CPSES - TECHNICAL REQUIREMENTS MANUAL (TRM)
AMENDMENT / REVISION 12
DETAILED DESCRIPTION

Prefix Page (as amended)	Group	Description
0-1	4	Changes position title from Vice President, Nuclear Operations to Vice President of Nuclear Operations. Update : Position title change is consistent with the organizational changes made to the FSAR via LDCR# SA-92-839 (TUS-93080). Change Request Number : TR-93-7.1 Commitment Register Number : Related SER : 13.1 SSER :26 13.1 SER/SSER Impact : No
0-1	4	Corrects typographical errors, including those to rev bars, and makes each page's format consistent within the TRM. Other pages impacted: 0-14, 0-15, 0-20, 0-21, 0-25, 1-3, 1-4, 1-7 thru 1-15, 1-18 thru 1-22, 2-2, 2-3, 2-14, 2-16, 2-27, 2-28, 3-4 thru 3-6, 3-8, 4-3, 4-4, 4-8, 4-9, 4-21, 4-22 & 4-31. Editorial : Editorial improvement of the TRM. Change Request Number : TR-93-7.3 Commitment Register Number : Related SER : SSER : SER/SSER Impact : No
0-18	4	Revises requirements related to inservice inspection and testing of ASME Code Class 1, 2 & 3 pumps and valves. Update : Makes the wording of the requirements consistent with that contained within the Combined Unit Technical Specification 4.0.5. Change Request Number : TR-93-7.2 Commitment Register Number : Related SER : 3.9.6 SSER :23 3.9.6 SER/SSER Impact : No
1-2	4	See Sheet No(s) :1-6, -15, -17, -22, 2-2, 3-2 & 4-2 Deletes asterisk & note stating that Unit 2 requirements are effective upon issuance of the Unit 2 operating license. Update : The Unit 2 operating licence has been issued; there is no further reason for this note to appear in the TRM. Change Request Number : TR-93-7.4 Commitment Register Number : Related SER : SSER : SER/SSER Impact : No

Prefix Page (as amended)	Group	Description
2-25	4	Adds Unit 1 indicator to valve tag number VD-907, and provides Unit 2 tag number equivalent to 1VD-907. Correction : Required for consistency with the Inservice Testing Plan (IST) Table 16, and FSAR Tables 3.9B-10 Sh. 25 and 6.2.4-2 Sh. 7. (Ref: ONE Form 93-864) Change Request Number : TR-93-9. Commitment Register Number : Related SER : 6.2 SSER : SER/SSER Impact : No
3-3	2	Revision to allow the first inservice visual inspection of Unit 2 snubbers to be performed after completing two (2) months of power operation. Also, adds note stating that the "Unit 2 visual inspections shall not begin until the Unit 2 Startup Testing Program has been completed". Revision : The basis for requiring the initial visual inspection of snubbers after four (4) months of power operation is to provide the snubbers a sufficient opportunity to experience various modes of operation. Since the CPSES Unit 2 Startup Testing Program will have been completed after 2 months of power operation, performing visual inspections at 2 months of power operation will not compromise the original basis for the initial inspection requirement. In addition, the note added clarifies the timing of the visual inspections. Change Request Number : TR-93-10. Commitment Register Number : Related SER : 3.9 SSER : SER/SSER Impact : No
4-8	4	See Sheet No(s) :4-9 thru 4-11 & 4-13 Replaces "Containment" with "Compartment" with regard to the "Device Location" for certain protective devices; adds "VAC" to indicate voltage; and, makes other miscellaneous editorial changes/ corrections. Editorial : Changes are trivial, editorial enhancements or corrections. Change Request Number TR-93-8.6 Commitment Register Number : Related SER : 8.4.1 SSER :22 8.4.1 SER/SSER Impact : No
4-12	4	See Sheet No(s) :4-25 Corrects Motor Operated Valve tag numbers by removing the "HV" prefix.

Prefix Page (as amended)	Group	Description
		Correction : Correction is warranted to make valve tag numbers consistent with Licensing Basis and Design Basis Documents. Change Request Number : TR-93-8.5 Commitment Register Number : Related SER : 8.4.1 SSER :22 8.4.1 SER/SSER Impact : No
4-16	3	See Sheet No(s) :4-29 Corrects backup breaker type located in the Miscellaneous Signal Control Cabinet on Tables 4.1.1a and 4.1.1b. Correction : Makes TRM consistent with field-installed breaker type. (Ref: Drawing D-599-220) Change Request Number : TR-93-8.3 Commitment Register Number : Related SER : 8.4.1 SSER :22 8.4.1 SER/SSER Impact : No
4-16	4	See Sheet No(s) :4-29 Panel board circuit designations are added for panel boards A and B in the Miscellaneous Signal Control Cabinet. Addition : This information is added to Tables 4.1.1a and 4.1.1b to enhance the description of the backup breakers located in the Miscellaneous Signal Control Cabinet. Change Request Number : TR-93-8.4 Commitment Register Number : Related SER : 8.4.1 SSER :22 8.4.1 SER/SSER Impact : No
4-18	3	See Sheet No(s) :4-19 Overcurrent protective relays are added to TRM Table 4.1.1b for 6.9 kV AC switchgears 2A1, 2A2, 2A3 and 2A4. Addition : Similar relays are already listed for Unit 1 in Table 4.1.1a (pages 4-5 & 4-6). Though not previously included in the Unit 2 TRM table, they have been tested per Work Orders 5-92-503440-AA, 5-92-503442-AA, 5-92- 503443-AA & 5-92-503444-AA. (Ref: ONE Form 93-440) Change Request Number : TR-93-8.1 Commitment Register Number : Related SER : 8.4.1 SSER :22 8.4.1 SER/SSER Impact : No
4-21	4	See Sheet No(s) :4-23, 4-24 & 4-26 Replaces "Containment" with "Compartment" with

Prefix Page (as amended)	Group	Description
		regard to the "Device Location" for certain protective devices; and, makes another miscellaneous editorial change/correction. Editorial : Changes are trivial, editorial enhancements or corrections. Change Request Number : TR-93-8.7 Commitment Register Number : Related SER : 8.4.1 SSER :22 8.4.1 SER/SSER Impact : No
4-29	3	Adds asterisks and a note identifying common circuit breakers on Table 4.1.1b. (These circuits provide backup protection to both Units 1 and 2.) Clarification : Clarifies function of breakers. These circuit breakers are also listed on Table 4.1.1a, and their testing is controlled by the Unit 1 surveillance program. Change Request Number : TR-93-8.2 Commitment Register Number : Related SER : 8.4.1 SSER :22 8.4.1 SER/SSER Impact : No

COMANCHE PEAK STEAM ELECTRIC STATION
TECHNICAL REQUIREMENTS MANUAL
INSTRUCTION SHEET

The following instructional information and checklist is being furnished to help insert Revision 12 into the Comanche Peak Steam Electric Station TRM. A description of this revision is provided in TXX-93233, dated July 15, 1993.

Discard the old sheets and insert the new sheets, as listed below. Keep all instruction sheets in the front of the Effective Page Listing to serve as a record of changes.

Remove	Insert
Section 0	
0-1	0-1
0-14 & 0-15	0-14 & 0-15
0-18	0-18
0-20 & 0-21	0-20 & 0-21
0-25	0-25
Section 1	
1-2 thru 1-4	1-2 thru 1-4
1-6 thru 1-15	1-6 thru 1-15
1-17 thru 1-22	1-17 thru 1-22
Section 2	
2-2 & 2-3	2-2 & 2-3
2-14	2-14
2-16	2-16
2-25	2-25
2-27 & 2-28	2-27 & 2-28
Section 3	
3-2 thru 3-6	3-2 thru 3-6
3-8	3-8
Section 4	
4-2 thru 4-4	4-2 thru 4-4
4-8 thru 4-13	4-8 thru 4-13
4-16	4-16
4-18 & 4-19	4-18 & 4-19
4-21 thru 4-26	4-21 thru 4-26
4-29	4-29
4-31	4-31
List of Effective Pages	
EPL-1 thru EPL-4	EPL-1 thru EPL-4

TECHNICAL REQUIREMENTS MANUAL

(TRM)

Description of the Administrative Control Process

INTRODUCTION

CPSES has relocated certain information from the Technical Specifications to a separate controlled document based on the NUMARC Technical Specification Improvement Program, the Westinghouse Owners Group MERITS Program, and the Commission's Interim Policy Statement for improvement of Technical Specifications for nuclear power plants (52 FR 3788 of February 6, 1987). This information is now contained in a separate document to be called the CPSES Technical Requirements Manual (TRM). The following is a description of the administrative program for control, distribution, updating, and amending the information contained in the TRM. | 2

DOCUMENT CONTROL

The TRM is considered a licensing basis document and as such, overall control of the document is addressed by the site-wide procedures for licensing document control. | 2

DOCUMENT DISTRIBUTION

The TRM is considered a controlled document and distribution is controlled by the Nuclear Licensing Department. Licensing specifies (by copy number) the proper distribution for the TRM. Distribution includes those personnel/locations which receive the CPSES Technical Specifications as well as any other groups which need access to the information contained in the TRM. | 2

CHANGES/DELETIONS TO THE TRM

Changes to the TRM are controlled by the procedure on licensing document change control. This procedure addresses the administrative requirements necessary to change/amend CPSES licensing documents (e.g., Fire Protection Report, Offsite Dose Calculation Manual). For changes to the TRM, the procedure requires initiation of a Licensing Document Change Request (LDCR). The LDCR is the mechanism whereby changes are tracked to ensure that appropriate reviews, approvals, and signatures are obtained. TRM changes are evaluated per 10CFR50.59. TRM changes require a review by SORC and the approval of the Vice President of Nuclear Operations. | 2 | 12

TECHNICAL REQUIREMENT 0.2 APPLICABILITY

This Technical Requirement contains Section 3.0/4.0, APPLICABILITY, of the Technical Specifications, which are also applied to the Technical Requirements Manual except where otherwise specified. For the purpose of this Technical Requirement, the Technical Requirements Manual terms specified below shall be considered synonymous with the listed Technical Specification terms:

Technical Requirements Manual	Technical Specifications
OPERABILITY CRITERIA	LIMITING CONDITION FOR OPERATION
COMPENSATORY MEASURE	ACTION
TESTS/INSPECTIONS	SURVEILLANCE REQUIREMENTS
TECHNICAL REQUIREMENT	SPECIFICATION

NOTE: Although the CPSES Technical Specification is repeated here, in part, care must be taken not to overlook Technical Specification requirements.

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

3/4.0 APPLICABILITY

LIMITING CONDITION FOR OPERATION

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

3.0.2 Noncompliance with a specification shall exist when the requirements of the Limiting Condition for Operation and associated ACTION requirements are not met within the specified time intervals. If the Limiting Condition for Operation is restored prior to expiration of the specified time intervals, completion of the ACTION requirements is not required.

3.0.3 When a Limiting Condition for Operation is not met, except as provided in the associated ACTION requirements, within 1 hour action shall be initiated to place the unit in a MODE in which the specification does not apply by placing it, as applicable, in:

a. At least HOT STANDBY within the next 6 hours,
b. At least HOT SHUTDOWN within the following 6 hours, and
c. At least COLD SHUTDOWN within the subsequent 24 hours.

Where corrective measures are completed that permit operation under the ACTION requirements, the action may be taken in accordance with the specified time limits as measured from the time of failure to meet the Limiting Condition for Operation. Exceptions to these requirements are stated in the individual specifications.

This specification is not applicable in MODE 5 or 6.

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

SURVEILLANCE REQUIREMENTS (continued)

a. Inservice inspection of ASME Code Class 1, 2, and 3 components shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda as required by 10CFR50.55a; | 12

b. Inservice testing of ASME Code Class 1, 2, and 3 pumps and valves shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda as required by 10CFR50.55a; | 12

c. Surveillance intervals specified in Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda for the inservice inspection and testing activities required by the ASME Boiler and Pressure Vessel Code and applicable Addenda shall be applicable as follows in these Technical Specifications: | 12

ASME Boiler and Pressure Vessel Code and applicable Addenda terminology for inservice inspection and testing activities	Required frequencies for performing inservice inspection and testing activities
Weekly	At least once per 7 days
Monthly	At least once per 31 days
Quarterly or every 3 months	At least once per 92 days
Semiannually or every 6 months	At least once per 184 days
Every 9 months	At least once per 276 days
Yearly or annually	At least once per 366 days

d. The provisions of Specification 4.0.2 are applicable to the above required frequencies for performing inservice inspection and testing activities; | 12

e. Performance of the above inservice inspection and testing activities shall be in addition to other specified Surveillance Requirements; and | 12

f. Nothing in the ASME Boiler and Pressure Vessel Code shall be construed to supersede the requirements of any Technical specification. | 12

ACTION requirements are applicable when this limit expires if the surveillance has not been completed. When a shutdown is required to comply with ACTION requirements, the plant may have entered a MODE in which a new specification becomes applicable. In this case, the time limits of the ACTION requirements would apply from the point in time that the new specification becomes applicable if the requirements of the Limiting Condition for Operation are not met. 8

Specification 3.0.2 establishes that noncompliance with a specification exists when the requirements of the Limiting Condition for Operation are not met and the associated ACTION requirements have not been implemented within the specified time interval. The purpose of this specification is to clarify that (1) implementation of the ACTION requirements within the specified time interval constitutes compliance with a specification and (2) completion of the remedial measures of the ACTION requirements is not required when compliance with a Limiting Condition of Operation is restored within the time interval specified in the associated ACTION requirements. 8

Specification 3.0.3 establishes the shutdown ACTION requirements that must be implemented when a Limiting Condition for Operation is not met and the condition is not specifically addressed by the associated ACTION requirements. The purpose of this specification is to delineate the time limits for placing the unit in a safe shutdown MODE when plant operation cannot be maintained within the limits for safe operation defined by the Limiting Conditions for Operation and its ACTION requirements. It is not intended to be used as an operational convenience which permits (routine) voluntary removal of redundant systems or components from service in lieu of other alternatives that would not result in redundant systems or components being inoperable. One hour is allowed to prepare for an orderly shutdown before initiating a change in plant operation. This time permits the operator to coordinate the reduction in electrical generation with the load dispatcher to ensure the stability and availability of the electrical grid. The time limits specified to reach lower MODES of operation permit the shutdown to proceed in a controlled and orderly manner that is well within the specified maximum cooldown rate and within the cooldown capabilities of the facility assuming only the minimum required equipment is OPERABLE. This reduces thermal stresses on components of the primary coolant system and the potential for a plant upset that could challenge safety systems under conditions for which this specification applies. 8

If remedial measures permitting limited continued operation of the facility under the provisions of the ACTION requirements are completed, the shutdown may be terminated. The time limits of the ACTION requirements are applicable from the point in time there was a failure to meet a Limiting Condition for Operation. Therefore, the shutdown may be terminated 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.

The time limits of Specification 3.0.3 allow 37 hours for the plant to be in the COLD SHUTDOWN MODE when a shutdown is required during the POWER MODE of operation. If the plant is in a lower MODE of operation when a shutdown is required, the time limit for reaching the next lower MODE of operation applies. However, if a lower MODE of operation is reached in less time than allowed, the total allowable time to reach COLD SHUTDOWN, or other applicable MODE, is not reduced. For example, if HOT STANDBY is reached in 2 hours, the time allowed to reach HOT SHUTDOWN is the next 11 hours because the total time to reach HOT SHUTDOWN is not reduced from the allowable limit of 13 hours.

Therefore, if remedial measures are completed that would permit a return to POWER operation, a penalty is not incurred by having to reach a lower MODE of operation in less than the total time allowed.

The same principle applies with regard to the allowable outage time limits of the ACTION requirements, if compliance with the ACTION requirements for one specification results in entry into a MODE or condition of operation for another specification in which the requirements of the Limiting Condition for Operation are not met. If the new specification becomes applicable in less time than specified, the difference may be added to the allowable outage time limits of the second specification. However, the allowable outage time limits of ACTION requirements for a higher MODE of operation may not be used to extend the allowable outage time that is applicable when a Limiting Condition for Operation is not met in a lower MODE of operation.

The shutdown requirements of Specification 3.0.3 do not apply in MODES 5 and 6, because the ACTION requirements of individual specifications define the remedial measures to be taken.

Specification 3.0.4 establishes limitations on MODE changes when a Limiting Condition for Operation is not met. It precludes placing the facility in a higher MODE of operation when the requirements for a

a surveillance is not completed within the 24-hour allowance, the time limits of the ACTION requirements are applicable at that time. When a surveillance is performed within the 24-hour allowance, and the Surveillance Requirements are not met, the time limits of the ACTION requirements are applicable at the time that the surveillance is terminated. 8

Surveillance Requirements do not have to be performed on inoperable equipment because the ACTION requirements define the remedial measures that apply. However, the Surveillance Requirements have to be met to demonstrate that inoperable equipment has been restored to OPERABLE status. 8

Specification 4.0.4 establishes the requirement that all applicable surveillances must be met before entry into an OPERATIONAL MODE or other condition of operation specified in the Applicability statement. The purpose of this specification is to ensure that system and component OPERABILITY requirements or parameter limits are met before entry into a MODE or condition for which these systems and components ensure safe operation of the facility. This provision applies to changes in OPERATIONAL MODES or other specified conditions associated with plant shutdown as well as startup. 8

Under the provisions of this specification, the applicable Surveillance Requirements must be performed within the specified surveillance interval to ensure that the Limiting Conditions for Operation are met during initial plant startup or following a plant outage. 8

When a shutdown is required to comply with ACTION requirements, the provisions of Specification 4.0.4 do not apply because this would delay placing the facility in a lower MODE of operation. 8

Specification 4.0.5 establishes the requirement that inservice inspection of ASME Code Class 1, 2, and 3 components and inservice testing of ASME Code Class 1, 2, and 3 pumps and valves shall be performed in accordance with a periodically updated version of Section XI of the ASME Boiler and Pressure Vessel Code and Addenda as required by 10CFR50.55a. These requirements apply except when relief has been provided in writing by the Commission. 8

This specification includes a clarification of the frequencies for performing the inservice inspection and testing activities required by Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda. This clarification is provided to ensure consistency in surveillance intervals throughout the Technical Specifications and to remove any ambiguities relative to the frequencies for performing the required inservice inspection and testing activities. 8

3/4.3 INSTRUMENTATION

3/4.3.1 REACTOR TRIP SYSTEM INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.1 As a minimum, the Reactor Trip System instrumentation channels and interlocks of Table 3.3-1 shall be OPERABLE.

APPLICABILITY: As shown in Table 3.3-1. | 12

ACTION:

As shown in Table 3.3-1.

SURVEILLANCE REQUIREMENTS

4.3.1.1 Each Reactor Trip System Instrumentation channel and interlock and the automatic trip logic shall be demonstrated OPERABLE by the performance of the Reactor Trip System Instrumentation Surveillance Requirements specified in Table 4.3-1.

4.3.1.2 The REACTOR TRIP SYSTEM RESPONSE TIME of each Reactor trip function shall be demonstrated to be within its limit at least once per 18 months. Each test shall include at least one train such that both trains are tested at least once per 36 months and one channel per function such that all channels are tested at least once every N times 18 months where N is the total number of redundant channels in a specific Reactor trip function as shown in the "Total No. of Channels" column of Table 3.3-1.

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TECHNICAL REQUIREMENT 1.1

Table 1.1.1

REACTOR TRIP SYSTEM INSTRUMENTATION RESPONSE TIMES

FUNCTIONAL UNIT	RESPONSE TIME
1. Manual Reactor Trip	N.A.
2. Power Range, Neutron Flux	≤ 0.5 second*
3. Power Range, Neutron Flux High Positive Rate	N.A.
4. Power Range, Neutron Flux High Negative Rate	≤ 0.5 second*
5. Intermediate Range, Neutron Flux	N.A.
6. Source Range, Neutron Flux	≤ 0.5 second*
7. Overtemperature N-16	≤ 7 seconds*#
8. Overpower N-16	≤ 7 seconds*#
9. Pressurizer Pressure-Low	≤ 2 seconds
10. Pressurizer Pressure-High	≤ 2 seconds
11. Pressurizer Water Level-High	N.A.

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

#Response time includes the thermal well response time.

Table 1.1.1 (continued)

REACTOR TRIP SYSTEM INSTRUMENTATION RESPONSE TIMES

FUNCTIONAL UNIT	RESPONSE TIME
12. Reactor Coolant Flow-Low	
a. Single Loop (Above P-8)	≤ 1 second
b. Two Loops (Above P-7 and below P-8)	≤ 1 second
13. Steam Generator Water Level--Low-Low	≤ 2 seconds
14. Undervoltage - Reactor Coolant Pumps	≤ 1.5 seconds
15. Underfrequency - Reactor Coolant Pumps	≤ 0.6 second
16. Turbine Trip	
a. Low Fluid Oil Pressure	N.A.
b. Turbine Stop Valve Closure	N.A.
17. Safety Injection Input from ESFAS	N.A.
18. Reactor Trip System Interlocks	N.A.
19. Reactor Trip Breakers	N.A.
20. Automatic Trip and Interlock Logic	N.A.

BASES

1.1 REACTOR TRIP SYSTEM RESPONSE TIMES

The bases for the Reactor Trip System are contained in the CPSES Technical Specifications. The measurement of response time at the specified frequencies provides assurance that the Reactor trip actuation associated with each channel is completed within the time limit assumed in the safety analyses. No credit was taken in the analyses for those channels with response times indicated as not applicable. Response time may be demonstrated by any series of sequential, overlapping, or total channel test measurements provided that such tests demonstrate the total channel response time as defined. Sensor response time verification may be demonstrated by either: (1) in place, onsite, or offsite test measurements, or (2) utilizing replacement sensors with certified response time.

3/4.3.2 ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.2 The Engineered Safety Features Actuation System (ESFAS) instrumentation channels and interlocks shown in Table 3.3-2 shall be OPERABLE with their Trip Setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3-3.

APPLICABILITY: As shown in Table 3.3-2. | 12

ACTION:

a. With an ESFAS Instrumentation or Interlock Trip Setpoint trip less conservative than the value shown in the Trip Setpoint column but more conservative than the value shown in the Allowable Value column of Table 3.3-3, adjust the Setpoint consistent with the Trip Setpoint value.

b. With an ESFAS Instrumentation or Interlock Trip Setpoint less conservative than the value shown in the Allowable Value column of Table 3.3-3, either:

   1. Adjust the Setpoint consistent with the Trip Setpoint value of Table 3.3-3 and determine within 12 hours that Equation 2.2-1 was satisfied for the affected channel, or

   2. Declare the channel inoperable and apply the applicable ACTION statement requirements of Table 3.3-2 until the channel is restored to OPERABLE status with its Setpoint adjusted consistent with the Trip Setpoint value.

   Equation 2.2-1 $Z + R + S \leq TA$

   Where:

   Z = The value from Column Z of Table 3.3-3 for the affected channel,

   R = The "as measured" value (in percent span) of rack error for the affected channel,

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LIMITING CONDITION FOR OPERATION (continued)

ACTION (continued)

S = Either the "as measured" value (in percent span) of the sensor error, or the value from Column S (Sensor Error) of Table 3.3-3 for the affected channel, and

TA = The value from Column TA (Total Allowance) of Table 3.3-3 for the affected channel.

c. With ESFAS instrumentation channel or interlock inoperable, take the ACTION shown in Table 3.3-2.

SURVEILLANCE REQUIREMENTS

4.3.2.1 Each ESFAS instrumentation channel and interlock and the automatic actuation logic and relays shall be demonstrated OPERABLE by performance of the ESFAS Instrumentation Surveillance Requirements specified in Table 4.3-2.

4.3.2.2 The ENGINEERED SAFETY FEATURES RESPONSE TIME of each ESFAS function shall be demonstrated to be within the limit at least once per 18 months. Each test shall include at least one train such that both trains are tested at least once per 36 months and one channel per function such that all channels are tested at least once per N times 18 months where N is the total number of redundant channels in a specific ESFAS function as shown in the "Total No. of Channels" column of Table 3.3-2.

TECHNICAL REQUIREMENT 1.2

TABLE 1.2.1

ENGINEERED SAFETY FEATURES RESPONSE TIMES

INITIATION SIGNAL AND FUNCTION	RESPONSE TIME IN SECONDS
1. Manual Initiation	
a. Safety Injection (ECCS)	N.A.
b. Containment Spray (Phase-"B" Isolation and Containment Vent Isolation)	N.A.
c. Phase "A" Isolation (Containment Vent Isolation)	N.A.
d. Steam Line Isolation	N.A.
e. Feedwater Isolation (SI)	N.A.
f. Auxiliary Feedwater (SI)	N.A.
g. Station Service Water (SI)	N.A.
h. Component Cooling Water (SI)	N.A.
i. Control Room Emergency Recirculation (SI)	N.A.
j. Reactor Trip	N.A.
k. Emergency Diesel Generator Operation	N.A.
l. Essential Ventilation Systems (SI)	N.A.
m. Turbine Trip	N.A.

TABLE 1.2.1 (continued)

ENGINEERED SAFETY FEATURES RESPONSE TIMES

INITIATION SIGNAL AND FUNCTION	RESPONSE TIME IN SECONDS	
2. Containment Pressure--High-1		
a. Safety Injection (ECCS)	$\leq 27^{(1,5a)}/\ 27^{(4,5b)}$	9
b. Reactor Trip	≤ 2	
c. Feedwater Isolation	≤ 6.5	
d. Phase "A" Isolation	$\leq 17^{(2)}/27^{(1)}$	
e. Containment Ventilation Isolation	N.A.	
f. Auxiliary Feedwater	≤ 60	9
g. Station Service Water	N.A.	
h. Component Cooling Water	N.A.	
i. Essential Ventilation Systems	N.A.	
j. Emergency Diesel Generator Operation	$\leq$ 12	
k. Turbine Trip	N.A.	
l. Control Room Emergency Recirculation	N.A.	
m. Containment Spray Pump	$\leq 32^{(1,7)}$	11

TABLE 1.2.1 (continued)

ENGINEERED SAFETY FEATURES RESPONSE TIMES

INITIATION SIGNAL AND FUNCTION	RESPONSE TIME IN SECONDS	
3. Pressurizer Pressure--Low		
a. Safety Injection (ECCS)	$\leq 27^{(1,5a)}/\ 27^{(4,5b)}$	9
b. Reactor Trip	≤ 2	
c. Feedwater Isolation	≤ 7	
d. Phase "A" Isolation	$\leq 17^{(2)}/27^{(1)}$	
e. Containment Ventilation Isolation	$\leq 5^{(6)}$	9
f. Auxiliary Feedwater	≤ 60	9
g. Station Service Water	N.A.	
h. Component Cooling Water	N.A.	
i. Essential Ventilation Systems	N.A.	
j. Emergency Diesel Generator Operation	≤ 12	
k. Turbine Trip	N.A.	
l. Control Room Emergency Recirculation	N.A.	
m. Containment Spray Pump	N.A.	9

TABLE 1.2.1 (continued)

ENGINEERED SAFETY FEATURES RESPONSE TIMES

INITIATION SIGNAL AND FUNCTION	RESPONSE TIME IN SECONDS	
4. Steam Line Pressure--Low		
a. Safety Injection (ECCS)	$\leq 37^{(3,5b)}/27^{(4,5b)}$	
b. Reactor Trip	≤ 2	
c. Feedwater Isolation	≤ 6.5	9
d. Phase "A" Isolation	$\leq 17^{(2)}/27^{(1)}$	
e. Containment Ventilation Isolation	N.A.	
f. Auxiliary Feedwater	≤ 60	9
g. Station Service Water	N.A.	
h. Component Cooling Water	N.A.	
i. Essential Ventilation Systems	N.A.	
j. Emergency Diesel Generator Operation	≤ 12	
k. Turbine Trip	N.A.	
l. Control Room Emergency Recirculation	N.A.	
m. Containment Spray Pump	N.A.	9
n. Steam Line Isolation	≤ 6.5	9

TABLE 1.2.1 (continued)

ENGINEERED SAFETY FEATURES RESPONSE TIMES

INITIATION SIGNAL AND FUNCTION	RESPONSE TIME IN SECONDS	
5. Containment Pressure--High-3		
a. Containment Spray Pump	N.A.	
b. Phase "B" Isolation	N.A.	
c. Containment Spray Pump Discharge Valve	≤ 119	9
6. Containment Pressure--High-2		
Steam Line Isolation	≤ 6.5	
7. Steam Line Pressure - Negative Rate-High		
Steam Line Isolation	≤ 7	9
8. Steam Generator Water Level - High-High		
a. Turbine Trip	N.A.	
b. Feedwater Isolation	≤ 11	
9. Steam Generator Water Level - Low-Low		
a. Motor-Driven Auxiliary Feedwater Pumps	≤ 60	
b. Turbine-Driven Auxiliary Feedwater Pump	≤ 85	4
10. Loss-of-Offsite Power		
Auxiliary Feedwater	N.A.	9
11. Trip of All Main Feedwater Pumps		
All Auxiliary Feedwater Pumps	N.A.	

TABLE 1.2.1 (continued)

ENGINEERED SAFETY FEATURES RESPONSE TIMES

INITIATION SIGNAL AND FUNCTION	RESPONSE TIME IN SECONDS	
12. RWST Level - Low-Low Coincident with Safety Injection		
Automatic Initiation of ECCS Switchover to Containment Sump	≤ 30	
13. Loss of Power (6.9 KV and 480V Safeguards System Undervoltage)		
a. 6.9 KV Preferred Offsite Source Undervoltage	N.A.	9
b. 6.9 KV Alternate Offsite Source Undervoltage	N.A.	9
c. 6.9 KV Bus Undervoltage	≤ 2(8)	9
d. 6.9 KV and 480V Degraded Voltage		
with Safety Injection	≤ 10(8,9)	9
without Safety Injection	≤ 63(8,9)	9
e. 480 V Low Grid Undervoltage	≤ 63(8,9)	9

TABLE 1.2.1 (continued)

TABLE NOTATIONS

(1) Diesel generator starting and sequence loading delays included.

(2) Diesel generator starting delay not included. Offsite power available.

(3) Diesel generator starting delay included. Only centrifugal charging pumps are included.

(4) Diesel generator starting delay not included. Only centrifugal charging pumps are included. | 11

(5a) Sequential transfer of charging pump suction from the VCT to the RWST (RWST valves open, then VCT valves close) is not included.

(5b) Sequential transfer of charging pump suction from the VCT to the RWST (RWST valves open, then VCT valves close) is included.

(6) Includes containment pressure relief line isolation only.

(7) This is a bounding response time for all scenarios. | 11

(8) Response time measured to output of undervoltage channel only.

(9) Two additional seconds allowable for alternate offsite source breaker trip functions.

BASES

1.2 ENGINEERED SAFETY FEATURES ACTUATION SYSTEM RESPONSE TIMES

The bases for the Engineered Safety Features Actuation System are contained in the CPSES Technical Specifications. The measurement of response time at the specified frequencies provides assurance that the Engineered Safety Features actuation associated with each channel is completed within the time limit assumed in the safety analyses. No credit was taken in the analyses for those channels with response times indicated as not applicable. Response time may be demonstrated by any series of sequential, overlapping, or total channel test measurements provided that such tests demonstrate the total channel response time as defined. Sensor response time verification may be demonstrated by either: (1) in place, onsite, or offsite test measurements, or (2) utilizing replacement sensors with certified response time.

TECHNICAL REQUIREMENT 1.3

MOVABLE INCORE DETECTORS

OPERABILITY CRITERIA

1.3 The Movable Incore Detection System shall be OPERABLE with:

a. At least 75% of the detector thimbles,
b. A minimum of two detector thimbles per core quadrant, and
c. Sufficient movable detectors, drive, and readout equipment to map these thimbles.

APPLICABILITY: When the Movable Incore Detection System is used for: | 12

a. Recalibration of the Excore Neutron Flux Detection System, or
b. Monitoring the QUADRANT POWER TILT RATIO, or
c. Measurement of $F^N_{\Delta H}$, $F_Q(Z)$ and F_{xy}.

COMPENSATORY MEASURES:

With the Movable Incore Detection System Inoperable, do not use the system for the above applicable monitoring or calibration functions. The provisions of Technical Requirement 0.2 Operability Criteria 3.0.3 and 3.0.4 are not applicable. | 3

TESTS/INSPECTIONS

TR1.3 The Movable Incore Detection system shall be demonstrated OPERABLE within 24 hours prior to use by irradiating each required detector and determining the acceptability of its voltage curve when the system is required for:

a. Recalibration of the Excore Neutron Flux Detection System, or
b. Monitoring the QUADRANT POWER TILT RATIO, or
c. Measurement of $F^N_{\Delta H}$, $F_Q(Z)$ and F_{xy}.

BASES

1.3 MOVABLE INCORE DETECTORS

The OPERABILITY of the movable incore detectors with the specified +minimum complement of equipment ensures that the measurements obtained from use of this system accurately represent the spatial neutron flux distribution of the core. The OPERABILITY of this system is demonstrated by irradiating each detector used and determining the acceptability of its voltage curve. | 12

TECHNICAL REQUIREMENT 1.4

SEISMIC INSTRUMENTATION

OPERABILITY CRITERIA

1.4 The seismic monitoring instrumentation shown in Table 1.4.1 shall be OPERABLE.

APPLICABILITY: At all times. | 12

COMPENSATORY MEASURES (UNITS 1 AND 2): | 8

a. With one or more of the above required seismic monitoring instruments inoperable for more than 30 days, prepare and submit a Special Report to the Commission pursuant to CPSES Technical Specification 6.9.2 within the next 10 days outlining the cause of the malfunction and the plans for restoring the instrument(s) to OPERABLE status.

b. The provisions of Technical Requirement 0.2 Operability Criteria 3.0.3 and 3.0.4 are not applicable. | 3

TESTS/INSPECTIONS

TR1.4.1 Each of the above required seismic monitoring instruments shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL CALIBRATION, and ANALOG CHANNEL OPERATIONAL TEST at the frequencies shown in Table 1.4.2.

TR1.4.2 Each of the above required seismic monitoring instruments which is accessible during power operations and which is actuated during a seismic event greater than or equal to 0.01g shall be restored to OPERABLE status within 24 hours and a CHANNEL CALIBRATION performed within 15 days following the seismic event. Data shall be retrieved from actuated instruments and analyzed to determine the magnitude of the vibratory ground motion. A Special Report shall be prepared and submitted to the Commission pursuant to CPSES Technical Specification 6.9.2 within 14 days describing the magnitude, frequency spectrum, and resultant effect upon facility features important to safety.

TR1.4.3 Each of the above seismic monitoring instruments which is actuated during a seismic evert greater than or equal to 0.01g but is not accessible during power operation shall be restored to OPERABLE status and a CHANNEL CALIBRATION performed the next time the plant enters MODE 5 or below. A supplemental report shall then be prepared and submitted to the Commission within 14 days pursuant to CPSES Technical Specification 6.9.2 describing the additional data from these instruments. | 12

TABLE 1.4.1

SEISMIC MONITORING INSTRUMENTATION * | 8

INSTRUMENTS AND SENSOR LOCATIONS	MINIMUM INSTRUMENTS OPERABLE	
1. Triaxial Time-History Accelerographs		
a. Accelerometer-Fuel Building	1	
b. Accelerometer-Unit 1 Containment	1	8
c. Accelerometer-Electrical Manhole (Yard)	1	8
d. Seismic Trigger-Fuel Building	1**	8
e. Recorder Unit, SMA-3 (Unit 1 Control Room)	1	8
f. Playback Unit, SMP-1 (Unit 1 Control Room)	1	8
2. Triaxial Peak Accelerographs		
a. Pressurizer Lifting Trunion (Unit 1 Containment)	1	8
b. Reactor Coolant Piping (Unit 1 Containment)	1	8
c. CCW Heat Exchanger (Auxiliary Building)	1	8
3. Triaxial Seismic Switch		
Fuel Building	1**	8
4. Triaxial Response-Spectrum Recorders		
a. Fuel Building	1	
b. Unit 1 Reactor Bldg. Internal Structure	1	8
c. Unit 1 Safeguards Building	1	8
5. Response Spectrum Annunciator Unit 1 Control Room	1**	8

*Unit 1 and Unit 2 control room alarms are connected to shared seismic instruments which are located in Unit 1 and common structures. | 8
**With control room indication.

TABLE 1.4.2

SEISMIC MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS *

INSTRUMENTS AND SENSOR LOCATIONS	CHANNEL CHECK	CHANNEL CALIBRATION	ANALOG** CHANNEL OPERATIONAL TEST
1. Triaxial Time-History Accelerographs			
a. Accelerometer-Fuel Building	M	R	SA
b. Accelerometer-Unit 1 Containment	M	R	SA
c. Accelerometer-Electrical Manhole (Yard)	M	R	SA
d. Seismic Trigger-Fuel Building***	M	R	SA
e. Recorder Unit, SMA-3 (Unit 1 Control Room)	M	R	SA
f. Playback Unit, SMP-1 (Unit 1 Control Room)	M	R	SA
2. Triaxial Peak Accelerographs			
a. Pressurizer Lifting Trunion - Unit 1 Containment	N.A.	R	N.A.
b. Reactor Coolant Piping - Unit 1 Containment	N.A.	R	N.A.
c. CCW Heat Exchanger - Auxiliary Building	N.A.	R	N.A.
3. Triaxial Seismic Switch			
Fuel Building***	M	R	SA

*Unit 1 and Unit 2 control room alarms are connected to shared seismic instruments which are located in Unit 1 and common structures.
**Setpoint verification is not applicable.
***With control room indication.

TABLE 1.4.2 (continued)

SEISMIC MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS*

INSTRUMENTS AND SENSOR LOCATIONS	CHANNEL CHECK	CHANNEL CALIBRATION	ANALOG** CHANNEL OPERATIONAL TEST
4. Triaxial Response-Spectrum Recorders			
a. Fuel Building	N.A.	R	N.A.
b. Unit 1 Reactor Bldg. Internal Structure	N.A.	R	N.A.
c. Unit 1 Safeguards Building	N.A.	R	N.A.
5. Response Spectrum Annunciator*** (Unit 1 Control Room)	M	R	SA

*Unit 1 and Unit 2 control room alarms are connected to shared seismic instruments which are located in Unit 1 and common structures.
**Setpoint verification is not applicable.
***With control room indication.

1.4 SEISMIC INSTRUMENTATION

The OPERABILITY of the seismic instrumentation ensures that sufficient capability is available to promptly determine the magnitude of a seismic event and evaluate the response of those features important to safety. This capability is required to permit comparison of the measured response to that used in the design basis for the facility to determine if plant shutdown is required pursuant to Appendix A of 10CFR100. The instrumentation is consistent with the recommendations of Regulatory Guide 1.12, "Instrumentation for Earthquakes," April 1974.

TECHNICAL REQUIREMENT 1.5

LOOSE-PART DETECTION SYSTEM

OPERABILITY CRITERIA

1.5 The Loose-Part Detection System shall be OPERABLE.

APPLICABILITY: MODES 1 and 2. | 12

COMPENSATORY MEASURES:

a. With one or more Loose-Part Detection System channels inoperable for more than 30 days, prepare and submit a Special Report to the Commission pursuant to CPSES Technical Specification 6.9.2 within the next 10 days outlining the cause of the malfunction and the plans for restoring the channel(s) to OPERABLE status.

b. The provisions of Technical Requirement 0.2 Operability Criteria 3.0.3 and 3.0.4 are not applicable. | 3

TESTS/INSPECTIONS

TR1.5 Each channel of the Loose-Part Detection Systems shall be demonstrated OPERABLE by performance of:

a. A CHANNEL CHECK at least once per 24 hours,

b. An ANALOG CHANNEL OPERATIONAL TEST* at least once per 31 days, and

c. A CHANNEL CALIBRATION at least once per 18 months.

* Setpoint verification is not applicable.

BASES

1.5 LOOSE PARTS DETECTION SYSTEM

The OPERABILITY of the Loose-Part Detection System ensures that sufficient capability is available to detect loose metallic parts in the Reactor System and avoid or mitigate damage to Reactor System components. The allowable out-of-service 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.

| 12

CONTAINMENT SYSTEMS

3/4.6.3 CONTAINMENT ISOLATION VALVES

LIMITING CONDITION FOR OPERATION

3.6.3 The containment isolation valves shall be OPERABLE.#

APPLICABILITY: MODES 1, 2, 3, and 4. | 12

ACTION:

*With one or more of the containment isolation valve(s) inoperable, maintain at least one isolation valve OPERABLE in each affected penetration that is open and:

a. Restore the inoperable valve(s) to OPERABLE status within 4 hours, or

b. Isolate each affected penetration within 4 hours by use of at least one deactivated automatic valve secured in the isolation position, or

c. Isolate each affected penetration within 4 hours by use of at least one closed manual valve or blind flange, or

d. Be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.3.1 The containment isolation valves shall be demonstrated OPERABLE prior to returning the valve to service after maintenance, repair or replacement work is performed on the valve or its associated actuator, control or power circuit by performance of a cycling test, and verification of isolation time.

The requirements of Specification 3.6.3 do not apply for those valves covered by Specifications 3.7.1.1, 3.7.1.5, 3.7.1.6 and 3.7.1.7. | 3

| 12

* CAUTION: The inoperable isolation valve(s) may be part of a system(s). Isolating the affected penetration(s) may affect the use of the system(s). Consider the Technical Specification Requirements on the affected system(s) and act accordingly.

SURVEILLANCE REQUIREMENTS (continued)

4.6.3.2 Each containment isolation valve shall be demonstrated OPERABLE during the REFUELING MODE or COLD SHUTDOWN at least once per 18 months by:

a. Verifying that on a Phase "A" Isolation test signal, each Phase "A" isolation valve actuates to its isolation position;

b. Verifying that on a Phase "B" Isolation test signal, each Phase "B" isolation valve actuates to its isolation position; and

c. Verifying that on a Containment Ventilation Isolation test signal, each pressure relief discharge valve actuates to its isolation position.

4.6.3.3 The isolation time of each power-operated or automatic valve shall be determined to be within its limit when tested pursuant to Specification 4.0.5.

TABLE 2.1.1 (continued)

CONTAINMENT ISOLATION VALVES

VALVE NO.	FSAR TABLE REFERENCE NO.*	LINE OR SERVICE	MAXIMUM ISOLATION TIME (Seconds)	NOTES AND LEAK TEST REQUIREMENTS	
4. Manual Valves (Continued)					
2BS-0030#	134	Airlock Hydraulically Operated Equalization	N.A.	Notes 5, 6, 7	8 8 8
2BS-0025#	134	Airlock Hydraulically Operated Equalization	N.A.	Notes 5, 6, 7	8 8 8
2BS-0056#	134a	Airlock Manual Equalization	N.A.	Notes 5, 6	8 8
2BS-0044#	134a	Airlock Manual Equalization	N.A.	Notes 5, 6	8 8
2BS-0029#	134a	Airlock Manual Equalization	N.A.	Notes 5, 6	8 3
2BS-0015#	134a	Airlock Manual Equalization	N.A.	Notes 5, 6	8 8
5. Power-Operated Isolation Valves					
HV-2452-1	4	Main Steam to Aux. FPT From Steam Line #1	N.A.	N.A.	9
PV-2325	5	Atmospheric Relief Steam Generator	N.A.	Note 3	8 3
PV-2326	9	Atmospheric Relief Steam Generator	N.A.	Note 3	8 3
PV-2327	13	Atmospheric Relief Steam Generator	N.A.	Note 3	8 3
HV-2452-2	17	Main Steam to Aux. FPT From Steam Line	N.A.	N.A.	8
PV-2328	18	Atmospheric Relief Steam Generator	N.A.	Note 3	8 3
HV-2491A	20a	Auxiliary Feedwater to Steam Generator #1	N.A.	N.A.	8

TABLE 2.1.1 (continued)

CONTAINMENT ISOLATION VALVES

VALVE NO.	FSAR TABLE REFERENCE NO.*	LINE OR SERVICE	MAXIMUM ISOLATION TIME (Seconds)	NOTES AND LEAK TEST REQUIREMENTS	
5. Power-Operated Isolation Valves (Continued)					
8801B	42	Safety Injection to Cold Leg Loops #1, #2, #3, and #4	N.A.	N.A.	8
8802A	43	SI Injection to RCS Hot Leg Loops #2 and #3	N.A.	N.A.	8
8802B	44	SI Injection to RCS Hot Leg Loops #1 and #4	N.A.	N.A.	8
8835	45	SI Injection to RCS Cold Leg Loops #1, #2, #3, and #4	N.A.	N.A.	8
8351A	47	Seal Injection to RC Pump (Loop #1)	N.A.	N.A.	8
8351B	48	Seal Injection to RC Pump (Loop #2)	N.A.	N.A.	8
8351C	49	Seal Injection to RC Pump (Loop #3)	N.A.	N.A.	8
8351D	50	Seal Injection to RC Pump (Loop #4)	N.A.	N.A.	8
HV-4777	54	Containment Spray to Spray Header (Train B)	N.A.	Note 4	8 2
HV-4776	55	Containment Spray to Spray Header (Train A)	N.A.	Note 4	8 2
8840	63	RHR to Hot Leg Loops #2 and #3	N.A.	Note 4	8 2
8811A	125	Containment Recirc. Sump to RHR Pumps (Train A)	N.A.	N.A.	8

TABLE 2.1.1 (continued)

CONTAINMENT ISOLATION VALVES

VALVE NO.	FSAR TABLE REFERENCE NO.*	LINE OR SERVICE	MAXIMUM ISOLATION TIME (Seconds)	NOTES AND LEAK TEST REQUIREMENTS	
10. Relief Valves (Continued)					
RC-036	41a	Penetration Thermal Relief	N.A.	C	8
WP-7176	52a	Penetration Thermal Relief	N.A.	C	8
DD-430	60a	Penetration Thermal Relief	N.A.	C	8
1VD-907 2VD-896	61a	Penetration Thermal Relief	N.A.	C	12 12
PS-503	74a	Penetration Thermal Relief	N.A.	C	8
PS-501	77a	Penetration Thermal Relief	N.A.	C	8
PS-502	78a	Penetration Thermal Relief	N.A.	C	8
PS-500	80a	Penetration Thermal Relief	N.A.	C	8
WP-7177	81a	Penetration Thermal Relief	N.A.	C	8
1SI-8972 2SI-8983	83a	Penetration Thermal Relief	N.A.	C	9
1CC-1067 2CC-1090	114a	Penetration Thermal Relief	N.A.	C	9
1CH-0271 2CH-0281	120a	Penetration Thermal Relief	N.A.	C	9
1CH-0272 2CH-0282	121a	Penetration Thermal Relief	N.A.	C	9
SI-0182	125	Pressure Relief for Bonnet of MOV 8811A	N.A.	N.A.	9 9 9

TABLE 2.1.1 (continued)

TABLE NOTATIONS

* Identification code for containment penetration and associated isolation valves in FSAR Tables 6.2.4-1, 6.2.4-2, and 6.2.4-3.

May be opened on an intermittent basis under administrative control.

The table does not list local vent, drain and test connections as they are a special class of containment isolation valves and are locked closed and capped to meet containment isolation criteria when located within the penetration boundary.

Note 1: All four MSIV bypass valves are locked closed in Mode 1. During Mode 2, 3, and 4 one MSIV bypass valve may be opened provided the other three MSIV bypass valves are locked closed and their associated MSIVs are closed.

Note 2: These valves require steam to be tested and are thus not required to be tested until the plant is in MODE 3.

Note 3: These valves are included for table completeness; the requirements of Specification 3.6.3 do not apply. Instead, the requirements of Specification 3.7.1.1, 3.7.1.5, 3.7.1.6 and 3.7.1.7 apply for main steam safety valves, main steam isolation valves, feedwater isolation valves and steam generator atmospheric relief valves, respectively. | 3 3 3 3

Note 4: These valves are leak tested in accordance with Technical Specification Surveillance Requirement 4.6.1.2. | 2

Note 5: 10 CFR 50 Appendix J, Type C testing of these valves is satisfied by the testing of the airlock under Technical Specification Surveillance Requirement 4.6.1.3b. | 6 6 6

Note 6: These valves are considered an integral part of the airlock associated with their respective airlock door. Therefore, they are subject to the controls of Specification 3.6.1.3. | 6 6 6

Note 7: These valves are secured in position by hydraulic system locks and/or interlocks and do not require separate locks. | 6 6

BASES

2.1 CONTAINMENT ISOLATION VALVES

The OPERABILITY of the containment isolation valves ensures that the containment atmosphere will be isolated from the outside environment in the event of a release of radioactive material to the containment atmosphere or pressurization of the containment and is consistent with the requirements of General Design Criteria 54 through 57 of 10CFR50, Appendix A. Containment isolation within the time limits specified for those isolation valves designed to close automatically ensures that the release of radioactive material to the environment will be consistent with the assumptions used in the analyses for a LOCA.

PLANT SYSTEMS

3/4.7.9 SNUBBERS

LIMITING CONDITION FOR OPERATION

3.7.9 All snubbers shall be OPERABLE. The only snubbers excluded from the requirements 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.

APPLICABILITY: MODES 1, 2, 3, and 4. MODES 5 and 6 for snubbers located on systems required OPERABLE in those MODES. | 12

ACTION:

With one or more snubbers inoperable on any system, within 72 hours replace or restore the inoperable snubbers(s) to OPERABLE status and perform an engineering evaluation in accordance with the approved augmented inservice inspection program on the attached component or declare the attached system inoperable and follow the appropriate ACTION statement for that system.

SURVEILLANCE REQUIREMENTS

4.7.9 Each snubber shall be demonstrated OPERABLE by performance of the requirements of the approved augmented inservice inspection program.

| 12

TECHNICAL REQUIREMENT 3.1

SNUBBERS

TESTS/INSPECTIONS

TR3.1 Each snubber shall be demonstrated OPERABLE by performance of the following augmented inservice inspection program in lieu of the requirements of Technical Specification 4.0.5.

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 groups (inaccessible and accessible) may be inspected independently. The first inservice visual inspection of each type of snubber shall be performed after 2 months*** but within 10 months of commencing POWER OPERATION and shall include all snubbers. If all snubbers of each type on any system are found OPERABLE during the first inservice visual inspection, the second inservice visual inspection on that type shall be performed at the first refueling outage. Otherwise subsequent visual inspections of a given system shall be performed in accordance with the following schedule:

No. of Inoperable Snubbers of Each Type on any System per Inspection Period**	Subsequent Visual Inspection Period*
0,1	12 months ± 25%
2	6 months ± 25%
3,4	124 days ± 25%
5,6,7	62 days ± 25%
8 or more	31 days ± 25%

Visual inspection intervals following the second refueling outage shall be determined based upon the criteria provided in the table below:

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* The inspection interval for each type of snubber shall not be lengthened more than one step at a time unless a generic problem has been identified and corrected; in that event the inspection interval may be lenthened one step the first time and two steps thereafter if no inoperable snubbers of that type are found on any system.

** If one or more snubbers of each type on any system are found inoperable during the first inservice visual inspection, the second inservice visual inspection on that type shall be performed no later than the first refueling outage or the subsequent visual inspection period, whichever comes first.

*** The Unit 2 visual inspections shall not begin until the Unit 2 Startup Testing Program has been completed.

TECHNICAL REQUIREMENT 3.1 (continued)

SNUBBERS

TESTS/INSPECTIONS (continued)

NUMBER OF UNACCEPTABLE SNUBBERS

Population or Category (Notes 1 & 2)	Column A Extend Interval (Notes 3 & 6)	Column B Repeat Interval (Notes 4 & 6)	Column C Reduce Interval (Notes 5 & 6)
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

Note 1: The next visual inspection interval for a snubber population or category size shall be determined based upon the previous inspection interval and the number of unacceptable snubbers found during that interval. Snubbers may be categorized, based upon their accessibility during power operation, as accessible or inaccessible. These categories may be examined separately or jointly. However, the licensee must make and document that decision before any inspection and shall use that decision as the basis upon which to determine the next inspection interval for that category.

Note 2: Interpolation between population or category sizes and the number of unacceptable snubbers is permissible. Use next lower integer for the value of the limit for Columns A, B, or C if that integer includes a fractional value of unacceptable snubbers as determined by interpolation.

Note 3: If the number of unacceptable snubbers is equal to or less than the number in Column A, the next inspection interval may be twice the previous interval but not greater than 48 months.

Note 4: If the number of unacceptable snubbers is equal to or less than the number in Column B, but greater than the number in Column A, the next inspection interval shall be the same as the previous interval.

Note 5: If the number of unacceptable snubbers is equal to or greater than the number in Column C, the next inspection interval shall be two-thirds of the previous interval. However, if the number of unacceptable snubbers is less than the number in Column C but greater than the number in Column B, the next interval shall be reduced proportionally by interpolation, that is, the previous interval shall be reduced by a factor that is one-third of the ratio of the difference between the number of unacceptable snubbers found during the previous interval and the number in Column B to the difference in the numbers in Columns B and C. | 5

Note 6: The provisions of Specification 4.0.2 are applicable for all inspection intervals up to and including 48 months. | 5

c. Visual Inspection Acceptance Criteria

Visual inspections shall verify that: (1) there are no visible indications of damage or impaired OPERABILITY, (2) attachments to the foundation or supporting structure are secure, and (3) fasteners for attachment of the snubber to the component and to the snubber anchorage are secure. Snubbers which appear inoperable as a result of visual inspections may be determined OPERABLE 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 irrespective of type that may be generically susceptible; or (2) the affected snubber is functionally tested in the as-found condition and determined OPERABLE per Test/Inspection TR3.1f. All snubbers connected to an inoperable common hydraulic fluid reservoir shall be counted as inoperable snubbers.

d. Transient Event Inspection

An inspection shall be performed of all snubbers attached to sections of systems that have experienced unexpected, potentially damaging transients as determined from a review of operational data. A visual inspection of those systems shall be performed within 6 months following such an event. In addition to satisfying the visual inspection acceptance criteria, freedom-of-motion 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 setting; 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 of each type shall be tested using one of the following sample plans. The sample plan for each type 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 for each snubber type prior to the test period or the sample plan used in the prior test period 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 Test/Inspection TR3.1f, an additional 10% 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

2) A representative sample of each type of snubber shall be functionally tested in accordance with Figure 3.1-1. "C" is the total number of snubbers of a type found not meeting the acceptance requirements of Test/Inspection TR3.1f. 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 3.1-1. If at any time the point plotted falls in the "Accept" region, testing of snubbers of that type may be terminated. When the point plotted lies in the "Continue Testing" region, additional snubbers of that type shall be tested until the point falls in the "Accept" region, or all the snubbers of that type have been tested. 5

g. Functional Test Failure Analysis (continued)

For the 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 functionally tested. This testing requirement shall be independent of the requirements stated in Test/Inspection TR3.1e 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 results 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 Service Life 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. Part replacement shall be documented and the documentation shall be retained in accordance with Technical Specification 6.10.2.

3/4.8.4 ELECTRICAL EQUIPMENT PROTECTIVE DEVICES

CONTAINMENT PENETRATION CONDUCTOR OVERCURRENT PROTECTIVE DEVICES

LIMITING CONDITION FOR OPERATION

3.8.4 All containment penetration conductor overcurrent protective devices shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4. | 12

ACTION:

With one or more of the containment penetration conductor overcurrent protective device(s) inoperable:

a. Restore the protective device to OPERABLE status or:

   1. Deenergize the circuit(s) by racking out, locking open, or removing the inoperable protective device and tripping/removing the associated protective device within 72 hours, declare the affected system or component inoperable, and verify the inoperable protective device racked out, locked open, or removed at least once per 31 days thereafter; the provisions of Specification 3.0.4 are not applicable to overcurrent protective devices in circuits which have their associated protective device tripped/removed and their inoperable protective device racked out, locked open, or removed; or

   2. Deenergize the circuit(s) by tripping/removing the associated protective device or racking out, locking open, or removing the inoperable protective device within 72 hours, declare the affected system or component inoperable, and verify the associated protective device to be tripped/removed or the inoperable protective device racked out, locked open, or removed at least once per 7 days thereafter; the provisions of Specification 3.0.4 are not applicable to overcurrent devices in circuits which have their associated protective device tripped/removed or their inoperable protective device racked out, locked open, or removed; or

b. Be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

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CONTAINMENT PENETRATION CONDUCTOR OVERCURRENT PROTECTIVE DEVICES

SURVEILLANCE REQUIREMENTS

4.8.4 The containment penetration conductor overcurrent protective devices shall be demonstrated OPERABLE:

a. At least once per 18 months:

1) By verifying that the medium voltage 6.9 kV and low voltage 480V switchgear circuit breakers are OPERABLE by selecting, on a rotating basis, at least 10% of the circuit breakers of each current rating and performing the following:

a) A CHANNEL CALIBRATION of the associated protective relays,

b) An integrated system functional test which includes simulated automatic actuation of the system and verifying that each relay and associated circuit breakers and control circuits function as designed, and

c) For each circuit breaker found inoperable during these functional tests, one or an additional representative sample of at least 10% of all the circuit breakers of the inoperable type shall also be functionally tested until no more failures are found or all circuit breakers of that type have been functionally tested;

2) By selecting and functionally testing a representative sample of at least 10% of each type 480V molded case circuit breakers and of lower voltage circuit breakers. Circuit breakers selected for functional testing shall be selected on a rotating basis. Testing of these circuit breakers shall consist of injecting a current with a value equal to 300% of the pickup of the long-time delay trip element and 150% of the pickup of the short-time delay trip element, and verifying that the circuit breaker operates within the time delay band width for that current specified by the manufacturer. The instantaneous element shall be tested by injecting a current equal to $\pm$20% of the pickup value of the element and verifying that the circuit breaker trips instantaneously with no intentional time delay. Molded case circuit breaker testing shall also follow this procedure except that generally no more than two trip elements, time delay and instantaneous, will be involved. The instantaneous element for molded case circuit breakers shall be tested by injecting a current for a frame size of 250 amps or less with tolerances of

+40%, -25% and a frame size of 400 amps or greater with tolerances of ±25% and verifying that the circuit breaker trips instantaneously with no apparent time delay. Circuit breakers found inoperable during functional testing shall be restored to OPERABLE status prior to resuming operation. For each circuit breaker found inoperable during these functional tests, an additional representative sample of a least 10% of all the circuit breakers of the inoperable type shall also be functionally tested until no more failures are found or all circuit breakers of that type have been functionally tested; and

b. At least once per 60 months by subjecting each circuit breaker to an inspection and preventive maintenance in accordance with procedures prepared in conjunction with its manufacturer's recommendations.

TABLE 4.1.1a (continued) | 8

UNIT 1 | 8

CONTAINMENT PENETRATION CONDUCTOR
OVERCURRENT PROTECTIVE DEVICES

DEVICE NUMBER AND LOCATION		SYSTEM POWERED	
2.2	Device Location - 480V Switchgear 1EB4	Containment Polar Crane	
	a. Primary Breaker - 1SCCP1		
	b. Backup Breaker 1EB4-1 and BT-1EB24		
	1) Long Time Delay Relay		1
	51 / 1SCCP1		1 1
	2) Time Delay and Instantaneous Relays*		1
	62 / 1SCCP1 (1EB4-1 and BT-1EB24)	62X / 1SCCP1 (1SCCP1)	1 1
3.	480VAC from Motor Control Centers		
3.1	Device Location - MCC 1EB1-2 Compartment Numbers listed below.		12
	Primary and Backup Breakers - Both primary and backup breakers have identical trip ratings and are in the same MCC Compt. These breakers are General Electric type THED or THFK with thermal-magnetic trip elements.		

* Associated circuit breaker(s) shown in parentheses; e.g., 1EB4-1 and BT-1EB24 are backup breakers for 1SCCP1.

TABLE 4.1.1a (continued) | 8

UNIT 1 | 8

CONTAINMENT PENETRATION CONDUCTOR
OVERCURRENT PROTECTIVE DEVICES

DEVICE NUMBER
AND LOCATION

3. 480VAC from Motor Control Centers (continued)

MCC 1EB1-2 COMPT. NO.	G.E. BKR. TYPE	SYSTEM POWERED	
4G	THED	Motor Operated Valve 1-TV-4691	
4M	THED	Motor Operated Valve 1-TV-4693	
3F	THED	Containment Drain Tank Pump-03	
9H	THED	Reactor Cavity Sump Pump-01	
9M	THED	Reactor Cavity Sump Pump-02	
7H	THED	Containment Sump #1 Pump-01	
7M	THED	Containment Sump #1 Pump-02	
6H	THED	RCP #11 Motor Space Heater-01	
6M	THED	RCP #13 Motor Space Heater-03	
8B	THED	Incore Detector Drive "A"	
8D	THED	Incore Detector Drive "B"	
7B	THED	Incore Detector Drive "F"	
3B	THED	Stud Tensioner Hoist Outlet-01	
7D	THED	Hydraulic Deck Lift-01	
4B	THED	Reactor Coolant Pump Motor Hoist Receptacle-42	
8H	THED	RC Pipe Penetration Cooling Unit-01	
8M	THED	RC Pipe Penetration Cooling Unit-02	
5H	THED	RCP #11 Oil Lift Pump-01	
5M	THED	RCP #13 Oil Lift Pump-03	
10B	THED	Preaccess Filter Train Package Receptacle-17	
5B	THED	Containment Ltg. XFMR-14 (PNL C3)	
10F	THED	S.G. Wet Layup Circ. Pump 01 (CP1-CFAPRP-01)	
12M	THED	S.G. Wet Layup Circ. Pump 03 (CP1-CFAPRP-03)	
12H	THED	Containment Ltg. XFMR-28 (PNL C11 & C12)	2

TABLE 4.1.1a (continued) | 8

UNIT 1 | 8

CONTAINMENT PENETRATION CONDUCTOR
OVERCURRENT PROTECTIVE DEVICES

DEVICE NUMBER
AND LOCATION

3. 480VAC from Motor Control Centers (continued)

MCC 1EB1-2 COMPT. NO.	G.E. BKR. TYPE	SYSTEM POWERED
6D	THED	Refueling Machine (Manipulator Crane-01)
2M	THED	RC Drain Tank Pump No. 1
2F	THED	Containment Ltg. XFMR-16 (PNL C7 & C9)
1M	THED	Containment Ltg. XFMR-12 (PNL C1 & C5)
3M	THED	Preaccess Fan No. 11
5D	THED	Fuel Transfer System Reactor Side Cont. Pnl. for TBX-FHSTTS-02	12

3.2 Device Location - MCC 1EB2-2 Compartment Numbers listed below. | 12

Primary and Backup Breakers - Both primary and backup breakers have identical trip ratings and are located in the same MCC compt. These breakers are General Electric type THED or THFK with thermal-magnetic trip elements. | 12

MCC 1EB2-2 COMPT. NO.	G.E. BKR. TYPE	SYSTEM POWERED
4G	THED	Motor Operated Valve 1-TV-4692
4M	THED	Motor Operated Valve 1-TV-4694
3F	THED	Containment Drain Tank Pump-04
7H	THED	Containment Sump No. 2 Pump-03
7M	THED	Containment Sump No. 2 Pump-04
6H	THED	RCP #12 Motor Space Heater-02
6M	THED	RCP #14 Motor Space Heater-04
5B	THED	Incore Detector Drive "C"
2B	THED	Incore Detector Drive "D"
7B	THED	Incore Detector Drive "E"
5D	THED	Containment Fuel Storage Crane-01
3B	THED	Stud Tensioner Hoist Outlet-02
4B	THED	Containment Solid Rad Waste Compactor-01

TABLE 4.1.1a (continued) | 8

UNIT 1 | 8

CONTAINMENT PENETRATION CONDUCTOR
OVERCURRENT PROTECTIVE DEVICES

DEVICE NUMBER
AND LOCATION

3. 480VAC from Motor Control Centers (continued)

MCC 1EB2-2 COMPT. NO.	G.E. BKR. TYPE	SYSTEM POWERED	
10B	THED	RCC Change Fixture Hoist Drive-01	
10F	THED	Refueling Cavity Skimmer Pump-01	
12B	THED	Power Receptacles (Cont. El. 841')	
1M	THED	S.G. Wet Layup Circ. Pump 02 (CP1-CFAPRP-02)	
12M	THED	S.G. Wet Layup Circ. Pump 04 (CP1-CFAPRP-04)	
8H	THED	RC Pipe Penetration Fan-03	
8M	THED	RC Pipe Penetration Fan-04	
5H	THED	RCP #12 Oil Lift Pump-02	
5M	THED	RCP #14 Oil Lift Pump-04	
12H	THED	Preaccess Filter Train Package Receptacles - 18	
6D	THED	Containment Auxiliary Upper Crane-01	
2F	THED	Containment Ltg. XFMR-13 (PNL C2)	
7D	THED	Containment Elevator-01	
2D	THED	Containment Access Rotating Platform-01	
2M	THED	Reactor Coolant Drain Tank Pump-02	
9F	THED	Containment Ltg. XFMR-17 (PNL C8 & C10)	
9M	THED	Containment Ltg. XFMR-15 (PNL C4 & C6)	
3M	THED	Preaccess Fan-12	
1G	THFK	Distribution Panel 1EB2-2-1 CP1-EPDPNB-24	7 7

3.3 Device Location - MCC 1EB3-2 Compartment numbers listed below. | 12

Primary and Backup - Unless noted otherwise, both primary and backup breakers have identical trip ratings and are located in the same MCC compt. These breakers are General Electric type THED or THFK with thermal-magnetic trip elements.

TABLE 4.1.1a (continued) | 8

UNIT 1 | 8

CONTAINMENT PENETRATION CONDUCTOR
OVERCURRENT PROTECTIVE DEVICES

DEVICE NUMBER
AND LOCATION

3. 480VAC from Motor Control Centers (continued)

MCC 1EB3-2 COMPT. NO.	G.E. BKR. TYPE	SYSTEM POWERED	
8RF	THED	JB-1S-10050, Altern. Feed to Motor Operated Valve 1-8702A	
1G	THED	Motor Operated Valve 1-8112	
9G	THED	Motor Operated Valve 1-8701A	
9M	THED	Motor Operated Valve 1-8701B	
5M	THED	Motor Operated Valve 1-8000A	
5G	THED	Motor Operated Valve 1-HV-6074	
4G	THED	Motor Operated Valve 1-HV-6076	
4M	THED*	Motor Operated Valve 1-HV-6078	
2G	THED	Motor Operated Valve 1-HV-4696	
2M	THED	Motor Operated Valve 1-HV-4701	
3G	THED*	Motor Operated Valve 1-HV-5541	
3M	THED*	Motor Operated Valve 1-HV-5543	
1M	THED	Motor Operated Valve 1-HV-6083	
6F	THED	Motor Operated Valve 1-8808A	12
6M	THED	Motor Operated Valve 1-8808C	12
7M	THED	Containment Ltg. XFMR-18 (PNL SC1 & SC3)	
8M	THED	Neutron Detector Well Fan-09	
7F	THFK	Electric H_2 Recombiner Power Supply PNL-01	
8RM	THED	Motor Operated Valve 1-HV-4075C	
9RF	THED	Motor Operated Valve 1-HV-4782	
9RM	THED	Motor Operated Valve 1-8811A	

* Primary protection is provided by Gould Tronic TR5 fusible switch with 3.2A fuse.

TABLE 4.1.1a (continued) | 8

UNIT 1 | 8

CONTAINMENT PENETRATION CONDUCTOR
OVERCURRENT PROTECTIVE DEVICES

DEVICE NUMBER
AND LOCATION

3. 480VAC From Motor Control Centers (continued)

3.4 Device Location - MCC 1EB4-2 Compartment numbers listed below. | 12

Primary and Backup - Unless noted otherwise, both primary and backup breakers have identical trip ratings and are located in the same MCC compt. These breakers are General Electric type THED or THFK with thermal-magnetic trip elements.

MCC 1EB4-2 COMPT. NO.	G.E. BKR. TYPE	SYSTEM POWERED
1M	THED	JB-1S-1230G, Altern. Feed to Motor Operated Valve 1-8701B
8G	THED	Motor Operated Valve 1-8702A
8M	THED	Motor Operated Valve 1-8702B
4M	THED	Motor Operated Valve 1-8000B
4G	THED	Motor Operated Valve 1-HV-6075
3G	THED	Motor Operated Valve 1-HV-6077
3M	THED*	Motor Operated Valve 1-HV-6079
2G	THED	Motor Operated Valve 1-HV-5562
2M	THED*	Motor Operated Valve 1-HV-5563
5F	THED	Motor Operated Valve 1-8808B
5M	THED	Motor Operated Valve 1-8808D
6M	THED	Containment Ltg. XFMR-19 (PNL SC2 & SC4)
7M	THED	Neutron Detector Well Fan-10
6F	THFK	Elect. H_2 Recombiner Power Supply PNL-02
8RF	THED	Motor Operated Valve 1-HV-4783
8RM	THED	Motor Operated Valve 1-8811B

* Primary protection is provided by Gould Tronic TR5 fusible switch with 3.2A fuse.

TABLE 4.1.1a (continued) | 8

UNIT 1 | 8

CONTAINMENT PENETRATION CONDUCTOR
OVERCURRENT PROTECTIVE DEVICES

DEVICE NUMBER AND LOCATION		SYSTEM POWERED	
6. 125V DC Control Power		Various	
a. Primary Devices - N/A (Fuse)			
b. Backup Breakers			
PANELBOARD NO.	CKT. NO.	GENERAL ELECTRIC BREAKER TYPE	
XED1-1	1,6	TED	
XED2-1	1,3,6	TED	
XD2-3	8	TED	1
1ED2-1	14,17	TED	
1ED1-1	14	TED	2
1D2-3	7,10	TED	
1D2-2	9	TED	
1ED2-2	12	TED	
1ED3-1	5	TED	
1ED1-2	7,8	TED	
TBX-WPXILP-01	Main (LBK3)	FB(Westinghouse)	1
7. 120V AC Control Power from Isolation XFMR TXEC3 & TXEC4			1
a. Primary Devices - N/A (Fuse)			1
b. Backup Breakers - Square D Type QOB located in Miscellaneous Signal Control Cabinet.			12 1
1) Panel Board A, Ckt. Bkr. connected at TB4-13			12
2) Panel Board B, Ckt. Bkr. connected at TB6-7			12
8. 120V AC Power for Personnel and Emergency Airlocks			
a. Primary Devices - N/A (Fuse)			
b. Backup Breakers			
PANELBOARD NO.	CKT. NO.	GENERAL ELECTRIC BREAKER TYPE	
XEC2	34	TED	
XEC1-2	2	TED	

TECHNICAL REQUIREMENT 4.1 (continued) | 8

TABLE 4.1.1b | 8

UNIT 2 | 8

CONTAINMENT PENETRATION CONDUCTOR | 8
OVERCURRENT PROTECTIVE DEVICES | 8

DEVICE NUMBER AND LOCATION	SYSTEM POWERED	
		8
		8
1. 6.9 KVAC from Switchgears		8
a. Switchgear Bus 2A1	RCP #21	8
1) Primary Breaker 2PCPX1		8
a) Relay 50M1-51		8
b) Relay 86M		9
c) Relay 51M2		8
2) Backup Breakers 2A1-1 or 2A1-2		8
a) Relay 51M3		8
b) Relay 51 for 2A1-1		12
c) Relay 51 for 2A1-2		12
d) Relay 86/2A1		12
b. Switchgear Bus 2A2	RCP #22	8
1) Primary Breaker 2PCPX2		8
a) Relay 50M1-51		8
b) Relay 86M		9
c) Relay 51M2		8
2) Backup Breakers 2A2-1 or 2A2-2		8
a) Relay 51M3		8
b) Relay 51 for 2A2-1		12
c) Relay 51 for 2A2-2		12
d) Relay 86/2A2		12

TECHNICAL REQUIREMENT 4.1 (continued) | 8

TABLE 4.1.1b (continued) | 8

UNIT 2 | 8

CONTAINMENT PENETRATION CONDUCTOR OVERCURRENT PROTECTIVE DEVICES | 8 8

DEVICE NUMBER AND LOCATION	SYSTEM POWERED	
1. 6.9 KVAC from Switchgears (continued)		8 8
c. Switchgear Bus 2A3	RCP #23	8
1) Primary Breaker 2PCPX3		8
a) Relay 50M1-51		8
b) Relay 86M		9
c) Relay 51M2		8
2) Backup Breakers 2A3-1 or 2A3-2		8
a) Relay 51M3		8
b) Relay 51 for 2A3-1		12
c) Relay 51 for 2A3-2		12
d) Relay 86/2A3		12
d. Switchgear Bus 2A4	RCP #24	8
1) Primary Breaker 2PCPX4		8
a) Relay 50M1-51		8
b) Relay 86M		9
c) Relay 51M2		8
2) Backup Breaker 2A4-1 or 2A4-2		8
a) Relay 51M3		8
b) Relay 51 for 2A4-1		12
c) Relay 51 for 2A4-2		12
d) Relay 86/2A4		12
2. 480 VAC from Switchgears		8
2.1 Device Location - 480V Switchgears 2EB1, 2EB2, 2EB3 and 2EB4	Containment Recirc. Fans and CRDM Vent Fans	8 8 8 8
a. Primary Breakers - 2FNAV1, 2FNAV2, 2FNAV3, 2FNAV4, 2FNCB1 and 2FNCB2		8 8 8

TECHNICAL REQUIREMENT 4.1 (continued) | 8

TABLE 4.1.1b (continued) | 8

UNIT 2 | 8

CONTAINMENT PENETRATION CONDUCTOR OVERCURRENT PROTECTIVE DEVICES | 8 8

DEVICE NUMBER AND LOCATION	SYSTEM POWERED	
2.2 Device Location - 480V Switchgear 2EB4	Containment Polar Crane	8 8
a. Primary Breaker - 2SCCP1		8
b. Backup Breaker 2EB4-1 and BT-2EB24		8
1) Long Time Delay Relay		8
51 / 2SCCP1		8 8
2) Time Delay and Instantaneous Relays*		8
62 / 2SCCP1 (2EB4-1 and BT-2EB24) 62X / 2SCCP1 (2SCCP1)		8 8 8 8
3. 480VAC from Motor Control Centers		8
3.1 Device Location - MCC 2EB1-2 Compartment Numbers listed below.		12 8
Primary and Backup Breakers - Both primary and backup breakers have identical trip ratings and are in the same MCC Compt. These breakers are General Electric type THED or THFK with thermal-magnetic trip elements.		8 8 8 8 8 8

* Associated circuit breaker(s) shown in parentheses; e.g., 2EB4-1 and BT-2EB24 are backup breakers for 2SCCP1. | 8 8

TECHNICAL REQUIREMENT 4.1 (continued) | 8

TABLE 4.1.1b (continued) | 8

UNIT 2 | 8

CONTAINMENT PENETRATION CONDUCTOR OVERCURRENT PROTECTIVE DEVICES | 8 8

DEVICE NUMBER AND LOCATION | 8 8

3. 480VAC from Motor Control Centers (continued) | 8

MCC 2EB1-2 COMPT. NO.	G.E. BKR. TYPE	SYSTEM POWERED	8 8
4G	THED	Motor Operated Valve 2-TV-4691	8
4M	THED	Motor Operated Valve 2-TV-4693	8
3F	THED	Containment Drain Tank Pump-03	8
9H	THED	Reactor Cavity Sump Pump-01	8
9M	THED	Reactor Cavity Sump Pump-02	8
7H	THED	Containment Sump #1 Pump-01	8
7M	THED	Containment Sump #1 Pump-02	8
6H	THED	RCP #21 Motor Space Heater-01	8
6M	THED	RCP #23 Motor Space Heater-03	8
8B	THED	Incore Detector Drive "A"	8
8D	THED	Incore Detector Drive "B"	8
7B	THED	Incore Detector Drive "F"	8
3B	THED	Stud Tensioner Hoist Outlet-01	8
7D	THED	Hydraulic Deck Lift-01	8
4B	THED	Reactor Coolant Pump Motor Hoist Receptacle-42	8 8
8H	THED	RC Pipe Penetration Cooling Unit-01	8 8
8M	THED	RC Pipe Penetration Cooling Unit-02	8 8
5H	THED	RCP #21 Oil Lift Pump-01	8
5M	THED	RCP #23 Oil Lift Pump-03	8
10B	THED	Preaccess Filter Train Package Receptacle-17	8 8
5B	THED	Containment Ltg. XFMR-14 (PNL 2LPC3)	8 8
10F	THED	S.G. Wet Layup Circ. Pump 01 (CP2-CFAPRP-01)	8 8
12M	THED	S.G. Wet Layup Circ. Pump 03 (CP2-CFAPRP-03)	8 8
12H	THED	Containment Ltg. XFMR-28 (PNL 2C11 & 2C12)	8 8
12B	THED	Personnel Air Lock Hydraulic Unit #2	10 10

TECHNICAL REQUIREMENT 4.1 (continued)

TABLE 4.1.1b (continued)

UNIT 2

CONTAINMENT PENETRATION CONDUCTOR
OVERCURRENT PROTECTIVE DEVICES

DEVICE NUMBER
AND LOCATION

3. 480VAC from Motor Control Centers (continued)

MCC 2EB1-2 COMPT. NO.	G.E. BKR. TYPE	SYSTEM POWERED
6D	THED	Refueling Machine (Manipulator Crane-01)
2M	THED	RC Drain Tank Pump No. 1
2F	THED	Containment Ltg. XFMR-16 (PNL 2C7 & 2C9)
1M	THED	Containment Ltg. XFMR-12 (PNL 2LPC1 & 2LPC5)
3M	THED	Preaccess Fan No. 11
5D	THED	Fuel Transfer System Reactor Side Cont. Pnl. for TCX-FHSTTS-01

3.2 Device Location - MCC 2EB2-2 Compartment Numbers listed below.

Primary and Backup Breakers - Both primary and backup breakers have identical trip ratings and are located in the same MCC compt. These breakers are General Electric type THED or THFK with thermal-magnetic trip elements.

MCC 2EB2-2 COMPT. NO.	G.E. BKR. TYPE	SYSTEM POWERED
4G	THED	Motor Operated Valve 2-TV-4692
4M	THED	Motor Operated Valve 2-TV-4694
3F	THED	Containment Drain Tank Pump-04
7H	THED	Containment Sump No. 2 Pump-03
7M	THED	Containment Sump No. 2 Pump-04
6H	THED	RCP #22 Motor Space Heater-02
6M	THED	RCP #24 Motor Space Heater-04
5B	THED	Incore Detector Drive "C"
2B	THED	Incore Detector Drive "D"
7B	THED	Incore Detector Drive "E"
5D	THED	Containment Fuel Storage Crane-01
3B	THED	Stud Tensioner Hoist Outlet-02

TECHNICAL REQUIREMENT 4.1 (continued) | 8

TABLE 4.1.1b (continued) | 8

UNIT 2 | 8

CONTAINMENT PENETRATION CONDUCTOR OVERCURRENT PROTECTIVE DEVICES | 8 8

DEVICE NUMBER AND LOCATION | 8 8

3. 480VAC from Motor Control Centers (continued) | 8

MCC 2EB2-2 COMPT. NO.	G.E. BKR. TYPE	SYSTEM POWERED	
10B	THED	RCC Change Fixture Hoist Drive-01	8
10F	THED	Refueling Cavity Skimmer Pump-01	8
12B	THED	Power Receptacles (Cont. El. 841')	8 8
1M	THED	S.G. Wet Layup Circ. Pump 02 (CP2-CFAPRP-02)	8 8
12M	THED	S.G. Wet Layup Circ. Pump 04 (CP2-CFAPRP-04)	8 8
8H	THED	RC Pipe Penetration Fan-03	8
8M	THED	RC Pipe Penetration Fan-04	8
5H	THED	RCP #22 Oil Lift Pump-02	8
5M	THED	RCP #24 Oil Lift Pump-04	8
12H	THED	Preaccess Filter Train Package Receptacles - 18	8 8
6D	THED	Containment Auxiliary Upper Crane-01	8 8
2F	THED	Containment Ltg. XFMR-13 (PNL 2LPC2)	8 8
7D	THED	Containment Elevator-01	8
2D	THED	Containment Access Rotating Platform-01	8 8
2M	THED	Reactor Coolant Drain Tank Pump-02	8
9F	THED	Containment Ltg. XFMR-17 (PNL 2C8 & 2C10)	8 8
9M	THED	Containment Ltg. XFMR-15 (PNL 2LPC4 & 2LPC6)	8 8
3M	THED	Preaccess Fan-12	8 10 10
1C	THFK	Containment Welding Receptacles	8

3.3 Device Location -MCC 2EB3-2 Compartment numbers listed below. | 12 8

Primary and Backup -Unless noted otherwise, both primary and backup breakers have identical trip ratings and are located in the same MCC compt. These breakers are General Electric type THED or THFK with thermal-magnetic trip elements. | 8 8 8 8 8 8 8

TECHNICAL REQUIREMENT 4.1 (continued) | 8

TABLE 4.1.1b (continued) | 8

UNIT 2 | 8

CONTAINMENT PENETRATION CONDUCTOR | 8
OVERCURRENT PROTECTIVE DEVICES | 8

DEVICE NUMBER | 8
AND LOCATION | 8

3. 480VAC from Motor Control Centers (continued) | 8

MCC 2EB2-2 COMPT. NO.	G.E. BKR. TYPE	SYSTEM POWERED	
10B	THED	RCC Change Fixture Hoist Drive-01	8
10F	THED	Refueling Cavity Skimmer Pump-01	8
12B	THED	Power Receptacles (Cont. El. 841')	8
1M	THED	S.G. Wet Layup Circ. Pump 02 (CP2-CFAPRP-02)	8
12M	THED	S.G. Wet Layup Circ. Pump 04 (CP2-CFAPRP-04)	8
8H	THED	RC Pipe Penetration Fan-03	8
8M	THED	RC Pipe Penetration Fan-04	8
5H	THED	RCP #22 Oil Lift Pump-02	8
5M	THED	RCP #24 Oil Lift Pump-04	8
12H	THED	Preaccess Filter Train Package Receptacles - 18	8
6D	THED	Containment Auxiliary Upper Crane-01	8
2F	THED	Containment Ltg. XFMR-13 (PNL 2LPC2)	8
7D	THED	Containment Elevator-01	8
2D	THED	Containment Access Rotating Platform-01	8
2M	THED	Reactor Coolant Drain Tank Pump-02	8
9F	THED	Containment Ltg. XFMR-17 (PNL 2C8 & 2C10)	8
9M	THED	Containment Ltg. XFMR-15 (PNL 2LPC4 & 2LPC6)	8
3M	THED	Preaccess Fan-12	8
			10
			10
1C	THFK	Containment Welding Receptacles	8

3.3	Device Location	-MCC 2EB3-2 Compartment numbers listed below.	12 8
	Primary and Backup	-Unless noted otherwise, both primary and backup breakers have identical trip ratings and are located in the same MCC compt. These breakers are General Electric type THED or THFK with thermal-magnetic trip elements.	8 8 8 8 8 8 8

TECHNICAL REQUIREMENT 4.1 (continued) | 8

TABLE 4.1.1b (continued) | 8

UNIT 2 | 8

CONTAINMENT PENETRATION CONDUCTOR OVERCURRENT PROTECTIVE DEVICES | 8 8

DEVICE NUMBER AND LOCATION

3. 480VAC from Motor Control Centers (continued) | 8

MCC 2EB3-2 COMPT. NO.	G.E. BKR. TYPE	SYSTEM POWERED	8 8
8RF	THED	Altern. Feed to Motor Operated Valve 2-8702A	8 8
1G	THED	Motor Operated Valve 2-8112	8
9G	THED	Motor Operated Valve 2-8701A	8
9M	THED	Motor Operated Valve 2-8701B	8
5M	THED	Motor Operated Valve 2-8000A	8
5G	THED	Motor Operated Valve 2-HV-6074	8
4G	THED	Motor Operated Valve 2-HV-6076	8
4M	THED*	Motor Operated Valve 2-HV-6078	8
2G	THED	Motor Operated Valve 2-HV-4696	8
2M	THED	Motor Operated Valve 2-HV-4701	8
3G	THED	Motor Operated Valve 2-HV-5541	8
3M	THED	Motor Operated Valve 2-HV-5543	8
1M	THED	Motor Operated Valve 2-HV-6083	8
6F	THED	Motor Operated Valve 2-8808A	12
6M	THED	Motor Operated Valve 2-8808C	12
7M	THED	Containment Ltg. XFMR-18 (PNL 2SC1 & 2SC3)	8 8
8M	THED	Neutron Detector Well Fan-09	8
7F	THFK	Electric H_2 Recombiner Power Supply PNL-01	8 8
8RM	THED	Motor Operated Valve 2-HV-4075C	8
9RF	THED	Motor Operated Valve 2-HV-4782	8
9RM	THED	Motor Operated Valve 2-8811A	8

* Primary protection is provided by Gould Tronic TR5 fusible switch with 3.2A fuse. | 8

TECHNICAL REQUIREMENT 4.1 (continued)

TABLE 4.1.1b (continued)

UNIT 2

CONTAINMENT PENETRATION CONDUCTOR
OVERCURRENT PROTECTIVE DEVICES

DEVICE NUMBER
AND LOCATION

3. 480VAC From Motor Control Centers (continued)

3.4 Device Location - MCC 2EB4-2 Compartment numbers listed below.

Primary and Backup - Unless noted otherwise, both primary and backup breakers have identical trip ratings and are located in the same MCC compt. These breakers are General Electric type THED or THFK with thermal-magnetic trip elements.

MCC 2EB4-2 COMPT. NO.	G.E. BKR. TYPE	SYSTEM POWERED
1M	THED	Altern. Feed to Motor Operated Valve 2-8701B
8G	THED	Motor Operated Valve 2-8702A
8M	THED	Motor Operated Valve 2-8702B
4M	THED	Motor Operated Valve 2-8000B
4G	THED	Motor Operated Valve 2-HV-6075
3G	THED	Motor Operated Valve 2-HV-6077
3M	THED*	Motor Operated Valve 2-HV-6079
2G	THED*	Motor Operated Valve 2-HV-5562
2M	THED*	Motor Operated Valve 2-HV-5563
5F	THED	Motor Operated Valve 2-8808B
5M	THED	Motor Operated Valve 2-8808D
6M	THED	Containment Ltg. XFMR-19 (PNL 2SC2 & 2SC4)
7M	THED	Neutron Detector Well Fan-10
6F	THFK	Elect. H_2 Recombiner Power Supply PNL-02
8RF	THED	Motor Operated Valve 2-HV-4783
8RM	THED	Motor Operated Valve 2-8811B

* Primary protection is provided by Gould Tronic TR5 fusible switch with 3.2A fuse.

TECHNICAL REQUIREMENT 4.1 (continued) | 8

TABLE 4.1.1b (continued) | 8

UNIT 2 | 8

CONTAINMENT PENETRATION CONDUCTOR | 8
OVERCURRENT PROTECTIVE DEVICES | 8

DEVICE NUMBER AND LOCATION		SYSTEM POWERED	
6. 125V DC Control Power		Various	8
a. Primary Devices - N/A (Fuse)			8
b. Backup Breakers			8
PANELBOARD NO.	CKT. NO.	GENERAL ELECTRIC BREAKER TYPE	8
XED1-1	6*	TED	12
XED2-1	6*	TED	12
2ED2-1	11,17,16	TED	8
2ED1-1	11,14	TED	8
2D2-3	6,10,11	TED	8
2D2-2	9	TED	8
2ED2-2	12	TED	8
2ED3-1	5	TED	8
2ED1-2	7,8	TED	8
TBX-WPXILP-01	Main (LBK3)*	FB(Westinghouse)	12
7. 120V AC Control Power from Isolation XFMR TXEC3 & TXEC4			8
a. Primary Devices - N/A (Fuse)			8
b. Backup Breakers - Square D Type QO8 located in Miscellaneous Signal Control Cabinet.			12 8
1) Panel Board A, Ckt. Bkr. connected at TB3-5			12
2) Panel Board B, Ckt. Bkr. connected at TB5-1			12
8. 120V AC Power for Personnel and Emergency Airlocks			8
a. Primary Devices - N/A (Fuse)			8
b. Backup Breakers			8
PANELBOARD NO.	CKT. NO.	GENERAL ELECTRIC BREAKER TYPE	8
XEC1	12	TED	8
XEC2-2	3	TED	8

*These circuits provide backup protection to both Units 1 and 2. Testing of these breakers is controlled by Unit 1 surveillance program. | 12

BASES

4.1 CONTAINMENT PENETRATION CONDUCTOR OVERCURRENT PROTECTIVE DEVICES

The bases for OPERABILITY and surveillance of these devices are contained in the CPSES Technical Specifications.

All Class 1E motor-operated valves' motor starters are provided with thermal overload protection which is permanently bypassed and provides an alarm function only at Comanche Peak Steam Electric Station. Therefore, there are no OPERABILITY or Surveillance Requirements for these devices, since they will not prevent safety-related valves from performing their function (refer to Regulatory Guide 1.106, "Thermal Overload Protection for Electric Motors on Motor Operated Valves," Revision 1, March 1977).

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Revision 7	March 18, 1992
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