysis assumes that the core is being operated within the flow dependent limits for Maximum Average Planar Linear Heat Generation Rate (MAPLHGR(F)) and Minimum Critical Power Ratio (MCPR(F)), which are also dependent on the MG set scoop tube mechanical high speed stop settings.

Reference: Technical Specification Amendment No. 130.

3/4.4 REACTOR COOLANT SYSTEM

3/4.4.1 RECIRCULATION SYSTEM RECIRCULATION LOOPS

LIMITING CONDITION FOR OPERATION

3.4.1.1 Both recirculation pump MG set scoop tube mechanical high speed stops shall be OPERABLE.

APPLICABILITY: MODE 1

ACTION:

Lock the MG set scoop tube and turn off power to the positioner for any MG set with an inoperable mechanical high speed stop within 2 hours,

OR

Comply with Limiting Conditions for Operation for Technical Specification 3.2.1, "Average Planar Linear Heat Generation Rate" and Technical Specification 3.2.3, "Minimum Critical Power Ratio."

SURVEILLANCE REQUIREMENTS

4.4.1.1 Each pump MG set scoop tube mechanical high speed stop shall be demonstrated OPERABLE at least once per 18 months with overspeed setpoints less than or equal to core flow values assumed in the COLR for determining MAPLHGR(F) and MCPR(F).

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TABLE OF CONTENTS - VOLUME 1

TRM - TABLE 3.6.3-1 (Continued)

PRIMARY CONTAINMENT ISOLATION VALVES

VALVE FUNCTION AND NUMBER		MAXIMUM ISOLATION TIME[v] (Seconds)
A. Automatic Isolation Valves[a] (Continued)		
3. Group 3 - Residual Heat Removal (RHR) System		
RHR Drywell Spray Isolation Valves		
Loop A:	E1150-F016A	150
	E1150-F021A	60
Loop B:	E1150-F016B	150
	E1150-F021B	60
RHR Containment Cooling/Test Isolation Valves		
Loop A:	E1150-F024A	60
Loop B:	E1150-F024B	60
RHR Suppression Pool Spray Isolation Valves		
Loop A:	E1150-F027A	60
Loop B:	E1150-F027B	60
RHR Suppression Pool Spray/Test Isolation Valves		
Loop A:	E1150-F028A	60
Loop B:	E1150-F028B	60
4. Group 4 - Residual Heat Removal Shutdown Cooling and Head Spray		
RHR Shutdown Cooling Suction Isolation Valves		
Inboard:	E1150-F009	51
Outboard:	E1150-F008	51
RHR Reactor Pressure Vessel Head Spray Isolation Valves		
Inboard:	E1150-F022	36
Outboard:	E1150-F023	120

BASES

3/4.3.7.8 CHLORINE DETECTION SYSTEM

The OPERABILITY of the chlorine detection system ensures that an accidental chlorine release will be detected promptly and the necessary protective actions will be automatically initiated to provide protection for control room personnel. Upon detection of a high concentration of chlorine, the control room emergency ventilation system will automatically be placed in the chlorine mode of operation to provide the required protection. **In this mode of operation, all outside air intakes are closed to prevent ingress during a chlorine-release emergency.** The detection system required by this Technical Requirement is consistent with the recommendations of Regulatory Guide 1.95, "Protection of Nuclear Power Plant Control Room Operators against an Accidental Chlorine Release", Revision 1, January, 1977.

When the control room emergency ventilation system is placed in the recirculation (radiological emergency) mode of operation, the emergency air intakes are used to bring in a limited amount of outside air. The chlorine detectors do not experience system air flow because they are located in the normal air intakes. The chlorine detectors remain physically and functionally OPERABLE; however, per the plant design, their specified function is not required during the recirculation mode.

3/4.3.7.8 CHLORINE DETECTION SYSTEM

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When the control room emergency ventilation system is placed in the recirculation (radiological emergency) mode of operation, the emergency air intakes are used to bring in a limited amount of outside air. The chlorine detectors do not experience system air flow because they are located in the normal air intakes. The chlorine detectors remain physically and functionally OPERABLE; however, per the plant design, their specified function is not required during the recirculation mode.

TRM TABLE 4.3.7.2-1

SEISMIC MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENTS AND SENSOR LOCATIONS	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION
1. Active Triaxial System			
a. Active Triaxial Accelerometers			
1) HPCI Room	NA	SA	R
2) Base of RPV Pedestal, In Drywell	NA	SA	R
b. Active Seismic Recording System*			
1) Relay Room, Auxiliary Building**	M[(a)]	SA	R
c. Active Seismic Playback System			
1) Relay Room, Auxiliary Building	M	SA	R
2. Passive Triaxial Peak Shock Recorders			
a. HPCI Room	NA	NA	R
b. Relay Room, Auxiliary Building	NA	NA	R
c. Refuel Floor, Reactor Building	NA	NA	R
d. Diesel Generator Room, RHR Complex	NA	NA	R
e. Switchgear Room, RHR Complex	NA	NA	R
f. Cooling Tower, RHR Complex	NA	NA	R

*Including seismic trigger.
**With reactor control room annunciation.
(a)Except seismic trigger.

TABLE TR3.6.3-1 (Page 14 of 22)
Primary Containment Isolation Valves

FUNCTION	MAXIMUM ISOLATION TIME (seconds)[u]
4. Other Isolation Valves (continued)	
h. Core Spray Loop Pump Suction Relief Valves[o][s]	
E2100-F032A	NA
E2100-F032B	NA
i. Core Spray Loop Pump Discharge Pressure Relief Valves[s]	
E2100-F011A	NA
E2100-F012A	NA
E2100-F011B	NA
E2100-F012B	NA
j. Excess Flow Check Valves[q]	
1. Jet Pump Instrumentation	
B21-F513A	NA
B21-F513B	NA
B21-F513C	NA
B21-F513D	NA
B21-F514A	NA
B21-F514B	NA
B21-F514C	NA
B21-F514D	NA
B21-F515A	NA
B21-F515B	NA
B21-F515C	NA
B21-F515D	NA
B21-F515E	NA
B21-F515F	NA
B21-F515G	NA
B21-F515H	NA
B21-F515L	NA

(continued)

TABLE TR3.6.3-1 (Page 13 of 22)
Primary Containment Isolation Valves

FUNCTION	MAXIMUM ISOLATION TIME (seconds)[u]
4. Other Isolation Valves	
a. Main Feedwater Reverse Flow Check Valves	
B2100-F010A	NA
B2100-F010B	NA
B2100-F076A	NA
B2100-F076B	NA
b. RHR Heat Exchanger Relief Valves[s]	
E1100-F001A	NA
E1100-F001B	NA
c. RHR Heat Exchanger Outlet Line Relief Valves[o][s]	
E1100-F025A	NA
E1100-F025B	NA
d. RHR Pump Suction from Recirc Piping Reverse Flow Check Valve	
E1100-F408	NA
e. RHR Shutdown Cooling Suction Relief Valve[o][s]	
E1100-F029	NA
f. RHR Pump Torus Suction Relief Valves[o][s]	
E1100-F030A	NA
E1100-F030B	NA
E1100-F030C	NA
E1100-F030D	NA
g. Core Spray Loop Containment Reverse Flow Check Valves	
E2100-F006A	NA
E2100-F006B	NA

(continued)

TABLE TR3.6.3-1 (Page 12 of 22)
Primary Containment Isolation Valves

FUNCTION	MAXIMUM ISOLATION TIME (seconds)[u]
2. Remote-Manual Isolation Valves[d] (continued)	
ab. Post Accident Sampling Isolation Valves (continued)	
3. Gaseous Sample Return Valves	
P34-F408	NA
P34-F410	NA
4. Pressurized Reactor Coolant Sample Suction Valves	
P34-F401A	NA
P34-F401B	NA
5. Liquid Sample Return Valves[b]	
P34-F407	NA
P34-F409	NA
ac. Torus to Secondary Containment Vacuum Breaker Isolation Valves	
T2300-F410	NA
T2300-F409	NA
ad. Primary Containment Water Level Instrumentation Isolation Valves	
T50-F458	NA
3. Manual Isolation Valves	
a. Drywell Condensate Supply Header Inboard Isolation Valve[p]	
P1100-F126	NA
b. Drywell Control Air and N_2 Outboard Isolation Bypass Valve[p]	
T4901-F007	NA
c. N_2 to Drywell Outboard Isolation Bypass Valve[p]	
T4901-F016	NA

(continued)

TABLE TR3.6.3-1 (Page 11 of 22)
Primary Containment Isolation Valves

FUNCTION	MAXIMUM ISOLATION TIME (seconds)[u]
2. Remote-Manual Isolation Valves[d] (continued)	
y. EECW Return from Drywell Equipment Isolation Valves	
Division I: P4400-F607A	NA
P4400-F616	NA
Division II: P4400-F607B	NA
P4400-F615	NA
z. Service Air to Drywell Isolation Valves[p]	
Inboard: P5000-F604	NA
Outboard: P5000-F603	NA
aa. TIP System Shear Valves[l][q]	
C5100-F001A	NA
C5100-F001B	NA
C5100-F001C	NA
C5100-F001D	NA
C5100-F001E	NA
ab. Post Accident Sampling Isolation Valves	
1. Drywell Atmosphere Sample Suction Valves	
Division I: P34-F404B	NA
P34-F403B	NA
Division II: P34-F403A	NA
P34-F404A	NA
2. Suppression Pool Atmosphere Sample Suction Valves	
Division I: P34-F405B	NA
P34-F406B	NA
Division II: P34-F405A	NA
P34-F406A	NA

(continued)

TABLE TR3.6.3-1 (Page 10 of 22)
Primary Containment Isolation Valves

FUNCTION	MAXIMUM ISOLATION TIME (seconds)[u]
2. Remote-Manual Isolation Valves[d] (continued)	
u. Drywell to Suppression Chamber Vacuum Breakers N_2 Supply Isolation Valves	
T4800-F416	NA
T4800-F417	NA
T4800-F418	NA
T4800-F419	NA
T4800-F420	NA
T4800-F421	NA
T4800-F422	NA
T4800-F423	NA
T4800-F424	NA
T4800-F425	NA
T4800-F426	NA
T4800-F427	NA
v. Drywell Pressure Instrumentation Isolation Valves	
Division I: T5000-F420A	NA
Division II: T5000-F420B	NA
w. Suppression Pool Level Instrumentation Isolation Valves	
Division I: E41-F401[b]	NA
T50-F412A[b]	NA
E41-F400	NA
Division II: E41-F403[b]	NA
T50-F412B[b]	NA
E41-F402	NA
x. EECW Supply to Drywell Equipment Isolation Valves	
Division I: P4400-F606A	NA
Division II: P4400-F606B	NA

(continued)

TABLE TR3.6.3-1 (Page 9 of 22)
Primary Containment Isolation Valves

FUNCTION	MAXIMUM ISOLATION TIME (seconds)[u]
2. Remote-Manual Isolation Valves[d] (continued)	
q. Combustible Gas Control System Return Isolation Valves	
Inboard: Division I: T4804-F601A	NA
Division II: T4804-F601B	NA
Outboard: Division I: T4804-F604A	NA
Division II: T4804-F604B	NA
r. Primary Containment Monitoring System Torus Return Isolation Valves	
Division I: T5000-F408A	NA
Division II: T5000-F408B	NA
s. Primary Containment Monitoring System Torus Suction Isolation Valves	
Division I: T5000-F407A	NA
Division II: T5000-F407B	NA
t. Drywell Atmosphere Sample Isolation Valves	
Division I: T5000-F401A	NA
T5000-F402A	NA
T5000-F403A	NA
T5000-F404A	NA
T5000-F405A	NA
Division II: T5000-F401B	NA
T5000-F402B	NA
T5000-F403B	NA
T5000-F404B	NA
T5000-F405B	NA

(continued)

TABLE TR3.6.3-1 (Page 8 of 22)
Primary Containment Isolation Valves

FUNCTION	MAXIMUM ISOLATION TIME (seconds)[u]
2. Remote-Manual Isolation Valves[d] (continued)	
i. Core Spray Loop Minimum Recirculation Isolation Valves[g][s]	
Loop A: E2150-F031A	NA
Loop B: E2150-F031B	NA
j. Core Spray Loop Suction from Suppression Chamber Valves[s]	
Loop A: E2150-F036A	NA
Loop B: E2150-F036B	NA
k. HPCI Pump Discharge to Reactor Feedwater Header Valve[h]	
E4150-F006	NA
l. HPCI Pump Minimum Flow Valve[i][s]	
E4150-F012	NA
m. RCIC Pump Discharge to Feedwater Header Isolation Valve[j]	
E5150-F013	NA
n. RCIC Pump Minimum Flow Valve[k][s]	
E5150-F019	NA
o. RCIC Pump Suction from Suppression Chamber Isolation Valves[s]	
Inboard: E5150-F031	NA
p. Combustible Gas Control System Suction Isolation Valves	
Inboard	
Torus: Division I: T4804-F602A	NA
Division II: T4804-F602B	NA
Drywell: Division I: T4804-F603A	NA
Division II: T4804-F603B	NA
Outboard	
Torus: Division I: T4804-F606A	NA
Division II: T4804-F606B	NA
Drywell: Division I: T4804-F605A	NA
Division II: T4804-F605B	NA

(continued)

TABLE TR3.6.3-1 (Page 7 of 22)
Primary Containment Isolation Valves

FUNCTION	MAXIMUM ISOLATION TIME (seconds)[u]
2. Remote-Manual Isolation Valves[d]	
a. Main Steam Isolation Valve (MSIV) Leakage Control Valve	
B2100-F434	NA
b. RHR Shutdown Cooling Suction Inboard Isolation Valve Bypass Valve[p]	
E1150-F608	NA
c. LPCI Inboard Isolation Valves[e][r]	
Loop A: E1150-F015A	NA
Loop B: E1150-F015B	NA
d. RHR Pumps Recirculation Motor Operated Valves[f][s]	
Pumps A/C: E1150-F007A	NA
Pumps B/D: E1150-F007B	NA
e. Warmup and Flush Line Isolation Valve[s][t]	
E1150-F026B	NA
f. Reactor Protection System Instrumentation Isolation Valves	
Division I: E11-F412	NA
E11-F413	NA
Division II: E11-F414	NA
E11-F415	NA
g. RHR Pump Torus Suction Isolation Valves[s]	
Pump A: E1150-F004A	NA
Pump B: E1150-F004B	NA
Pump C: E1150-F004C	NA
Pump D: E1150-F004D	NA
h. Core Spray Loop Inboard Isolation Valves	
Loop A: E2150-F005A	NA
Loop B: E2150-F005B	NA

(continued)

TABLE TR3.6.3-1 (Page 6 of 22)
Primary Containment Isolation Valves

FUNCTION			MAXIMUM ISOLATION TIME (seconds)[u]
1. Automatic Isolation Valves[a] (continued)			
q. Group 16 - Nitrogen Inerting System			
N_2 Pressure Control Isolation Valves			
	Inboard:	T4800-F455	60
	Outboard:	T4800-F453	60
		T4800-F454	60
		T4800-F456	60
		T4800-F457	60
		T4800-F458	60
r. Group 17 - Recirculation Pump System and Primary Containment Radiation Monitoring System			
Recirculation Pumps Seal Purge Isolation Valves			
	Inboard:	B3100-F014A	5
		B3100-F014B	5
	Outboard:	B3100-F016A	5
		B3100-F016B	5
Primary Containment Gaseous Radioactivity Monitor Isolation Valves			
	Inboard:	T50-F450	60
		T50-F451	60
	Outboard:	T5000-F455	60
		T5000-F456	60
s. Group 18 - Primary Containment Pneumatic Supply System			
N_2 to Drywell Isolation Valves			
	Inboard:	T4901-F601	60
		T4901-F602	60
	Outboard:	T4901-F465	60
		T4901-F468	60

(continued)

TABLE TR3.6.3-1 (Page 5 of 22)
Primary Containment Isolation Valves

FUNCTION	MAXIMUM ISOLATION TIME (seconds)[u]
1. Automatic Isolation Valves[a] (continued)	
n. Group 14 - Drywell and Suppression Pool Ventilation System	
Drywell Exhaust Isolation Valves	
T4803-F602	5
T4600-F411	5
T4600-F402	5
Drywell N_2 and Air Purge Inlet Isolation Valves	
T4803-F601	5
T4800-F408	5
T4800-F407	5
Suppression Pool Exhaust Air Purge to Standby Gas Treatment System and N_2 Inlet Isolation Valves	
T4600-F400	5
T4800-F410	5
T4600-F401	5
T4600-F412	5
Suppression Pool N_2 and Air Purge Inlet Isolation Valves	
T4800-F404	5
T4800-F405	5
T4800-F409	5
o. Not used	
p. Group 15 - Traversing In-core Probe (TIP) System	
TIP System Ball Valves C5100-F002 A, B, C, D, and E	NA

(continued)

TABLE TR3.6.3-1 (Page 4 of 22)
Primary Containment Isolation Valves

FUNCTION	MAXIMUM ISOLATION TIME (seconds)[u]
1. Automatic Isolation Valves[a] (continued)	
j. Group 10 - Reactor Water Cleanup (RWCU) System (Inboard)	
Inboard: G3352-F001	10
k. Group 11 - Reactor Water Cleanup (RWCU) System (Outboard)	
Outboard: G3352-F004	10
Outboard: G3352-F220	20
l. Group 12 - Torus Water Management System (TWMS)	
TWMS to RHR Line Isolation Valves [b][c]	
G5100-F605	60
G5100-F604	60
TWMS to CSS Test Line Isolation Valves[b][c]	
G5100-F607	60
G5100-F606	60
Torus Drain Isolation Valves[b][c]	
G5100-F600	60
G5100-F602	60
G5100-F601	60
G5100-F603	60
m. Group 13-Drywell Sumps	
Drywell Floor Drain Sump Pump Discharge Isolation Valves	
G1154-F600	60
G1100-F003	60
Drywell Equipment Drain Sump Pump Discharge Isolation Valves	
G1154-F018	60
G1100-F019	60

(continued)

TABLE TR3.6.3-1 (Page 3 of 22)
Primary Containment Isolation Valves

FUNCTION	MAXIMUM ISOLATION TIME (seconds)[u]
1. Automatic Isolation Valves[a] (continued)	
f. Group 6 - High Pressure Coolant Injection (HPCI) System	
HPCI Turbine Steam Supply Isolation Valves	
Inboard: E4150-F002	15
Outboard: E4150-F003	15
HPCI Turbine Steam Supply Outboard Isolation Bypass Valve	
E4150-F600	15
HPCI Booster Pump Suction from Suppression Chamber Isolation Valve[s]	
E4150-F042	60
g. Group 7 - High Pressure Coolant Injection (HPCI) Vacuum Breakers	
HPCI Turbine Exhaust Line Vacuum Breaker Isolation Valves	
E4150-F075	60
E4150-F079	60
h. Group 8 - Reactor Core Isolation Cooling (RCIC) System	
RCIC Steam Line Isolation Valves	
Inboard: E5150-F007	15
Outboard E5150-F008	15
i. Group 9 - Reactor Core Isolation Cooling (RCIC) System Vacuum Breakers	
RCIC Turbine Exhaust Line Vacuum Breaker Isolation Valves	
E5150-F062	60
E5150-F084	60

(continued)

TABLE TR3.6.3-1 (Page 2 of 22)
Primary Containment Isolation Valves

FUNCTION	MAXIMUM ISOLATION TIME (seconds)[u]
1. Automatic Isolation Valves[a] (continued)	
c. Group 3 - Residual Heat Removal (RHR) System	
RHR Drywell Spray Isolation Valves	
Loop A: E1150-F016A	150
E1150-F021A	60
Loop B: E1150-F016B	150
E1150-F021B	60
RHR Containment Cooling/Test Isolation Valves	
Loop A: E1150-F024A	60
Loop B: E1150-F024B	60
RHR Suppression Pool Spray Isolation Valves	
Loop A: E1150-F027A	60
Loop B: E1150-F027B	60
RHR Suppression Pool Spray/Test Isolation Valves	
Loop A: E1150-F028A	60
Loop B: E1150-F028B	60
d. Group 4 - Residual Heat Removal Shutdown Cooling and Head Spray	
RHR Shutdown Cooling Suction Isolation Valves	
Inboard: E1150-F009	51
Outboard: E1150-F008	51
RHR Reactor Pressure Vessel Head Spray Isolation Valves	
Inboard: E1150-F022	36
Outboard: E1150-F023	120
e. Group 5 - Core Spray System	
Core Spray Pump Flow Test Valves[s]	
Loop A: E2150-F015A	150
Loop B: E2150-F015B	150

(continued)

TR 3.6 CONTAINMENT SYSTEMS

TR 3.6.3 Primary Containment Isolation Valves (PCIVs)

1. The PCIVs and associated maximum isolation times for the automatic valves are listed in Table TR3.6.3-1.

2. The PCIVs and Primary Containment Flanges located in Locked High Radiation Areas are listed in Table TR3.6.3-2.

TABLE TR3.6.3-1 (Page 1 of 22)
Primary Containment Isolation Valves

FUNCTION	MAXIMUM ISOLATION TIME (seconds)[u]
1. Automatic Isolation Valves[a]	
a. Group 1 - Main Steam System	
Main Steam Isolation Valves (MSIVs)	
Inboard	
Line A: B2103-F022A	5
Line B: B2103-F022B	5
Line C: B2103-F022C	5
Line D: B2103-F022D	5
Outboard	
Line A: B2103-F028A	5
Line B: B2103-F028B	5
Line C: B2103-F028C	5
Line D: B2103-F028D	5
Main Steam Line Drains Isolation Valves	
Inboard: B2103-F016	23
Outboard: B2103-F019	23
b. Group 2 - Reactor Water Sample System	
Reactor Water Sample Line Isolation Valves	
Inboard: B3100-F019	15
Outboard: B3100-F020	15

(continued)

TR 3.6 CONTAINMENT SYSTEMS

TR 3.6.2 Primary Containment Hydrogen Recombiners

TRLCO 3.6.2 Two primary containment hydrogen recombiners shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. TRSR 3.6.2.1 not met.	A.1 Declare associated primary containment hydrogen recombiner inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
TRSR 3.6.2.1	Perform CHANNEL CALIBRATION of all recombiner operating instrumentation and control circuits.	18 months

TR 3.6 CONTAINMENT SYSTEMS

TR 3.6.1 Suppression Chamber

TRLCO 3.6.1 The suppression chamber shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. TRSR 3.6.1.1 not met.	A.1 Declare suppression chamber inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
TRSR 3.6.1.1	Perform visual inspection of the accessible interior and exterior of the suppression chamber.	18 months

SECTION 3.6
DETAILED INDEX OF SECTION

TR 3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS) AND REACTOR CORE ISOLATION COOLANT (RCIC) SYSTEM

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TR 3.4 REACTOR COOLANT SYSTEM (RCS)

TR 3.4.7 Recirculation Pump MG Set Scoop Tube

TRLCO 3.4.7 Both recirculation pump MG set scoop tube mechanical stops shall be OPERABLE.

APPLICABILITY: MODE 1.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more recirculation pump MG set scoop tube mechanical stops inoperable.	A.1.1 Lock MG scoop tube. AND A.1.2 Turn off power to the positioner for any MG set with an inoperable mechanical high speed stop. OR A.2 Verify OPERABILITY per Technical Specification LCO 3.2.1, Average Planar Linear Heat Generation Rate (APLHGR) and LCO 3.2.2, Minimum Critical Power Ratio (MCPR).	2 hours 2 hours Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
TRSR 3.4.7.1	Demonstrate each pump MG set scoop tube mechanical high speed stop is OPERABLE with overspeed setpoints ≤ core flow values assumed in the COLR for determining MAPLHGR(F) and MCPR(F).	18 months

TR 3.4 REACTOR COOLANT SYSTEM (RCS)

TR 3.4.6 Structural Integrity

TRLCO 3.4.6 The structural integrity of ASME Code Class 1, 2, and 3 components shall be maintained in accordance with 10 CFR 50.55a.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Structural integrity of Class 1 components not conforming as required.	A.1 Initiate action to isolate affected components.	Prior to increasing RCS temperature more than 50°F above the minimum temperature required by NDT considerations
B. Structural integrity of Class 2 components not conforming as required.	B.1 Initiate action to isolate affected components.	Prior to increasing RCS temperature above 200°F
C. Structural integrity of Class 3 components not conforming as required.	C.1 Initiate action to isolate affected components.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE
Associated Surveillance Requirements are prescribed by 10 CFR 50.55a.

TABLE TR3.4.5-1 (Page 1 of 1)
Reactor Coolant System Chemistry Limits

MODE	CHLORIDES	CONDUCTIVITY (μmhos/cm @25°C)	pH
1	≤ 0.2 ppm	≤ 1.0	5.6 ≤ pH ≤ 8.6
2 and 3	≤ 0.1 ppm	≤ 2.0	5.6 ≤ pH ≤ 8.6
At all other times	≤ 0.5 ppm	≤ 10.0	5.3 ≤ pH ≤ 8.6

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
TRSR 3.4.5.1	Record the conductivity of the reactor coolant, or -------------------NOTE------------------- Only applicable when the continuous recording conductivity monitor is inoperable. -- Obtain an in-line conductivity measurement of the reactor coolant.	Continuously 4 hours in MODE 1, 2, or 3 AND 24 hours in other than MODES 1, 2, and 3
TRSR 3.4.5.2	Analyze a sample of the reactor coolant for chlorides, conductivity, and pH.	72 hours AND ------NOTE------- Only applicable to chlorides and pH determination. ----------------- 8 hours when conductivity is > the limit in Table TR3.4.5-1
TRSR 3.4.5.3	Perform a CHANNEL CHECK of the continuous conductivity monitor with an in-line flow cell.	7 days AND 24 hours whenever conductivity is > the limit in Table TR3.4.5-1

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Chloride concentration not within limits of Table TR3.4.5-1 in other than MODES 1, 2, and 3.	E.1 Restore RCS chemistry to within limits.	24 hours
F. Conductivity or pH not within the limits of Table TR3.4.5-1 in other than MODES 1, 2, and 3.	F.1 Restore RCS chemistry to within limits.	72 hours
G. ---------NOTE--------- Required Action G.1 shall be completed if this Condition is entered. --------------------- Required Action and associated Completion Time of Condition E or Condition F not met.	G.1 Perform an engineering evaluation to determine the effects of the out-of-limit condition on the structural integrity of the reactor coolant system. Determine that the structural integrity of the reactor coolant system remains acceptable for continued operation.	Prior to entering MODE 2 or 3

TR 3.4 REACTOR COOLANT SYSTEM (RCS)

TR 3.4.5 Chemistry

TRLCO 3.4.5 The chemistry of the reactor coolant system shall be maintained within the limits specified in Table TR3.4.5-1.

APPLICABILITY: At all times.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. RCS chemistry not within limits of Table TR3.4.5-1 in MODE 1.	A.1 Restore RCS chemistry to within limits.	72 hours AND 336 hours cumulative in the past 365 days
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 2.	6 hours
C. RCS chemistry not within limits of Table TR3.4.5-1 in MODE 2 or 3.	C.1 Restore RCS chemistry to within limits.	48 hours
D. Required Action and associated Completion Time of Condition C not met. OR Conductivity > 10 µmho/cm at 25° C in MODE 1. OR Chloride concentration > 0.5 ppm in MODE 1.	D.1 Be in MODE 3. AND D.2 Be in MODE 4.	12 hours AND 36 hours

(continued)

TR 3.4 REACTOR COOLANT SYSTEM (RCS)

TR 3.4.4 Reactor Pressure Vessel Water Level - Cold Shutdown

TRLCO 3.4.4 Reactor water level shall be maintained ≥ 214 inches.

APPLICABILITY: MODE 4.

-----NOTE-----
Not applicable when heat losses to ambient are greater than or equal to heat input to reactor coolant.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Reactor water level less than 214 inches.	A.1 Restore reactor water level to the required level. __OR__ A.2 Place two recirculation pumps in operation. __OR__ A.3 Place two RHR shutdown cooling mode loops in operation.	1 hour 1 hour 1 hour

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
TRSR 3.4.4.1	Verify reactor water level is ≥ 214 inches.	12 hours

TR 3.4 REACTOR COOLANT SYSTEM (RCS)

TR 3.4.3 Reactor Coolant System (RCS) Leakage Detection System

TRLCO 3.4.3 The drywell equipment drain sump level, flow and pump-run-time system shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. The drywell equipment drain sump level, flow or pump-run-time system inoperable.	A.1 Restore the inoperable detection system to OPERABLE status.	30 days
B. Required Action and associated Completion Time not met.	B.1 Initiate a Corrective Action Document outlining the action taken, the cause of the inoperablility, and the plans and schedule for restoring the system to OPERABLE status.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
TRSR 3.4.3.1	Perform CHANNEL FUNCTIONAL TEST.	31 days
TRSR 3.4.3.2	Perform CHANNEL CALIBRATION.	18 months

TR 3.4 REACTOR COOLANT SYSTEM (RCS)

TR 3.4.2 Safety Relief Valve (SRV) Position Indication

TRLCO 3.4.2 The position indication function of the reactor coolant system safety relief valves shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more safety relief valve position indicators inoperable.	A.1 Restore indicator(s) to OPERABLE status.	7 days
B. Required Action and associated Completion Time not met.	B.1 Declare the associated SRV inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
TRSR 3.4.2.1	Perform CHANNEL CALIBRATION. The pressure setpoint of each of the tail-pipe pressure switches shall be 30 $\pm$ 5 psig.	18 months

TR 3.4 REACTOR COOLANT SYSTEM (RCS)

TR 3.4.1 Recirculation Loops Operating

TRLCO 3.4.1 Two reactor recirculation loops shall be in operation.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One reactor coolant system recirculation loop not in operation.	A.1 Place the individual recirculation pump flow controller for the operating recirculation pump in the Manual mode.	4 hours
	AND	
	A.2 Limit the speed of the operating recirculation pump to ≤ 75% of rated pump speed.	4 hours

SURVEILLANCE REQUIREMENTS

-----NOTE-----
Only required to be performed when one recirculation loop is not in operation.

SURVEILLANCE		FREQUENCY
TRSR 3.4.1.1	Verify: a. The individual recirculation pump controller for the operating recirculation pump is in the Manual Mode; and b. The speed of the operating recirculation pump is ≤ 75% of rated pump speed.	12 hours

SECTION 3.4
DETAILED INDEX OF SECTION

TABLE TR3.3.14-1 (Page 1 of 1)
Radiation Monitoring Instrumentation

	FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER TRIP SYSTEM	TRIP SETPOINT
1.	Area Monitors - Criticality Monitors			
	a. New Fuel Vault	(a)	1	≥ 5 mR/hr and ≤ 20 mR/hr[c]
	b. Fuel Storage Pool	(b)	2	≥ 5 mR/hr and ≤ 20 mR/hr[c]
2.	Control Room Direct Radiation Monitor	At all times	1	≤ 0.5 mR/hr[c]

(a) With fuel in the new fuel vault.

(b) With fuel in the fuel storage pool.

(c) Alarm only.

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. For Function 1.b, both required channels inoperable while moving fuel.	C.1	Implement the preplanned alternate method for monitoring using a continuous monitor.	Immediately
	<u>OR</u>		
	C.2	Suspend fuel movement.	Immediately

SURVEILLANCE REQUIREMENTS

-----------------------------------NOTE-----------------------------------
These SRs apply to each Function in Table TR3.3.14-1.

SURVEILLANCE		FREQUENCY
TRSR 3.3.14.1	Perform CHANNEL CHECK.	12 hours
TRSR 3.3.14.2	Perform CHANNEL FUNCTIONAL TEST.	31 days
TRSR 3.3.14.3	Perform CHANNEL CALIBRATION.	18 months

TR 3.3 INSTRUMENTATION

TR 3.3.14 Radiation Monitoring Instrumentation

TRLCO 3.3.14 The radiation monitoring instrumentation for each Function in Table TR3.3.14-1 shall be OPERABLE with their trip setpoints within the specified limits.

APPLICABILITY: According to Table TR3.3.14-1.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required channels with trip setpoint exceeding the value shown in Table TR3.3.14-1.	A.1 Restore setpoint to within the limit.	4 hours
B. Required Action and associated Completion Time of Condition A not met. OR One or more channels inoperable for reasons other than Condition A.	B.1 Declare the channel(s) inoperable. AND B.2 Perform area surveys of the monitored area(s) with portable monitoring instrumentation.	Immediately Once per 24 hours

(continued)

TABLE TR3.3.13-1 (Page 1 of 1)
Meteorological Monitoring Instrumentation

FUNCTION	REQUIRED CHANNELS PER FUNCTION
1. Wind Speed	
a. Elev. 10 meters	1
b. Elev. 60 meters	1
2. Wind Direction	
a. Elev. 10 meters	1
b. Elev. 60 meters	1
3. Air Temperature Difference	
a. Elev. 10/60 meters	1

TR 3.3 INSTRUMENTATION

TR 3.3.13 Meteorological Monitoring Instrumentation

TRLCO 3.3.13 The meteorological monitoring instrumentation channels shown in Table TR3.3.13-1 shall be OPERABLE.

APPLICABILITY: At all times.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one required channel inoperable.	A.1 Restore channel to OPERABLE status.	7 days
B. Required Action and associated Completion Time not met.	B.1 Initiate a Corrective Action Document.	Immediately

SURVEILLANCE REQUIREMENTS

------------------------------------NOTE------------------------------------
These SRs apply to each Function in Table TR3.3.13-1.

SURVEILLANCE	FREQUENCY
TRSR 3.3.13.1 Perform CHANNEL CHECK.	24 hours
TRSR 3.3.13.2 Perform CHANNEL CALIBRATION.	184 days

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and associated Completion Time of Required Action A.3 not met.	C.1 Submit a Corrective Action Document explaining why the inoperability was not corrected in a timely manner.	Immediately
D. Offgas hydrogen concentration not within limit.	-------------NOTE------------- TRLCO 3.0.4 is not applicable. ------------------------------	
	D.1 Restore hydrogen concentration to within the limit.	48 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
TRSR 3.3.12.1	Perform CHANNEL CHECK of the hydrogen monitor.	24 hours
TRSR 3.3.12.2	Perform CHANNEL FUNCTIONAL TEST of the hydrogen monitor.	31 days
TRSR 3.3.12.3	Perform CHANNEL CALIBRATION of the hydrogen monitor. The alarm setpoint shall be $\leq$ 4% hydrogen by volume. Include the use of standard gas samples containing a nominal: a. One volume percent hydrogen, balance nitrogen, and b. Four volume percent hydrogen, balance nitrogen.	92 days

TR 3.3 INSTRUMENTATION

TR 3.3.12 Explosive Gas Monitoring Instrumentation

TRLCO 3.3.12 One offgas monitoring system hydrogen monitoring channel shall be OPERABLE.

AND

Offgas hydrogen concentration downstream of the recombiners shall be ≤ 4% by volume.

APPLICABILITY: During main condenser offgas treatment system operation.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. The required hydrogen monitoring instrumentation channel inoperable.	A.1	Collect hydrogen grab sample.	Once per 4 hours
	AND		
	A.2	Analyze hydrogen grab sample.	4 hours after collection of grab sample
	AND		
	A.3	Restore required offgas hydrogen monitoring instrumentation channel to OPERABLE status.	30 days
B. Required Action and associated Completion Time of required Action A.1 or A.2 not met.	B.1	Suspend release of radioactive effluents via this pathway.	Immediately

(continued)

TR 3.3 INSTRUMENTATION

TR 3.3.11 Loose-Part Detection System

TRLCO 3.3.11 The Loose-Part Detection System shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more loose-part detection system channels inoperable.	A.1 Restore channel to OPERABLE status.	30 days
B. Required Action and associated Completion Time not met.	B.1 Initiate a Corrective Action Document.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
TRSR 3.3.11.1	Perform CHANNEL CHECK.	24 hours
TRSR 3.3.11.2	Perform CHANNEL FUNCTIONAL TEST.	31 days
TRSR 3.3.11.3	Perform CHANNEL CALIBRATION.	18 months

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
TRSR 3.3.10.1	Perform CHANNEL FUNCTIONAL TEST.	31 days
TRSR 3.3.10.2	Perform CHANNEL CALIBRATION. The Trip Setpoint shall be ≤ 5 ppm.	18 months
TRSR 3.3.10.3	Verify that on the chlorine mode actuation signal, the CREF system automatically switches to the chlorine detection mode of operation, the isolation valves close within 4 seconds and a minimum of 1200 cfm emergency recirculation is established.	18 months

TR 3.3 INSTRUMENTATION

TR 3.3.10 Chlorine Detection System

TRLCO 3.3.10 Two independent chlorine detectors shall be OPERABLE.

APPLICABILITY: At all times, except when the Control Room Emergency Filtration (CREF) system is operating in the recirculation mode.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One chlorine detector inoperable.	A.1 Restore detector to OPERABLE status.	7 days
B. Required Action and associated Completion Time of Condition A not met.	B.1 Initiate and maintain isolation of all control room emergency intakes by placing the HVAC system in the chlorine mode of operation.	6 hours
C. Two chlorine detectors inoperable.	C.1 Initiate and maintain isolation of all control room emergency intakes by placing the HVAC system in the chlorine mode of operation.	1 hour
D. TRSR 3.3.10.3 not met.	D.1 Verify CREF system OPERABILITY per Technical Specification LCO 3.7.3.	Immediately

Table TR3.3.9-1 (Page 1 of 1)
Appendix R Alternative Shutdown Instrumentation

	FUNCTION	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION A.1
1.	CTG 11-1-Volts	1	B
2.	CTG 11-1-Frequency	1	B
3.	CTG 11-1-Watts	1	B
4.	CTG 11-1-VARs	1	B
5.	Condensate Storage Tank Level	1	C
6.	Standby Feedwater Flow	1	C
7.	Reactor Vessel Water Level	1	D
8.	Reactor Vessel Steam Dome Pressure	1	D
9.	Suppression Pool Water Temperature	1	D
10.	Suppression Pool Water Level	1	D
11.	Primary Containment Temperature	1	D

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. As required by Required Action A.1 and referenced in Table TR3.3.9-1.	D.1 Restore channel to OPERABLE status.	7 days
E. Required Action and associated Completion Time of Condition D not met.	E.1 Enter TRLCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

-----NOTE-----
These SRs apply to each Function in Table TR3.3.9-1.

SURVEILLANCE		FREQUENCY
TRSR 3.3.9.1	Perform CHANNEL CHECK.	31 days
TRSR 3.3.9.2	Perform CHANNEL CALIBRATION.	18 months

TR 3.3 INSTRUMENTATION

TR 3.3.9 Appendix R Alternative Shutdown Instrumentation

TRLCO 3.3.9 The alternative shutdown instrumentation channels shown in Table TR3.3.9-1 shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

-----NOTES-----

1. TRLCO 3.0.4 is not applicable.

2. Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more Functions with one required channel inoperable.	A.1	Enter the Condition referenced in Table TR3.3.9-1 for the Channel.	Immediately
B. As required by Required Action A.1 and referenced in Table TR3.3.9-1.	B.1	Declare CTG 11-1 inoperable.	Immediately
	<u>AND</u>		
	B.2	Enter the applicable Conditions and Required Actions of TR 3.7.7.	Immediately
C. As required by Required Action A.1 and referenced in Table TR3.3.9-1.	C.1	Declare SBFW System inoperable.	Immediately
	<u>AND</u>		
	C.2	Enter the applicable Conditions and Required Actions of TR 3.7.7.	Immediately

(continued)

TABLE TR3.3.8.1-1 (Page 1 of 1)
Loss of Power Instrumentation

FUNCTION	TRIP SETPOINT	ALLOWABLE VALUE
1. 4.16 kV Emergency Bus Undervoltage (Loss of Voltage)		
Division I		
a. Bus Undervoltage	4.16 kV Basis/ 3033 volts	NA
	120 V Basis/ 87.5 volts	≥ 85.75 and ≤ 89.25 volts
b. Time Delay	2.0 seconds	NA
Division II		
a. Bus Undervoltage	4.16 kV Basis/ 3078 volts	NA
	120 V Basis/ 88.8 volts	≥ 87.02 and ≤ 90.58 volts
b. Time Delay	2.0 seconds	NA
2. 4.16 kV Emergency Bus Undervoltage (Degraded Voltage)		
Division I		
a. Bus Undervoltage	4.16 kV Basis/ 3952 volts	NA
	120 V Basis/ 114.0 volts	≥ 111.71 and ≥ 116.29 volts
b. Time Delay	44.0 seconds	NA
Division II		
a. Bus Undervoltage	4.16 kV Basis/ 3702 volts	NA
	120 V Basis/ 106.8 volts	≥ 104.66 and ≤ 108.94 volts
b. Time Delay	21.4 seconds	NA

TR 3.3 INSTRUMENTATION

TR 3.3.8.1 Loss of Power (LOP) Instrumentation

TRLCO 3.3.8.1 The 120 volt basis instrumentation associated with the LOP instrumentation shall be OPERABLE within the allowable value listed in Table TR3.3.8.1-1.

-----NOTE-----
The Technical Specifications and TRM LOP instrumentation trip setpoints are listed in Table TR3.3.8.1-1.

APPLICABILITY: When the associated 4.16 kV LOP instrumentation is required to be OPERABLE.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more 120 volt basis instruments with a trip setpoint exceeding the allowable value listed in Table TR3.3.8.1-1.	A.1 Assess the OPERABILITY of the associated 4.16 kV LOP instrumentation.	Immediately

TABLE TR3.3.7.2-1 (Page 1 of 1)
Seismic Monitoring Instrumentation

FUNCTION	REQUIRED CHANNELS PER FUNCTION	SURVEILLANCE REQUIREMENTS	MEASUREMENT RANGE
1. Active Triaxial System			
a. Active Triaxial Accelerometers			
1) HPCI Room	1	TRSR 3.3.7.2.2 TRSR 3.3.7.2.3	± 1 g
2) Base of RPV Pedestal, In Drywell	1	TRSR 3.3.7.2.2 TRSR 3.3.7.2.3	± 1 g
b. Active Seismic Recording System[a]			
1) Relay Room, Auxiliary Building	1[b]	TRSR 3.3.7.2.1 TRSR 3.3.7.2.2 TRSR 3.3.7.2.3	NA
c. Active Seismic Playback System			
1) Relay Room, Auxiliary Building	NA	TRSR 3.3.7.2.1 TRSR 3.3.7.2.2 TRSR 3.3.7.2.3	NA
2. Passive Triaxial Peak Shock Recorders			
a. HPCI Room	1	TRSR 3.3.7.2.3	[c]
b. Relay Room, Auxiliary Building	1	TRSR 3.3.7.2.3	[c]
c. Refuel Floor, Reactor Building	1	TRSR 3.3.7.2.3	[c]
d. Diesel Generator Room, RHR Complex	1	TRSR 3.3.7.2.3	[c]
e. Switchgear Room, RHR Complex	1	TRSR 3.3.7.2.3	[c]
f. Cooling Tower, RHR Complex	1	TRSR 3.3.7.2.3	[c]

(a) Including seismic trigger.

(b) With reactor control room annunciation.

(c) Each passive accelerometer has 12 reeds, each monitoring a different frequency. The frequencies correspond to varying accelerations. The widest range is ± 90 g.

SURVEILLANCE REQUIREMENTS

-----------------------------------NOTE-----------------------------------
Refer to Table TR3.3.7.2-1 to determine which TRSRs apply for each Seismic Monitoring Instrumentation Function.

	SURVEILLANCE	FREQUENCY
TRSR 3.3.7.2.1	-------------------NOTE------------------- For Function 1.b.1, CHANNEL CHECK does not include seismic trigger. -- Perform CHANNEL CHECK.	31 days
TRSR 3.3.7.2.2	Perform CHANNEL FUNCTIONAL TEST.	184 days
TRSR 3.3.7.2.3	Perform CHANNEL CALIBRATION.	18 months

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. --------NOTE---------- Required Actions C.1, C.2, C.3, and C.4 shall be completed if this Condition is entered. --------------------- One or more seismic monitoring Functions inoperable due to actuation during a seismic event greater than or equal to 0.01 g.	C.1 Restore seismic monitoring instrument to OPERABLE status.	24 hours
	<u>AND</u>	
	C.2 Perform TRSR 3.3.7.2.3.	5 days
	<u>AND</u>	
	C.3 Data shall be retrieved from actuated instruments and analyzed to determine the magnitude of the vibratory ground motion.	10 days
	<u>AND</u>	
	C.4 Prepare and submit a Special Report to the Commission pursuant to 10 CFR 50.4 describing the magnitude, frequency spectrum, and resultant effect upon unit features important to safety.	10 days

TR 3.3 INSTRUMENTATION

TR 3.3.7.2 Seismic Monitoring Instrumentation

TRLCO 3.3.7.2 The seismic monitoring instrumentation shown in Table TR3.3.7.2-1 shall be OPERABLE.

APPLICABILITY: At all times.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more seismic monitoring instruments inoperable.	A.1 Restore seismic monitoring instruments to OPERABLE status.	30 days
B. Required Action and associated Completion Time not met.	B.1 Initiate Corrective Action Document.	Immediately

(continued)

TR 3.3 INSTRUMENTATION

TR 3.3.7.1 Control Room Emergency Filtration (CREF) System Instrumentation

The CREF system instrumentation trip setpoints are listed in Table TR3.3.7.1-1.

TABLE TR3.3.7.1-1 (Page 1 of 1)
Control Room Emergency Filtration System Instrumentation

	FUNCTION	TRIP SETPOINT
1.	Reactor Vessel Water Level - Low Low, Level 2	$\geq$ 110.8 inches[a]
2.	Drywell Pressure - High	$\leq$ 1.68 psig
3.	Fuel Pool Ventilation Exhaust Radiation - High	$\leq$ 5 mr/hr
4.	Control Center Normal Makeup Air Radiation - High	< 340 cpm

(a) As Referenced to instrument zero Top of Active Fuel (TAF).

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
TRSR 3.3.6.5.1	Perform CHANNEL CHECK.	24 hours
TRSR 3.3.6.5.2	Perform CHANNEL FUNCTIONAL TEST.	31 days
TRSR 3.3.6.5.3	Perform CHANNEL CALIBRATION. The alarm setpoints shall be: a. High water level ≤ 14 ft. 8 inches; and b. Low water level ≥ 14 ft. 4 inches. (TWMS Narrow Range)	18 months

TABLE TR3.8.4-1 (Page 3 of 6)
Motor-Operated Valves Thermal Overload Protection

SYSTEM AFFECTED	VALVE NUMBER
4. RHR Service Water Pumps and Motors (continued)	E1150-F604A
	E1150-F604B
	E1150-F605A
	E1150-F605B
5. Core Spray System	E2150-F004A
	E2150-F004B
	E2150-F005A
	E2150-F005B
	E2150-F015A
	E2150-F015B
	E2150-F031A
	E2150-F031B
	E2150-F036A
	E2150-F036B
6. High Pressure Coolant Injection System	E4150-F001
	E4150-F002
	E4150-F003
	E4150-F004
	E4150-F006
	E4150-F007
	E4150-F008
	E4150-F012
	E4150-F021
	E4150-F022
	E4150-F041
	E4150-F042
	E4150-F059
	E4150-F075

(continued)

TABLE TR3.8.4-1 (Page 2 of 6)
Motor-Operated Valves Thermal Overload Protection

SYSTEM AFFECTED	VALVE NUMBER
3. Residual Heat Removal System (continued)	E1150-F021A
	E1150-F021B
	E1150-F022
	E1150-F023
	E1150-F024A
	E1150-F024B
	E1150-F026B
	E1150-F027A
	E1150-F027B
	E1150-F028A
	E1150-F028B
	E1150-F047A
	E1150-F047B
	E1150-F048A
	E1150-F048B
	E1150-F068A
	E1150-F068B
	E1150-F073
	E1150-F075
	E1150-F608
	E1150-F611A
	E1150-F611B
4. RHR Service Water Pumps and Motors	E1150-F601A
	E1150-F601B
	E1150-F602A
	E1150-F602B
	E1150-F603A
	E1150-F603B

(continued)

TABLE TR3.8.4-1 (Page 1 of 6)
Motor-Operated Valves Thermal Overload Protection

SYSTEM AFFECTED	VALVE NUMBER
1. Nuclear Boiler System	B2103-F016
	B2103-F019
	B2103-F021
	B2103-F600
2. Reactor Recirculation System	B3105-F031A
	B3105-F031B
3. Residual Heat Removal System	E1150-F003A
	E1150-F003B
	E1150-F004A
	E1150-F004B
	E1150-F004C
	E1150-F004D
	E1150-F006A
	E1150-F006B
	E1150-F006C
	E1150-F006D
	E1150-F007A
	E1150-F007B
	E1150-F008
	E1150-F009
	E1150-F010
	E1150-F015A
	E1150-F015B
	E1150-F016A
	E1150-F016B
	E1150-F017A
	E1150-F017B

(continued)

TR 3.8 ELECTRICAL POWER SYSTEMS

TR 3.8.4 Electrical Equipment Protective Devices Motor-Operated Valves Thermal Overload Protection

TRLCO 3.8.4 The thermal overload protection for each valve in Table TR3.8.4-1 shall be OPERABLE.

APPLICABILITY: Whenever the motor-operated valve is required to be OPERABLE.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Thermal overload protection inoperable for one or more required valves.	A.1 Continuously bypass the inoperable thermal overload.	8 hours
B. Required Action and associated Completion Time not met.	B.1 Declare affected valve(s) inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

-------------------------------------NOTE-------------------------------------
These SRs apply to each valve in Table TR3.8.4-1.

SURVEILLANCE		FREQUENCY
TRSR 3.8.4.1	Perform CHANNEL CALIBRATION of a representative sample of at least 25% of all thermal overloads for the valves listed in Table TR3.8.4-1.	18 months
TRSR 3.8.4.2	Perform CHANNEL CALIBRATION of the affected thermal overload.	Following maintenance activities which could affect performance of thermal overload

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
TRSR 3.8.3.1	Perform an inspection of the diesel in accordance with procedures prepared in conjunction with its manufacturer's recommendations for this class of standby service.	18 months
TRSR 3.8.3.2	Verify that the following diesel generator lockout features prevent diesel generator starting only when required: a. 4160-volt ESF bus lockout; b. Differential trip; and c. Shutdown relay trip.	18 months
TRSR 3.8.3.3	Verify that the auto-connected loads to each diesel generator do not exceed the 2000-hour rating of 3100 kW.	18 months
TRSR 3.8.3.4	Drain each fuel oil storage tank, remove the accumulated sediment and clean the tank using sodium hypochlorite solution.	10 years

TR 3.8 ELECTRICAL POWER SYSTEMS

TR 3.8.3 AC Sources

TRLCO 3.8.3 Two emergency diesel generators (EDGs) per division shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. TRSR 3.8.3.1 not met. OR TRSR 3.8.3.2 not met. OR TRSR 3.8.3.3 not met. OR TRSR 3.8.3.4 not met.	A.1 Perform OPERABILITY assessment on the affected EDG(s).	Immediately

TR 3.8 ELECTRICAL POWER SYSTEMS

TR 3.8.2

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TR 3.8 ELECTRICAL POWER SYSTEMS

TR 3.8.1 AC Circuits Inside Primary Containment

TRLCO 3.8.1 The AC circuits inside primary containment associated with the following circuit breakers shall be de-energized:

a. Circuit Number 6 in panel 72B-2D

b. Circuit Numbers 1, 2, 3, 4, 5, 15, 16, 17, 18 in panel R1R

APPLICABILITY: MODES 1, 2, and 3, except during drywell entries.

ACTIONS

-----NOTE-----
Separate Condition entry is allowed for each AC circuit.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more AC circuits inside containment energized.	A.1 Trip associated circuit breaker.	1 hour

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
TRSR 3.8.1.1	Verify required AC circuits de-energized by verifying that the associated circuit breakers in the specified panels are in the off position.	24 hours OR 31 days if locked, sealed, or otherwise secured in the tripped condition

SECTION 3.8
DETAILED INDEX OF SECTION

TR 3.7 PLANT SYSTEMS

TR 3.7.9 Snubbers

TRLCO 3.7.9 All hydraulic and mechanical snubbers shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,
MODES 4 and 5 for snubbers located on systems required OPERABLE in those MODES.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more snubbers inoperable on any system.	A.1 Replace or restore snubber(s) to OPERABLE status.	72 hours
	<u>AND</u>	
	A.2 Perform an engineering evaluation per Augmented Inservice Inspection Program for Snubbers, TR 5.1 Section G, on the attached component.	72 hours
B. Required Action and associated Completion Time not met.	B.1 Declare the attached system inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
TRSR 3.7.9.1	Each snubber shall be demonstrated OPERABLE by performance of the Augmented Inservice Inspection Program for Snubbers, TR 5.1.1.	In accordance with TR 5.1.1 and the requirements of Technical Specification 5.5.6

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TABLE TR3.7.7-1 (Page 4 of 4)
Appendix R Alternative Shutdown Control Circuits

	FUNCTION	CONTROL CIRCUIT	SWITCH LOCATION
79.	43S-1B Transfer Switch Valve B31-F031A	Transfer	H21-P627
80.	43S-2B Transfer Switch Valve E1150-F010	Transfer	H21-P627
81.	43S-2C Transfer Switch Valve E1150-F015A	Transfer	H21-P627
82.	43S-3A Transfer Switch Valve E1150-F017A	Transfer	H21-P627
83.	Recirculation Pump A Discharge Valve B31-F031A	Transfer	H21-P627
84.	Cross-Tie Header Valve E11-F010	Push-button	H21-P627
85.	RHR to Recirculation Inboard Isolation Valve E11-F015A	Push-button	H21-P627
86.	RHR Recirculation Outboard Isolation Valve E11-F017A	Push-button	H21-P627
87.	43S-4B Transfer Switch Valve P44-F616	Transfer	H21-P628
88.	EECW from Drywell Inboard Isolation P44-F616	Selector	H21-P628
89.	Dedicated Shutdown System	Push-button	H11-P811
90.	43S-4CR Transfer Switch Valve P44-F607A	Transfer	H21-P632
91.	EECW from Drywell Outboard Isolation P44-F607A	Pushbutton	H21-P632
92.	Alternate QA IM (BOP) power to 72F-4A position 4C-R, throwover switch valve P44-F607A	Transfer	R1600S148

TABLE TR3.7.7-1 (Page 3 of 4)
Appendix R Alternative Shutdown Control Circuits

	FUNCTION	CONTROL CIRCUIT	SWITCH LOCATION
51.	Suppression Pool to Pump C Valve E11-F004C	Push-button	H21-P625
52.	RHR Heat Exchanger A Bypass Valve E11-F048A	Push-button	H21-P625
53.	RHR Heat Exchanger A Outlet E11-F003A	Push-button	H21-P625
54.	SDC Suction to RHR Pump C E11-F006C	Push-button	H21-P625
55.	RHR Heat Exchanger A Inlet Valve E11-F047A	Push-button	H21-P625
56.	RHR SW Control Valve E11-F068A	Push-button	H21-P625
57.	EECW Division I Return to RBCCW P44-F601A	Push-button	H21-P625
58.	EECW Division I Makeup Tank Out P44-F602A	Push-button	H21-P625
59.	EECW Supply to EECW Division I P44-F603A	Push-button	H21-P625
60.	EECW Drywell Supply Isolation P44-F606A	Push-button	H21-P625
61.	Containment Spray Outboard Isolation Valve E11-F016A	Push-button	H21-P625
62.	Drywell Cooling Fan 2	CMC	H21-P625
63.	RHR Suction Cooling Inboard Valve E11-F009	Push-button	H21-P625
64.	Drywell Cooling Fan 2 (Low, High Speed)	Selector	H21-P625
65.	RHR Emergency Equipment Cooler 1	CMC	H21-P625
66.	Torus Water Level Isolation Valve E41-F400	Push-button	H21-P625
67.	Torus Water Level Isolation Valve T50-F412A	Push-button	H21-P625
68.	43S-5A Transfer Switch Valve E11-F024A	Transfer	H21-P626
69.	43S-2A Transfer Switch Valve E11-F028A	Transfer	H21-P626
70.	43S-1AR Transfer Switch Fan T47-C001	Transfer	H21-P626
71.	43S-3AR Transfer Switch Valve E11-F004A	Transfer	H21-P626
72.	42S-5DR Transfer Switch Valve E11-F611A	Transfer	H21-P626
73.	Suppression Pool Cooling Test E11-F024A	Push-button	H21-P626
74.	Suppression Chamber Suppression Pool Outboard Isolation Valve E11-F028A	Push-button	H21-P626
75.	Drywell Cooling Fan 1	CMC	H21-P626
76.	Suppression Pool to Pump A E11-F004A	Push-button	H21-P626
77.	Drywell Cooling Fan 1 (low, high speed)	Selector	H21-P626
78.	RHR Recirculation Outboard Bypass E1150-F611A	Push-button	H21-P626

(continued)

TABLE TR3.7.7-1 (Page 2 of 4)
Appendix R Alternative Shutdown Control Circuits

	FUNCTION	CONTROL CIRCUIT	SWITCH LOCATION
26.	4160-V Position C9 Tie Breaker Control (Cutoff Switch)	Transfer	H21-P624
27.	4160-V Circuit Breaker Position C10 Core Spray Pump C Control (Cutoff Switch)	Transfer	H21-P624
28.	4160-V Position C5 Circuit Breaker Control	Transfer	H21-P624
29.	4160-V Position C6 Circuit Breaker Control	Transfer	H21-P624
30.	4160 V Position C8 Circuit Breaker Control	Transfer	H21-P624
31.	4160-V C11 Circuit Breaker Control	Transfer	H21-P624
32.	Residual Heat Removal Pump C	CMC	H21-P624
33.	4160-V Position C6 Incoming Breaker Control	CMC	H21-P624
34.	4160-V Diesel Generator Bus #12 EB Breaker Control	CMC	H21-P624
35.	ESS bus 72C Transfer R1400S023A Primary Control	CMC	H21-P624
36.	43S-5B Transfer Switch Valve E11-F004C	Transfer	H21-P625
37.	43S-6D Transfer Switch Valve E11-F048A	Transfer	H21-P625
38.	43S-5A Transfer Switch Valve E11-F003A	Transfer	H21-P625
39.	43S-5C Transfer Switch Valve E11-F006C	Transfer	H21-P625
40.	43S-6A Transfer Switch Valve E11-F047A	Transfer	H21-P625
41.	43S-6B Transfer Switch Valve E11-F068A	Transfer	H21-P625
42.	43S-7C Transfer Switch Valve P44-F601A	Transfer	H21-P625
43.	43S-7A Transfer Switch Valve P44-F602A	Transfer	H21-P625
44.	43S-7D Transfer Switch Valve P44-F603A	Transfer	H21-P625
45.	43S-4D Transfer Switch Valve P44-F606A	Transfer	H21-P625
46.	43S-5D Transfer Switch Valve E11-F016A	Transfer	H21-P625
47.	43S-9C Transfer Switch Fan T47-C002	Transfer	H21-P625
48.	43S-3C Transfer Switch Valve E11-F009	Transfer	H21-P625
49.	43S-3A Transfer Switch Fan T41-B018	Transfer	H21-P625
50.	43S-TW Transfer Switch Valve T50-F412A, E41-F400	Selector	H21-P625

(continued)

TABLE TR3.7.7-1 (Page 1 of 4)
Appendix R Alternative Shutdown Control Circuits

	FUNCTION	CONTROL CIRCUIT	SWITCH LOCATION
1.	EF1 Supervisor Control	Transfer	H21-P623
2.	EF2 System Transfer	Transfer	H21-P623
3.	Voltage Control	Control	H21-P623
4.	Governor Control	Control	H21-P623
5.	CTG 11 Unit 1 Control Status	CMC	H21-P623
6.	120 KV Position GM Breaker Control	Control	H21-P623
7.	120 KV Position GK Breaker Control	Control	H21-P623
8.	120 KV Position GH Breaker Control	Control	H21-P623
9.	120 KV Position GD Breaker Control	Control	H21-P623
10.	CTG 11 Position A2 Breaker Control	CMC	H21-P623
11.	13.2 KV Position A7 Outbuilding - TSC FD Breaker Control	CMC	H21-P623
12.	13.2 KV Position A6 SS64 Alternate Feeder Breaker Control	CMC	H21-P623
13.	SS64 Primary Position D Breaker Control	CMC	H21-P623
14.	SS66 Primary Position C Breaker Control	CMC	H21-P623
15.	SS67 Primary Position B Breaker Control	CMC	H21-P623
16.	Transfer 1 sec Position A Breaker Control	CMC	H21-P623
17.	SBFW Pump A Breaker Control	CMC	H21-P623
18	SBFW Pump B Breaker Control	CMC	H21-P623
19.	4160V Position V1 Breaker Control	CMC	H21-P623
20.	4160V Position V3 Breaker Control	CMC	H21-P623
21.	4160V Position W5 Breaker Control	CMC	H21-P623
22.	SBFW Flow Control N21-F002	Push-button	H21-P623
23.	SBFW Flow Control N21-F003	Push-button	H21-P623
24.	SBFW Isolation Valve N21-F001	Push-button	H21-P623
25.	SRV Line B B21-F013 G	Push-button	H21-P623

(continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
TRSR 3.7.7.1	For the SBFW system, verify by venting at the high point vents that the system piping from the pump discharge to the system isolation valves is filled with water.	31 days
TRSR 3.7.7.2	For the SBFW system, verify that each valve (manual, power-operated or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in the correct position.	31 days
TRSR 3.7.7.3	For CTG 11 Unit 1, start and supply load of at least 10 MW to the Peaker Bus.	31 days
TRSR 3.7.7.4	Verify that each SBFW pump develops a flow of ≥ 600 gpm in a test flow path with a system head corresponding to the reactor vessel operating pressure including injection line losses.	46 days on a STAGGERED TEST BASIS
TRSR 3.7.7.5	For the drywell cooling units, operate the unit for 72 hours with the fan in "HIGH" speed.	46 days on a STAGGERED TEST BASIS
TRSR 3.7.7.6	Verify each required alternative shutdown system control circuit in Table TR3.7.7-1 is capable of performing its intended function(s).	18 months

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. CTG 11 Unit 1 inoperable.	C.1 Verify the 120 kV bus is available by performing Technical Specification SR 3.8.1.1. **AND** C.2.1 Restore the CTG 11 Unit 1 to OPERABLE status. **OR** C.2.2 Provide an alternative source of power to the Alternative Shutdown bus.	1 hour 7 days 7 days
D. One drywell cooling unit inoperable.	D.1 Perform TRSR 3.7.7.5 using the OPERABLE drywell cooling unit.	7 days **AND** Once per 31 days thereafter
E. Two drywell cooling units inoperable.	E.1 Restore at least one drywell cooling unit to OPERABLE status.	7 days
F. One or more required alternative shutdown system control circuits inoperable.	F.1 Restore the inoperable circuits to OPERABLE status.	7 days
G. Required Action and Associated Completion Time not met.	G.1 Enter TRLCO 3.0.3.	Immediately

TR 3.7 PLANT SYSTEMS

TR 3.7.7 Appendix R Alternative Shutdown Auxiliary Systems

TRLCO 3.7.7 The Appendix R Alternative Shutdown auxiliary systems shall be OPERABLE as described below:

a. A Standby Feedwater (SBFW) system consisting of two OPERABLE SBFW pumps and an OPERABLE flow path from the condensate storage tank to the reactor vessel.

b. An OPERABLE CTG 11 Unit 1 and power train capable of supplying power to the Peaker Bus.

c. Two OPERABLE Drywell Cooling Units (Units 1 and 2) consisting of a fan and cooling coil capable of being supplied with cooling water from the EECW system.

d. The OPERABLE Appendix R Alternative Shutdown control circuits listed in Table TR3.7.7-1 that support OPERABLE Appendix R Alternative Shutdown auxiliary systems.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

-----------------------------------NOTE-----------------------------------
TRLCO 3.0.4 is not applicable.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One SBFW pump inoperable.	A.1 Perform TRSR 3.7.7.4 using the OPERABLE pump.	7 days AND Once per 31 days thereafter
B. SBFW system inoperable for reasons other than Condition A.	B.1 Restore SBFW system to OPERABLE status.	7 days

(continued)

TR 3.7 PLANT SYSTEMS

TR 3.7.6 Main Turbine Bypass System

The Main TURBINE BYPASS SYSTEM RESPONSE TIME limit is listed in Table TR3.7.6-1.

TABLE TR3.7.6-1 (Page 1 of 1)
Main Turbine Bypass System

FUNCTION	RESPONSE TIME
1. Turbine Bypass System	≤ 300 milliseconds

SURVEILLANCE REQUIREMENTS

-----NOTES-----

1. Each sealed source shall be tested for contamination by the licensee, or other persons specifically authorized by the Commission or an Agreement State.

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

	SURVEILLANCE	FREQUENCY
TRSR 3.7.5.1	-----NOTE----- Not applicable to: sources with half-life $\leq$ 30 days excluding tritium; gaseous sources; startup sources and fission detectors previously subjected to core flux; and sources not in use. ----- Verify each sealed source leakage and/or contamination is within limit.	6 months
TRSR 3.7.5.2	-----NOTE----- Only applicable to sealed startup sources and fission detectors. ----- Verify each sealed source leakage and/or contamination is within limit.	Once within 31 days prior to use <u>AND</u> Following repair or maintenance to the source
TRSR 3.7.5.3	-----NOTE----- Only applicable to sources not in use. ----- Verify each sealed source leakage and/or contamination is within limit.	Once within 6 months prior to transfer

TR 3.7 PLANT SYSTEMS

TR 3.7.5 Sealed Source Contamination

TRLCO 3.7.5 Each sealed source containing radioactive material either in excess of 100 μCi of beta and/or gamma emitting material or 5 μCi of alpha emitting material shall be free of ≥ 0.005 μCi of removable contamination.

APPLICABILITY: At all times.

ACTIONS

-----NOTES-----
Separate Condition entry is allowed for each source.

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more sealed sources with removable contamination not within limit.	A.1	Suspend use and transfer of sealed source.	Immediately
	AND		
	A.2.1	Restore removable contamination to within limit.	Prior to use
	OR		
	A.2.2	Dispose of sealed source in accordance with 10 CFR.	Prior to use
	AND		
	A.3	Submit report of contaminated sealed source to the Commission.	12 months

TABLE TR3.7.4-1 (Page 2 of 2)
Shore Barrier Survey Points[(a)]

SURVEY POINT	LOCATION[(b)] NORTH-SOUTH	LOCATION[(b)] EAST-WEST	DECEMBER 1984 CONTROL ELEVATION
7A	N7328	E5946	582.22
7B	N7322	E5958	581.18
7C	N7317	E5966	578.99
7D	N7328	E5974	575.09
8A	N7422	E5950	582.16
8B	N7418	E5957	581.40
8C	N7429	E5963	578.12
8D	N7428	E5974	576.53
9A	N7529	E5948	583.04
9B	N7531	E5961	582.10
9C	N7531	E5965	579.91
9D	N7526	E5973	575.13
10A	N7612	E5937	583.85
10B	N7610	E5950	582.21
10C	N7618	E5961	582.56
10D	N7616	E5972	576.58
11A	N7721	E5940	583.15
11B	N7721	E5956	582.08
11C	N7718	E5963	579.82
11D	N7722	E5971	576.43
12A	N7814	E5949	581.86
12B	N7809	E5955	581.11
12C	N7814	E5965	578.88
12D	N7815	E5975	577.81

(a) Measuring reference points are anchored into the capstones using center notched self-drilling bolts.

(b) See Figure B3.7.4-1 for location sketch.

TABLE TR3.7.4-1 (Page 1 of 2)
Shore Barrier Survey Points[a]

SURVEY POINT	LOCATION[b] NORTH-SOUTH	EAST-WEST	DECEMBER 1984 CONTROL ELEVATION
1A	N6807	E5945	580.05
1B	N6803	E5957	576.99
1C	N6803	E5972	575.10
2A	N6824	E5947	581.63
2B	N6825	E5959	581.01
2C	N6826	E5968	579.02
2D	N6822	E5976	577.65
3A	N6901	E5944	581.52
3B	N6898	E5958	579.89
3C	N6905	E5972	577.08
4A	N7020	E5949	580.92
4B	N7023	E5960	580.59
4C	N7023	E5967	578.58
4D	N7024	E5974	576.02
5A	N7119	E5947	582.09
5B	N7122	E5957	581.45
5C	N7120	E5964	578.72
5D	N7121	E5974	575.52
6A	N7222	E5931	582.55
6B	N7223	E5950	582.70
6C	N7215	E5958	581.22
6D	N7228	E5966	578.59
6E	N7233	E5973	575.59

(continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
TRSR 3.7.4.1	Verify the shore barrier is structurally sound and capable of limiting wave action by visual inspection and instrument survey.	Within 7 days after a severe storm in which the crest elevation of incident waves at the shore line exceeds the top of the shore barrier (583'0") **AND** Within 7 days after an earthquake event with intensity greater than an operating basis earthquake (OBE) **AND** 12 months

TR 3.7 PLANT SYSTEMS

TR 3.7.4 Shore Barrier Protection

TRLCO 3.7.4 The shore barrier shall be:

a. Structurally sound and capable of limiting wave action as intended, and

b. Maintained such that the elevation of each survey point listed in Table TR3.7.4-1 is not less than 1.0 foot below the listed elevation.

APPLICABILITY: At all times.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Elevation of one or more survey points different by more than 1.0 foot from the elevation in Table TR3.7.4-1.	A.1 Submit a Special Report to the Commission pursuant to 10 CFR 50.4 which includes the following: a. Explanation of how the degradation occurred and if the shore barrier is continuing to degrade, b. A planned course to repair the damage and a schedule for accomplishing the repair, c. Evaluation of and justification for continued plant operation, and d. The current elevation of each survey point shown in Table TR3.7.4-1.	90 days

TR 3.7 PLANT SYSTEMS

TR 3.7.3 Control Center Air Temperature

TRLCO 3.7.3 Control Center Air Temperature shall be ≤ 95° F.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Control room air temperature > 95° F but < 105° F.	A.1 Restore control room air temperature to ≤ 95° F.	12 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1 Go to a 4 hour operating shift.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE
Associated sureveillance requirements are prescribed in Technical Specification LCO 3.7.4.

TABLE TR3.7.2-2 (Page 1 of 1)
CREF System Duct Work Leak Testing Requirements (SR 3.7.3.6)

DUCTS

1. Normal intake between damper T4100F042 and the Control Room wall (Penetration V-430).
2. Normal exhaust between damper T4100F044 and the Control Room wall (Penetration V-429).
3. Discharge of recirculation fans T4100C047, 48 between the discharge flanges on filter train T41000D016 and the 5th Floor CCHVAC Equipment Room wall (Penetration V-504B).
4. Division II supply plenum between the Control Room wall (Penetration V-431) and the 4th Floor Aux. Building ceiling (Penetration V-9014).

Acceptance Criteria	Leakage Determined at Maximum Negative Pressure Expected For Each Specific Duct During Normal System Operation	Leakage Determined at Maximum Negative Pressure Expected For Each Specific Duct During Operation With a Single Damper Failure
Cumulative Total for all four ducts[a] (SCFM)	11	34

(a) When tested in accordance with ASME N510-1989.

TR 3.7 PLANT SYSTEMS

TR 3.7.2 Control Room Emergency Filtration (CREF) System

a. The CREF System duct work subject to Technical Specifications SR 3.7.3.3 is listed in Table TR3.7.2-1.

b. The CREF System duct work and the associated leak testing acceptance criteria subject to Technical Specifications SR 3.7.3.6 are listed in Table TR3.7.2-2.

TABLE TR3.7.2-1 (Page 1 of 1)
CREF System Duct Work (SR 3.7.3.3)

	DUCTS
1.	Normal intake between damper T4100F042 and the Control Room wall (Penetration V-430).
2.	Normal exhaust between damper T4100F044 and the Control Room wall (Penetration V-429).
3.	Discharge of recirculation fans T4100C047, 48 between the discharge flanges on filter train T4100D016 and the 5th Floor CCHVAC Equipment Room wall (Penetration V-504B).
4.	Division II supply plenum between the Control Room wall (Penetration V-431) and the 4th Floor Aux. Building ceiling (Penetration V-9014).
5.	Emergency intake between the discharge flange on filter train T4100D011 and the inlet flange on filter train T4100D016.
6.	Recirculation duct between the 5th Floor CCHVAC Equipment Room wall (Penetration V-504A) and the inlet flange on filter train T4100D016.

TR 3.7 PLANT SYSTEMS

TR 3.7.1 Ultimate Heat Sink (UHS) Minimum Temperature

TRLCO 3.7.1 The Ultimate Heat Sink shall be OPERABLE with an average water temperature of ≥ 41°F for each reservoir.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more reservoirs with an average water temperature < 41°F.	A.1 Visually inspect reservoir(s) to verify that no ice has formed.	Once per 12 hours
B. One or more reservoirs with ice formed.	B.1 Demonstrate OPERABILITY of each safety related pump in the reservoir(s) by running each pump.	Once per 8 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
TRSR 3.7.1.1	Verify the average water temperature of each reservoir, and combined average water temperature of the two reservoirs, are ≥ 41°F.	24 hours

SECTION 3.7
DETAILED INDEX OF SECTION

(continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
TRSR 3.6.8.1	Verify each valve (manual, power-operated, or automatic) in the flow path that is not locked, sealed, or otherwise secure in position, is in its correct position	31 days
TRSR 3.6.8.2	Verify that each spray nozzle is unobstructed by performance of an air or smoke flow test of the drywell spray nozzles.	5 years

TR 3.6 CONTAINMENT SYSTEMS

TR 3.6.8 Drywell Spray

TRLCO 3.6.8 The drywell spray mode of the residual heat removal (RHR) system shall be OPERABLE with two independent loops, each loop consisting of:

a. One OPERABLE RHR pump, and

b. An OPERABLE flow path capable of recirculating water from the suppression chamber through an RHR heat exchanger and drywell spray spargers.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One drywell spray loop inoperable.	A.1	Restore the inoperable loop to OPERABLE status.	7 days
B. Both drywell spray loops inoperable.	B.1	Restore one inoperable loop to OPERABLE status.	8 hours
C. Required Action and associated Completion Time not met.	C.1	Enter TRLCO 3.0.3.	Immediately

TR 3.6 CONTAINMENT SYSTEMS

TR 3.6.7 Secondary Containment Isolation Valves (SCIVs)

The secondary containment power operated isolation valves and their maximum isolation times are listed in Table TR3.6.7-1.

TABLE TR3.6.7-1 (Page 1 of 1)
Secondary Containment Ventilation System Power Operated Isolation Valves

FUNCTION		MAXIMUM ISOLATION TIME (seconds)
1.	Reactor Building Ventilation Exhaust Damper T41-F008	5
2.	Reactor Building Ventilation Exhaust Damper T41-F009	5
3.	Reactor Building Ventilation Supply Damper T41-F010	5
4.	Reactor Building Ventilation Supply Damper T41-F011	5

TR 3.6 CONTAINMENT SYSTEMS

TR 3.6.6 Main Steam Isolation Valve (MSIV) Leakage Control System (LCS)

TRLCO 3.6.6 Two MSIV LCS subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. TRSR 3.6.6.1 not met. OR TRSR 3.6.6.2 not met. OR TRSR 3.6.6.3 not met.	A.1 Declare the associated MSIV LCS subsystem inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
TRSR 3.6.6.1	Perform CHANNEL CHECK of the pressure control (pressure and differential pressure) instrumentation.	24 hours
TRSR 3.6.6.2	Perform CHANNEL FUNCTIONAL TEST of the pressure control (pressure and differential pressure) instrumentation.	92 days
TRSR 3.6.6.3	Perform CHANNEL CALIBRATION of the pressure control (pressure and differential pressure) instrumentation.	18 months

SURVEILLANCE REQUIREMENTS

------------------------------------NOTE------------------------------------
These SRs apply to each suppression chamber-to-drywell vacuum breaker position indicator channel.

	SURVEILLANCE	FREQUENCY
TRSR 3.6.5.1	During performance of Technical Specifications SR 3.6.1.8.2, verify proper position indication.	In accordance with SR 3.6.1.8.2
TRSR 3.6.5.2	Perform CHANNEL CALIBRATION.	18 months
TRSR 3.6.5.3	Verify the opening gap for switch actuation is $\leq$ 0.03 inches.	18 months

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Both closed position indicating channels inoperable for one or more suppression chamber-to-drywell vacuum breakers. OR Required Action and associated Completion Time of Condition A not met.	B.1 Declare the affected vacuum breaker(s) open.	Immediately
C. One of the closed position indicators of one or more suppression chamber-to-drywell vacuum breakers indicating open and the redundant closed indicator indicating closed after a suppression chamber-to-drywell vacuum breaker opening as a result of a steam release.	C.1 Cycle the applicable valve(s) to determine which of the redundant indicators is OPERABLE.	24 hours

TR 3.6 CONTAINMENT SYSTEMS

TR 3.6.5 Suppression Chamber-to-Drywell Vacuum Breaker Position Indication

TRLCO 3.6.5 Two closed position indicator channels for each suppression chamber-to-drywell vacuum breaker shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

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

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One closed position indicator channel on one or more suppression chamber-to-drywell vacuum breakers inoperable.	A.1	Verify all other vacuum breakers are closed.	2 hours
	<u>AND</u>		
	A.2.1	Verify vacuum breaker(s) with inoperable position indicator channel closed by demonstrating the other indicator OPERABLE.	2 hours <u>AND</u> Once per 14 days thereafter
	<u>OR</u>		
	A.2.2	Verify vacuum breaker(s) with inoperable position indicator channel closed by demonstrating that the drywell-to-suppression chamber ΔP is maintained at $\geq$ 0.5 psi for one hour without makeup.	24 hours <u>AND</u> Once per 14 days thereafter

(continued)

SURVEILLANCE REQUIREMENTS

-----NOTE-----
These SRs apply to each reactor building-to-suppression chamber vacuum breaker.

SURVEILLANCE		FREQUENCY
TRSR 3.6.4.1	During performance of Technical Specification SR 3.6.1.7.2, verify proper position indication.	In accordance with SR 3.6.1.7.2
TRSR 3.6.4.2	Perform visual inspection.	18 months
TRSR 3.6.4.3	Perform CHANNEL CALIBRATION on the position indicator.	18 months

TR 3.6 CONTAINMENT SYSTEMS

TR 3.6.4 Reactor Building-to-Suppression Chamber Vacuum Breaker Position Indication

TRLCO 3.6.4 The position indication for each reactor building-to-suppression chamber vacuum breaker shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Position indication inoperable for one or more reactor building -to-suppression chamber vacuum breakers.	A.1 Restore position indication to OPERABLE status.	14 days
B. Required Action and associated Completion Time not met.	B.1 Verify the vacuum breaker(s) closed by visual inspection. OR B.2 Declare the vacuum breaker(s) inoperable.	Once per 24 hours Immediately

TABLE TR3.6.3-2 (Page 2 of 2)
PCIVs/Primary Containment Flanges
Located in Locked High Radiation Areas

FUNCTION/LOCATION	PENETRATION
8. Steam Tunnel	X-7A
a. B21-F102A	
b. B21-F103A	
9. Steam Tunnel	X-9B
a. G33-F122	
b. G33-F123	
10. Steam Tunnel	X-10
a. E51-F036	
b. E51-F037	
11. Steam Tunnel	X-11
a. E41-F014	
b. E41-F015	
12. Tip Room	X-35A
a. Penetration X-35A Blank Flange	

TABLE TR3.6.3-2 (Page 1 of 2)
PCIVs/Primary Containment Flanges
Located in Locked High Radiation Areas

FUNCTION/LOCATION	PENETRATION
1. RWCU Valve Pit	X-48F
a. P34-F013	
b. P34-F014	
2. Reactor Building Second Floor	X-16B
a. E21-F023A	
b. E21-F022A	
3. RWCU Valve Pit	X-43
a. G33-F002	
b. G33-F003	
4. Steam Tunnel	X-8
a. B21-F017	
b. B21-F018	
5. Reactor Building Second Floor	X-15
a. T48-F006A	
b. T48-F007A	
6. RWCU Valve Pit	X-42
a. C41-F026	
b. C41-F027	
7. Steam Tunnel	X-7A, B, C, and D
a. B21-F025A	
b. B21-F025B	
c. B21-F025C	
d. B21-F025D	
e. B21-F026A	
f. B21-F026B	
g. B21-F026C	
h. B21-F026D	

(continued)

TABLE TR3.6.3-1 (Page 22 of 22)
Primary Containment Isolation Valves

17. <u>Group 17 - Recirculation Pump System and Primary Containment Radiation Monitoring System</u>

    Reactor Vessel Low Water Level - Level 2
    Drywell Pressure - High

18. <u>Group 18 - Primary Containment Pneumatic Supply System</u>

    Reactor Vessel Low Water Level - Level 2
    Drywell Pressure - High

(b) These valves are hydrostatically leak tested.

(c) Also closes automatically as a result of Torus Room Floor Drain Sump Level - High - High and Drywell Floor Drain Sump Level - High - High.

(d) These valves may be closed remotely from one of the following locations:
1) control room.
2) their respective local panels.

(e) Will automatically reposition as a result of the actuation of the LPCI Loop Selection Logic.

(f) Will automatically close when the corresponding RHR loop flow is greater than 3000 gpm.

(g) Will automatically close when the corresponding core spray loop flow is greater than approximately 775 gpm.

(h) Will automatically close when a) HPCI Turbine Steam Stop Valve E4100-F067 closes or b) HPCI Turbine Steam Supply Isolation Valve E4150-F001 closes.

(i) Will automatically close as a result of the condition listed in Note (h), above, as well as when HPCI flow is greater than 1200 gpm.

(j) Will automatically close when a) RCIC Turbine Steam Stop Valve E5150-F045 closes or b) RCIC Turbine Governor Trip and Throttle Valve E5150-F059 closes.

(k) Will automatically close as a result of the conditions listed in Note (j) above, as well as when RCIC flow is greater than 130 gpm.

(l) These valves are actuated by remote manual key-locked switches and will cut the TIP cable and seal off the TIP guide tube when actuated. These valves are squib-fired.

(m) May be closed remotely as a secondary actuation mode to reverse flow.

(n) Valves realign automatically on a reactor scram signal.

(o) Thermal relief valves.

(p) Locked closed.

(q) Not subject to Type C leakage tests.

(r) Hydrostatically tested in accordance with Technical Specification SR 3.4.5.1 in lieu of the requirements of Technical Specifications 3.6.1.1 and 3.6.1.3.

(s) These Containment Isolation Valve(s) are not Type C tested. Containment by-pass leakage is prevented since the line terminates below the minimum water level in the suppression chamber and the system is a closed system outside Primary Containment.

(t) Valve closes on low reactor water level signal (Level 1) or high drywell pressure signal to ensure all SDC flow is directed to the reactor vessel.

(u) Includes valve stroke time only.

TABLE TR3.6.3-1 (Page 21 of 22)
Primary Containment Isolation Valves

5. Group 5 - Core Spray System

Reactor Vessel Low Water Level - Level 1
Drywell Pressure - High

6. Group 6 - High Pressure Coolant Injection (HPCI) System

HPCI Steam Line Flow - High
HPCI Steam Supply Pressure - Low
HPCI Turbine Exhaust Diaphragm Pressure - High
HPCI Equipment Room Temperature - High

7. Group 7 - High Pressure Coolant Injection (HPCI) Vacuum Breakers

Drywell Pressure - High with simultaneous HPCI Steam Supply Pressure - Low

8. Group 8 - Reactor Core Isolation Cooling (RCIC) System

RCIC Steam Line Flow - High
RCIC Steam Supply Pressure - Low
RCIC Turbine Exhaust Diaphragm Pressure - High
RCIC Equipment Room Temperature - High

9. Group 9 - Reactor Core Isolation Cooling (RCIC) Vacuum Breakers

Drywell Pressure - High with simultaneous RCIC
Steam Supply Pressure - Low

10. Group 10 - Reactor Water Cleanup (RWCU) System (Inboard)

RWCU Differential Flow - High
RWCU Area Temperature - High
RWCU Area Ventilation Differential Temperature - High
Reactor Vessel Low Water Level - Level 2

11. Group 11- Reactor Water Cleanup (RWCU) System (Outboard)

SLCS Initiation (not a containment isolation signal)
RWCU Differential Flow - High
RWCU Area Temperature - High
RWCU Area Ventilation Differential Temperature - High
Reactor Vessel Low Water Level - Level 2

12. Group 12 - Torus Water Management System (TWMS)

Reactor Vessel Low Water Level - Level 2
Drywell Pressure - High

13. Group 13 - Drywell Sumps

Reactor Vessel Low Water Level - Level 3
Drywell Pressure - High

14. Group 14 - Drywell and Suppression Pool Ventilation System

Reactor Vessel Low Water Level - Level 2
Drywell Pressure - High

15. Group 15 - Transversing In-Core (TIP) System

NOTE: Either of these signals initiate TIP withdrawal which results in automatic closure of the TIP Ball Valves when the TIP probe has entered the shield cask.

Reactor Vessel Low Water Level - Level 3
Drywell Pressure - High

16. Group 16 - Nitrogen Inerting System

Reactor Vessel Low Water Level - Level 2
Drywell Pressure - High

(continued)

TABLE TR3.6.3-1 (Page 20 of 22)
Primary Containment Isolation Valves

FUNCTION	MAXIMUM ISOLATION TIME (seconds)[u]
4. Other Isolation Valves (continued)	
s. EECW Supply to Drywell Equipment Check Valves	
Division I: P4400-F282A	NA
Division II: P4400-F282B	NA
t. Control Rod Drive System Insert and Withdrawal Lines[q]	
The following valve identifiers are common to all HCUs and sub-components under each HCU PIS number. HCU PIS numbers are C1103-D001 through C1103-D185.	
C11-F115	NA
C11-F138	NA
u. Control Rod Drive Scram Discharge Volume	
C1100-F010	NA
C1100-F011	NA
C1100-F180	NA
C1100-F181	NA

(a) The following is a summary of the parameters which will automatically actuate the Primary Containment Isolation Valve Groups. The instrumentation associated with these parameters is described in Technical Specification LCO 3.3.6.1.

1. Group 1 - Main Steam System

   Reactor Vessel Low Water Level - Level 1
   Main Steam Line Radiation - High
   Main Steam Line Flow - High
   Main Steam Line Tunnel Temperature - High
   Main Steam Line Pressure - Low
   Condenser Pressure - High
   Turbine Building Area Temperature - High

2. Group 2 - Reactor Water Sample System

   Reactor Vessel Low Water Level - Level 2
   Drywell Pressure - High
   Main Steam Line Radiation - High

3. Group 3 - Residual Heat Removal (RHR) System

   Reactor Vessel Low Water Level - Level 1
   Drywell Pressure - High

4. Group 4 - Residual Heat Removal Shutdown Cooling and Head Spray

   Reactor Vessel Low Water Level - Level 3
   Reactor Vessel Pressure - High, Shutdown Cooling Interlock

(continued)

TABLE TR3.6.3-1 (Page 19 of 22)
Primary Containment Isolation Valves

FUNCTION	MAXIMUM ISOLATION TIME (seconds)[u]
4. Other Isolation Valves (continued)	
k. HPCI Turbine Exhaust Drain Pot Drain to Suppression Chamber Reverse Stop Check Valve[m][s]	
E4150-F022	NA
l. RCIC Turbine Exhaust Line Isolation Check Valve[m][s]	
E5150-F001	NA
m. HPCI Turbine Exhaust line Isolation Valve[m][s]	
E4150-F021	NA
n. RCIC Barometric Condenser Vacuum Pump Discharge Stop Check Valve[m][s]	
E5150-F002	NA
o. Combustible Gas Control System Return Line Relief Valves	
Division I: T4804-F016A	NA
Division II: T4804-F016B	NA
p. Suppression Pool to Reactor Building Check Valves	
T2300-F450A	NA
T2300-F450B	NA
q. CRD Insert and Withdrawal Valves[n][q]	
The following valve identifiers are common to all HCUs and are sub-components under each HCU PIS number. HCU PIS numbers are C1103-D001 through C1103-D185.	
C11-F120	NA
C11-F121	NA
C11-F122	NA
C11-F123	NA
r. Standby Liquid Control Reverse Flow Check Valves	
Inboard: C4100-F007	NA
Outboard: C4100-F006	NA

(continued)

TABLE TR3.6.3-1 (Page 18 of 22)
Primary Containment Isolation Valves

FUNCTION	MAXIMUM ISOLATION TIME (seconds)[u]
4. Other Isolation Valves (continued)	
j. Excess Flow Check Valves[q] (continued)	
6. Recirculation Pump Instrumentation (continued)	
e) Pumps A and B Suction Pressure	
B31-F512A	NA
B31-F512B	NA
7. Main Steam Flow Instrumentation	
Line A: B21-F501A	NA
B21-F502A	NA
B21-F503A	NA
B21-F504A	NA
Line B: B21-F501B	NA
B21-F502B	NA
B21-F503B	NA
B21-F504B	NA
Line C: B21-F501C	NA
B21-F502C	NA
B21-F503C	NA
B21-F504C	NA
Line D: B21-F501D	NA
B21-F502D	NA
B21-F503D	NA
B21-F504D	NA

(continued)

TABLE TR3.6.3-1 (Page 17 of 22)
Primary Containment Isolation Valves

FUNCTION	MAXIMUM ISOLATION TIME (seconds)[u]
4. Other Isolation Valves (continued)	
j. Excess Flow Check Valves[q] (continued)	
6. Recirculation Pump Instrumentation (continued)	
a) Flow (continued)	
Loop B: B31-F503B	NA
B31-F504B	NA
B31-F505B	NA
B31-F506B	NA
b) Inlet Differential Pressure	
B31-F501A	NA
B31-F501B	NA
B31-F501C	NA
B31-F501D	NA
B31-F502A	NA
B31-F502B	NA
B31-F502C	NA
B31-F502D	NA
c) Pump Differential Pressure	
Pump A: B31-F510A	NA
B31-F511A	NA
Pump B: B31-F510B	NA
B31-F511B	NA
d) Seal Cavity Pressure	
Pump A, #1 Seal: B31-F516A	NA
Pump A, #2 Seal: B31-F515A	NA
Pump B, #1 Seal: B31-F516B	NA
Pump B, #2 Seal: B31-F515B	NA

(continued)

TABLE TR3.6.3-1 (Page 16 of 22)
Primary Containment Isolation Valves

FUNCTION	MAXIMUM ISOLATION TIME (seconds)[u]
4. Other Isolation Valves (continued)	
j. Excess Flow Check Valves[q] (continued)	
2. RPV Instrumentation (continued)	
b) Pressure: (continued)	
N21-F539A	NA
N21-F539B	NA
G33-F583	NA
3. Core Spray instrumentation	
E21-F500A	NA
E21-F500B	NA
4. HPCI Instrumentation	
E41-F500	NA
E41-F501	NA
E41-F502	NA
E41-F503	NA
5. RCIC Instrumentation	
E51-F503	NA
E51-F504	NA
E51-F505	NA
E51-F506	NA
6. Recirculation Pump Instrumentation	
a) Flow	
Loop A: B31-F503A	NA
B31-F504A	NA
B31-F505A	NA
B31-F506A	NA

(continued)

TABLE TR3.6.3-1 (Page 15 of 22)
Primary Containment Isolation Valves

FUNCTION	MAXIMUM ISOLATION TIME (seconds)[u]
4. Other Isolation Valves (continued)	
j. Excess Flow Check Valves[q] (continued)	
1. Jet Pump Instrumentation (continued)	
B21-F515M	NA
B21-F515N	NA
B21-F515P	NA
B21-F515R	NA
B21-F515S	NA
B21-F515T	NA
B21-F515U	NA
2. RPV Instrumentation	
a) Level:	
B21-F507	NA
B21-F508	NA
B21-F509	NA
B21-F510	NA
B21-F511	NA
B21-F512	NA
b) Pressure:	
B21-F506	NA
B21-F508	NA
B21-F516A	NA
B21-F516B	NA
B21-F516C	NA
B21-F517A	NA
B21-F517B	NA
B21-F517C	NA
B21-F517D	NA

(continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
TRSR 3.12.8.1	Verify that each unlocked fire door without electrical supervision is closed.	24 hours
TRSR 3.12.8.2	Verify the position of each locked-closed fire door.	7 days
TRSR 3.12.8.3	Perform a CHANNEL FUNCTIONAL TEST of each fire door supervision system for each electrically supervised fire door.	31 days
TRSR 3.12.8.4	Inspect the automatic hold-open, release and closing mechanism and latches.	184 days
TRSR 3.12.8.5	Visually inspect the exposed surfaces of each fire rated assembly.	18 months
TRSR 3.12.8.6	Visually inspect each fire damper and associated hardware.	18 months
TRSR 3.12.8.7	-------------------NOTE------------------- Penetration seals inside electrical conduits need not be inspected under this TRSR if they meet the requirements of UFSAR Section 9A.2.3.1.1 for not requiring seals to prevent the passage of heat and fire. -- Visually inspect 10% of each type of sealed penetration. If apparent changes in appearance or abnormal degradations are found, a visual inspection of an additional 10% of each type of sealed penetration shall be made. This inspection process shall continue until a 10% sample with no apparent changes in appearance or abnormal degradation is found.	------NOTE------- Samples shall be selected such that each penetration seal is inspected at least once per 15 years. ----------------- 18 months

TR 3.12 FIRE PROTECTION

TR 3.12.8 Fire Rated Assemblies

TRLCO 3.12.8 All fire rated assemblies, including 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 including fire doors, fire dampers, cable, piping and ventilation duct penetration seals and ventilation seals, shall be OPERABLE.

APPLICABILITY: At all times.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more of the above required fire rated assemblies and/or sealing devices inoperable.	A.1 Establish a continuous fire watch on at least one side of the affected assembly(s) and/or sealing device(s).	1 hour
	OR	
	A.2.1 Verify the OPERABILITY of fire detectors on at least one side of the inoperable assembly(s) and sealing device(s).	1 hour
	AND	
	A.2.2 Establish an hourly fire watch patrol.	1 hour

TABLE TR3.12.7-1 (Page 1 of 1)
Yard Fire Hydrants and Associated Hydrant Houses

	FUNCTION	HYDRANT NUMBER
1.	Between the RHR complex and the reactor building	9
2.	Southwest of the reactor building	10
3.	Southwest of the reactor building	11
4.	Southeast of the reactor building	12

SURVEILLANCE REQUIREMENTS

-----NOTE-----
These TRSRs apply to each Function in Table TR3.12.7-1.

SURVEILLANCE		FREQUENCY
TRSR 3.12.7.1	Perform a visual inspection of the hydrant hose house to assure all required equipment is at the hose house.	31 days
TRSR 3.12.7.2	Visually inspect each yard fire hydrant and verify that the hydrant barrel is dry and that the hydrant is not damaged.	-------NOTE------ Inspections are to be performed during March, April, or May and during September, October, or November. ---------------- 6 months
TRSR 3.12.7.3	Conduct a hose hydrostatic test at a pressure of 150 psig or at least 50 psig above the maximum fire main operating pressure, whichever is greater.	12 months
TRSR 3.12.7.4	Replace all degraded gaskets in couplings.	12 months
TRSR 3.12.7.5	Perform a flow check of each hydrant.	12 months

TR 3.12 FIRE PROTECTION

TR 3.12.7 Yard Fire Hydrants and Hydrant Hose Houses

TRLCO 3.12.7 The yard fire hydrants and associated hydrant hose houses shown in Table TR3.12.7-1 shall be OPERABLE.

APPLICABILITY: When equipment in the areas protected by the yard fire hydrants is required to be OPERABLE.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more of the yard fire hydrants or associated hydrant houses shown in Table TR3.12.7-1 inoperable.	A.1	---------NOTE-------- Only applicable if the inoperable fire hydrant or associated hydrant hose house is the primary means of fire suppression. --------------------- Have additional lengths of 2 ½ inch diameter hose located in an adjacent OPERABLE hydrant hose house to provide service to the unprotected area(s).	1 hour
	<u>AND</u>		
	A.2	---------NOTE-------- Only applicable if the inoperable fire hydrant or associated hydrant hose house is not the primary means of fire suppression. --------------------- Have additional lengths of 2 ½ inch diameter hose located in an adjacent OPERABLE hydrant hose house to provide service to the unprotected area(s).	24 hours

TABLE TR3.12.6-1 (Page 3 of 3)
Fire Hose Stations

FUNCTION	ELEVATION	HOSE RACK NO.
3. Residual Heat Removal (RHR) complex		
a. Fire hose at top of stairway to RHR-1 switchgear room	617 ft 0 in	RR-1
b. Fire hose at top of stairway to RHR-2 switchgear room	617 ft 0 in	RR-2
c. Fire hose in RHR-1 near diesel generator service water pump	590 ft 0 in	RR-3
d. Fire hose in RHR-2 near diesel generator service water pump	590 ft 0 in	RR-4
e. Fire hose in RHR-1 near diesel generator No. 12	590 ft 0 in	RR-5
f. Fire hose in RHR-2 near diesel generator No. 13	590 ft 0 in	RR-6
g. Fire hose in RHR-1 near diesel generator No. 11	590 ft 0 in	RR-7
h. Fire hose in RHR-2 near diesel generator No. 14	590 ft 0 in	RR-8

TABLE TR3.12.6-1 (Page 2 of 3)
Fire Hose Stations

	FUNCTION	ELEVATION	HOSE RACK NO.
1.	Reactor Building (continued)		
	z. Fire hose at southwest corner near stairway	562 ft 0 in	RB-26
	aa. Fire hose at southeast corner near stairway	562 ft 0 in	RB-27
	ab. Fire hose at northwest corner near stairway	540 ft 0 in	RB-28
	ac. Fire hose at northeast corner near stairway	540 ft 0 in	RB-29
	ad. Fire hose at southwest corner near stairway	540 ft 0 in	RB-30
	ae. Fire hose at southeast corner near stairway	540 ft 0 in	RB-31
	af. Fire hose in HPCI room	540 ft 0 in	RB-32
	ag. Fire hose in CRD pump room	562 ft 0 in	RB-33
2.	Auxiliary Building		
	a. Fire hose at southwest corner in control center air conditioning equipment room	677 ft 6 in	AB-1
	b. Fire hose at northwest corner in ventilation equipment area	677 ft 6 in	AB-2
	c. Fire hose at southwest wall in ventilation equipment area	677 ft 6 in	AB-3
	d. Fire hose at north side in ventilation equipment area	659 ft 6 in	AB-4
	e. Fire hose at south side in ventilation equipment area	659 ft 6 in	AB-5
	f. Fire hose outside control room near center stairway	643 ft 6 in	AB-6
	g. Fire hose outside cable spreading room in stairway from control room	630 ft 6 in	AB-7
	h. Fire hose south wall cable tray room near stairway	630 ft 6 in	AB-8
	i. Fire hose near column line H-12	613 ft 6 in	AB-9
	j. Fire hose in walkway from reactor building	613 ft 6 in	AB-10
	k. Fire hose in stairway from relay room to lower cable tray area	613 ft 6 in	AB-11
	l. Fire hose at southeast corner by RBCCW heat exchanger	583 ft 6 in	AB-12
	m. Fire hose at column G-14 RBCCW pump area	583 ft 6 in	AB-13
	n. Fire hose near compressor receiver for Division II	551 ft 0 in	AB-14
	o. Fire hose near compressor receiver for Division I	551 ft 0 in	AB-15

(continued)

TABLE TR3.12.6-1 (Page 1 of 3)
Fire Hose Stations

FUNCTION	ELEVATION	HOSE RACK NO.
1. Reactor Building		
a. Fire hose at top of stairway in northwest auxiliary building	736 ft	RB-1
b. Fire hose at northwest corner by elevator	684 ft 6 in	RB-2
c. Fire hose at southwest corner	684 ft 6 in	RB-3
d. Fire hose at northeast stairway	684 ft 6 in	RB-4
e. Fire hose in southeast walkway	684 ft 6 in	RB-5
f. Fire hose at northwest corner outside elevator	659 ft 6 in	RB-6
g. Fire hose at northeast corner in stairway	659 ft 6 in	RB-7
h. Fire hose at southwest corner at stairway	659 ft 6 in	RB-8
i. Fire hose at southeast corner at stairway	659 ft 6 in	RB-9
j. Fire hose at northeast corner at stairway	659 ft 6 in	RB-10
k. Fire hose at northwest corner at stairway by elevator	641 ft 6 in	RB-11
l. Fire hose at southwest corner at stairway	641 ft 6 in	RB-12
m. Fire hose at southeast corner at stairway	641 ft 6 in	RB-13
n. Fire hose at northwest corner near elevator	613 ft 6 in	RB-14
o. Fire hose at southwest corner at bottom of stairway	613 ft 6 in	RB-15
p. Fire hose near drywell instrument monitoring rack (east walkway)	613 ft 6 in	RB-16
q. Fire hose in the northeast corner	613 ft 6 in	RB-17
r. Fire hose at southeast corner by auxiliary building access	613 ft 6 in	RB-18
s. Fire hose at northwest corner near elevator	583 ft 6 in	RB-19
t. Fire hose at northeast corner near stairway	583 ft 6 in	RB-20
u. Fire hose at railroad bay	583 ft 6 in	RB-21
v. Fire hose at southeast corner near stairway	583 ft 6 in	RB-22
w. Fire hose at entrance to containment (southwest)	583 ft 6 in	RB-23
x. Fire hose at northwest corner near elevator	562 ft 0 in	RB-24
y. Fire hose at northeast corner near stairway	562 ft 0 in	RB-25

(continued)

SURVEILLANCE REQUIREMENTS

--------------------------------------NOTE--------------------------------------
These TRSRs apply to each Function in Table TR3.12.6-1.

SURVEILLANCE		FREQUENCY
TRSR 3.12.6.1	-------------------NOTE------------------- Only applicable to fire hose stations accessible during plant operation. -- Perform a visual inspection of the fire hose stations to assure all required equipment is at the station.	31 days
TRSR 3.12.6.2	-------------------NOTE------------------- Only applicable to fire hose stations not accessible during plant operation. -- Perform a visual inspection of the fire hose stations to assure all required equipment is at the station.	18 months
TRSR 3.12.6.3	Remove the hose, inspect and re-rack.	18 months
TRSR 3.12.6.4	Inspect all gaskets and replace any degraded gaskets in the couplings.	18 months
TRSR 3.12.6.5	Partially open each hose station valve to verify valve OPERABILITY and no flow blockage.	3 years
TRSR 3.12.6.6	Conduct a hose hydrostatic test at a pressure of 150 psig or at least 50 psig above the maximum fire main operating pressure, whichever is greater.	3 years

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. (continued)	A.1	---------NOTE-------- Only applicable when the inoperable fire hose is the primary means of fire suppression. --------------------- Provide gated wye(s) on the nearest OPERABLE hose station(s).	 1 hour
	<u>AND</u>		
	A.2	---------NOTE-------- Only applicable when the inoperable fire hose is not the primary means of fire suppression. --------------------- Provide gated wye(s) on the nearest OPERABLE hose station(s).	 24 hours

TR 3.12 FIRE PROTECTION

TR 3.12.6 Fire Hose Stations

TRLCO 3.12.6 The fire hose stations shown in Table TR3.12.6-1 shall be OPERABLE.

APPLICABILITY: When equipment in the areas protected by the fire hose stations is required to be OPERABLE.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more fire hose stations shown in Table TR3.12.6-1 inoperable.	-------------NOTES------------ 1. One outlet of the wye shall be connected to the standard length of hose provided for the hose station. 2. The second outlet of the wye shall be connected to a length of hose sufficient to provide coverage for the area left unprotected by the inoperable hose station. 3. Where it can be demonstrated that the physical routing of the fire hose would result in a recognizable hazard to operating technicians, plant equipment, or the hose itself, the fire hose shall be stored in a roll at the outlet of the OPERABLE hose station. 4. Signs shall be mounted above the gated wye(s) to identify the proper hose to use. ------------------------------	

(continued)

SURVEILLANCE REQUIREMENTS

-----NOTE-----
These TRSRs apply to each halon system.

SURVEILLANCE		FREQUENCY
TRSR 3.12.5.1	Verify that each manual, power-operated, or automatic valve in the flow path is in its correct position.	31 days
TRSR 3.12.5.2	For halon storage tank weight and pressure, verify either: a. Main bank ≥ 95% full charge weight and ≥ 90% full charge pressure; or b. Reserve bank ≥ 95% full charge weight and ≥ 90% full charge pressure.	6 months
TRSR 3.12.5.3	Verify the system, including associated ventilation system fire dampers and fire door release mechanisms, actuates, manually and automatically, upon receipt of a simulated actuation signal.	18 months

TR 3.12 FIRE PROTECTION

TR 3.12.5 Halon Systems

TRLCO 3.12.5 The following halon systems shall be OPERABLE with the storage tanks of either the main bank or the reserve bank having at least 95% of the main bank or the reserve bank full charge weight and 90% of the main bank or the reserve bank full charge pressure:

a. Relay room, elevation 613 ft 6 in;

b. Cable spreading room, elevation 630 ft 6 in; and

c. Computer room, and under floor, elevation 655 ft 6 in.

APPLICABILITY: When equipment protection by the halon systems is required to be OPERABLE.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more of the above required Halon systems inoperable.	A.1 ---------NOTE-------- Only applicable to systems a and b above. -------------------- Establish a continuous fire watch with backup fire suppression equipment.	1 hour
	AND	
	A.2 ---------NOTE-------- Only applicable to system c above. -------------------- Establish an hourly fire watch patrol.	1 hour

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
TRSR 3.12.4.1	Verify each CO_2 storage tank pressure to be > 250 psig but < 330 psig, and level to be a. > 50% full for systems a and b above; and b. > 40% full for systems c and d above.	7 days
TRSR 3.12.4.2	For each required low pressure CO_2 system, verify that each manual, power-operated, or automatic valve in the flow path is in its correct position.	31 days
TRSR 3.12.4.3	-------------------NOTE------------------- Upon actuation of the SGTS CO_2 suppression system, the SGTS exhaust and cooling fans are manually tripped if they are running. -- Verify each required low pressure CO_2 system, including associated ventilation system fire dampers and fire door release mechanisms, actuates, manually and/or automatically, upon receipt of a simulated actuation signal.	18 months

TR 3.12 FIRE PROTECTION

TR 3.12.4 CO_2 Systems

TRLCO 3.12.4 The following low pressure CO_2 systems shall be OPERABLE:

a. Emergency diesel generators, RHR complex;

b. Standby gas treatment system charcoal filters, Auxiliary Building, elevation 677 ft 6 in;

c. Cable tray area, Auxiliary Building, elevation 631 ft; and

d. Outside Division II switchgear room, Auxiliary Building, elevation 643 ft 6 in.

APPLICABILITY: When equipment protected by the CO_2 systems is required to be OPERABLE.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more of the above required CO_2 systems inoperable.	A.1 ---------NOTE-------- Only applicable to systems c and d above. --------------------- Establish a continuous fire watch with backup fire suppression equipment.	1 hour
	AND	
	A.2 ---------NOTE-------- Only applicable to systems a and b above. --------------------- Establish an hourly fire watch patrol.	1 hour

TABLE TR3.12.3-1
Spray and Sprinkler Systems

AREA	ELEVATION	TYPE
1. Reactor Building		
a. Torus Room	560 ft	Wet Pipe Sprinkler[a]
b. Basement NE Corner Room	540 ft	Wet Pipe Sprinkler
c. HPCI Turbine and Pump Room	540 ft	Wet Pipe Sprinkler
d. First Floor, Railroad Bay	583 ft	Wet Pipe Sprinkler[a]
e. Second Floor, Cable Trays	613 ft	Wet Pipe Sprinkler[a]
f. Fourth Floor, MG Sets	641 ft 6 in	Wet Pipe Sprinkler
2. Auxiliary Building		
a. Basement	551 ft and 562 ft	Wet Pipe Sprinkler[a]
b. Mezzanine and Cable Tray Area	583 ft and 603 ft	Wet Pipe Sprinkler[a]
c. Ventilation Equipment	677 ft	Manual Flooding System
d. Corridor	562 ft	Wet Pipe Sprinkler[a]
3. RHR Complex		
a. Fuel Oil Storage Tank Rooms (4)		Wet Pipe Sprinkler
4. General Service Water Pumphouse		
a. Diesel Fire Pump Room		Wet Pipe Sprinkler

(a) This sprinkler system is located in a fire zone where redundant systems or components could be damaged.

SURVEILLANCE REQUIREMENTS

------------------------------------NOTE------------------------------------
These SRs apply to each Area in Table TR3.12.3-1.

SURVEILLANCE		FREQUENCY
TRSR 3.12.3.1	-------------------NOTE------------------- For valves that are not accessible during unit operation, not required to be performed in MODES 1, 2, and 3, or MODE 4 of ≤ 24 hours. --- Verify each manual, powered-operated, or automatic valve in the flow path is in its correct position.	31 days
TRSR 3.12.3.2	-------------------NOTE------------------- For valves that are not accessible during unit operation, not required to be performed in MODES 1, 2, and 3, or MODE 4 of ≤ 24 hours. --- Cycle each testable valve in the flow path through at least one complete cycle of full travel.	12 months
TRSR 3.12.3.3	-------------------NOTE------------------- The ventilation room manual flooding system is exempt from the automatic actuation. --- Perform a system functional test, which includes the simulated automatic actuation of each system by opening the inspectors test valve and verifying the water flow alarm annunciator.	18 months
TRSR 3.12.3.4	Perform a visual inspection of the sprinkler header to verify its integrity.	18 months

TR 3.12 FIRE PROTECTION

TR 3.12.3 Spray and Sprinkler Systems

TRLCO 3.12.3 The spray and sprinkler system shown in Table TR3.12.3-1 shall be OPERABLE.

APPLICABILITY: When equipment protected by the spray and/or sprinkler systems is required to be OPERABLE.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more required spray and/or sprinkler systems inoperable.	A.1	--------NOTE--------- Only applicable to areas 1.a, 1.d, 1.e, 2.a, 2.b, and 2.d. ---------------------	
		Establish a continuous fire watch with backup fire suppression equipment.	1 hour
	AND		
	A.2	--------NOTE--------- Only applicable to areas 1.b, 1.c, 1.f, 2.c, 3.a, and 4.a. ---------------------	
		Establish an hourly fire watch patrol.	1 hour

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
TRSR 3.12.2.18	Verify diesel-driven fire pump starting 24-volt battery bank battery to battery and terminal connections, are clean, tight, free of corrosion, and coated with anticorrosion material.	18 months
TRSR 3.12.2.19	Perform a flow test of the fire suppression water system in accordance with Chapter 8, Section 16 of the Fire Protection Handbook, 15th Edition, published by the National Fire Protection Association.	3 years

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
TRSR 3.12.2.13	--------------------NOTE------------------ Measured performance shall be recorded at minimum and rated loads. -- Verify that each fire pump develops a discharge of 150% rated capacity at 65% of rated pressure (3750 $\pm$ 10% gpm at 104 $\pm$ 10% psig).	18 months
TRSR 3.12.2.14	Cycle each valve in the flow path that is not testable during plant operation through at least one complete cycle of full travel.	18 months
TRSR 3.12.2.15	Verify that each fire suppression pump starts sequentially to maintain the fire suppression water system pressure $\geq$ 105 psig.	18 months
TRSR 3.12.2.16	------------------NOTE------------------ This surveillance shall not be performed during MODES 1 or 2. -- Inspect the diesel of the diesel-driven fire suppression pump to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for the class of service.	18 months
TRSR 3.12.2.17	Verify the diesel-driven fire pump starting 24-volt battery bank battery and battery racks, show no visual indication of physical damage or abnormal deterioration.	18 months

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
TRSR 3.12.2.7	Verify the diesel-driven fire suppression pump fuel storage tank contains at least 150 gallons of fuel.	31 days
TRSR 3.12.2.8	Start the diesel-driven fire suppression pump from ambient conditions and operate for ≥ 30 minutes on recirculation flow.	31 days
TRSR 3.12.2.9	-------------------NOTE------------------- Obtain the sample of diesel fuel in accordance with ASTM-D270-65 (reapproved 1980). --	
	Verify that a sample of diesel fuel from the diesel-driven fire suppression pump fuel storage tank is within the acceptable limits specified in Table 1 of ASTM-D975-77 when checked for viscosity, water and sediment.	92 days
TRSR 3.12.2.10	Perform a fire suppression water system flush.	12 months
TRSR 3.12.2.11	-------------------NOTE------------------- For valves that are not accessible during unit operation, not required to be performed in MODES 1, 2, and 3, or MODE 4 of < 24 hours. --	
	Cycle each testable valve in the flow path through at least one complete cycle of full travel.	12 months
TRSR 3.12.2.12	Perform a system functional test which includes simulated automatic actuation of the system throughout its operating sequence.	18 months

(continued)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
TRSR 3.12.2.1	Verify the general service water intake structure water level is ≥ 558 ft.	7 days
TRSR 3.12.2.2	Verify the electrolyte level of each diesel-driven fire pump starting 24-volt battery bank battery is above the plates.	7 days
TRSR 3.12.2.3	Verify the battery specific gravity of the diesel-driven fire pump starting 24-volt battery bank corrected to 77°F, is ≥ 1.235.	7 days
TRSR 3.12.2.4	-------------------NOTE------------------- The voltage is to be checked with the battery charger connected. -- Verify the diesel-driven fire pump starting 24-volt battery bank battery voltage, is ≥ 26.2 volts.	7 days
TRSR 3.12.2.5	Start the electric motor-driven fire suppression pump and operate it for 15 minutes on recirculation flow.	31 days
TRSR 3.12.2.6	-------------------NOTE------------------- For valves that are not accessible during unit operation, not required to be performed in MODES 1, 2, and 3, or MODE 4 of ≤ 24 hours. -- Verify that each manual, powered-operated, or automatic valve in the flow path is in the correct position.	31 days

(continued)

TR 3.12 FIRE PROTECTION

TR 3.12.2 Fire Suppression Water System

TRLCO 3.12.2 The fire suppression water system shall be OPERABLE with:

a. Two fire suppression pumps, each with a capacity of 2500 gpm, with their discharge aligned to the fire suppression header;

b. The general service water intake structure water level ≥ 558 feet; and

c. An OPERABLE flow path capable of taking suction from the general service water intake structure and transferring the water through distribution piping with OPERABLE sectionalizing control or isolation valves to the yard hydrant curb valves, the last valve ahead of the water flow alarm device in each sprinkler or hose standpipe and the last valve ahead of the spray system required to be OPERABLE per TRLCO 3.12.3, TRLCO 3.12.6, and TRLCO 3.12.7.

APPLICABILITY: At all times.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One fire suppression pump inoperable.	A.1	Restore the inoperable pump to OPERABLE status.	7 days
	<u>OR</u>		
	A.2	Provide an alternate backup pump.	7 days
B. The fire suppression water system inoperable for reasons other than Condition A.	B.1	Establish backup fire suppression water system.	24 hours
C. Required Actions and associated Completion Time of Condition B not met.	C.1	Be in MODE 2.	7 hours
	<u>AND</u>		
	C.2	Be in MODE 3.	13 hours
	<u>AND</u>		
	C.3	Be in MODE 4.	37 hours

TABLE TR3.12.1-2 (Page 1 of 1)
Containment Air Temperature Locations

	ELEVATION	AZIMUTH (At least one at each elevation)
1.	590 ft 0 in	90°, 135°, 270°, or 316°
2.	597 ft 0 in	35°, 75°, 93°, 135°, 175°, 200°, 246°, 272°, 306°, or 345°
3.	621 ft 8 in	0°, 90°, 180°, or 270°
4.	648 ft 6 in	45°, 135°, 225°, or 315°
5.	662 ft 0 in	0°, 90°, 180°, or 285°
6.	665 ft 6 in	0° or 180°

TABLE TR3.12.1-1 (Page 3 of 3)
Fire Detection Instrumentation

FUNCTION		FIRE DETECTION ZONE	TOTAL NUMBER OF INSTRUMENTS[a] IONIZATION (X/Y)	PHOTOELECTRIC (X/Y)	FIXED THERMAL (X/Y)	INFRARED (X/Y)
4.	RHR Complex (continued)					
	g. EDG 11 switchgear room	52	6/0			
	h. EDG 12 switchgear room	53	6/0			
	i. EDG 13 switchgear room	54	6/0			
	j. EDG 14 switchgear room	55	6/0			
5.	General service water pump house					
	a. First floor	31	2/0		3/0	

(a) (X/Y) X is number of Function A (early-warning fire detection and notification only) instruments.
Y is number of Function B (actuation of fire suppression system and early warning and notification) instruments.

TABLE TR3.12.1-1 (Page 2 of 3)
Fire Detection Instrumentation

FUNCTION	FIRE DETECTION ZONE	TOTAL NUMBER OF INSTRUMENTS[a] IONIZATION (X/Y)	PHOTOELECTRIC (X/Y)	FIXED THERMAL (X/Y)	INFRARED (X/Y)
2. Auxiliary Building (continued)					
f. Cable tray area second floor mezzanine	9A	0/22			
g. DC/MCC room, third floor	14	0/10			
h. Switchgear, battery and M-G rooms, third floor	14	14/0			
i. Fourth floor	16	6/0			
j. Fifth floor	16	25/0			
3. Control Center					
a. Relay room	8	0/27			
b. Cable spreading room	11	0/28			
c. Control room	12	50/0	4/0	2/0	
d. Computer room	13	0/13			
e. Computer room above drop ceiling	13	5/0	2/0		
4. RHR Complex					
a. Division I pump room	50	8/0			
b. Division II pump room	51	8/0			
c. EDG 11 room suppression				0/8	
d. EDG 12 room suppression				0/8	
e. EDG 13 room suppression				0/8	
f. EDG 14 room suppression				0/8	

(continued)

(a) (X/Y) X is number of Function A (early-warning fire detection and notification only) instruments.
Y is number of Function B (actuation of fire suppression system and early warning and notification) instruments.

TABLE TR3.12.1-1 (Page 1 of 3)
Fire Detection Instrumentation

FUNCTION	FIRE DETECTION ZONE	TOTAL NUMBER OF INSTRUMENTS[a] IONIZATION (X/Y)	PHOTOELECTRIC (X/Y)	FIXED THERMAL (X/Y)	INFRARED (X/Y)
1. Reactor Building[b]					
a. Torus area	1	8/0			
b. NW corner rooms RHR pump	2	4/0			
c. SW corner rooms RHR pump	3	4/0			
d. SE corner rooms CRD HPCI	4	9/0			
e. NE corner rooms RCIC	5	5/0			
f. First floor	7	20/0		8/0	
g. EECW system area second floor	10	21/0			
h. Third floor	15	15/0			
i. Fourth floor	17	8/0		2/0	
j. Refueling area, fifth floor	17				10/0
2. Auxiliary Building					
a. Basement N control air equipment	4	6/0			
b. Corridors, 562 ft, 563 ft	5	2/0	2/0		
c. First floor mezzanine cable tray, 583 ft, 603 ft	6	17/0			
d. Switchgear room, corridor area second floor	9	10/0			
e. Cable tunnel	9	10/0			

(continued)

(a) (X/Y) X is number of Function A (early-warning fire detection and notification only) instruments.
Y is number of Function B (actuation of fire suppression system and early warning and notification) instruments.

(b) The fire detection instruments located within the containment are not required to be OPERABLE during the performance of Type A Containment Leakage Rate Tests.

SURVEILLANCE REQUIREMENTS

-----------------------------------NOTE-----------------------------------

These SRs apply to each Function in Table TR3.12.1-1.

	SURVEILLANCE	FREQUENCY
TRSR 3.12.1.1	------------------NOTE------------------ For fire detectors that are not accessible during unit operation, not required to be performed in MODES 1, 2, and 3, or MODE 4 of ≤ 24 hours. -- Perform functional test as defined in NFPA 72E.	12 months
TRSR 3.12.1.2	Demonstrate NFPA Standard 72D supervised circuits supervision associated with the detector alarms of the fire detection instrumentation are OPERABLE.	12 months

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Required Action and associated Completion Time not met. OR One or more zones with < the total number of instruments shown in Table TR3.12.1-1 for Function B. OR One or more zones with ≤ one half of the total number of instruments shown in Table TR3.12.1-1 for Function A. OR Any two or more adjacent instruments inoperable.	B.1 ---------NOTE--------- Only applicable to zones outside containment. --------------------- Establish an hourly fire watch patrol to inspect the zone(s).	1 hour
	AND -------------NOTE------------- Only applicable to zones inside containment. ------------------------------	
	B.2.1 Establish a fire watch patrol to inspect the zone(s).	1 hour AND Then once per 8 hours
	OR	
	B.2.2 Monitor the containment air temperature at the locations listed in Table TR3.12.1-2.	Once per hour

TR 3.12 FIRE PROTECTION

TR 3.12.1 Fire Detection Instrumentation

TRLCO 3.12.1 The fire detection instrumentation for each fire detection zone shown in Table TR3.12.1-1 shall be OPERABLE.

APPLICABILITY: When equipment protected by the fire detection instrumentation is required to be OPERABLE.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more zones with < the total number of instruments shown in Table TR3.12.1-1 for Function A, but > one half of the total number of instruments shown in Table TR3.12.1-1 for Function A.	A.1 Restore Function A instrument(s) to OPERABLE status.	14 days

(continued)

SECTION 3.12
DETAILED INDEX OF SECTION

TR 3.11 RADIOACTIVE EFFLUENTS

TR 3.11.1 Temporary Outdoor Storage Tank Radioactivity

TRLCO 3.11.1 The quantity of radioactive material contained in any outside temporary tank shall be limited to less than or equal to 10 curies, excluding tritium and dissolved or entrained noble gases.

APPLICABILITY: At all times.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. The quantity of radioactive material in any of the above tanks exceeding the limit.	A.1	Suspend all additions of radioactive material to the tank.	Immediately
	<u>AND</u>		
	A.2	Reduce the tank contents to within the limit.	48 hours
	<u>AND</u>		
	A.3	Describe the events leading to this condition in the next Radioactive Effluent Release Report.	Prior to May 1

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
TRSR 3.11.1.1	Verify quantity of radioactive material is within limit by analyzing a representative sample of the tank's contents.	7 days when radioactive materials are being added to the tank

SECTION 3.11
DETAILED INDEX OF SECTION

TR 3.10 SPECIAL OPERATIONS

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TR 3.9 REFUELING OPERATIONS

TR 3.9.4 Reactor Pressure Vessel Water Level - Refueling

TRLCO 3.9.4 Reactor water level shall be maintained ≥ 214 inches.

APPLICABILITY: MODE 5 with irradiated fuel in the reactor pressure vessel (RPV) and the water level < 20 feet 6 inches above the top of the RPV flange.

-----NOTE-----
Not applicable when heat losses to ambient are greater than or equal to heat input to reactor coolant.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Reactor water level less than 214 inches.	A.1 Restore reactor water level to ≥ 214 inches.	1 hour
	<u>OR</u>	
	A.2 Place two recirculation pumps in operation.	1 hour
	<u>OR</u>	
	A.3 Place two RHR shutdown cooling subsystem in operation.	1 hour

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
TRSR 3.9.4.1	Verify reactor water level is ≥ 214 inches.	12 hours

TR 3.9 REFUELING OPERATIONS

TR 3.9.3 Crane Travel - Spent Fuel Storage Pool

TRLCO 3.9.3 Loads > 1100 lbs shall not travel over fuel assemblies in the spent fuel storage pool racks.

APPLICABILITY: With fuel assemblies in the spent fuel storage pool racks.

ACTIONS

------------------------------------NOTE------------------------------------
TRLCO 3.0.3 is not applicable.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Load > 1100 lbs over fuel assemblies in the spent fuel storage pool racks.	A.1 Move load to safe condition.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
TRSR 3.9.3.1	------------NOTE------------ Not applicable to loads consisting of fuel assemblies. ---------------------------- Verify load being moved is ≤ 1100 lbs.	Once prior to movement over fuel assemblies in the spent fuel storage pool racks

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
TRSR 3.9.2.1	Demonstrate operation of the overload cutoff when the load exceeds 1200 pounds for the fuel grapple hoist with the Model NF-400 mast, 1395 pounds for the fuel grapple hoist with Model NF-500 mast, and 1050 pounds for all other hoists.	Within 7 days prior to use
TRSR 3.9.2.2	Demonstrate operation of the uptravel stop when fuel grapple hoist uptravel and frame mounted and monorail auxiliary hoists uptravel bring the point of attachment of the fuel assembly or control rod to within 6 feet 6 inches or greater below the top of the refueling platform track.	Within 7 days prior to use
TRSR 3.9.2.3	Demonstrate operation of the downtravel cutoff when the end of the fuel grapple hoist downtravel reaches 52 feet 3 inches or less below the top of the platform tracks and when the end of the frame mounted and monorail auxiliary hoists reach 85 feet or less below the top of the platform tracks.	Within 7 days prior to use
TRSR 3.9.2.4	Demonstrate operation of the slack cable cutoff prior to the hoist cable tension decreasing to less than 40 pounds for the fuel grapple hoist.	Within 7 days prior to use
TRSR 3.9.2.5	Demonstrate operation of the loaded interlock when the load exceeds 535 pounds for the fuel grapple hoist with either the Model NF-400 mast or the Model NF-500 mast, and 450 pounds for all other hoists.	Within 7 days prior to use

TR 3.9 REFUELING OPERATIONS

TR 3.9.2 Refueling Platform

TRLCO 3.9.2 The refueling platform shall be OPERABLE and used for handling fuel assemblies or control rods within the reactor pressure vessel.

APPLICABILITY: During handling of fuel assemblies or control rods within the reactor pressure vessel.

ACTIONS

-------------------------------------NOTE-------------------------------------
Separate Condition entry is allowed for each refueling platform hoist used for handling of control rods or fuel assemblies within the reactor pressure vessel.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Refueling platform inoperable.	A.1 Place the load in a safe condition.	Immediately
	<u>AND</u>	
	A.2 Suspend use of any inoperable refueling platform equipment from operations involving the handling of control rods and fuel assemblies within the reactor pressure vessel.	Immediately

TR 3.9 REFUELING OPERATIONS

TR 3.9.1 Communications

TRLCO 3.9.1 Direct communication shall be maintained between the control room and refueling platform personnel.

APPLICABILITY: During CORE ALTERATIONS, except movement of control rods with their normal drive system.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Direct communication between the control room and refueling platform personnel cannot be maintained.	A.1 Suspend CORE ALTERATIONS.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
TRSR 3.9.1.1	Demonstrate direct communication between the control room and refueling platform personnel.	Within one hour prior to entering the Applicability AND 12 hours

SECTION 3.9
DETAILED INDEX OF SECTION

TABLE TR3.8.6-1 (Page 1 of 1)
Standby Liquid Control System Associated Isolation Devices
480 V Motor Control Centers

1. MCC 72B-4C	
a. Position 2AR	SLC Pump A
2. MCC 72C-4A	
a. Position 5C	SLC Heater A
3. MCC 72E-5B	
a. Position 2B	SLC Pump B
b. Position 2CR	SLC Heater B

SURVEILLANCE REQUIREMENTS

-----NOTE-----
These SRs apply to each device in Table TR3.8.6-1.

SURVEILLANCE		FREQUENCY
TRSR 3.8.6.1	Perform CHANNEL FUNCTIONAL TEST of each breaker which includes simulation of actuation of the system and verifying that each relay and associated circuit breaker and overcurrent control circuits functions as designed.	18 months
TRSR 3.8.6.2	Perform CHANNEL CALIBRATION of the associated protective relays.	18 months
TRSR 3.8.6.3	Subject each circuit breaker to an inspection and preventive maintenance in accordance with procedures prepared in conjunction with its manufacturer's recommendations.	60 months

TR 3.8 ELECTRICAL POWER SYSTEMS

TR 3.8.6 Standby Liquid Control (SLC) System Associated Isolation Devices

TRLCO 3.8.6 All circuit breakers shown in Table TR3.8.6-1 shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more of the circuit breakers in Table TR3.8.6-1 inoperable.	A.1	Restore circuit breaker(s) to OPERABLE status.	8 hours
B. Required Action and associated Completion Time not met.	B.1	Trip circuit breaker(s).	8 hours
	<u>AND</u>		
	B.2.1	Rackout circuit breaker(s).	8 hours
	<u>OR</u>		
	B.2.2	Remove circuit breaker(s) from service.	8 hours
	<u>AND</u>		
	B.3	Verify circuit breaker(s) racked out or removed from service.	Once per 7 days
	<u>AND</u>		
	B.4	--------NOTE--------- Only applicable to MCC 72B-4C, Position 2AR (SLC Pump A) and MCC 72E-5B, Position 2B (SLC Pump B). --------------------- Declare the affected SLC System component inoperable.	Immediately

TABLE TR3.8.5-1 (Page 1 of 1)
Primary Containment Penetration Conductor Overcurrent Protection Devices

DEVICE NUMBER and LOCATION	TYPE	SOURCE	TRIP SETPOINT/ TRIP RATING (A)	SYSTEMS/ COMPONENTS POWERED	SURVEILLANCE REQUIREMENTS
1. 4.16 kV Circuit Breaker					
a. B31-P003A Recirc Pump A Generator Field Breaker	GE	AC-50 (K9A, K22A)	1440 (setpoint)	B31-C001A Recirc Pump A Motor	TRSR 3.8.5.1 TRSR 3.8.5.2 TRSR 3.8.5.4
b. B31-P003B Recirc Pump B Generator Field Breaker	GE	AC-50 (K9B, K22B)	1440 (setpoint)	B31-C001B Recirc Pump B Motor	TRSR 3.8.5.1 TRSR 3.8.5.2 TRSR 3.8.5.4
2. 480 VAC					
a. 15A Circuit breaker (MCC 72E-3A)	ITE (HE3B015)	72E-3A-1C (R)	15 (rating)	B3101-C001B Recirc Pump B Motor Heater	TRSR 3.8.5.3 TRSR 3.8.5.4
b. 15A Circuit breaker (MCC 72B-4A)	ITE (HE3B015)	72B-4A-1A	15 (rating)	B3101-C001A Recirc Pump A Motor Heater	TRSR 3.8.5.3 TRSR 3.8.5.4

SURVEILLANCE REQUIREMENTS

---NOTE---
Refer to Table TR3.8.5-1 to determine which TRSRs apply for each Primary Containment Penetration Conductor Overcurrent Protective function.

SURVEILLANCE		FREQUENCY
TRSR 3.8.5.1	Perform CHANNEL CALIBRATION of the associated protective relays.	18 months
TRSR 3.8.5.2	Perform an integrated system functional test which includes simulated automatic actuation of the system and verifying that each relay and associated circuit breakers and overcurrent control circuits function as designed.	18 months
TRSR 3.8.5.3	Perform functional test of 480 volt circuit breakers. Testing of these circuit breakers shall consist of injecting a current in excess of 120% of the breakers nominal setpoint and measuring the response time. The measured response time will be compared to the manufacturer's data to insure that it is less than or equal to a value specified by the manufacturer.	18 months
TRSR 3.8.5.4	Subject each circuit breaker to an inspection and preventive maintenance in accordance with procedures prepared in conjunction with its manufacturer's recommendations.	60 months

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. One or more 480 volt primary containment penetration overcurrent protective devices inoperable.	B.1 Declare the affected system(s) or component(s) inoperable.	Immediately
	AND	
	B.2.1 Remove the inoperable 480 volt device(s) from service by racking out the device.	72 hours
	OR	
	B.2.2 Remove the inoperable 480 volt device(s) from service by removing the device.	72 hours
	AND	
	B.3 Verify the inoperable 480 volt device(s) racked out or removed.	Once per 7 days thereafter
C. Required Action and associated Completion Time of Condition A or B not met.	C.1 Enter TRLCO 3.0.3.	Immediately

TR 3.8 ELECTRICAL POWER SYSTEMS

TR 3.8.5 Primary Containment Penetration Conductor Overcurrent Protective Devices

TRLCO 3.8.5 All primary containment penetration conductor overcurrent protective devices shown in Table TR3.8.5-1 shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

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

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more 4.16 kV primary containment penetration overcurrent protective devices inoperable.	A.1	Declare the affected system(s) or component(s) inoperable.	Immediately
	<u>AND</u>		
	A.2	De-energize the 4.16 kV circuit(s) by tripping the associated circuit breaker(s).	72 hours
	<u>AND</u>		
	A.3	Verify the 4.16 kV circuit breaker(s) tripped.	Once per 7 days thereafter

(continued)

TABLE TR3.8.4-1 (Page 6 of 6)
Motor-Operated Valves Thermal Overload Protection

SYSTEM AFFECTED	VALVE NUMBER
14. Containment Atmosphere Control System	T4804-F601A
	T4804-F601B
	T4804-F602A
	T4804-F602B
	T4804-F603A
	T4804-F603B
	T4804-F604A
	T4804-F604B
	T4804-F605A
	T4804-F605B
	T4804-F606A
	T4804-F606B
	T4804-F601
	T4804-F602
15. Primary Containment Pneumatic Supply System	T4901-F601
	T4901-F602

TABLE TR3.8.4-1 (Page 5 of 6)
Motor-Operated Valves Thermal Overload Protection

SYSTEM AFFECTED	VALVE NUMBER
10. Torus Water Management System (continued)	G5100-F604
	G5100-F605
	G5100-F606
	G5100-F607
11. Main Steam System	N1100-F607
	N1100-F608
	N1100-F609
	N1100-F610
12. Emergency Equipment Cooling Water	P4400-F601A
	P4400-F601B
	P4400-F602A
	P4400-F602B
	P4400-F603A
	P4400-F603B
	P4400-F604
	P4400-F605A
	P4400-F605B
	P4400-F606A
	P4400-F606B
	P4400-F607A
	P4400-F607B
	P4400-F608
	P4400-F613
	P4400-F614
	P4400-F615
	P4400-F616
13. Compressed Air System	P5000-F603
	P5000-F604

(continued)

TABLE TR3.8.4-1 (Page 4 of 6)
Motor-Operated Valves Thermal Overload Protection

SYSTEM AFFECTED	VALVE NUMBER
6. High Pressure Coolant Injection System (continued)	E4150-F079
	E4150-F600
7. Reactor Core Isolation Cooling System	E5150-F001
	E5150-F002
	E5150-F007
	E5150-F008
	E5150-F010
	E5150-F012
	E5150-F013
	E5150-F019
	E5150-F022
	E5150-F029
	E5150-F031
	E5150-F045
	E5150-F046
	E5150-F059
	E5150-F062
	E5150-F084
	E5150-F095
8. Drywell Floor Drain System	G1154-F018
	G1154-F600
9. Reactor Water Clean-up System	G3352-F001
	G3352-F004
(Return Line)	G3352-F220
10. Torus Water Management System	G5100-F600
	G5100-F601
	G5100-F602
	G5100-F603

(continued)

TR B3.4 REACTOR COOLANT SYSTEM (RCS)

TR B3.4.5 Chemistry

BASES

The water chemistry limits of the reactor water coolant system are established to prevent damage to the reactor materials in contact with the coolant. Chloride limits are specified to prevent stress corrosion cracking of the stainless steel. The effect of chloride is not as great when the oxygen concentration in the coolant is low, thus the 0.2 ppm limit on chlorides is permitted during power operation. During shutdown and refueling operations, the temperature necessary for stress corrosion to occur is not present so a 0.5 ppm concentration of chlorides is not considered harmful during these periods.

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

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

TR B3.4 REACTOR COOLANT SYSTEM (RCS)

TR B3.4.4 Reactor Pressure Vessel Water Level - Cold Shutdown

BASES

See Bases for Technical Specification 3.4.9, Residual Heat Removal (RHR) Shutdown Cooling System - Cold Shutdown.

TR B3.4 REACTOR COOLANT SYSTEM (RCS)

TR B3.4.3 Reactor Coolant System (RCS) Leakage Detection System

BASES

The RCS leakage detection systems required by this specification are provided to monitor and detect leakage from the reactor coolant pressure boundary.

TR B3.4 REACTOR COOLANT SYSTEM (RCS)

TR B3.4.2 Safety Relief Valve (SRV) Position Indication

BASES

See Bases for Technical Specification 3.4.3, Safety Relief Valves (SRVs).

TR B3.4 REACTOR COOLANT SYSTEM (RCS)

TR B3.4.1 Recirculation Loops Operating

BASES

See Bases for Technical Specification 3.4.1, Recirculation Loops Operating.

TR B3.3 INSTRUMENTATION

TR B3.3.14 Radiation Monitoring Instrumentation

BASES

The OPERABILITY of the radiation monitoring instrumentation ensures that; (1) the radiation levels are continually measured in the area served by the individual channels; (2) the alarm is initiated when the radiation level trip setpoint is exceeded; and (3) sufficient information is available on selected plant parameters to monitor and assess these variables following an accident. This capability is consistent with 10 CFR Part 50, Appendix A, General Design Criteria 19, 41, 60, 61, 63, and 64.

TR B3.3 INSTRUMENTATION

TR B3.3.13 Meteorological Monitoring Instrumentation

BASES

The OPERABILITY of the meteorological monitoring instrumentation ensures that sufficient meteorological data are 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," February, 1972.

Entry into Condition B and the initiation of a Corrective Action Document will cause a determination of reportability to the Commission in accordance with the requirements of 10 CFR 50.72 and 10 CFR 50.73.

TR B3.3 INSTRUMENTATION

TR B3.3.12 Explosive Gas Monitoring Instrumentation

BASES

The explosive gas monitoring instrumentation is provided to monitor the concentrations of potentially explosive gas mixtures in the main condenser offgas treatment system. The OPERABILITY and use of this instrumentation is consistent with the requirements of General Design Criterion 60 of Appendix A to 10 CFR Part 50.

This specification also ensures that the concentration of potentially explosive gas mixtures contained in the main condenser offgas system is maintained below the flammability limits of hydrogen and oxygen. Maintaining the concentration of hydrogen below the flammability limit provides assurance that the releases of radioactive materials will be controlled in conformance with the requirements of General Design Criterion 60 of Appendix A to 10 CFR Part 50.

TR B3.3 INSTRUMENTATION

TR B3.3.11 Loose-Part Detection System

BASES

The OPERABILITY of the loose-part detection system ensures that sufficient capability is available to detect loose metallic parts in the primary system and avoid or mitigate damage to primary system components. The Completion Times and surveillance requirements are consistent with the recommendations of Regulatory Guide 1.133, "Loose-Part Detection Program for the Primary System of Light-Water-Cooled Reactors," May 1981.

Entry into Condition B and the initiation of a Corrective Action Document will cause a determination of reportability to the Commission in accordance with the requirements of 10 CFR 50.72 and 10 CFR 50.73.

TR B3.3 INSTRUMENTATION

TR B3.3.10 Chlorine Detection System

BASES

The OPERABILITY of the chlorine detection system ensures that an accidental chlorine release will be detected promptly and the necessary protective actions will be automatically initiated to provide protection for control room personnel. Upon detection of a high concentration of chlorine, the control room emergency ventilation system will automatically be placed in the chlorine mode of operation to provide the required protection. In this mode of operation, all the outside air intakes are closed to prevent ingress during a chlorine-release emergency. The detection system required by this specification is consistent with the recommendations of Regulatory Guide 1.95, "Protection of Nuclear Power Plant Control Room Operators against an Accidental Chlorine Release", Revision 1, January, 1977.

When the control room emergency ventilation system is placed in the recirculation (radiological emergency) mode of operation, the emergency air intakes are used to bring in a limited amount of outside air. The chlorine detectors do not experience system air flow because they are located in the normal air intakes. The chlorine detectors remain physically and functionally OPERABLE; however, per the plant design, their specified function is not required during the recirculation mode.

With one division of Control Room Emergency Filtration (CREF) inoperable, the CREF system can be operated in recirculation mode if the inoperable division is not restored within 7 days. However, when in the recirculation mode, both chlorine detectors do not see system flow because they are located in the normal air intake (recirculation mode uses emergency intakes). Since operation in the recirculation mode will not result in toxic chlorine levels (> 15 ppm) during a site chlorine release event, the chlorine detectors are not required to be OPERABLE during recirculation mode operation.

TR B3.3 INSTRUMENTATION

TR B3.3.9 Appendix R Alternative Shutdown Instrumentation

BASES

The OPERABILITY of the alternative shutdown system ensures that a fire will not preclude achieving safe shutdown. The alternative shutdown system instrumentation is independent of areas where a fire could damage systems normally used to shutdown the reactor. Thus, the system capability is consistent with General Design Criterion 3 and Appendix R to 10 CFR 50.

TR B3.3 INSTRUMENTATION

TR B3.3.8.1 Loss of Power (LOP) Instrumentation

BASES

This specification provides the trip setpoints associated with Technical Specification 3.3.8.1, Loss of Power (LOP) Instrumentation.

Operation with a trip set less conservative than its Trip Setpoint but within its specified Allowable Value is acceptable on the basis that the difference between each Trip Setpoint and the Allowable Value is equal to or less than the drift allowance assumed for each trip in the safety analyses.

TR B3.3 INSTRUMENTATION

TR B3.3.7.2 Seismic Monitoring Instrumentation

BASES

The OPERABILITY of the seismic monitoring 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 basis for the unit. This instrumentation is consistent with the recommendations of Regulatory Guide 1.12, "Instrumentation for Earthquakes," April 1974.

Entry into Condition B and the initiation of a Corrective Action Document will cause a determination of reportability to the Commission in accordance with the requirements of 10 CFR 50.72 and 10 CFR 50.73.

TR B3.3 INSTRUMENTATION

TR B3.3.7.1 Control Room Emergency Filtration (CREF) System Instrumentation

BASES

No bases information provided.

TR B3.3 INSTRUMENTATION

TR B3.3.6.5 Narrow Range Suppression Pool Water Level Instrumentation

BASES

See bases for Technical Specification LCO 3.6.2.2, Suppression Pool Water Level.

TR B3.3 . INSTRUMENTATION

TR B3.3.6.4 Suppression Pool Water Temperature Instrumentation

BASES

See bases for Technical Specification LCO 3.6.2.1, Suppression Pool Average Temperature.

TR B3.3 INSTRUMENTATION

TR B3.3.6.3 Low-Low Set (LLS) Instrumentation

BASES

No bases information provided.

TR B3.3 INSTRUMENTATION

TR B3.3.6.2 Secondary Containment Isolation Instrumentation

BASES

This specification ensures the effectiveness of the instrumentation used to mitigate the consequences of accidents by prescribing the trip setpoints associated with the Technical Specifications instrumentation for isolation of the secondary containment.

Operation with a trip set less conservative than its Trip Setpoint but within its specified Allowable Value is acceptable on the basis that the difference between each Trip Setpoint and the Allowable Value is equal to or less than the drift allowance assumed for each trip in the safety analyses.

TR B3.3 INSTRUMENTATION

TR B3.3.6.1 Primary Containment Isolation Instrumentation

BASES

This specification ensures the effectiveness of the instrumentation used to mitigate the consequences of accidents by prescribing the OPERABILITY trip setpoints and response times associated with the Technical Specifications instrumentation for isolation of the reactor systems.

Except for the MSIVs, the safety analysis does not address individual sensor response times or the response time of the logic systems to which the sensors are connected. For D.C. operated valves, a 3 second delay is assumed before the valve starts to move. For A.C. operated valves, it is assumed that the A.C. power supply is lost and is restored by startup of the emergency diesel generators. In this event, a time of 13 seconds is assumed before the valve starts to move. In addition to the pipe break, the failure of the D.C. operated valve is assumed; thus the signal delay (sensor response) is concurrent with the 10 second diesel startup. The safety analysis considers an allowable inventory loss in each case which in turn determines the valve speed in conjunction with the 10 second delay. It follows that checking the valve speeds and the 10 second time for emergency power establishment will establish the response time for the isolation functions. However, to enhance overall system reliability and to monitor instrument channel response time trends, the isolation actuation instrumentation response time shall be measured and recorded as a part of the ISOLATION SYSTEM RESPONSE TIME.

Operation with a trip set less conservative than its Trip Setpoint but within its specified Allowable Value is acceptable on the basis that the difference between each Trip Setpoint and the Allowable Value is equal to or less than the drift allowance assumed for each trip in the safety analyses.

For Table TR3.3.6.1-1 Function 1.f, a new "full power background" level is established for hydrogen water chemistry based upon 100% power operation with the established hydrogen injection rate. Actual background radiation levels may be less depending on actual power or hydrogen injection rate. Setpoint adjustment is not necessary for variations in power or hydrogen injection rate, including interruptions in hydrogen flow.

TR B3.3 INSTRUMENTATION

TR B3.3.5.2 Reactor Core Isolation Cooling (RCIC) System Instrumentation

BASES

The reactor core isolation cooling system instrumentation is provided to initiate actions to assure adequate core cooling in the event of reactor isolation from its primary heat sink and the loss of feedwater flow to the reactor vessel without providing actuation of any of the emergency core cooling equipment.

Operation with a trip set less conservative than its Trip Setpoint but within its specified Allowable Value is acceptable on the basis that the difference between each Trip Setpoint and the Allowable Value is equal to or less than the drift allowance assumed for each trip in the safety analyses.

TR B3.3 INSTRUMENTATION

TR B3.3.5.1 Emergency Core Cooling System (ECCS) Instrumentation

BASES

This specification provides the OPERABILITY requirements for the ECCS manual initiations. Additionally, it provides the trip setpoints and response times associated with Technical Specification 3.3.5.1, Emergency Core Cooling System (ECCS) Instrumentation. These ensure effectiveness of the systems to provide the design protection.

Operation with a trip set less conservative than its Trip Setpoint but within its specified Allowable Value is acceptable on the basis that the difference between each Trip Setpoint and the Allowable Value is equal to or less than the drift allowance assumed for each trip in the safety analyses.

TR B3.3 INSTRUMENTATION

TR B3.3.4.2 Traversing In-Core Probe (TIP) System

BASES

The OPERABILITY of the traversing in-core probe system with the specified minimum complement of equipment ensures that the measurements obtained from use of this equipment accurately represent the spatial neutron flux distribution of the reactor core.

The requirements for the OPERABILITY of the TIP System are as follows for the different applicabilities:

For recalibration of the LPRM detectors, OPERABILITY requires:
a. Five movable detectors, drives and readout equipment to map the core, and
b. Indexing equipment to allow all five detectors to be calibrated in a common location.

For monitoring the APLHGR, LHGR, or MCPR, OPERABILITY only requires OPERABLE detector(s) in the required measurement location(s).

The TIP system OPERABILITY is demonstrated by normalizing all probes (i.e., detectors) prior to performing an LPRM calibration function. Monitoring core thermal limits may involve utilizing individual detectors to monitor selected areas of the reactor core, thus all detectors may not be required to be OPERABLE. The OPERABILITY of individual detectors to be used for monitoring is demonstrated by comparing the detectors(s) output with data obtained during the previous LPRM calibration.

TR B3.3 INSTRUMENTATION

TR B3.3.4.1 Anticipated Transient Without Scram Recirculation Pump Trip (ATWS-RPT) Instrumentation

BASES

The anticipated transient without scram (ATWS) recirculation pump trip system provides a means of limiting the consequences of the unlikely occurrence of a failure to scram during an anticipated transient. The response of the plant to this postulated event falls within the envelope of study events in General Electric Company Topical Report NEDO-10349, dated March 1971, NEDO-24222, dated December 1979, and Appendix 15B.8 of the FSAR.

Operation with a trip set less conservative than its Trip Setpoint but within its specified Allowable Value is acceptable on the basis that the difference between each Trip Setpoint and the Allowable Value is equal to or less than the drift allowance assumed for each trip in the safety analyses.

TR B3.3 INSTRUMENTATION

TR B3.3.3 Accident Monitoring Instrumentation

BASES

See Technical Specifications Bases for LCO 3.3.3.1, Post Accident Monitoring Instrumentation.

The multiple noble gas monitors installed on each division of the Standby Gas Treatment system provide the necessary monitoring capabilities to assure that the normal and extended monitoring ranges required by NUREG-0737 and Regulatory Guide 1.97 are met.

TR B3.3 INSTRUMENTATION

TR B3.3.2.2 Feedwater and Main Turbine High Water Level Trip Instrumentation

BASES

No bases information provided.

TR B3.3 INSTRUMENTATION

TR B3.3.2.1 Control Rod Block Instrumentation

BASES

See Technical Specification 3.3.1.1, RPS Instrumentation and Technical Specification 3.3.2.1, Control Rod Block Instrumentation, for an instrumentation description. The trip logic is arranged so that a trip in any one of the inputs will result in a control rod block.

TR B3.3 INSTRUMENTATION

TR B3.3.1.2 Reactor Protection System (RPS) Shorting Links

BASES

No bases information provided.

TR B3.3 INSTRUMENTATION

TR B3.3.1.1 Reactor Protection System (RPS) Instrumentation

BASES

The measurement of response time at the specified frequencies provides assurance that the protective functions associated with each channel are completed within the time limit assumed in the safety analyses. No credit was taken for those channels with response times indicated as not applicable except for APRM Simulated Thermal Power - Upscale and Neutron Flux - Upscale trip functions. Response time may be demonstrated by any series of sequential, overlapping or total channel test measurement, provided such tests demonstrate the total channel response time as defined. Sensor response time verification may be demonstrated by either (1) inplace, onsite or offsite test measurements, or (2) utilizing replacement sensors with certified response times. For the digital electronic portions of the APRM Simulated Thermal Power - Upscale and Neutron Flux - Upscale trip functions, performance characteristics that determine response time are checked by a combination of automatic self-test, calibration activities, and response time tests of the 2-out-of-4 Trip Voter.

TR B3.2 Power Distribution Limits

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TR B3.1 REACTIVITY CONTROL SYSTEMS

TR B3.1.1 Control Rod Drive Housing Support

BASES

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

BASES

TRSR 3.0.4 (continued)

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

TRSR 3.0.4 is only applicable when entering MODE 3 from MODE 4, MODE 2 from MODE 3 or 4, or MODE 1 from MODE 2. Furthermore, TRSR 3.0.4 is applicable when entering any other specified condition in the Applicability only while operating in MODE 1, 2, or 3. The requirements of TRSR 3.0.4 do not apply in MODES 4 and 5, or in other specified conditions of Applicability (unless in MODE 1, 2, or 3) because the ACTIONS of individual Specifications sufficiently define the remedial measures to be taken.

BASES

TRSR 3.0.4

TRSR 3.0.4 establishes the requirements that all applicable TRSRs must be met before entry into a MODE or other specified condition in the Applicability.

This Specification ensures that system and component OPERABILITY requirements and variable limits are met before entry into MODES or other specified conditions in the Applicability for which these systems and components ensure safe operation of the unit.

The provision of this Specification should not be interpreted as endorsing the failure to exercise the good practice of restoring systems or components to OPERABLE status before entering an associated MODE or other specified condition in the Applicability.

However, in certain circumstances, failing to meet an TRSR will not result in TRSR 3.0.4 restricting a MODE change or other specified condition change. When a system, subsystem, division, component, device, or variable is inoperable or outside its specified limits, the associated TRSR(s) are not required to be performed per TRSR 3.0.1, which states that surveillances do not have to be performed on inoperable equipment. When equipment is inoperable, TRSR 3.0.4 does not apply to the associated TRSR(s) since the requirement for the TRSR(s) to be performed is removed. Therefore, failing to perform the Surveillance(s) within the specified Frequency does not result in a TRSR 3.0.4 restriction to changing MODES or other specified conditions of the Applicability. However, since the TRLCO is not met in this instance, TRLCO 3.0.4 will govern any restrictions that may (or may not) apply to MODE or other specified condition changes.

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

(continued)

TRSR 3.0.3

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

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

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

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

TRSR 3.0.3 also provides a time limit for completion of Surveillances that become applicable as a consequence of MODE changes imposed by Required Actions.

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

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

Completion of the Surveillance within the delay period allowed by this Specification, or within the Completion Time of the ACTIONS, restores compliance with TRSR 3.0.1.

(continued)

BASES

TRSR 3.0.1 (continued)	been established. In these situations, the equipment may be considered OPERABLE provided testing has been satisfactorily completed to the extent possible and the equipment is not otherwise believed to be incapable of performing its function. This will allow operation to proceed to a MODE or other specified condition where other necessary post maintenance tests can be completed.
TRSR 3.0.2	TRSR 3.0.2 establishes the requirements for meeting the specified Frequency for Surveillances and any Required Action with a Completion Time that requires the periodic performance of the Required Action on a "once per…" interval. TRSR 3.0.2 permits a 25% extension of the interval specified in the Frequency. This extension facilitates Surveillance scheduling and considers plant operating conditions that may not be suitable for conducting the Surveillance (e.g., TRSR 3.0.2 transient conditions or other ongoing Surveillance or maintenance activities). The 25% extension does not significantly degrade the reliability that results from performing the Surveillance at its specified Frequency. This is based on the recognition that the most probable result of any particular Surveillance being performed is the verification of conformance with the TRSRs. The exceptions to TRSR 3.0.2 are those Surveillances for which the 25% extension of the interval specified in the Frequency does not apply. These exceptions are stated in the individual Specifications. As stated in TRSR 3.0.2, the 25% extension also does not apply to the initial portion of a periodic Completion Time that requires performance on a "once per…" basis. The 25% extension applies to each performance after the initial performance. The initial performance of the Required Action, whether it is a particular Surveillance or some other remedial action, is considered a single action with a single Completion Time. One reason for not allowing the 25% extension to this Completion Time is that such an action usually verifies that no loss of function has occurred by checking the status of redundant or diverse components or accomplishes the function of the inoperable equipment in an alternative manner. The provisions of TRSR 3.0.2 are not intended to be used repeatedly merely as an operational convenience to extend Surveillance intervals (other than those consistent with refueling intervals) or periodic Completion Time intervals beyond those specified.

(continued)

TR B3.0 SURVEILLANCE REQUIREMENT (TRSR) APPLICABILITY

BASES

TRSRs

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

TRSR 3.0.1

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

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

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

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

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

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

Surveillances, including Surveillances invoked by Required Actions, do not have to be performed on inoperable equipment because the ACTIONS define the remedial measures that apply. Surveillances have to be met and performed in accordance with TRSR 3.0.2, prior to returning equipment to OPERABLE status.

Upon completion of maintenance, appropriate post maintenance testing is required to declare equipment OPERABLE. This includes ensuring applicable Surveillances are not failed and their most recent performance is in accordance with TRSR 3.0.2. Post maintenance testing may not be possible in the current MODE or other specified conditions in the Applicability due to the necessary unit parameters not having

(continued)

BASES

TRLCO 3.0.2	TRLCO 3.0.2 establishes that the time limits of the ACTION requirements are applicable from the point in time it is identified that there is a failure to meet a TRLCO. Therefore, operation may continue if the ACTION requirements have been met or the time limits of the ACTION requirements have not expired, thus providing an allowance for the completion of the required actions.
TRLCO 3.0.3	TRLCO 3.0.3 establishes that noncompliance with a Technical Requirement exists when the requirements of the TRLCO are not met and the associated ACTION statement(s) have not been implemented within the specified time intervals. The purpose of this Technical Requirement is to clarify that implementation of the ACTION statement(s) within the specified time interval constitutes compliance with a Technical Requirement and completion of the remedial measures of the ACTION statement(s) is not required when compliance with a TRLCO is restored within the time interval specified in the associated ACTION statement(s).
TRLCO 3.0.4	TRLCO 3.0.4 establishes limitations on a change in MODES when a TRLCO is not met. It precludes placing the facility in a higher MODE when the requirements for a TRLCO are not met and continued non-compliance to these conditions would result in a shutdown to comply with the ACTION requirements if a change in CONDITIONS were permitted. The purpose of this Technical Requirement is to ensure that facility operation is not initiated or that higher CONDITIONS of operation are not entered when corrective actions is being taken to obtain compliance with a Technical Requirement by restoring equipment to OPERABLE status or parameters to specified limits. Compliance with ACTION statement(s) that permit continued operation of the facility for an unlimited period of time provides an acceptable level if safety for continued operation without regard to the status of the plant before or after a change in MODE. Therefore, in this case, entry into a MODE or other specified condition may be made in accordance with the provisions of the ACTION statement(s). The provisions of this Technical Requirement should not, however, be interpreted as endorsing the failure to exercise good practice in restoring systems or components to OPERABLE status before plant startup. When a shutdown is required to comply with ACTION statement(s) the provisions of TRLCO 3.0.4 do not apply because they would delay placing the facility in a lower CONDITION of operation.

TR B3.0 LIMITING CONDITION FOR OPERATION (TRLCO) APPLICABILITY

BASES

TRLCOs

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

TRLCO 3.0.1

TRLCO 3.0.1 establishes the Applicability statement within each individual Technical Requirement as the requirement for when (i.e., in which MODES or other specified conditions) conformance to the TRLCO is required for safe operation of the facility. The ACTIONS statement(s) establish those remedial measures that must be taken within specified time limits when the requirements of TRLCO are not met. It is not intended that the shutdown ACTION statement(s) be used as an operational convenience which 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 inoperable.

There are two basic types of ACTION statement(s). The first specifies the remedial measures that permit continued operation of the facility, which is not further restricted by the time limits of the ACTION statement(s). In this case, conformance to the ACTION statement(s) provides an acceptable level of safety for unlimited operation as long as the ACTION statement(s) continue to be met. The second type of ACTION statement(s) specifies a time limit in which conformance to the conditions for the TRLCO must be met. This time limit is the allowable outage time to restore an inoperable system or component to OPERABLE status or for restoring parameters with specified limits.

The specified time limits of the ACTION statement(s) are applied from the point in time it is identified that a TRLCO is not met. The time limits of the ACTION statement(s) are also applicable when a system or component is removed from service for surveillance testing or investigation of operational problems. Individual Technical Requirements may include a specified time limit for the completion of a Surveillance Requirement when equipment is removed from service. In this case, the allowable outage time limits of the ACTION statement(s) are applicable when this limit expires if the surveillance has not been completed. When a shutdown is required to comply with ACTION statement(s), the plant may have entered a MODE in which a new Technical Requirement becomes applicable. In this case, the time limits of the ACTION statement(s) would apply from the point in time that the new Technical Requirement becomes applicable if the requirements of the TRLCO are not met.

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TR B2.0 SAFETY LIMITS (SLs)

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TR B1.0 USE AND APPLICATION

TR B1.1 Definitions

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TR 5.0 ADMINISTRATIVE CONTROLS

TR 5.2 Reports

In addition to the applicable reporting requirements of Title 10, Code of Federal Regulations, the following reports shall be submitted to the Regional Administrator of the Regional Office of the NRC unless otherwise noted.

TR 5.2.1 Startup Report

a. A summary report of plant startup and power escalation testing shall be submitted following:

   1. Receipt of an Operating License;

   2. Amendment to the license involving a planned increase in power level;

   3. Installation of fuel that has a different design or has been manufactured by a different fuel supplier; and

   4. Modifications that may have significantly altered the nuclear, thermal, or hydraulic performance of the unit.

b. The startup report shall address each of the tests identified in Subsection 14.1.4.8 of the Final Safety Analysis Report and shall include a description of the measured values of the operating conditions or characteristics obtained during the test program and a comparison of these values with design predictions and specifications. Any corrective actions that were required to obtain satisfactory operation shall also be described. Any additional specific details required in license conditions based on other commitments shall be included in this report.

c. Startup reports shall be submitted within:

   1. 90 days following completion of the startup test program;

   2. 90 days following resumption or commencement of commercial power operation; or

   3. 9 months following initial criticality, whichever is earliest.

   If the startup report does not cover all three events (i.e., initial criticality, completion of startup test program, and resumption or commencement of commercial operation) supplementary reports shall be submitted at least every 3 months until all three events have been completed.

TR 5.1.2 Configuration Risk Management Program

The Configuration Risk Management Program (CRMP) provides a proceduralized risk-informed assessment to manage the risk associated with equipment inoperability. The program applies to Technical Specification structures, systems, or components for which a risk-informed allowed-outage-time has been granted (Technical Specification LCO 3.8.1, Required Actions A.3 and A.6). The program shall include the following elements:

a. Provision for control and implementation of a level-1, at power, internal events PRA-informed methodology. The assessment shall be capable of evaluating the applicable plant configuration;

b. Provisions for performing an assessment prior to entering the LCO ACTION STATEMENT for preplanned activities;

c. Provisions for performing an assessment after entering the LCO ACTION STATEMENT for unplanned entry into the LCO ACTION STATEMENT;

d. Provisions for assessing the need for additional actions after the discovery of additional equipment out of service conditions while in the LCO ACTION STATEMENT; and

e. Provisions for considering other applicable risk significant contributions, such as level-2 PRA issues and external events, qualitatively or quantitatively.

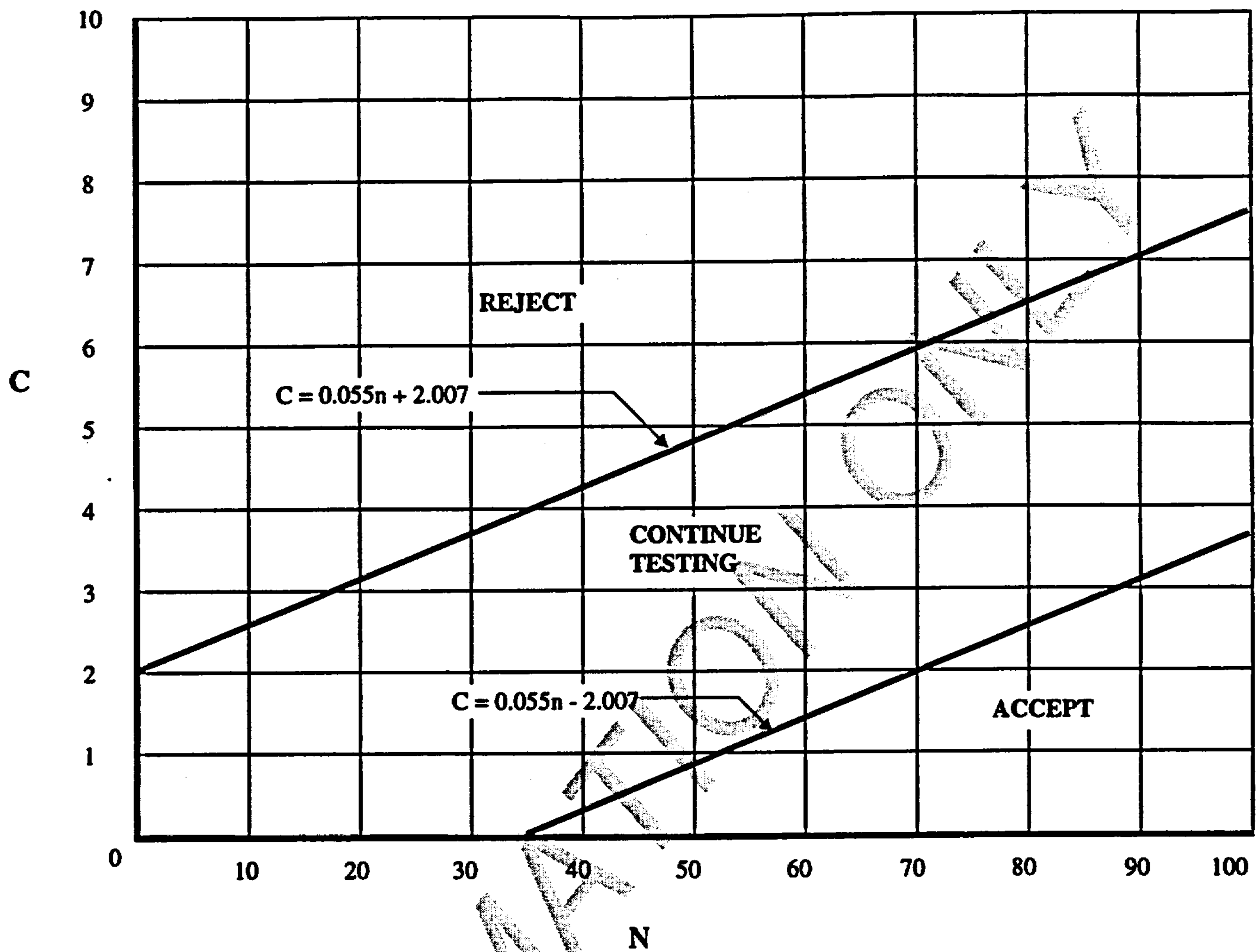

Figure TR5.1.1-1
Sample Plan 2 for Snubber Functional Test

TABLE TR5.1.1-1 (Page 1 of 1)
Snubber Visual Inspection Interval

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

(a) The next visual inspection interval for a snubber population or category shall be determined based upon the previous inspection interval and the number of unacceptable snubbers found during that interval. Snubbers may be categorized, based upon their accessibility during power operation, as accessible or inaccessible. These categories may be examined separately or jointly. However, the licensee must make and document that decision before any inspection and shall use that decision as the basis upon which to determine the next inspection interval for that category. Interpolation between population or category sizes and the number of unacceptable snubbers is permissible. Use next lower integer for the value of the limit for Columns A, B, or C if the integer includes a fractional value of unacceptable snubbers as determined by interpolation.

(b) If the number of unacceptable snubbers is ≤ the number in Column A, the next inspection interval may be twice the previous interval but not greater than 48 months.

(c) If the number of unacceptable snubbers is ≤ the number in Column B but greater than the number in Column A, the next inspection interval shall be the same as the previous interval.

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

(e) The provisions of Technical Specification 5.5.6 are applicable for all inspection intervals up to and including 48 months.

g. Functional Test Failure Analysis (continued)

For snubbers found inoperable, an engineering evaluation shall be performed on the components to which the inoperable snubbers are attached. The purpose of this engineering evaluation shall be to determine if the components to which the inoperable snubbers are attached were adversely affected by the inoperability of the snubbers in order to ensure that the component remains capable of meeting the designed service.

If any snubber selected for functional testing either fails to lock up or fails to move, i.e., frozen-in-place, the cause will be evaluated and if caused by manufacturer or design deficiency all snubbers of the same type subject to the same defect shall be tested. This testing requirement shall be independent of the requirements stated in Augmented Inservice Inspection Program for Snubbers, TR 5.1.1 Section e for snubbers not meeting the functional test acceptance criteria.

h. Functional Testing of Repaired and Replaced Snubbers

Snubbers which fail the visual inspection or the functional test acceptance criteria shall be repaired or replaced. Replacement snubbers and snubbers which have repairs which might affect the functional test result shall be tested to meet the functional test criteria before installation in the unit. Mechanical snubbers shall have met the acceptance criteria subsequent to their most recent service, and the freedom-of motion test must have been performed within 12 months before being installed in the unit.

i. Snubber Seal Replacement Program

The service life of hydraulic and mechanical snubbers shall be monitored to ensure that the service life is not exceeded between surveillance inspections. The maximum expected service life for various seals, springs, and other critical parts shall be determined and established based on engineering information and shall be extended or shortened based on monitored test results and failure history. Critical parts shall be replaced so that the maximum service life will not be exceeded during a period when the snubber is required to be OPERABLE. The parts replacement shall be documented and the documentation shall be retained.

e. Functional Tests (continued)

4. The representative sample selected for the functional test sample plans shall be randomly selected from the snubbers of each type and reviewed before beginning the testing. The review shall ensure as far as practical that they are representative of the various configurations, operating environments, range of size, and capacity of snubber of each type. Snubbers placed in the same locations as snubbers which failed the previous functional test shall be restarted at the time of the next Functional test but shall not be included in the sample plan. If during the functional testing, additional sampling is required due to failure of only one type of snubber, the functional testing results shall be reviewed at the time to determine if additional samples should be limited to the type of snubber which has failed the functional testing.

f. Functional Test Acceptance Criteria

The snubber functional test shall verify that:

1. Activation (restraining action) is achieved within the specified range in both tension and compression;

2. Snubber bleed, or release rate where required, is present in both tension and compression, within the specified range;

3. For mechanical snubbers, the force required to initiate or maintain motion of the snubber is within the specified range in both directions of travel; and

4. For snubbers specifically required not to displace under continuous load, the ability of the snubber to withstand load without displacement.

Testing methods may be used to measure parameters indirectly or parameters other than those specified if those results can be correlated to the specified parameters through established methods.

g. Functional Test Failure Analysis

An engineering evaluation shall be made of each failure to meet the functional test acceptance criteria to determine the cause of the failure. The results of this evaluation shall be used, if applicable, in selecting snubbers to be tested in an effort to determine the OPERABILITY of other snubbers irrespective of type which may be subject to the same failure mode.

(continued)

e. Functional Tests (continued)

2. A representative sample of each type of snubber shall be functionally tested in accordance with Figure TR5.1.1-1. "C" is the total number of snubbers of a type found not meeting the acceptance requirements of the Augmented Inservice Inspection Program for Snubbers, TR 5.1.1 Section f. The cumulative number of snubbers of a type tested is denoted by "N". At the end of each day's testing, the new values of "N" and "C" (previous day's total plus current day's increments) shall be plotted on Figure TR5.1.1. If at any time the point plotted falls in the "Reject" region all snubbers of that type shall be functionally tested. If at any time the point plotted falls in the "Accept" region, testing of snubbers of that type may be terminated. When the point plotted lies in the "Continue Testing' region, additional snubbers of that type shall be tested until the points falls in the "Accept" region or the "Reject" region, or all snubbers of that type are tested. Testing equipment failure during testing may invalidate that day's testing and allow that day's testing to resume anew at a later time, providing all snubbers tested with the failed equipment during the day of equipment failure are retested; or

3. An initial representative sample of 55 snubbers shall be functionally tested. For each snubber type which does not meet the functional test acceptance criteria, another sample of at least one-half the size of the initial sample shall be tested until the total number tested is equal to the initial sample size multiplied by the factor, 1 + C/2, where "C" is the number of snubbers found which do not meet the functional test acceptance criteria. The results from this sample plan shall be plotted using an "Accept" line which follows the equation N = 55(1 + C/2). Each snubber point should be plotted as soon as the snubber is tested. If the point plotted falls on or below the "Accept" line, testing of that type of snubber may be terminated. If the point plotted falls above the "Accept" line, testing must continue until the point falls in the "Accept" region or all the snubber of that type have been tested.

(continued)

d. Transient Event Inspection

An inspection shall be performed of all hydraulic and mechanical snubbers attached to sections of systems that have experienced unexpected, potentially damaging transients as determined from a review of operational data and a visual inspection of the systems within 72 hours for accessible areas and 6 months for inaccessible areas following such an event. In addition to satisfying the visual inspection acceptance criteria, freedom-of-movement of mechanical snubbers shall be verified using at least one of the following: (1) manually induced snubber movement; or (2) evaluation of in-place snubber piston settings; or (3) stroking the mechanical snubber through its full range of travel.

e. Functional Tests

During the first refueling shutdown and at least once per 18 months thereafter during shutdown, a representative sample of snubbers shall be tested using one of the following sample plans. The sample plan shall be selected prior to the test period and cannot be changed during the test period. The NRC Regional Administrator shall be notified in writing of the sample plan selected prior to the test period or the sample plan used in the prior test shall be implemented:

1. At least 10% of the total of each type of snubber shall be functionally tested either in-place or in a bench test. For each snubber of a type that does not meet the functional test acceptance criteria of the Augmented Inservice Inspection Program for Snubbers, TR 5.1.1 Section f, an additional 5% of that type of snubber shall be functionally tested until no more failures are found or until all snubbers of that type have been functionally tested; or

(continued)

TR 5.0 ADMINISTRATIVE CONTROLS

TR 5.1 Programs

TR 5.1.1 Augmented Inservice Inspection Program for Snubbers

a. Inspection Types

As used in this specification, type of snubber shall mean snubbers of the same design and manufacturer, irrespective of capacity.

b. Visual Inspections

Snubbers are categorized as inaccessible or accessible during reactor operation. Each of these categories (inaccessible and accessible) may be inspected independently according to the schedule determined by Table TR5.1.1-1. The visual inspection interval for each category of snubber shall be determined based upon the criteria provided in Table TR5.1.1-1. The first inspection interval determined using this criteria shall be based upon the previous inspection interval as established by the requirements in effect before Amendment 84 of the Technical Specifications.

c. Visual Inspection Acceptance Criteria

Visual Inspection shall verify that (1) there are no visible indications of damage or impaired OPERABILITY and (2) attachments to the foundation or supporting structure are functional, and (3) fasteners for attachment of the snubber to the component and to the snubber anchorage are functional. Snubbers which appear inoperable as a result of visual inspections shall be classified as unacceptable and may be reclassified acceptable for the purpose of establishing the next visual inspection interval, provided that (1) the cause of the rejection is clearly established and remedied for that particular snubber and for other snubbers that may be generically susceptible: and (2) the affected snubber is functionally tested in the as-found condition and determined OPERABLE per Augmented Inservice Inspection Program for Snubbers, TR 5.1 Section f. For those snubbers common to more than one system, the OPERABILITY of such snubbers shall be considered in assessing the OPERABILITY of each of the related systems. A review and evaluation shall be performed and documented to justify continued operation with an unacceptable snubber. If continued operation cannot be justified, the snubber shall be declared inoperable and the ACTION requirements shall be met.

(continued)

SECTION 5.0
DETAILED INDEX OF SECTION

TR 4.0 DESIGN FEATURES

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TABLE TR3.3.1.1-1 (Page 2 of 2)
Reactor Protection System Instrumentation

	FUNCTION	TRIP SETPOINT	RESPONSE TIME (seconds)
3.	Reactor Vessel Steam Dome Pressure - High	≤ 1093 psig	≤ 0.55 (c)
4.	Reactor Vessel Water Level - Low, Level 3	≥ 173.4 inches (d)	≤ 1.05 (c)
5.	Main Steam Isolation Valve - Closure	≤ 8% closed	≤ 0.06
6.	Main Steam Line Radiation - High	≤ 3.0 x full power background	NA
7.	Drywell Pressure - High	≤ 1.68 psig	NA
8.	Scram Discharge Volume Water Level - High		
	a. Level Transmitter	≤ 592 ft. 6 inches	NA
	b. Float Switch	≤ 594 ft. 8 inches	NA
9.	Turbine Stop Valve-Closure	≤ 5% closed	≤ 0.06
10.	Turbine Control Valve Fast Closure	Initiation of fast closure	≤ 0.08 (e)

(c) The sensor response time need not be measured and may be assumed to be the design sensor response time. Prior to return to service of a new transmitter or following refurbishment of a transmitter (e.g., sensor cell or variable damping components), a hydraulic response time test will be performed to determine an initial sensor-specific response time value.

(d) As referenced to instrument zero Top of Active Fuel (TAF).

(e) Measured from de-energization of K37 relay, which inputs the turbine control valve closure signal, to the RPS.

TR 3.3 INSTRUMENTATION

TR 3.3.1.1 Reactor Protection System (RPS) Instrumentation

The RPS instrumentation trip setpoints and response times are listed in Table TR3.3.1.1-1.

TABLE TR3.3.1.1-1 (Page 1 of 2)
Reactor Protection System Instrumentation

FUNCTION	TRIP SETPOINT	RESPONSE TIME (seconds)
1. Intermediate Range Monitors		
a. Neutron Flux - High	≤ 120/125 divisions of full scale	NA
b. Inop	NA	NA
2. Average Power Range Monitors[a]		
a. Neutron Flux-Upscale (Setdown)	≤ 15% RTP	NA
b. Simulated Thermal Power - Upscale		NA
1. Flow Biased	≤ 0.63 (W-ΔW)[b] + 61.4%,	
2. High Flow Clamped	with a maximum of ≤ 113.5% of RTP	
c. Neutron Flux - Upscale	≤ 118% RTP	NA
d. Inop	NA	NA
e. 2-out-of-4 Voters	NA	≤ 0.05[a]
f. OPRM-Upscale		NA
1. Confirmation Count and	14	
2. Amplitude	1.11	
3. Growth	1.3	
4. Amplitude	1.3	

(continued)

(a) Neutron detectors, APRM channel, and 2-out-of-4 Trip Voter digital electronics are exempt from response time testing. Response time shall be measured from activation of the 2-out-of-4 Trip Voter output relay.

(b) ΔW = 0% for two loop operation. ΔW = 8% for single loop operation.

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(continued)

TR B3.8 ELECTRICAL POWER SYSTEMS

TR B3.8.6 Standby Liquid Control System Associated Isolation Devices

BASES

Circuit breakers actuated by fault currents are used as isolation devices to protect equipment associated with the Standby Liquid Control System. The OPERABILITY of these circuit breakers will ensure that the SLCS equipment is protected in the event of faults in the loads powered by these circuit breakers.

The SLC tank heater is only required when mixing sodium pentaborate and/or water to establish the required solution operating parameters. Normal operation of the SLCS does not depend on the tank heater to maintain the solution above its saturation temperature. Technical requirements have been placed on the tank heater circuit breaker to ensure that its failure will not degrade other SLC components.

TABLE TR3.8.6-1 (Page 1 of 1)
Standby Liquid Control System Associated Isolation Devices
480 V Motor Control Centers

1. MCC 72B-4C	
a. Position 2AR	SLC Pump A
2. Deleted	
3. MCC 72E-5B	
a. Position 2B	SLC Pump B
b. Position 2CR	SLC Heater B

TABLE TR3.6.3-1 (Page 4 of 22)
Primary Containment Isolation Valves

FUNCTION	MAXIMUM ISOLATION TIME (seconds)[u]
1. Automatic Isolation Valves[a] (continued)	
j. Group 10 - Reactor Water Cleanup (RWCU) System (Inboard)	
Inboard: G3352-F001	12
k. Group 11 - Reactor Water Cleanup (RWCU) System (Outboard)	
Outboard: G3352-F004	12
Outboard: G3352-F220	20
l. Group 12 - Torus Water Management System (TWMS)	
TWMS to RHR Line Isolation Valves [b][c]	
G5100-F605	60
G5100-F604	60
TWMS to CSS Test Line Isolation Valves[b][c]	
G5100-F607	60
G5100-F606	60
Torus Drain Isolation Valves[b][c]	
G5100-F600	60
G5100-F602	60
G5100-F601	60
G5100-F603	60
m. Group 13-Drywell Sumps	
Drywell Floor Drain Sump Pump Discharge Isolation Valves	
G1154-F600	60
G1100-F003	60
Drywell Equipment Drain Sump Pump Discharge Isolation Valves	
G1154-F018	60
G1100-F019	60

(continued)

TR B3.8 ELECTRICAL POWER SYSTEMS

TR B3.8.6 Standby Liquid Control System Associated Isolation Devices

BASES

Circuit breakers actuated by fault currents are used as isolation devices to protect equipment associated with the Standby Liquid Control System. The OPERABILITY of these circuit breakers will ensure that the SLCS equipment is protected in the event of faults in the loads powered by these circuit breakers.

The SLC tank heater is only required when mixing sodium pentaborate and/or water to establish the required solution operating parameters. Normal operation of the SLCS does not depend on the tank heater to maintain the solution above its saturation temperature. Technical requirements have been placed on the tank heater circuit breaker to ensure that ITS failure will not degrade other SLC components.

TABLE TR3.8.6-1 (Page 1 of 1)
Standby Liquid Control System Associated Isolation Devices
480 V Motor Control Centers

1. MCC 72B-4C	
a. Position 2AR	SLC Pump A
2. MCC 72C-4A	
a. Position 5C (Open)	SLC Heater A (Abandoned in place)
3. MCC 72E-5B	
a. Position 2B	SLC Pump B
b. Position 2CR	SLC Heater B

TR B3.12 FIRE PROTECTION

TR B3.12.8 Fire Rated Assemblies

BASES

The OPERABILITY of the fire barriers and barrier penetrations ensure that fire damage will be limited. These design features minimize the possibility of a single fire involving more than one fire area prior to detection and extinguishment. The fire barriers, fire barrier penetrations for conduits, cable trays and piping, fire dampers, and fire doors are periodically inspected to verify their OPERABILITY.

TR B3.12 FIRE PROTECTION

TR B3.12.7 Yard Fire Hydrants and Hydrant Hose Houses

BASES

The OPERABILITY of the fire suppression systems 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 systems consists of the water system, spray and/or sprinkler systems, CO_2 systems, Halon systems, 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 inoperable, alternate backup fire fighting equipment is required to be made available in the affected areas until the inoperable equipment is restored to service. When the inoperable fire fighting equipment is intended for use as a backup means of fire suppression, a longer period of time is allowed to provide an alternate means of fire fighting than if the inoperable equipment is the primary means of fire suppression.

The surveillance requirements provide assurances that the minimum OPERABILITY requirements of the fire suppression systems are met. An allowance is made for ensuring a sufficient volume of Halon in the Halon storage tanks by verifying the weight and pressure of the tanks.

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

TR B3.12 FIRE PROTECTION

TR B3.12.6 Fire Hose Stations

BASES

The OPERABILITY of the fire suppression systems 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 systems consists of the water system, spray and/or sprinkler systems, CO_2 systems, Halon systems, 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 inoperable, alternate backup fire fighting equipment is required to be made available in the affected areas until the inoperable equipment is restored to service. When the inoperable fire fighting equipment is intended for use as a backup means of fire suppression, a longer period of time is allowed to provide an alternate means of fire fighting than if the inoperable equipment is the primary means of fire suppression.

The surveillance requirements provide assurances that the minimum OPERABILITY requirements of the fire suppression systems are met. An allowance is made for ensuring a sufficient volume of Halon in the Halon storage tanks by verifying the weight and pressure of the tanks.

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

TR B3.12 FIRE PROTECTION

TR B3.12.5 Halon Systems

BASES

The OPERABILITY of the fire suppression systems 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 systems consists of the water system, spray and/or sprinkler systems, CO_2 systems, Halon systems, 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 inoperable, alternate backup fire fighting equipment is required to be made available in the affected areas until the inoperable equipment is restored to service. When the inoperable fire fighting equipment is intended for use as a backup means of fire suppression, a longer period of time is allowed to provide an alternate means of fire fighting than if the inoperable equipment is the primary means of fire suppression.

The surveillance requirements provide assurances that the minimum OPERABILITY requirements of the fire suppression systems are met. An allowance is made for ensuring a sufficient volume of Halon in the Halon storage tanks by verifying the weight and pressure of the tanks.

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

The Halon suppression systems located in the relay room (elevation 613 ft. 6 in.) and in the cable spreading room (elevation 630 ft. 6 in.) each serve a fire zone where redundant systems or components could be damaged.

TR B3.12 FIRE PROTECTION

TR B3.12.4 CO_2 Systems

BASES

The OPERABILITY of the fire suppression systems 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 systems consists of the water system, spray and/or sprinkler systems, CO_2 systems, Halon systems, 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 inoperable, alternate backup fire fighting equipment is required to be made available in the affected areas until the inoperable equipment is restored to service. When the inoperable fire fighting equipment is intended for use as a backup means of fire suppression, a longer period of time is allowed to provide an alternate means of fire fighting than if the inoperable equipment is the primary means of fire suppression.

The surveillance requirements provide assurances that the minimum OPERABILITY requirements of the fire suppression systems are met. An allowance is made for ensuring a sufficient volume of Halon in the Halon storage tanks by verifying the weight and pressure of the tanks.

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

The carbon dioxide suppression systems located in the cable tray area, (Auxiliary Building 631 ft. elevation) and outside the Division II switchgear room (Auxiliary Building 643 ft. 6 in. elevation) each serve a fire zone where redundant systems or components could be damaged.

For TSR 3.12.4.2, the automatic valves in the CO_2 system are demonstrated to be in their proper position by the successful performance of surveillances which verify that the pressure and inventory level of the CO_2 storage tank are at their required levels. The valves are indirectly verified as being closed because tank level and pressure are maintained; i.e. CO_2 is not leaking past the automatic valves.

TR B3.12 FIRE PROTECTION

TR B3.12.3 Spray and Sprinkler Systems

BASES

The OPERABILITY of the fire suppression systems 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 systems consists of the water system, spray and/or sprinkler systems, CO_2 systems, Halon systems, 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 inoperable, alternate backup fire fighting equipment is required to be made available in the affected areas until the inoperable equipment is restored to service. When the inoperable fire fighting equipment is intended for use as a backup means of fire suppression, a longer period of time is allowed to provide an alternate means of fire fighting than if the inoperable equipment is the primary means of fire suppression.

The surveillance requirements provide assurances that the minimum OPERABILITY requirements of the fire suppression systems are met. An allowance is made for ensuring a sufficient volume of Halon in the Halon storage tanks by verifying the weight and pressure of the tanks.

An exception is made to TRSR 3.12.3.1 and TRSR 3.12.3.2 for valves not accessible during unit operation. The valve that meets this criterion is T8000F037.

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

TR B3.12 FIRE PROTECTION

TR B3.12.2 Fire Suppression Water System

BASES

The OPERABILITY of the fire suppression systems 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 systems consists of the water system, spray and/or sprinkler systems, CO_2 systems, Halon systems, 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 inoperable, alternate backup fire fighting equipment is required to be made available in the affected areas until the inoperable equipment is restored to service. When the inoperable fire fighting equipment is intended for use as a backup means of fire suppression, a longer period of time is allowed to provide an alternate means of fire fighting than if the inoperable equipment is the primary means of fire suppression.

The surveillance requirements provide assurances that the minimum OPERABILITY requirements of the fire suppression systems are met. An allowance is made for ensuring a sufficient volume of Halon in the Halon storage tanks by verifying the weight and pressure of the tanks.

An exception is made to TRSR 3.12.2.6 and TRSR 3.12.2.11 for valves not accessible during unit operation. The valve that meets this criterion is T8000F037.

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

Maintenance may be performed on the diesel-driven fire suppression pump, during operation, by providing black start capability for either a GSW pump, the Electric Fire Pump, or an Engine Driven Pumper with sufficient capability.

TR B3.12 FIRE PROTECTION

TR B3.12.1 Fire Detection Instrumentation

BASES

OPERABILITY of the detection instrumentation ensures that both adequate warning capability is available for prompt detection of fires and that fire suppression systems, that are actuated by fire detectors, will discharge extinguishing agent in a timely manner. Prompt detection and suppression of fires will reduce the potential for damage to safety-related equipment and is an integral element in the overall facility fire protection program.

Fire detectors that are used to actuate fire suppression systems represent a more critically important component of a plant's fire protection program than detectors that are installed solely for early fire warning and notification. Consequently, the minimum number of OPERABLE fire detectors must be greater.

The loss of detection capability for fire suppression systems, actuated by fire detectors, represents a significant degradation of fire protection for any area. As a result, the establishment of a fire watch patrol must be initiated at an earlier stage than would be warranted for the loss of detectors that provide only early fire warning. The establishment of frequent fire patrols in the affected area is required to provide detection capability until the inoperable instrumentation is restored to OPERABILITY.

TR B3.11 RADIOACTIVE EFFLUENTS

TR B3.11.1 Temporary Outdoor Storage Tank Radioactivity

BASES

The tanks listed in this specification include all those outdoor radwaste tanks that are not surrounded by liners, dikes, or wall capable of holding the tank contents and that do not have tank overflows and surrounding area drains connected to the liquid radwaste treatment system.

Restricting the quantity of radioactive material contained in the specific tanks provides assurance that in the event of an uncontrolled release of the tanks' contents, the resulting concentrations would be less than the limits of 10 CFR Part 20, Appendix B, Table 2, Column 2, at the nearest potable water supply and the nearest surface water supply in an UNRESTRICTED AREA.

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TR B3.9 REFUELING OPERATIONS

TR B3.9.4 Reactor Pressure Vessel Water Level - Refueling

BASES

See Bases for Technical Specification 3.9.8, Residual Heat Removal (RHR) - Low Water Level.

TR B3.9 REFUELING OPERATIONS

TR B3.9.3 Crane Travel - Spent Fuel Storage Pool

BASES

The restriction on movement of loads in excess of the nominal weight of a fuel assembly over other fuel assemblies in the storage pool ensures that in the event this load is dropped (1) the activity release will be limited to that contained in a single fuel assembly, and (2) any possible distortion of fuel in the storage racks will not result in a critical array. This assumption is consistent with the activity release assumed in the safety analyses.

TR B3.9 REFUELING OPERATIONS

TR B3.9.2 Refueling Platform

BASES

The OPERABILITY requirements ensure that (1) the refueling platform will be used for handling control rods and fuel assemblies within the reactor pressure vessel, (2) each hoist has sufficient load capacity for handling fuel assemblies and control rods, and (3) the core internals and pressure vessel are protected from excessive lifting force in the event they are inadvertently engaged during lifting operations.

When setting the uptravel stop on the refueling platform hoists, the point of attachment is where the bail handle rests in the grapple.

TR B3.9 REFUELING OPERATIONS

TR B3.9.1 Communications

BASES

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

TR B3.8 ELECTRICAL POWER SYSTEMS

TR B3.8.6 Standby Liquid Control System Associated Isolation Devices

BASES

Circuit breakers actuated by fault currents are used as isolation devices to protect equipment associated with the Standby Liquid Control System. The OPERABILITY of these circuit breakers will ensure that the SLCS equipment is protected in the event of faults in the loads powered by these circuit breakers.

The SLC tank heaters are only required when mixing sodium pentaborate and/or water to establish the required solution operating parameters. Normal operation of the SLCS does not depend on these tank heaters to maintain the solution above its saturation temperature. Technical requirements have been placed on the tank heater circuit breakers to ensure that their failure will not degrade other SLC components.

TR B3.8 ELECTRICAL POWER SYSTEMS

TR B3.8.5 Primary Containment Penetration Conductor Overcurrent Protective Devices

BASES

Primary containment electrical penetrations and penetration conductors are protected by either de-energizing circuits not required during reactor operation or demonstrating the OPERABILITY of primary and backup overcurrent protection circuit breakers by periodic surveillance.

The surveillance requirements applicable to lower voltage circuit breakers and fuses provide assurance of breaker and fuse reliability by testing at least one representative sample of each manufacturers brand of circuit breaker and/or fuse. Each manufacturer's molded case and metal case circuit breakers and/or fuses are grouped into representative samples which are then tested on a rotating basis to ensure that all breakers and/or fuses are tested. If a wide variety exists within any manufacturer's brand of circuit breakers and/or fuses, it is necessary to divide that manufacturer's breakers and/or fuses into groups and treat each group as a separate type of breaker or fuse for surveillance purposes.

TR B3.8 ELECTRICAL POWER SYSTEMS

TR B3.8.4 Electrical Equipment Protective Devices Motor-Operated Valves Thermal Overload Protection

BASES

The OPERABILITY of the motor operated valves thermal overload protection ensures that the thermal overload protection will not prevent safety valves from performing their function. The Surveillance Requirements for demonstrating the OPERABILITY of the thermal overload protection are in accordance with Regulatory Guide 1.106 "Thermal Overload Protection for Electric Motors on Motor Operated Valves," Revision 1, March 1977.

TR B3.8 ELECTRICAL POWER SYSTEMS

TR B3.8.3 AC Sources

BASES

See Bases for Technical Specification 3.8.1, AC Sources - Operating and 3.8.2, AC Sources - Shutdown.

TR B3.8 ELECTRICAL POWER SYSTEMS

TR B3.8.2

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TR B3.8 ELECTRICAL POWER SYSTEMS

TR B3.8.1 AC Circuits Inside Primary Containment

BASES

Primary Containment electrical penetrations and penetration conductors are protected by either de-energizing circuits not required during reactor operation or demonstrating the OPERABILITY of primary and backup overcurrent protection circuit breakers by periodic surveillance.

BASES (continued)

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

1. Functionally test 10% of a type of snubber with an additional 5% tested for each functional testing failure, or

2. Functionally test a sample size and determine sample acceptance or rejection using Figure TR5.1.1-1, or

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

Figure TR5.1.1-1 was developed using "Wald's Sequential Probability Ratio Plan" as described in "Quality Control and Industrial Statistics" by Acheson J. Duncan.

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

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

TR B3.7 PLANT SYSTEMS

TR B3.7.9 Snubbers

BASES

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

Snubbers are classified and grouped by design and manufacturer but not by size. For example, mechanical snubbers utilizing the same design features of the 2-kip, 10-kip, and 100-kip capacity manufactured by company "A" are of the same type. The same design mechanical snubbers manufactured by company "B" for the purpose of this Technical Requirements Manual would be a different type, as would hydraulic snubbers from either manufacturer.

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

The visual inspection frequency is based upon maintaining a constant level of snubber protection to each safety-related system. Therefore, the required inspection interval varies based upon the number of unacceptable snubbers found during the previous inspection in proportion to the sizes of the various snubber populations or categories and the previous inspection interval as specified in NRC Generic Letter 90-09, "Alternative Requirements for Snubber Visual Inspection Intervals and Corrective Actions". In order to establish the inspection frequency for each type of snubber on safety-related systems it was assumed that the frequency of snubber failures and initiating events is constant with time and that the failure of any snubber on any system could cause the system to become unprotected and, therefore, result in failure during an assumed initiation event. Inspections performed before the interval has elapsed may be used as a new reference point to determine the next inspection. However, the results of such early inspections performed before the original required time interval has elapsed (nominal time less 25%) may not be used to lengthen the required inspection interval. Any inspection whose results require a shorter inspection interval will override the previous schedule.

The acceptance criteria used in both the visual inspections and the functional testing determines the OPERABILITY of the snubber(s). When a snubber is determined to be inoperable, an Engineering Evaluation is required. This provides for an evaluation of the snubber mode of failure to determine if the snubber mode of failure has adversely affected the safety-related component or system to which it was attached. This evaluation will further verify that the system is still capable of meeting its design function.

(continued)

TR B3.7 PLANT SYSTEMS

TR B3.7.8

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TR B3.7 PLANT SYSTEMS

TR B3.7.7 Appendix R Alternative Shutdown Auxiliary Systems

BASES

The systems identified in this section are those utilized for Appendix R Alternative shutdown but not included in other sections of the Technical Specifications and Technical Requirements Manual. The ACTION statements assure that the auxiliary systems will be OPERABLE or that acceptable alternative means are established to achieve the same objective.

There are four independent Combustion Turbine-Generator units onsite. CTG 11 Unit 1 has a diesel engine starter and thus can be started independently from offsite power. CTG 11 Units 2, 3, and 4 have AC-motor starters and rely on a 480-volt AC feed. The phrase "alternative source power", as used in TRM Specification 3.7.7, Required Action C.2.2, is defined as a source of power that is not reliant on offsite power for starting (if required) or operating (if already running) and capable of supplying the required loads on the 4160-volt busses associated with the Alternative Shutdown System.

One of the two installed Standby Feedwater Pumps and one of the two listed Drywell Cooling Units are necessary for Appendix R Alternative shutdown. Therefore unlimited operation with one of the two components inoperable is justified provided increased surveillance is performed on the components which remain OPERABLE.

The SBFW pump performs a function for Appendix R Alternative Shutdown analogous to RCIC for Remote Shutdown. As such the SBFW Surveillance Requirements are patterned after RCIC Surveillance Requirements, including the flow test capacity requirement. The specified flow value includes an allowance for normal instrument tolerance above the minimum flow required for adequate core cooling.

The controls for CTG 11 Unit 1, the Standby Feedwater Pumps, and Drywell Cooling Units 1 and 2 are only required when the respective equipment is OPERABLE.

TR B3.7 PLANT SYSTEMS

TR B3.7.6 Main Turbine Bypass System

BASES

See Bases for Technical Specification 3.7.6, Main Turbine Bypass System and Moisture Separator Reheater.

TR B3.7 PLANT SYSTEMS

TR B3.7.5 Sealed Source Contamination

BASES

The limitations on removable contamination for sources requiring leak testing, including alpha emitters, is based on 10CFR 70.39(c) limits for plutonium. This limitation will ensure that leakage from byproduct, source, and special nuclear material sources will not exceed allowable intake values. Sealed sources are classified into three groups according to their use, with surveillance requirements commensurate with the probability of damage to a source in that group. Those sources which are frequently handled are required to be tested more often than those which are not. Sealed sources which are continuously enclosed within a shielded mechanism, i.e., sealed sources within radiation monitoring devices, are considered to be stored and need not be tested unless they are removed from the shielded mechanism.

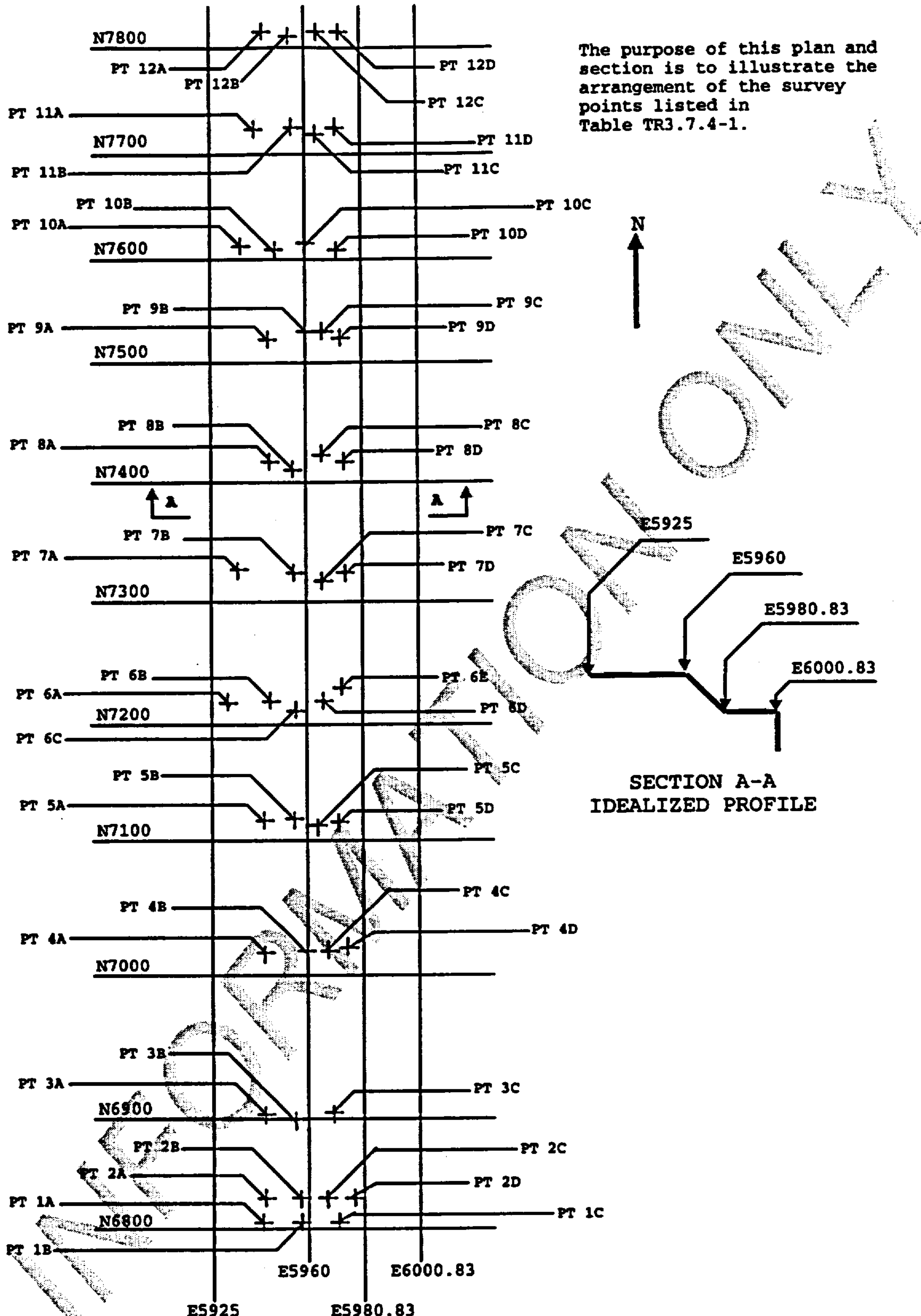

Figure B3.7.4-1
ARRANGEMENT OF SHORE BARRIER SURVEY POINTS

TR B3.7 PLANT SYSTEMS

TR B3.7.4 Shore Barrier Protection

BASES

The purpose of the shore barrier is to protect the site backfill from wave erosion.

Category 1 structures are designed to withstand the impact of waves up to 5.4 feet. So long as the backfill is in place, waves greater than 5.4 feet cannot impact Category 1 structures because of the lack of sufficient depth of water to sustain such waves.

The shore barrier can sustain a high degree of damage and still perform its function, protecting the site backfill from erosion. Thus the OPERABILITY condition for operation of the shore barrier has been written to ensure that severe damage to the structure will not go undetected for a substantial period of time and provide for prompt NRC notification and corrective action.

The control elevations listed in Table TR3.7.4-1 were determined during the 1984 survey.

TR B3.7 PLANT SYSTEMS

TR B3.7.3 Control Center Air Temperature

BASES

The OPERABILITY of the control room air conditioning system ensures that (1) the ambient air temperature does not exceed the allowable temperature for continuous duty rating for the equipment and instrumentation cooled by this system and (2) the control room will remain habitable for operations personnel during and following all design basis accident conditions.

TR B3.7 PLANT SYSTEMS

TR B3.7.2 Control Room Emergency Filtration (CREF) System

BASES

See Bases for Technical Specification 3.7.3, Control Room Emergency Filtration (CREF) System.

TR B3.7 PLANT SYSTEMS

TR B3.7.1 Ultimate Heat Sink (UHS) Minimum Temperature

BASES

No Bases information provided.

TR B3.6 CONTAINMENT SYSTEMS

TR B3.6.8 Drywell Spray

BASES

No Bases information provided.

TR B3.6 CONTAINMENT SYSTEMS

TR B3.6.7 Secondary Containment Isolation Valves (SCIVs)

BASES

See Bases for Technical Specification 3.6.4.2, Secondary Containment Isolation Valves (SCIVs).

TR B3.6 CONTAINMENT SYSTEMS

TR B3.6.6 Main Steam Isolation Valve (MSIV) Leakage Control System (LCS)

BASES

See Bases for Technical Specification 3.6.1.9, Main Steam Isolation Valve (MSIV) Leakage Control System (LCS).

TR B3.6 CONTAINMENT SYSTEMS

TR B3.6.5 Suppression Chamber-to-Drywell Vacuum Breaker Position Indication

BASES

See Bases for Technical Specification 3.6.1.8, Suppression Chamber-to-Drywell Vacuum Breakers.

TR B3.6 CONTAINMENT SYSTEMS

TR B3.6.4 Reactor Building-to-Suppression Chamber Vacuum Breaker Position Indication

BASES

See Bases for Technical Specification 3.6.1.7, Reactor Building-to-Suppression Chamber Vacuum Breakers.

TR B3.6 CONTAINMENT SYSTEMS

TR B3.6.3 Primary Containment Isolation Valves (PCIVs)

BASES

See Bases for Technical Specification 3.6.1.3, Primary Containment Isolation Valves (PCIVs).

TR B3.6 CONTAINMENT SYSTEMS

TR B3.6.2 Primary Containment Hydrogen Recombiners

BASES

See Bases for Technical Specification 3.6.3.1, Primary Containment Hydrogen Recombiners.

TR B3.6 CONTAINMENT SYSTEMS

TR B3.6.1 Suppression Chamber

BASES

See Bases for Technical Specification 3.6.1.1, Primary Containment.

TR B3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS) AND REACTOR CORE ISOLATION COOLANT (RCIC) SYSTEM

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TR B3.4 REACTOR COOLANT SYSTEM (RCS)

TR B3.4.7 Recirculation Pump MG Set Scoop Tube

BASES

The purpose of the mechanical high speed stops is to terminate a postulated dual reactor recirculation pump slow flow runout transient which is not terminated by a reactor scram (the design basis event for the Maximum Extended Operating Domain (MEOD) analysis documented in NEDC-31843P, "Fermi 2 Maximum Extended Operating Domain analysis," dated July 1990.) This event stabilizes at a new core power level, corresponding to the maximum possible core flow along the Maximum Extended Load Line Limits (MELLL) rod line, which is dictated by the actual MG set scoop tube mechanical high speed stops. The mechanical high speed stops protect the fuel cladding by limiting the reactor power increase which would result from this postulated increase in recirculation flow, such that neither the one-percent plastic strain limit nor the Minimum Critical Power Ratio (MCPR) Safety Limit are violated. This analysis assumes that the core is being operated within the flow limits for Maximum Average Planar Linear Heat Generation Rate (MAPLHGR(F)) and Minimum Critical Power Ratio (MCPR(F)), which are also dependent on the MG set scoop tube mechanical high speed stop settings.

REFERENCE 1. Technical Specification Amendment No. 130.

TR B3.4 REACTOR COOLANT SYSTEM (RCS)

TR B3.4.6 Structural Integrity

BASES

The inspection programs for ASME Code Class 1, 2, and 3 components ensure that the structural integrity of these components will be maintained at an acceptable level throughout the life of the plant.

Components of the reactor coolant system were designed to provide access to permit inservice inspections in accordance with Section XI of the ASME Boiler and Pressure Vessel Code 1974 Edition and Addenda through summer, 1975.

The inservice inspection program for ASME Code Class 1, 2, and 3 components will be 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) except where specific written relief has been granted by the NRC pursuant to 10 CFR 50.55a(g)(6)(i).

TABLE TR3.8.4-1 (Page 6 of 6)
Motor-Operated Valves Thermal Overload Protection

SYSTEM AFFECTED	VALVE NUMBER
14. Containment Atmosphere Control System	T4803-F601
	T4803-F602
	T4804-F601A
	T4804-F601B
	T4804-F602A
	T4804-F602B
	T4804-F603A
	T4804-F603B
	T4804-F604A
	T4804-F604B
	T4804-F605A
	T4804-F605B
	T4804-F606A
	T4804-F606B
15. Primary Containment Pneumatic Supply System	T4901-F601
	T4901-F602

TR 3.3 INSTRUMENTATION

TR 3.3.6.1 Primary Containment Isolation Instrumentation

The primary containment isolation instrumentation trip setpoints are listed in Table TR3.3.6.1-1.

TABLE TR3.3.6.1-1 (Page 1 of 3)
Primary Containment Isolation Instrumentation

FUNCTION	TRIP SETPOINT	RESPONSE TIME (seconds)
1. Main Steam Line Isolation		
a. Reactor Vessel Water Level - Low Low Low, Level 1	≥ 31.8 inches(f)	≤ 1.0(b)(c)
b. Main Steam Line Pressure - Low	≥ 756 psig	NA
c. Main Steam Line Flow - High	≤ 115.4 psid	≤ 0.5(b)(c)
d. Condenser Pressure - High	≤ 6.85 psia	NA
e. Main Steam Tunnel Temperature - High	≤ 200°F	NA
f. Main Steam Line Radiation - High	≤ 3.0 x full power background(e)	NA
g. Turbine Building Area Temperature - High	≤ 200°F	NA
h. Manual Initiation	NA	NA
2. Primary Containment Isolation		
a. Reactor Vessel Water Level - Low, Level 3	≥ 173.4 inches(f)	NA
b. Reactor Vessel Water Level - Low Low, Level 2	≥ 110.8 inches(f)	NA
c. Drywell Pressure - High	≤ 1.68 psig	NA
d. Manual Initiation	NA	NA

(continued)

(b) Isolation system instrumentation response time for MSIVs Only. No diesel generator delays assumed for MSIVs.

(c) The sensor response time need not be measured and may be assumed to be the design sensor response time. Prior to return to service of a new transmitter or following refurbishment of a transmitter (e.g., sensor cell or variable damper components), a hydraulic response time test will be performed to determine an initial sensor-specific response time value.

(e) A new "full power background" level is established for hydrogen water chemistry based on 100% power operation with the established hydrogen injection rate. Actual background radiation levels may be less depending on actual power level or hydrogen injection rate.

Setpoint adjustment is not necessary for variations in power or hydrogen injection rate, including interruptions in hydrogen flow.

(f) As referenced to instrument zero Top of Active Fuel (TAF).

TABLE TR3.3.1.1-1 (Page 2 of 2)
Reactor Protection System Instrumentation

	FUNCTION	TRIP SETPOINT	RESPONSE TIME (seconds)
3.	Reactor Vessel Steam Dome Pressure - High	≤ 1093 psig	≤ 0.55[c]
4.	Reactor Vessel Water Level - Low, Level 3	≥ 173.4 inches[d]	≤ 1.05[c]
5.	Main Steam Isolation Valve - Closure	≤ 8% closed	≤ 0.06
6.	Main Steam Line Radiation - High	≤ 3.0 x full power background[f]	NA
7.	Drywell Pressure - High	≤ 1.68 psig	NA
8.	Scram Discharge Volume Water Level - High		
	a. Level Transmitter	≤ 592 ft. 6 inches	NA
	b. Float Switch	≤ 594 ft. 8 inches	NA
9.	Turbine Stop Valve-Closure	≤ 5% closed	≤ 0.06
10.	Turbine Control Valve Fast Closure	Initiation of fast closure	≤ 0.08[e]

(c) The sensor response time need not be measured and may be assumed to be the design sensor response time. Prior to return to service of a new transmitter or following refurbishment of a transmitter (e.g., sensor cell or variable damping components), a hydraulic response time test will be performed to determine an initial sensor-specific response time value.

(d) As referenced to instrument zero Top of Active Fuel (TAF).

(e) Measured from de-energization of K37 relay, which inputs the turbine control valve closure signal, to the RPS.

(f) A new "full power background" level is established for hydrogen water chemistry based on 100% power operation with the established hydrogen injection rate. Actual background radiation levels may be less depending on actual power level or hydrogen injection rate.

Setpoint adjustment is not necessary for variations in power or hydrogen injection rate including interruptions in hydrogen flow.

TABLE TR3.12.1-1 (Page 2 of 3)
Fire Detection Instrumentation

FUNCTION	FIRE DETECTION ZONE	TOTAL NUMBER OF INSTRUMENTS[a] IONIZATION (X/Y)	PHOTOELECTRIC (X/Y)	FIXED THERMAL (X/Y)	INFRARED (X/Y)
2. Auxiliary Building (continued)					
f. Cable tray area second floor mezzanine	9A	0/22			
g. DC/MCC room, third floor	14	0/10			
h. Switchgear, battery and M-G rooms, third floor	14	14/0			
i. Fourth floor	16	6/0			
j. Fifth floor	16	25/0			
3. Control Center					
a. Relay room	8	0/27			
b. Cable spreading room	11	0/28			
c. Control room	12	52/0	4/0	2/0	
d. Computer room	13	0/4	0/9		
e. Computer room above drop ceiling	13	5/0	2/0		
4. RHR Complex					
a. Division I pump room	50	8/0			
b. Division II pump room	51	8/0			
c. EDG 11 room suppression				0/8	
d. EDG 12 room suppression				0/8	
e. EDG 13 room suppression				0/8	
f. EDG 14 room suppression				0/8	

(continued)

(a) (X/Y) X is number of Function A (early-warning fire detection and notification only) instruments.
Y is number of Function B (actuation of fire suppression system and early warning and notification) instruments.

TABLE TR3.12.1-1 (Page 2 of 3)
Fire Detection Instrumentation

FUNCTION	FIRE DETECTION ZONE	TOTAL NUMBER OF INSTRUMENTS[a] IONIZATION (X/Y)	PHOTOELECTRIC (X/Y)	FIXED THERMAL (X/Y)	INFRARED (X/Y)
2. Auxiliary Building (continued)					
f. Cable tray area second floor mezzanine	9A	0/22			
g. DC/MCC room, third floor	14	0/10			
h. Switchgear, battery and M-G rooms, third floor	14	14/0			
i. Fourth floor	16	6/0			
j. Fifth floor	16	25/0			
3. Control Center					
a. Relay room	8	0/27			
b. Cable spreading room	11	0/28			
c. Control room	12	52/0	4/0	2/0	
d. Computer room	13	0/13			
e. Computer room above drop ceiling	13	5/0	2/0		
4. RHR Complex					
a. Division I pump room	50	8/0			
b. Division II pump room	51	8/0			
c. EDG 11 room suppression				0/8	
d. EDG 12 room suppression				0/8	
e. EDG 13 room suppression				0/8	
f. EDG 14 room suppression				0/8	

(continued)

(a) (X/Y) X is number of Function A (early-warning fire detection and notification only) instruments.
Y is number of Function B (actuation of fire suppression system and early warning and notification) instruments.

TR 3.4 REACTOR COOLANT SYSTEM (RCS)

TR 3.4.1 Recirculation Loops Operating

TRLCO 3.4.1 Two reactor recirculation loops shall be in operation.

APPLICABILITY: MODES 1 and 2.

ACTIONS

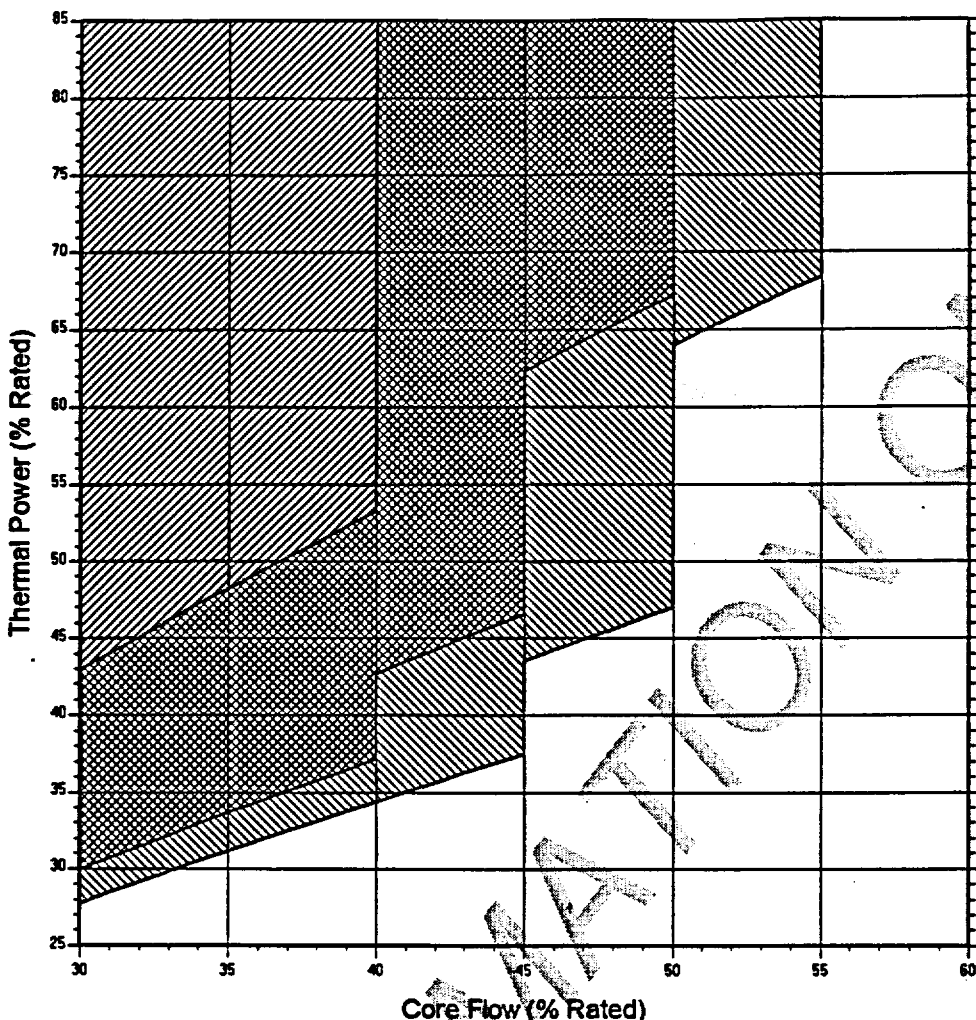
CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One reactor coolant system recirculation loop not in operation.	A.1 Limit the speed of the operating recirculation pump to ≤ 75% of rated pump speed.	4 hours

SURVEILLANCE REQUIREMENTS

-----NOTE-----
Only required to be performed when one recirculation loop is not in operation.

SURVEILLANCE		FREQUENCY
TRSR 3.4.1.1	Verify the speed of the operating recirculation pump is ≤ 75% of rated pump speed.	12 hours

BASES



Stability Region Descriptions		
	Scram Region:	>96% Rod Line, <40% Core Flow
	Exit Region: Not in Scram Region -and-	>67% Rod Line, <40% Core Flow >77% Rod LIne, <45% Core Flow >103% Rod Line, <50% Core Flow
	Stablility Awareness Region: Not in Scram or Exit Region -and-	>62% Rod Line, <45% Core Flow >72% Rod LIne, <50% Core Flow >98% Rod Line, <55% Core Flow

THERMAL POWER vs CORE FLOW

Figure B 3.4.1-1

BASES

SURVEILLANCE REQUIREMENTS (continued)

"Exit" regions. Therefore, frequent monitoring of the APRM and LPRM signals is appropriate when operating in the "Stability Awareness" region.

This SR is modified by a Note that states performance is only required when operating in the "Stability Awareness" region (refer to Bases Figure B 3.4.1-1) (i.e., in the power-to-flow region that is near regions of higher probability for core thermal-hydraulic instabilities). This is acceptable because outside the "Stability Awareness" region, power and flow conditions are such that sufficient margin exists to the potential for core thermal-hydraulic instability to allow routine core monitoring. Any unanticipated entry into the "Stability Awareness" region would require immediate verification of core stability since the Surveillance would not be current.

REFERENCES

1. 10 CFR 50, Appendix A, GDC 12

2. NRC Generic Letter 94-02, "Long-Term Solutions and Upgrade of Interim Operating Recommendations for Thermal Hydraulic Instabilities in Boiling Water Reactors," July 1994.

3. BWROG Letter 94078, "BWR Owners' Group Guidelines for Interim Corrective Action," June 1994.

ACTIONS

A.1

When operating in the "Exit" region (refer to Bases Figure B 3.4.1-1), the potential for thermal-hydraulic instabilities is increased and sufficient margin may not be available for operator response to suppress potential power oscillations. Therefore, action must be initiated immediately to restore operation outside of the "Exit" region. Control rod insertion and/or core flow increases are designated as the means to accomplish this objective.

Required Action A.1 is modified by a Note that precludes core flow increases by restart of an idle recirculation loop, or by resetting a recirculation flow limiter. Core flow increases by these means would not support timely completion of the action to restore operation outside the "Exit" Region.

B.1

If operating with no recirculation pumps in operation in MODE 1 or operating in the "Scram" region (refer to Bases Figure B 3.4.1-1), or if core thermal-hydraulic instability is detected, then unacceptable power oscillations may result. Therefore, the reactor mode switch must be immediately placed in the shutdown position to terminate the potential for unacceptable power oscillations.

Thermal-hydraulic instability is evidenced by a sustained increase in APRM or LPRM peak to peak noise level reaching 2 or more times its initial level and occurring with a characteristic period of less than 3 seconds.

If entry into this condition is an unavoidable and well known consequence of an event, early initiation of the Required Action is appropriate. Also, it is recognized that during certain abnormal conditions, it may become operationally necessary to enter the "Scram" or "Exit" region for the purpose of: 1) protecting plant equipment, which if it were to fail could impact plant safety, or 2) protecting a safety or fuel operating limit. In these cases, the appropriate actions for the region entered would be performed as required.

These requirements are consistent with References 2 and 3.

SURVEILLANCE REQUIREMENTS

SR 3.4.1.1.1

This SR provides frequent periodic monitoring for core thermal-hydraulic instability by monitoring APRM and LPRM signals for a sustained increase in APRM or LPRM peak to peak noise level reaching 2 or more times its initial level and occurring with a characteristic period of less than 3 seconds. The 1 hour frequency is based on the small potential for core thermal-hydraulic oscillations to occur outside the "Scram" or

(continued)

TR B3.4 REACTOR COOLANT SYSTEM (RCS)

TR B3.4.1.1 Recirculation Loops Operating - Regions

BASES

BACKGROUND

GDC 12 of 10 CFR 50 Appendix A (Reference 1) states that the reactor core and associated coolant, control, and protection systems shall be designed to assure that power oscillations which can result in exceeding specified fuel design limits are not possible or can be reliably detected and suppressed.

BWR cores typically operate with the presence of global flux noise in a stable mode which is due to random boiling and flow noise. As the power/flow conditions are changed, along with other system parameters (xenon, subcooling, power distribution, etc.) the thermal-hydraulic/reactor kinetic feedback mechanism can be enhanced such that perturbations may result in sustained limit cycle or divergent oscillations in power and flow.

Two major modes of oscillations have been observed in BWRs. The first mode is the fundamental or core-wide oscillation mode in which the entire core oscillates in phase in a given axial plane. The second mode involves regional oscillation in which one half of the core oscillates 180 degrees out of phase with the other half. Studies have indicated that adequate margin to the Safety Limit MCPR may not exist during regional oscillations.

APPLICABLE SAFETY ANALYSES

Thermal-hydraulic stability analysis (Reference 2) has concluded that procedures for detecting and suppressing power oscillations that might be induced by a thermal-hydraulic instability are necessary to provide reasonable assurance that the requirements of Reference 1 are satisfied in the absence of an operable OPRM function (APRM function 2.f).

LCO

Operations that exhibit core thermal-hydraulic instability are not permitted. Additionally, in order to avoid potential power oscillations due to thermal-hydraulic instability, operation at certain combinations of power and flow are not permitted. These restricted power and flow regions are referred to as the "Scram" and "Exit" regions and are defined by Bases Figure B 3.4.1-1.

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
TRSR 3.4.1.1.1	-----------------NOTE--------------------- Only required to be performed when operating in the "Stability Awareness" Region -- Verify the reactor core is not exhibiting core thermal-hydraulic instability.	1 hour

TR 3.4 REACTOR COOLANT SYSTEM (RCS)

TR 3.4.1.1 Recirculation Loops Operating - Regions

TRLCO 3.4.1.1 The reactor core shall not exhibit core thermal-hydraulic instablity or operate in the "Scram" or "Exit" Regions.

APPLICABILITY: MODE 1, within TS Action Statement 3.3.1.1.J for RPS function 2.f. inoperable.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. Reactor core operating in the "Exit" Region.	------------NOTE------------ Restart of an idle recirculation loop or resetting a recirculation flow limiter is not allowed. -------------------------------		
	A.1	Initiate action to insert control rods or increase core flow to restore operation outside the "Exit" Region.	Immediately
B. No recirculation loops operating while in MODE 1. OR Reactor core operating in the "Scram" Region OR Core thermal hydraulic instability evidenced.	B.1.	Place the reactor mode switch in the shutdown position.	Immediately

ENCLOSURE 5 TO
NRC-00-0068

SUMMARY OF THE CHANGES TO THE
TECHNICAL SPECIFICATION BASES

SUMMARY OF TECHNICAL SPECIFICATION BASES (TSB) CHANGES

The following is a summary of changes made to the TSB after October 31, 1999 through April 24, 2000.

Revision 1 1/4/00	Revised page B3.7.2 to clarify the effect on Emergency Equipment Cooling Water (EECW) operability of isolating EECW cooling to supported components or systems.
Revision 2 3/29//00	Revised Bases for Surveillance Requirement SR 3.6.1.3.9 to provide justification for Amendment 137 which revised the Excess Flow Check Valve surveillance requirements. Revised section B.3.6.1.3 References to add Reference 6.
Revision 3 4/4/00	Revised Bases Surveillance Requirement SR 3.8.6.2 to reflect EDP-30405 implementation. EDP 30405 replaces the Division I 260/130 VDC power battery from 120 cell system to 116 cell system.
Revision 4 4/24/00	Proposed Technical Specification Bases changes were submitted to the NRC in July 1999 per NRC-99-0048. After Improved Technical Specifications were implemented in October 1999, DECo submitted NRC-99-0102 which contained mark-ups and typed pages for the proposed Technical Specification Change (License Amendment) - Oscillation Power Range Monitor Upscale Trip Function in the Average Power Range Monitor. NRC approval was received on March 31, 2000. When EDP-28916 was implemented during the seventh refueling outage, OPRM as a function of APRM was activated. The previously submitted proposed changes to the Technical Specification Bases were implemented in Technical Specification Bases Revision 4.

ENCLOSURE 6 TO
NRC-00-0068

SUMMARY OF DETAIL REMOVED
FROM THE UFSAR

Fermi 2 UFSAR Revision 10 Modifications - Summary of Detail Removed from the UFSAR

The following is a summary of information removed from the UFSAR in Revision 10. These UFSAR modifications are made under Fermi 2 programs implementing guidance of NEI 98-03, and Regulatory Guide 1.181. The UFSAR as modified continues to adequately convey design bases and safety analyses information, and SSC design and operation continues to be adequately described.

LCR Number	Description of Information Removed	Basis for Removal
99-088-UFS	Figure 7.6-6, "Data Flow in Emergency Response Information System" (ERIS) block diagram is removed.	Figure 7.6-6 provided excessively detailed description of the ERIS. Replacing aging components with modern, micro-computer based gear has made maintenance of this figure administratively burdensome. Textual descriptions of the ERIS are enhanced to compensate for figure removal.
99-167-UFS	Identification of diesel fire pump manufacturer and supplier are removed from Sections 9.5.1.2.3.1 and 2.	Identification of diesel fire pump manufacturer and supplier are excessive detail.
00-013-UFS	Turbine generator overspeed trip system setpoints are removed from Section 1.2.2.12.3.	Turbine generator overspeed trip system setpoints are appropriately described in Section 10.2.2.4. Redundant information in the general Plant Description is excessive detail.
00-023-UFS	Obsolete information related to Fermi 1 is removed from various sections of text and figures.	Detailed descriptive information is made obsolete by ongoing Fermi 1 Industrial Safety Improvement Project activities and other changes made to the Fermi 1 facility.
00-025-UFS	Discussion of physical similarity of seismic monitoring instruments is removed from Section 3.7.4.2.1.	Discussion of physical similarity of seismic monitoring instruments is excessive detail.
00-069-UFS	Setpoint values for cycling of various demineralized water delivery pumps (supporting Emergency Core Cooling System and initiating a control room alarm) is removed from functional descriptions of Section 6.3.2.2.5.	Actual values of setpoints within functional descriptions are excessive detail that are replaced by qualitative descriptions of the relevant parameters' effect on Systems, Structures, or Components (SSC) function.