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.

(1A) INSERT A

Insert A

3.0.5 Limiting Conditions for Operation including the associated ACTION requirements shall apply to each unit individually unless otherwise indicated as follows:

a. Whenever the Limiting Conditions for Operation refers to systems or components which are shared by both units, the action requirements will apply to both units simultaneously, unless specifically noted otherwise, and will be denoted in the ACTION section of the specification;

b. Whenever the Limiting Conditions for operation applies to only one unit, this will be identified in the APPLICABILITY section of the specification; and

c. Whenever certain portions of a specification contain operating parameters, Setpoints, etc., which are different for each unit, this will be identified in parentheses, footnotes or body of the requirement.

3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

3/4.0 APPLICABILITY

(1-B)

BASES

Specification 3.0.1 through 3.0.4 establish the general requirements applicable to Limiting Conditions for Operation. These requirements are based on the requirements for Limiting Conditions for Operation stated in, 10CFR50.36(c)(2):

> "Limiting conditions for operation are the lowest functional capability or performance levels of equipment required for safe operation of the facility. When a limiting condition for operation of a nuclear reactor is not met, the licensee shall shut down the reactor or follow any remedial action permitted by the technical specification until the condition can be met."

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

There are two basic types of ACTION requirements. 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 requirements. In this case, conformance to the ACTION requirements provide an acceptable level of safety for unlimited continued operation as long as the ACTION requirements continue to be met. The second type of ACTION requirement specifies a time limit in which conformance to the conditions of the Limiting Condition for Operation 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 within specified limits. If these actions are not completed within the allowable outage time limits, a shutdown is required to place the facility in a MODE or condition in which the specification no longer applies. It is not intended that the shutdown ACTION requirements 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.

The specified time limits of the ACTION requirements are applicable from the point in time it is identified that a Limiting Condition for Operation is not met. The time limits of the ACTION requirements are also applicable when a system or component is removed from service for surveillance testing or investigation of operational problems. Individual specifications 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

(1B) BASES

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.

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.

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 that 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.

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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 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

1-B

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

When a shutdown is required to comply with ACTION requirements, the provisions of Specification 3.0.4 do not apply because they would delay placing the facility in a lower MODE of operation.

Specifications 4.0.1 through 4.0.5 establish the general requirements applicable to Surveillance Requirements. These requirements are based on the Surveillance Requirements stated in the Code of Federal Regulations, 10 CFR 50.36(c)(3):

> "Surveillance requirements are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within the safety limits, and that the limiting conditions of operation will be met."

Specification 4.0.1 establishes the requirement that surveillances must be met during the OPERATIONAL MODES or other conditions for which the requirements of the Limiting Conditions for Operation apply unless otherwise stated in an individual Surveillance Requirement. The purpose of this specification is to ensure that surveillances are performed to verify the operational status of systems and components and that parameters are within specified limits to ensure safe operation of the facility when the plant is in a MODE or other specified condition for which the associated Limiting Conditions for Operation are applicable. Surveillance Requirements do not have to be performed when the facility is in an OPERATIONAL MODE for which the requirements of the associated Limiting Condition for Operation do not

1A

INSERT B

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Specification 3.0.5 delineates the applicability of each specification to unit 1 and Unit 2 operation.

The valve identification numbers (tag numbers) contain a unit designator as the first character, i.e. 1CS-8455 would be a Unit 1 valve with 2CS-8455 being the corresponding Unit 2 valve. The dual unit Technical Specifications utilize a convention of identifying valves without the unit designator if the remainder of the tag number is applicable to both units, with the unit designator if the tag is only applicable to one unit.

When a specification is shared per 3.0.5a, the ACTION section contains the identifier "(Units 1 and 2)".

(1-B)

apply unless otherwise specified. The Surveillance Requirements associated with a Special Test Exception are only applicable when the Special Test Exception is used as an allowable exception to the requirements of a specification.

Specification 4.0.2 establishes the limit for which the specified time interval for Surveillance Requirements may be extended. It permits an allowable extension of the normal surveillance interval to facilitate surveillance scheduling and consideration of plant operating conditions that may not be suitable for conducting the surveillance; e.g., transient conditions or other ongoing surveillance or maintenance activities. It also provides flexibility to accommodate the length of a fuel cycle for surveillances that are performed at each refueling outage and are specified with an 18-month surveillance interval. It is not intended that this provision be used repeatedly as a convenience to extend surveillance intervals beyond that specified for surveillances that are not performed during refueling outages. The limitation of Specification 4.0.2 is based on engineering judgement and the recognition that the most probable result of any particular surveillance being performed is the verification of conformance with the Surveillance Requirements. This provision is sufficient to ensure that the reliability ensured through surveillance activities is not significantly degraded beyond that obtained from the specified surveillance interval.

Specification 4.0.3 establishes the failure to perform a Surveillance Requirement within the allowed surveillance interval, defined by the provisions of Specification 4.0.2, as a condition that constitutes a failure to meet the OPERABILITY requirements for a Limiting Condition for Operation. Under the provisions of this specification, systems and components are assumed to be OPERABLE when Surveillance Requirements have been satisfactorily performed within the specified time interval. However, nothing in this provision is to be construed as implying that systems or components are OPERABLE when they are found or known to be inoperable although still meeting the Surveillance Requirements. This specification also clarifies that the ACTION requirements are applicable when Surveillance Requirements have not been completed within the allowed surveillance interval and that the time limits of the ACTION requirements apply from the point in time it is identified that a surveillance has not been performed and not at the time that the allowed surveillance interval was exceeded. Completion of the Surveillance Requirement within the allowable outage time limits of the ACTION requirements restores compliance with the requirements of Specification 4.0.3. However, this does not negate the fact that the failure to have performed the surveillance within the allowed surveillance interval, defined by the provisions of Specification 4.0.2, was a violation of the OPERABILITY requirements of a Limiting Condition for Operation that is subject to enforcement action. Further, the failure to perform a surveillance within the

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(1-B)

provisions of Specification 4.0.2 is a violation of a Technical Specification requirement and is, therefore, a reportable event under the requirements of 10CFR50.73(a)(2)(i)(B) because it is a condition prohibited by the plant's Technical Specifications.

If the allowable outage time limits of the ACTION requirements are less than 24 hours or a shutdown is required to comply with ACTION requirements, e.g., Specification 3.0.3, a 24-hour allowance is provided to permit a delay in implementing the ACTION requirements. This provides an adequate time limit to complete Surveillance Requirements that have not been performed. The purpose of this allowance is to permit the completion of a surveillance before a shutdown is required to comply with ACTION requirements or before other remedial measures would be required that may preclude completion of a surveillance. The basis for this allowance includes consideration for plant conditions, adequate planning, availability of personnel, the time required to perform the surveillance, and the safety significance of the delay in completing the required surveillance. This provision also provides a time limit for the completion of Surveillance Requirements that become applicable as a consequence of MODE changes imposed by ACTION requirements and for completing Surveillance Requirements that are applicable when an exception to the requirements of Specification 4.0.4 is allowed. If 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.

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.

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.

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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.

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.

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.

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.

Under the terms of this specification, the more restrictive requirements of the Technical Specification take precedence over the ASME Boiler and Pressure Vessel Code and applicable Addenda. The requirements of Specification 4.0.4 to perform surveillance activities before entry into an OPERATIONAL MODE or other specified condition takes precedence over the ASME Boiler and Pressure Vessel Code provision which allows pumps and valves to be tested up to one week after return to normal operation. The Technical Specification definition of OPERABLE does not allow a grace period before a component, that is not capable of performing its specified function, is declared inoperable and takes precedence over the ASME Boiler and Pressure Vessel Code provision which allows a valve to be incapable of performing its specified function for up to 24 hours before being declared inoperable.

TECHNICAL REQUIREMENT: 1.4 Seismic Instruments

ITEM	PAGE #	JUSTIFICATION
2-A	1-16	The seismic instrumentation is a shared system for Units 1 and 2. Add "Units 1 and 2" after "COMPENSATORY MEASURES".
2-B	1-17	Add note to Table 1.4.1 stating that Unit 1 and Unit 2 control room alarms are connected to shared seismic instruments which are located in Unit 1 and common structures.
2-C	1-17 1-18 1-19	Sensor locations are updated to indicate the Unit 1 structure or the common structure.

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. (UNITS 1 AND 2)

(2-A) COMPENSATORY MEASURES:

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 event 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.

TECHNICAL REQUIREMENT 1.4 (continued)

TABLE 1.4.1

SEISMIC MONITORING INSTRUMENTATION *

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

**With control room indication.

* INSERT C

Insert C

Unit 1 and Unit 2 control room alarms are connected to shared seismic instruments which are located in Unit 1 and common structures.

TECHNICAL REQUIREMENT 1.4 (continued)

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 (Unit 1) (2-C)	M	R	SA	
b. Accelerometer-Containment	M	R	SA	
c. Accelerometer-Electrical Manhole (Yard)	M	R	SA	
d. Seismic Trigger-Fuel Building**	M	R	SA	1
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	

*Setpoint verification is not applicable.
**With control room indication.

TECHNICAL REQUIREMENT 1.4 (continued)

TABLE 1.4.2

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 (Unit 1)	N.A.	R	N.A.
b. Reactor Bldg. Internal Structure (Unit 1)	N.A.	R	N.A.
c. Safeguards Building (Unit 1)	N.A.	R	N.A.
5. Response Spectrum Annunciator** (Unit 1 Control Room)	M	R	SA

(2-C)

*Setpoint verification is not applicable.
**With control room indication.

TECHNICAL REQUIREMENT: 2.1 Containment Isolation Valves

ITEM	PAGE #	JUSTIFICATION
3-A	2-4 thru 2-24	Valve identification numbers (tag numbers) contain a unit designator as the first character, i.e. 1CS-8455 would be a Unit 1 valve with 2CS-8455 being the corresponding Unit 2 valve. The dual unit Technical Specifications will utilize a convention of identifying valves without the unit designator if the remainder of the tag number is applicable to both units, with the unit designator if the tag is only applicable to one unit. (See revised BASES for 3.0.5).
3-B	2-13	Inserts Unit 2 valves (Airlock Hydraulic) into table.

TECHNICAL REQUIREMENT 2.1

TABLE 2.1.1

CONTAINMENT ISOLATION VALVES

VALVE NO.	FSAR TABLE REFERENCE NO.*	LINE OR SERVICE	MAXIMUM ISOLATION TIME (Seconds)	NOTES AND LEAK TEST REQUIREMENTS
1. Phase "A" Isolation Valves				
1HV-2154	20	Feedwater Sample (FW to Stm Gen #1)	5	N.A.
1HV-2155	22	Feedwater Sample (FW to Stm Gen #2)	5	N.A.
1HV-2399	27	Blowdown From Steam Generator #3	5	N.A.
1HV-2398	28	Blowdown From Steam Generator #2	5	N.A.
1HV-2397	29	Blowdown From Steam Generator #1	5	N.A.
1HV-2400	30	Blowdown From Steam Generator #4	5	N.A.
1-8152	32	Letdown Line to Letdown Heat Exchanger	10	C
1-8160	32	Letdown Line to Letdown Heat Exchanger	10	C
1-8890A	35	RHR to Cold Leg Loops #1 & #2 Test Line	15	C
1-8890B	36	RHR to Cold Leg Loops #3 & #4 Test Line	15	C
1-8047	41	Reactor Makeup Water to Pressure Relief Tank & RC Pump Stand Pipe	10	C
1-8843	42	SI to RC System Cold Leg Loops #1, #2, #3, #4 Test Line	10	N.A.

TECHNICAL REQUIREMENT 2.1 (continued)

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	
1. Phase "A" Isolation Valves (Continued)					
(3-A) X-8881	43	SI to RC System Hot Loops #2 & #3 Test Line	10	N.A.	2
X-8824	44	SI to RC System Hot Leg Loops #1 & #4 Test Line	10	N.A.	2
X-8823	45	SI to RC System Cold Leg Loops #1, #2, #3 & #4 Test Line	10	N.A.	2
X-8100	51	Seal Water Return and Excess Letdown	10	C	
X-8112	51	Seal Water Return and Excess Letdown	10	C	
X-7136	52	RCDT Heat Exchanger to Waste Hold Up Tank	10	C	
LCV-1003	52	RCDT Heat Exchanger to Waste Hold Up Tank	10	C	
XHV-5365	60	Demineralized Water Supply	5	C	
XHV-5366	60	Demineralized Water Supply	5	C	
XHV-5157	61	Containment Sump Pump Discharge	5	C	
XHV-5158	61	Containment Sump Pump	5	C	
XHV-3487	62	Instrument Air to Containment	5	C	

TECHNICAL REQUIREMENT 2.1 (continued)

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
1. Phase "A" Isolation Valves (Continued)				
(3-A) X-8825	63	RHR to Hot Leg Loops #2 & #3 Test Line	15	C
XHV-2405	73	Sample from Steam Generator #1	5	N.A.
XHV-4170	74	RC Sample From Hot Legs	5	C
XHV-4168	74	RC Sample From Hot Leg #1	5	C
XHV-4169	74	RC Sample From Hot Leg #4	5	C
XHV-2406	76	Sample from Steam Generator #2	5	N.A.
XHV-4167	77	Pressurizer Liquid Space Sample	5	C
XHV-4166	77	Pressurizer Liquid Space Sample	5	C
XHV-4176	78	Pressurizer Steam Space Sample	5	C
XHV-4165	78	Pressurizer Steam Space Sample	5	C
XHV-2407	79	Sample From Steam Generator #3	5	N.A.
XHV-4175	80	Accumulators	5	C
XHV-4171	80	Sample From Accumulator #1	5	C

TECHNICAL REQUIREMENT 2.1 (continued)

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
1. Phase "A" Isolation Valves (Continued)				
(3-A) XHV-4172	80	Sample From Accumulator #2	5	C
XHV-4173	80	Sample From Accumulator #3	5	C
XHV 4174	80	Sample From Accumulator #4	5	C
XHV-7311	81	RC PASS Sample Discharge to RCDT	5	C
XHV-7312	81	RC PASS Sample Discharge to RCDT	5	C
XHV-2408	82	Sample from Steam Generator #4	5	N.A.
X-8871	83	Accumulator Test and Fill	10	C
X-8888	83	Accumulator Test and Fill	10	C
X-8964	83	Accumulator Test and Fill	10	C
XHV-5556	84	Containment Air PASS Return	5	C
XHV-5557	84	Containment Air PASS Return	5	C
XHV-5544	94	Radiation Monitoring Sample	5	C
XHV-5545	94	Radiation Monitoring Sample	5	C
XHV-5558	97	Containment Air PASS Inlet	5	C

TECHNICAL REQUIREMENT 2.1 (continued)

TABLE 2.1.1 (Continued)

CONTAINMENT ISOLATION VALVES

VALVE NO.	FSAR TABLE REFERENCE NO.*	LINE NO. & SERVICE	MAXIMUM ISOLATION TIME (Seconds)	NOTES AND LEAK TEST REQUIREMENTS
1. Phase "A" Isolation Valves (Continued)				
(3-A) 1HV-5559	97	Containment Air PASS Inlet	5	C
1HV-5560	100	Containment Air PASS Inlet	5	C
1HV-5561	100	Containment Air PASS Inlet	5	C
1HV-5546	102	Radiation Monitoring Sample Return	5	C
1HV-5547	102	Radiation Monitoring Sample Return	5	C
1-8880	104	N_2 Supply to Accumulators	10	C
1-7126	105	H_2 Supply to RC Drain Tank	10	C
1-7150	105	H_2 Supply to RC Drain Tank	10	C
1HV-4710	111	CCW Supply to Excess Letdown & RC Drain Tank Heat Exchanger	5	N.A.
1HV-4711	112	CCW Return From Excess Letdown & RC Drain Tank Heat Exchanger	5	N.A.
1HV-3486	113	Service Air to Containment	5	C

TECHNICAL REQUIREMENT 2.1 (continued)

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
1. Phase "A" Isolation Valves (Continued)				
(3-A) XHV-4725	114	Containment CCW Drain Tank Pumps Discharge	5	C
XHV-4726	114	Containment CCW Drain Tank Pumps Discharge	5	C
X-8027	116	Nitrogen Supply to PRT	10	C
X-8026	116	Nitrogen Supply to PRT	10	C
XHV-6084	120	Chilled Water Supply to Containment Coolers	10	C
XHV-6082	121	Chilled Water Return From Containment Coolers	10	C
XHV-6083	121	Chilled Water Return From Containment Coolers	10	C
XHV-4075B	124	Fire Protection System Isolation	10	C
XHV-4075C	124	Fire Protection System Isolation	10	C
2. Phase "B" Isolation Valves				
XHV-4708	117	CCW Return From RCP'S Motors	15	C
XHV-4701	117	CCW Return From RCP's Motors	15	C
XHV-4700	118	CCW Supply to RCP's Motors	15	C

TECHNICAL REQUIREMENT 2.1 (continued)

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
2. Phase "B" Isolation (continued)				
(3-A) 1HV-4709	119	CCW Return From RCP's Thermal Barrier	15	C
1HV-4696	119	CCW Return From RCP's Thermal Barrier	15	C
3. Containment Ventilation Isolation Valves				
1HV-5542	58	Hydrogen Purge Supply	N.A.	C
1HV-5543	58	Hydrogen Purge Supply	N.A.	C
1HV-5563	58	Hydrogen Purge Supply	N.A.	C
1HV-5540	59	Hydrogen Purge Exhaust	N.A.	C
1HV-5541	59	Hydrogen Purge Exhaust	N.A.	C
1HV-5562	59	Hydrogen Purge Exhaust	N.A.	C
1HV-5536	109	Containment Purge Air Supply	5	C
1HV-5537	109	Containment Purge Air Supply	5	C
1HV-5538	110	Containment Purge Air Exhaust	5	C
1HV-5539	110	Containment Purge Air Exhaust	5	C

TECHNICAL REQUIREMENT 2.1 (continued)

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
3. Containment Ventilation Isolation Valves (Continued)				
(3.A) XHV-5548	122	Containment Pressure Relief	3	C
XHV-5549	122	Containment Pressure Relief	3	C
4. Manual Valves				
XMS-711#	4a	TDAFW Pump Bypass Warm-up Valve	N.A.	N.A.
XMS-390	5a	N_2 Supply to Steam Generator #1	N.A.	N.A.
XMS-387	9a	N_2 Supply to Steam Generator #2	N.A.	N.A.
XMS-384	13a	N_2 Supply to Steam Generator #3	N.A.	N.A.
XMS-712#	17a	TDAFW Pump Bypass Warm-up Valve	N.A.	N.A.
XMS-393	18a	N_2 Supply to Steam Generator #4	N.A.	N.A.
XFW-106	20b	N_2 Supply to Steam Generator #1	N.A.	N.A.
XFW-104	22b	N_2 Supply to Steam Generator #2	N.A.	N.A.
XFW-102	24b	N_2 Supply to Steam Generator #3	N.A.	N.A.
XFW-108	26b	N_2 Supply to Steam Generator #4	N.A.	N.A.
X-7135#	52	RCDT Heat Exchanger to Waste Holdup Tank	N.A.	C

TECHNICAL REQUIREMENT 2.1 (continued)

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)					
(3-A) 1SF-011	56	Refueling Water Purification to Refueling Cavity	N.A.	C	
1SF-012	56	Refueling Water Purification to Refueling Cavity	N.A.	C	
1SF-021	67	Refueling Cavity to Refueling Water Purification Pump	N.A.	C	
1SF-022	67	Refueling Cavity to Refueling Water Purification Pump	N.A.	C	
1SF-053	71	Refueling Cavity Skimmer Pump Discharge	N.A.	C	
1SF-054	71	Refueling Cavity Skimmer Pump Discharge	N.A.	C	
1SI-8961#	83	Accumulator Test and Fill	N.A.	N.A.	3 3
1HV-2333B#	2	MSIV Bypass from Steam Generator #1	N.A.	Note 1	
1HV-2334B#	7	MSIV Bypass from Steam Generator #2	N.A.	Note 1	
1HV-2335B#	11	MSIV Bypass from Steam Generator #3	N.A.	Note 1	
1HV-2336B#	15	MSIV Bypass from Steam Generator #4	N.A.	Note 1	

TECHNICAL REQUIREMENT 2.1 (continued)

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)					
1BS-0016#	130	Airlock Hydraulic System	N.A.	N.A.	6 6
1BS-0017#	130	Airlock Hydraulic System	N.A.	N.A.	6 6
(3-A) ØBS-0030#	131	Airlock Hydraulically Operated Equalization	N.A.	Notes 5, 6, 7	6 6 6
ØBS-0025#	131	Airlock Hydraulically Operated Equalization	N.A.	Notes 5, 6, 7	6 6 6
ØBS-0056#	131a	Airlock Manual Equalization	N.A.	Notes 5, 6	6 6
ØBS-0044#	131a	Airlock Manual Equalization	N.A.	Notes 5, 6	6 6
ØBS-0029#	131a	Airlock Manual Equalization	N.A.	Notes 5, 6	6 6
ØBS-0015#	131a	Airlock Manual Equalization	N.A.	Notes 5, 6	6 6
ØBS-0202#	132	Airlock Manual Equalization	N.A.	Notes 5, 6, 7	6 6
ØBS-0203#	132	Airlock Manual Equalization	N.A.	Notes 5, 6, 7	6 6

(3-B) INSERT D

Insert D

(3-B)

Unit 2 Airlock Hydraulic System Valves

TECHNICAL REQUIREMENT 2.1 (continued)

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					
(3-A) HV-2452-1	4	Main Steam to Aux. FPT From Steam Line #1	N.A.	N.A.	
PV-2325	5	Atmospheric Relief Steam Generator	N.A.	Note 3	3
PV-2326	9	Atmospheric Relief Steam Generator	N.A.	Note 3	3
PV-2327	13	Atmospheric Relief Steam Generator	N.A.	Note 3	3
HV-2452-2	17	Main Steam to Aux. FPT From Steam Line	N.A.	N.A.	
PV-2328	18	Atmospheric Relief Steam Generator	N.A.	Note 3	3
HV-2491A	20a	Auxiliary Feedwater to Steam Generator #1	N.A.	N.A.	
HV-2491B	20a	Auxiliary Feedwater to Steam Generator #1	N.A.	N.A.	
HV-2492A	22a	Auxiliary Feedwater to Steam Generator #2	N.A.	N.A.	
HV-2492B	22a	Auxiliary Feedwater to Steam Generator #2	N.A.	N.A.	
HV-2493A	24a	Auxiliary Feedwater to Steam Generator #3	N.A.	N.A.	
HV-2493B	24a	Auxiliary Feedwater to Steam Generator #3	N.A.	N.A.	

TECHNICAL REQUIREMENT 2.1 (continued)

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)					
(3-A) ~~X~~HV-2494A	26a	Auxiliary Feedwater to Steam Generator #4	N.A.	N.A.	
~~X~~HV-2494B	26a	Auxiliary Feedwater to Steam Generator #4	N.A.	N.A.	
~~X~~-8701B	33	RHR From Hot Leg Loop #4	N.A.	C	
~~X~~-8701A	34	RHR From Hot Leg Loop #1	N.A.	C	
~~X~~-8809A	35	RHR to Cold Leg Loops #1 and #2	N.A.	Note 4	2
~~X~~-8809B	36	RHR to Cold Leg Loops #3 and #4	N.A.	Note 4	2
~~X~~-8801A	42	Safety Injection to Cold Leg Loops #1, #2, #3, and #4	N.A.	N.A.	
~~X~~-8801B	42	Safety Injection to Cold Leg Loops #1, #2, #3, and #4	N.A.	N.A.	
~~X~~-8802A	43	SI Injection to RCS Hot Leg Loops #2 and #3	N.A.	N.A.	
~~X~~-8802B	44	SI Injection to RCS Hot Leg Loops #1 and #4	N.A.	N.A.	
~~X~~-8835	45	SI Injection to RCS Cold Leg Loops #1, #2, #3, and #4	N.A.	N.A.	

TECHNICAL REQUIREMENT 2.1 (continued)

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)					
(3-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	2
~~8~~HV-4776	55	Containment Spray to Spray Header (Train A)	N.A.	Note 4	2
~~8~~-8840	63	RHR to Hot Leg Loops #2 and #3	N.A.	Note 4	2
~~8~~8811A	125	Containment Recirc. Sump to RHR Pumps (Train A)	N.A.	N.A.	
~~8~~-8811B	126	Containment Recirc. Sump to RHR Pumps (Train B)	N.A.	N.A.	
~~8~~HV-4782	127	Containment Recirc. to Spray Pumps (Train A)	N.A.	N.A.	
~~8~~HV-4783	128	Containment Recirc. to Spray Pumps (Train B)	N.A.	N.A.	

TECHNICAL REQUIREMENT 2.1 (continued)

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
6. Check Valves				
(3n) 8818A	35	RHR to Cold Leg Loop #1	N.A.	N.A.
(X) 8818B	35	RHR to Cold Leg Loop #2	N.A.	N.A.
(X) 8818C	36	RHR to Cold Leg Loop #3	N.A.	N.A.
(X) 8818D	36	RHR to Cold Leg Loop #4	N.A.	N.A.
(X) 9046	41	Reactor Makeup Water to Pressurizer Relief Tank and RC Pump Stand Pipe	N.A.	C
(X) 8815	42	High Head Safety Injection to Cold Leg Loops #1, #2, #3, and #4	N.A.	N.A.
(X) SI-8905B	43	SI to RC System Hot Leg Loop #2	N.A.	N.A.
(X) SI-8905C	43	SI to RC System Hot Leg Loop #3	N.A.	N.A.
(X) SI-8905A	44	SI to RC System Hot Leg Loop #1	N.A.	N.A.
(X) SI-8905D	44	SI to RC System Hot Leg Loop #4	N.A.	N.A.
(X) SI-8819A	45	SI to RC System Cold Leg Loop #1	N.A.	N.A.

TECHNICAL REQUIREMENT 2.1 (continued)

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
6. Check Valves (Continued)				
(3-A) ØSI-8819B	45	SI to RC System Cold Leg Loop #2	N.A.	N.A.
ØSI-8819C	45	SI to RC System Cold Leg Loop #3	N.A.	N.A.
ØSI-8819D	45	SI to RC System Cold Leg loop #4	N.A.	N.A.
Ø-8381	46	Charging Line to Regenerative Heat Exchanger	N.A.	C
ØCS-8368A	47	Seal Injection to RC Pump (Loop #1)	N.A.	N.A.
ØCS-8368B	48	Seal Injection to RC Pump (Loop #2)	N.A.	N.A.
ØCS-8368C	49	Seal Injection to RC Pump (Loop #3)	N.A.	N.A.
ØCS-8368D	50	Seal Injection to RC Pump (Loop #4)	N.A.	N.A.
ØCS-8180	51	Seal Water Return and Excess Letdown	N.A.	C
ØCT-[illegible]	54	Containment Spray to Spray Header (Tr. B)	N.A.	Note 4 | 2

TECHNICAL REQUIREMENT 2.1 (continued)

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	
6. Check Valves (Continued)					
(3-A) ØCT-142	55	Containment Spray to Spray Header (Tr. A)	N.A.	Note 4	2
ØCI-030	62	Instrument Air to Containment	N.A.	C	
Ø-8841A	63	RHR to Hot Leg Loop #2	N.A.	N.A.	
Ø-8841B	63	RHR to Hot Leg Loop #3	N.A.	N.A.	
ØSI-8968	108	N2 Supply to Accumulators	N.A.	C	
ØCA-016	113	Service Air to Containment	N.A.	C	
ØCC-629	117	CC Return From RCP's Motors	N.A.	C	
ØCC-713	118	CC Supply to RCP's Motors	N.A.	C	
ØCC-831	119	CC Return From RCP's Thermal Barrier	N.A.	C	
ØCH-024	120	Chilled Water Supply to Containment Coolers	N.A.	C	

TECHNICAL REQUIREMENT 2.1 (continued)

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
7. Steam Line Isolation Signal				
(3-A) ØHV-2333A	1	Main Steam From Steam Generator #1	5	Note 2 & 3
ØHV-2409	3	Drain From Main Steam Line #1	5	N.A.
ØHV-2334A	6	Main Steam From Steam Generator #2	5	Note 2 & 3
ØHV-2410	8	Drain From Main Steam Line #2	5	N.A.
ØHV-2335A	10	Main Steam From Steam Generator #3	5	Note 2 & 3
ØHV-2411	12	Drain From Main Steam Line #3	5	N.A.
ØHV-2336A	14	Main Steam From Steam Generator #4	5	Note 2 & 3
ØHV-2412	16	Drain From Main Steam Line #4	5	N.A.

TECHNICAL REQUIREMENT 2.1 (continued)

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
8. Feedwater Line Isolation Signal				
(3-A) HV-2134	19	Feedwater to Steam Generator #1	5	Note 3
FV-2193	20c	Feedwater Preheat Bypass Line S.G. #1	5	Note 3
HV-2185	20d	Feedwater Bypass Line S.G. #1	5	Note 3
HV-2135	21	Feedwater to Steam Generator #2	5	Note 3
FV-2194	22c	Feedwater Preheat Bypass Line S.G. #2	5	Note 3
HV-2186	22d	Feedwater Bypass Line S.G. #2	5	Note 3
HV-2136	23	Feedwater to Steam Generator #3	5	Note 3
FV-2195	24c	Feedwater Preheat Bypass Line S.G. #3	5	Note 3
HV-2187	24d	Feedwater Bypass Line S.G. #3	5	Note 3
HV-2137	25	Feedwater to Steam Generator #4	5	Note 3
FV-2196	26c	Feedwater Preheat Bypass Line S.G. #4	5	Note 3
HV-2188	26d	Feedwater Bypass Line S.G. #4	5	Note 3

TECHNICAL REQUIREMENT 2.1 (continued)

TABLE 2.1. (continued)

CONTAINMENT ISOLATION VALVES

VALVE NO.	FSAR TABLE REFERENCE NO.*	LINE OR SERVICE	MAXIMUM ISOLATION TIME (Seconds)	NOTES AND LEAK TEST REQUIREMENTS
9. Safety Injection Actuation Isolation				
(3-A) 8105	46	Charging Line to Regenerative Heat Exchanger	10	C
10. Relief Valves				
-8708B	33	RHR From Hot Leg Loop #4	N.A.	C
-8708A	34	RHR From Hot Leg Loop #1	N.A.	C
MS-021	5b	Main Steam Safety Valve S.G. #1	N.A.	Note 3
MS-022	5b	Main Steam Safety Valve S.G. #1	N.A.	Note 3
MS-023	5b	Main Steam Safety Valve S.G. #1	N.A.	Note 3
MS-024	5b	Main Steam Safety Valve S.G. #1	N.A.	Note 3
MS-025	5b	Main Steam Safety Valve S.G. #1	N.A.	Note 3
MS-058	9b	Main Steam Safety Valve S.G. #2	N.A.	Note 3
MS-059	9b	Main Steam Safety Valve S.G. #2	N.A.	Note 3
MS-060	9b	Main Steam Safety Valve S.G. #2	N.A.	Note 3

TECHNICAL REQUIREMENT 2.1 (continued)

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)				
(3-A) ~~Ø~~MS-061	9b	Main Steam Safety Valve S.G. #2	N.A.	Note 3
~~Ø~~MS-062	9b	Main Steam Safety Valve S.G. #2	N.A.	Note 3
~~Ø~~MS-093	13b	Main Steam Safety Valve S.G. #3	N.A.	Note 3
~~Ø~~MS-094	13b	Main Steam Safety Valve S.G. #3	N.A.	Note 3
~~Ø~~MS-095	13b	Main Steam Safety Valve S.G. #3	N.A.	Note 3
~~Ø~~MS-096	13b	Main Steam Safety Valve S.G. #3	N.A.	Note 3
~~Ø~~MS-097	13b	Main Steam Safety Valve S.G. #3	N.A.	Note 3
~~Ø~~MS-129	18b	Main Steam Safety Valve S.G. #4	N.A.	Note 3
~~Ø~~MS-130	18b	Main Steam Safety Valve S.G. #4	N.A.	Note 3
~~Ø~~MS-131	18b	Main Steam Safety Valve S.G. #4	N.A.	Note 3
~~Ø~~MS-132	18b	Main Steam Safety Valve S.G. #4	N.A.	Note 3
~~Ø~~MS-133	18b	Main Steam Safety Valve S.G. #4	N.A.	Note 3

TECHNICAL REQUIREMENT 2.1 (continued)

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)				
(3-A) ØRC-036	41a	Penetration Thermal Relief	N.A.	C
ØWP-7176	52a	Penetration Thermal Relief	N.A.	C
ØDD-430	60a	Penetration Thermal Relief	N.A.	C
ØVD-907	61a	Penetration Thermal Relief	N.A.	C
ØPS-503	74a	Penetration Thermal Relief	N.A.	C
ØPS-501	77a	Penetration Thermal Relief	N.A.	C
ØPS-502	78a	Penetration Thermal Relief	N.A.	C
ØPS-500	80a	Penetration Thermal Relief	N.A.	C
ØWP-7177	81a	Penetration Thermal Relief	N.A.	C
ØSI-8972	83a	Penetration Thermal Relief	N.A.	C
ØCC-1087	114a	Penetration Thermal Relief	N.A.	C
ØCH-271	120a	Penetration Thermal Relief	N.A.	C
ØCH-272	121a	Penetration Thermal Relief	N.A.	C

TECHNICAL REQUIREMENT: 3.3 Feedwater Isolation Valve Temperature

ITEM	PAGE #	JUSTIFICATION
4-A	3-12	Instrument identification numbers (tag numbers) contain a unit designator as the first character, i.e. 1-TI-2152-1 would be a Unit 1 instrument with 2-TI-2152-1 being the corresponding Unit 2 instrument. The dual unit Technical Specifications will utilize a convention of identifying instruments without the unit designator if the remainder of the tag number is applicable to both units, with the unit designator if the tag is only applicable to one unit. (See revised BASES for 3.0.5).
4-B	3-13	Valve identification numbers (tag numbers) contain a unit designator as the first character, i.e. 1CS-8455 would be a Unit 1 valve with 2CS-8455 being the corresponding Unit 2 valve. The dual unit Technical Specifications will utilize a convention of identifying valves without the unit designator if the remainder of the tag number is applicable to both units, with the unit designator if the tag is only applicable to one unit. (See revised BASES for 3.0.5).

TECHNICAL REQUIREMENT 3.3

FEEDWATER ISOLATION VALVE TEMPERATURE

OPERABILITY CRITERIA

3.3 Each main feedwater isolation valve shall be greater than or equal to 90°F, when feedwater line pressure is greater than 675 psig.

APPLICABILITY: MODES 1*, 2, 3 and during pressure testing of the steam generator or main feedwater line.

COMPENSATORY MEASURES:

With one or more main feedwater isolation valves outside of the above limits:

a. Restore main feedwater isolation valve pressure and/or temperature to within the limits within 30 minutes, and

b. Perform an engineering evaluation to determine the effect of the overpressure on the structural integrity of the main feedwater isolation valve(s) and determine that the main feedwater isolation valve(s) remains acceptable for continued operations within 72 hours. Complete this determination each time this compensatory measure is entered.

c. Otherwise, be in HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

TESTS/INSPECTIONS

TR3.3 Each main feedwater isolation valve shall be determined to be greater than or equal to 90°F at least once per 12 hours*. Readings shall be taken using the following instruments: ~~1~~ TI-2152-1, ~~2~~ TI-2152-2, ~~3~~ TI-2152-3 and ~~4~~ TI-2152-4. If any of these instruments are inoperable, a surface pyrometer may be used to determine valve temperature. (4-A)

* Except in MODE 1 with the feedwater isolation valve open, temperature readings are not required.

TECHNICAL REQUIREMENT 3.3 (Continued)

BASES

3.3 FEEDWATER ISOLATION VALVE TEMPERATURE

Supplemental impact testing performed on portions of representative samples of the valve body, neck and bonnet of the feedwater isolation valves (FIV's) yielded results which were not in accordance with the ASME code requirements for fracture toughness for material (NC-2300) based on a minimum service temperature of 40°F. The results of the supplemental testing are discussed in Engineering Report ER-DBE-ME-045. In addition a fracture mechanics analysis is detailed in Calculation 1b345-ME(B)-274 R/1 "Resistance of Feedwater Valves to Brittle Fracture".

As indicated in the engineering report, the fracture toughness requirements are satisfied with a metal temperature of 90°F for the valve body and neck, therefore, these portions will be maintained above this temperature prior to full pressurization of the valves. The valve bonnet fracture toughness has been demonstrated by the fracture analysis calculation in conjunction with a Volumetric Non-Destructive Exam which determined that there are no significant material flaws which could lead to fracture propagation.

(4-B) As a result of the conclusions drawn in Engineering Report ER-DBE-ME-045, it is necessary that minimum temperature limitations be imposed upon Feedwater Isolation Valves (FHV-2134, -2135, -2136 and -2137. As stated in DBE-ME-203 Section 4.3.7 "Operator interface requirements", the feedwater isolation valves must be verified to be above 90°F prior to entering MODE 3, RCS T avg $\geq$ 350°F. This corresponds to a pressurization at the valve of approximately 140-150 psig. The maximum pressurization during cold conditions (valve temperature < 90°F) should be limited to no more than 20% of the valve hydrostatic test pressure (3375 psig x 20% = 675 psig) which exceeds the condensate pump dead head discharge pressure (Ref. ER-DBE-ME-045).

During plant start-up, it is possible to cold pressurize the valves from the condensate pumps/feed pumps or from back pressurization from the Steam Generators. Imposing the MODE 3 limitation will prevent the back pressurization from the generators.

Cold pressurization from the condensate pumps is normally prevented due to the manual isolation valves upstream of each FIV being closed anytime the feedwater headers are pressurized during long cycle condensate full flow flushing operation or condensate pump minimum flow operation.

Steam turbine driven feed pumps are started during MODE 2 when sufficient steam is available for pump operation. Pressurization of the FIV from the Main Feed Pumps will therefore occur only after MODE 3 with the metal temperature of the FIV's being at or above 90°F.

TECHNICAL REQUIREMENT: 4.1 Containment Penetration Conductor Overcurrent Protection Devices

ITEM	PAGE #	JUSTIFICATION
5-A	4-5 thru 4-17	Updates Table 4.1.1 by separating Unit 1 devices into Table 4.1.1a.
5-B	4-18 thru 4-30	Updates Table 4.1.1 by separating Unit 2 devices into Table 4.1.1b.

S-A

TECHNICAL REQUIREMENT 4.1

UNIT 1 TABLE 4.1.1(a)

CONTAINMENT PENETRATION CONDUCTOR OVERCURRENT PROTECTIVE DEVICES

DEVICE NUMBER AND LOCATION	SYSTEM POWERED
1. 6.9 KVAC from Switchgears	
a. Switchgear Bus 1A1	RCP #11
1) Primary Breaker 1PCPX1	
a) Relay 50M1-51	
b) Relay 26	
c) Relay 86M	
d) Relay 51M2	
e) Relay 50N	
2) Backup Breakers 1A1-1 or 1A1-2	
a) Relay 51M3	
b) Relay 51 for 1A1-1	
c) Relay 51 for 1A1-2	
d) Relay 86/1A1	
b. Switchgear Bus 1A2	RCP #12
1) Primary Breaker 1PCPX2	
a) Relay 50M1-51	
b) Relay 26	
c) Relay 86M	
d) Relay 51M2	
e) Relay 50N	
2) Backup Breakers 1A2-1 or 1A2-2	
a) Relay 51M3	
b) Relay 51 for 1A2-1	
c) Relay 51 for 1A2-2	
d) Relay 86/1A2	

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UNIT 1

TECHNICAL REQUIREMENT 4.1 (continued)

TABLE 4.1.1a (Continued)

CONTAINMENT PENETRATION CONDUCTOR
OVERCURRENT PROTECTIVE DEVICES

DEVICE NUMBER AND LOCATION	SYSTEM POWERED
1. 6.9 KVAC from Switchgears (Continued)	
c. Switchgear Bus 1A3	RCP #13
1) Primary Breaker 1PCPX3	
a) Relay 50M1-51	
b) Relay 26	
c) Relay 86M	
d) Relay 51M2	
e) Relay 50N	
2) Backup Breakers 1A3-1 or 1A3-2	
a) Relay 51M3	
b) Relay 51 for 1A3-1	
c) Relay 51 for 1A3-2	
d) Relay 86/1A3	
d. Switchgear Bus 1A4	RCP #14
1) Primary Breaker 1PCPX4	
a) Relay 50M1-51	
b) Relay 26	
c) Relay 86M	
d) Relay 51M2	
e) Relay 50N	
2 Backup Breaker 1A4-1 or 1A4-2	
a) Relay 51M3	
b) Relay 51 for 1A4-1	
c) Relay 51 for 1A4-2	
d) Relay 86/1A4	
2. 480 VAC from Switchgears	
2.1 Device Location - 480V Switchgears 1EB1, 1EB2, 1EB3 and 1EB4	Containment Recirc. Fans and CRDM Vent Fans
a. Primary Breakers - 1FNAV1, 1FNAV2, 1FNAV3, 1FNAV4, 1FNCB1 and 1FNCB2	

TECHNICAL REQUIREMENT 4.1 (continued)

(5-A) UNIT 1

TABLE 4.1.1a (Continued)

CONTAINMENT PENETRATION CONDUCTOR
OVERCURRENT PROTECTIVE DEVICES

DEVICE NUMBER AND LOCATION				SYSTEM POWERED
2. 480 VAC from Switchgears (Continued)				
b. Backup Breakers - 1EB1-1, 1EB2-1, 1EB3-1 and 1EB4-1, BT-1EB13 and BT-1EB24				
1) Long Time & Instantaneous Relays*				
50/51 1FNAV1	(1EB1-1)	50/51 1FNAV2	(1EB2-1)	
50/51 1FNAV3	(1EB3-1)	50/51 1FNAV4	(1EB4-1)	
50/51 1FNCB1	(1EB3-1)	50/51 1FNCB2	(1EB4-1)	
2) Time Delay Relays*				
62-1 1FNAV1	(1EB1-1 and BT-1EB13)	62-1X 1FNAV1	(1FNAV1)	
62-1 1FNAV2	(1EB2-1 and BT-1EB24)	62-1X 1FNAV2	(1FNAV2)	
62-1 1FNAV3	(1EB3-1 and BT-1EB13)	62-1X 1FNAV3	(1FNAV3)	
62-1 1FNAV4	(1EB4-1 and BT-1EB24)	62-1X 1FNAV4	(1FNAV4)	
62-1 1FNCB1	(1EB3-1 and BT-1EB13)	62-1X 1FNCB1	(1FNCB1)	
62-1 1FNCB2	(1EB4-1 and BT-1EB24)	62-1X 1FNCB2	(1FNCB2)	

* Associated circuit breaker shown in parentheses; e.g., 1EB1-1, is backup breaker for 1FNAV1.

TECHNICAL REQUIREMENT 4.1 (continued)

5-A

UNIT 1

TABLE 4.1.1 (Continued) (a)

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 Containment Numbers listed below.	
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 parantheses; e.g. 1EB4-1 and BT-1EB24 are backup breakers for 1SCCP1.

(5-A) UNIT 1

TECHNICAL REQUIREMENT 4.1 (continued)

TABLE 4.1.1 (a) (Continued)

CONTAINMENT PENETRATION CONDUCTOR
OVERCURRENT PROTECTIVE DEVICES

DEVICE NUMBER
AND LOCATION

3. 480 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 (CPI-CFAPRP-01)
12M	THED	S.G. Wet Layup Circ. Pump 03 (CPI-CFAPRP-03)
12H	THED	Containment Ltg. XFMR-28 (PNL C11 & C12) | 2

TECHNICAL REQUIREMENT 4.1 (continued)

(5A) UNIT 1 →

TABLE 4.1.1 (Continued)

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-0

3.2 Device Location - MCC 1EB2-2 Containment 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 and THFK with thermal-magnetic trip elements.

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 No. 12 Motor Space Heater-02
6M	THED	RCP No. 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

TECHNICAL REQUIREMENT 4.1 (continued)

(5A) UNIT 1 → TABLE 4.1.1 (Continued)

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 (CPI-CFAPRP-02)
12M	THED	S.G. Wet Layup Circ. Pump 04 (CPI-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	Containment Welding Machine Power Supply Unit

3.3 Device Location - MCC 1EB3-2 Containment 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.

TECHNICAL REQUIREMENT 4.1 (continued)

TABLE 4.1.(a) (Continued)

(5-A) UNIT 1

CONTAINMENT PENETRATION CONDUCTOR
OVERCURRENT PROTECTIVE DEVICES

DEVICE NUMBER AND LOCATION	G.E. BKR. TYPE	SYSTEM POWERED
3. 480VAC from Motor Control Centers (Continued)		
MCC 1EB3-2 COMPT. NO.		
8RF	THED	JB-1S-1005, 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-HV-8808A
6M	THED	Motor Operated Valve 1-HV-8808C
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.

TECHNICAL REQUIREMENT 4.1 (continued)

(5-A) UNIT 1

TABLE 4.1.[a] (Continued)

CONTAINMENT PENETRATION CONDUCTOR OVERCURRENT PROTECTIVE DEVICES

DEVICE NUMBER AND LOCATION

3. 480VAC From Motor Control Centers (Continued)

3.4 Device Location - MCC 1EB4-2 Containment 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 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.

TECHNICAL REQUIREMENT 4.1 (continued)

TABLE 4.1.1 (Continued)

(5-A) UNIT 1

CONTAINMENT PENETRATION CONDUCTOR OVERCURRENT PROTECTIVE DEVICES

DEVICE NUMBER AND LOCATION		SYSTEM POWERED	
4.	480VAC From Panelboards For Pressurizer Heaters	Pressurizer Heaters	
	(1) groups A, B, & D		
	a. Primary Breakers - General Electric Type TJJ Thermal Magnetic breakers.		
	Breaker No. & Location - Ckt. Nos. 2 thru 4 of Panelboards 1EB2-1-2, 1EB3-1-2, 1EB4-1-1, 1EB4-1-2 and Ckt. Nos. 2 thru 5 of Panelboards 1EB2-1-1 and 1EB3-1-1.		3 3 3 3
	b. Backup Breakers - General Electric Type THJS with longtime and insts. solid state trip devices with 400 Amp. sensor.		
	Breaker No. & Location - Ckt. No. 1 of Panelboards 1EB2-1-1, 1EB2-1-2, 1EB3-1-1, 1EB3-1-2, 1EB4-1-1 and 1EB4-1-2.		3 3 1
	(2) group C		
	a. Primary Breakers - General Electric Type THED breakers.		
	Breaker No. and Location - For both 1EB1-1-1 & 1EB1-1-2 are located at Ckt. Nos. 2 thru 4.		3
	b. Backup Breakers - General Electric Type TJJ Thermal Magnetic breakers.		
	Breaker No. and Location - Ckt Nos. 2 thru 4 of Switchboards 1EB1-1-1 & 1EB1-1-2.		2 3
5.	120V Space Heater Circuits from 480V Switchgears	Containment Recirc. Fan and CRDM Vent. Fan Motor Space Heaters	

TECHNICAL REQUIREMENT 4.1 (continued)

(5A) UNIT 1 → TABLE 4.1.1a (Continued)

CONTAINMENT PENETRATION CONDUCTOR
OVERCURRENT PROTECTIVE DEVICES

5. 120V Space Heater Circuits from 480V Switchgears (Continued)

a. Primary Devices - N/A (Fuse) | 2

b. Backup Breakers | 2

BKR. LOCATION & NUMBER	WESTINGHOUSE BKR. TYPE
Swgr. 1EB1, Cubicle 3A, CP1-VAFNAV-01 Space Heater Bkr.	EB1010
Swgr. 1EB2, Cubicle 3A, CP1-VAFNAV-02 Space Heater Bkr.	EB1010
Swgr. 1EB3, Cubicle 9A, CP1-VAFNAV-03 Space Heater Bkr.	EB1010
Swgr. 1EB4, Cubicle 9A, CP1-VAFNAV-04 Space Heater Bkr.	EB1010
Swgr. 1EB3, Cubicle 8A, CP1-VAFNCB-01 Space Heater Bkr.	EB1010
Swgr. 1EB4, Cubicle 8A, CP1-VAFNCB-02 Space Heater Bkr.	EB1010

TECHNICAL REQUIREMENT 4.1 (continued)

TABLE 4.1.1a (Continued)

5A UNIT 1

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 Breaker - Square D Type QIL located in Miscellaneous Signal Control Cabinet	1 1

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	)
XEC1-2	2	TED

TECHNICAL REQUIREMENT 4.1 (continued)

TABLE 4.1.1a (Continued)

5A UNIT 1

CONTAINMENT PENETRATION CONDUCTOR
OVERCURRENT PROTECTIVE DEVICES

DEVICE NUMBER
AND LOCATION

9. 118V AC Control Power

a. Primary Devices - N/A (Fuse)

b. Backup Breakers

PANELBOARD NO.	CKT. NO.	GENERAL ELECTRIC BREAKER TYPE	
1C2	22	TED	
1PC1	10,13	TED	1
1PC4	6,10	TED	
1EC1	7	TED	
1EC2	7	TED	2
1EC5	8	TED	2
1EC6	3,8	TED	

10. Emergency Evacuation System Warning Lights Power 1

a. Primary Devices - N/A (Fuse)

b. Backup Breakers

PANELBOARD NO.	CKT. NO.	SQUARE D BREAKER TYPE	
XEC3-3	9, 10	FAL-12020	1
			1

11. DRPI Data Cabinet Power Supplies

a. Primary Breakers 2 2

PANELBOARD NO.	CKT. NO.	SQUARE D BREAKER TYPE	2 2
1C14	1,2	FA-14050A	2

b. Backup Breakers

PANELBOARD NO.	CKT. NO.	SQUARE D BREAKER TYPE	
1C14	Main Pnl. Bkrs.	FA-14070A	2
			2

TECHNICAL REQUIREMENT 4.1

(5-B) UNIT 2 → TABLE 4.1.1 (b)

CONTAINMENT PENETRATION CONDUCTOR
OVERCURRENT PROTECTIVE DEVICES

DEVICE NUMBER AND LOCATION	SYSTEM POWERED
1. 6.9 KVAC from Switchgears	
a. Switchgear Bus 2A1	RCP #2 1
1) Primary Breaker 2PCPX1	
a) Relay 50M1-51	
b) Relay 26	
c) Relay 86M	
d) Relay 51M2	
e) Relay 50N	
2) Backup Breakers 2A1-1 or 2A1-2	
a) Relay 51M3	
b) Relay 51 for 2A1-1	
c) Relay 51 for 2A1-2	
d) Relay 86/2A1 2	
b. Switchgear Bus 2A2	RCP #2
1) Primary Breaker 2PCPX2	
a) Relay 50M1-51	
b) Relay 26	
c) Relay 86M	
d) Relay 51M2	
e) Relay 50N	
2) Backup Breakers 2A2-1 or 2A2-2	
a) Relay 51M3	
b) Relay 51 for 2A2-1	
c) Relay 51 for 2A2-2	
d) Relay 86/2A2 2	

2

TECHNICAL REQUIREMENT 4.1 (continued)

(5-B) UNIT 2 → TABLE 4.1.1 (b) (Continued)

CONTAINMENT PENETRATION CONDUCTOR OVERCURRENT PROTECTIVE DEVICES

DEVICE NUMBER AND LOCATION	SYSTEM POWERED
1. 6.9 KVAC from Switchgears (Continued)	
c. Switchgear Bus 2A3	RCP #2 3
1) Primary Breaker 2PCPX3	
a) Relay 50M1-51	
b) Relay 26	
c) Relay 86M	
d) Relay 51M2	
e) Relay 50N	
2) Backup Breakers 2A3-1 or 2A3-2	
a) Relay 51M3	
b) Relay 51 for 2A3-1	
c) Relay 51 for 2A3-2	
d) Relay 86/2A3	
d. Switchgear Bus 2A4	RCP #2 4
1) Primary Breaker 2PCPX4	
a) Relay 50M1-51	
b) Relay 26	
c) Relay 86M	
d) Relay 51M2	
e) Relay 50N	
2 Backup Breaker 2A4-1 or 2A4-2	
a) Relay 51M3	
b) Relay 51 for 2A4-1	
c) Relay 51 for 2A4-2	
d) Relay 86/2A4	
2. 480 VAC from Switchgears	
2.1 Device Location - 2EB1, 2EB2, 2EB3 and 2EB4	Containment Recirc. Fans and CRDM Vent Fans
a. Primary Breakers - 2FNAV1, 2FNAV2, 2FNAV3, 2FNAV4, 2FNCB1 and 2FNCB2	

TECHNICAL REQUIREMENT 4.1 (continued)

(5-B) UNIT 2

TABLE 4.1.1 (b) (Continued)

CONTAINMENT PENETRATION CONDUCTOR OVERCURRENT PROTECTIVE DEVICES

DEVICE NUMBER AND LOCATION	SYSTEM POWERED
2. 480 VAC from Switchgears (Continued)	
b. Backup Breakers - 2EB1-1, 2EB2-1, 2EB3-1 and 2EB4-1, BT-2EB13 and BT-2EB24	
1) Long Time & Instantaneous Relays*	
50/51 2FNAV1 (2EB1-1)	50/51 2FNAV2 (2EB2-1)
50/51 2FNAV3 (2EB3-1)	50/51 2FNAV4 (2EB4-1)
50/51 2FNCB1 (2EB3-1)	50/51 2FNCB2 (2EB4-1)
2) Time Delay Relays*	
62-1 2FNAV1 (2EB1-1 and BT-2EB13)	62-1X 2FNAV1 (2FNAV1)
62-1 2FNAV2 (2EB2-1 and BT-2EB24)	62-1X 2FNAV2 (2FNAV2)
62-1 2FNAV3 (2EB3-1 and BT-2EB13)	62-1X 2FNAV3 (2FNAV3)
62-1 2FNAV4 (2EB4-1 and BT-2EB24)	62-1X 2FNAV4 (2FNAV4)
62-1 2FNCB1 (2EB3-1 and BT-2EB13)	62-1X 2FNCB1 (2FNCB1)
62-1 2FNCB2 (2EB4-1 and BT-2EB24)	62-1X 2FNCB2 (2FNCB2)

* Associated circuit breaker shown in parentheses; e.g., 2EB1-1, is backup breaker for 2FNAV1.

TECHNICAL REQUIREMENT 4.1 (continued)

(5B) UNIT 2 → TABLE 4.1.1 (Continued) (b)

CONTAINMENT PENETRATION CONDUCTOR OVERCURRENT PROTECTIVE DEVICES

DEVICE NUMBER AND LOCATION	SYSTEM POWERED	
2.2 Device Location - 480V Switchgear 2EB4	Containment Polar Crane	
a. Primary Breaker - 2SCCP1		
b. Backup Breaker 2EB4-1 and BT-2EB24		
1) Long Time Delay Relay		1
51 2 SCCP1		1
		1
2) Time Delay and Instantaneous Relays*		1
62 2 SCCP1 (2EB4-1 and BT-2EB24) 62X 2SCCP1 (2SCCP1)		1
		1
3. 480VAC from Motor Control Centers		
3.1 Device Location - MCC 2EB1-2 Containment Numbers listed below.		
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 THCD or THFK with thermal-magnetic trip elements.		

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

TECHNICAL REQUIREMENT 4.1 (continued)

TABLE 4.1.1 (Continued)

5-B UNIT 2

CONTAINMENT PENETRATION CONDUCTOR
OVERCURRENT PROTECTIVE DEVICES

DEVICE NUMBER AND LOCATION		
3. 480 from Motor Control Centers (Continued)		
MCC 2EB1-2 COMPT. NO.	G.E. BKR. TYPE	SYSTEM POWERED
4G	THED	Motor Operated Valve 2-TV-4691
4M	THED	Motor Operated Valve 2-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 #01 Motor Space Heater-01
6M	THED	RCP #03 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 #01 Oil Lift Pump-01
5M	THED	RCP #03 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 (CPD-CFAPRP-01)
12M	THED	S.G. Wet Layup Circ. Pump 03 (CPD-CFAPRP-03)
12H	THED	Containment Ltg. XFMR-28 (PNL C11 & C12)

TECHNICAL REQUIREMENT 4.1 (continued)

(b)

TABLE 4.1.1 (Continued)

(5-B) 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 2C1 & 2C5)
3M	THED	Preaccess Fan No. 11
5D	THED	Fuel Transfer System Reactor Side Cont. Pnl. for 2EX-FHSTTS-0[illegible]1

3.2 Device Location - MCC 2EB2-2 Containment 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 and 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 No. 2 Motor Space Heater-02
6M	THED	RCP No. 4 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

TECHNICAL REQUIREMENT 4.1 (continued)

(5-B) UNIT 2

TABLE 4.1.1 (b) (Continued)

CONTAINMENT PENETRATION CONDUCTOR OVERCURRENT PROTECTIVE DEVICES

DEVICE NUMBER AND LOCATION

3. 480VAC from Motor Control Centers (Continued)

MCC 2EB2-2 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 (CPP-CFAPRP-02)
12M	THED	S.G. Wet Layup Circ. Pump 04 (CPP-CFAPRP-04)
8H	THED	RC Pipe Penetration Fan-03
8M	THED	RC Pipe Penetration Fan-04
5H	THED	RCP #02 Oil Lift Pump-02
5M	THED	RCP #04 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
10H	THFK	Containment Welding Machine Power Supply Unit

3.3 Device Location - MCC 2EB3-2 Containment 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.

TECHNICAL REQUIREMENT 4.1 (continued)

5.B UNIT 2

TABLE 4.1.1 (Continued)

CONTAINMENT PENETRATION CONDUCTOR OVERCURRENT PROTECTIVE DEVICES

DEVICE NUMBER AND LOCATION		
3. 480VAC from Motor Control Centers (Continued)		
MCC 2EB3-2 COMPT. NO.	G.E. BKR. TYPE	SYSTEM POWERED
8RF	THED	JB-2S-1005, Altern. Feed to Motor Operated Valve 2-8702A
1G	THED	Motor Operated Valve 2-8112
9G	THED	Motor Operated Valve 2-8701A
9M	THED	Motor Operated Valve 2-8701B
5M	THED	Motor Operated Valve 2-8000A
5G	THED	Motor Operated Valve 2-HV-6074
4G	THED	Motor Operated Valve 2-HV-6076
4M	THED*	Motor Operated Valve 2-HV-6078
2G	THED	Motor Operated Valve 2-HV-4696
2M	THED	Motor Operated Valve 2-HV-5701
3G	THED (a)	Motor Operated Valve 2-HV-5541
3M	THED (a)	Motor Operated Valve 2-HV-5543
1M	THED	Motor Operated Valve 2-HV-6083
6F	THED	Motor Operated Valve 2-HV-8808A
6M	THED	Motor Operated Valve 2-HV-8808C
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 2-HV-4075C
9EF	THED	Motor Operated Valve 2-HV-4782
9RM	THED	Motor Operated Valve 2-8811A

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

TECHNICAL REQUIREMENT 4.1 (continued)

5-6 UNIT 2

TABLE 4.1.1 (Continued)

CONTAINMENT PENETRATION CONDUCTOR OVERCURRENT PROTECTIVE DEVICES

DEVICE NUMBER AND LOCATION

3. 480VAC From Motor Control Centers (Continued)

3.4 Device Location - MCC 2EB4-2 Containment 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
		2S-6000G
1M	THED	JB-2S-2300G, 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* STET	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&SC4)
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.

5-B

UNIT 2

TECHNICAL REQUIREMENT 4.1 (continued)

TABLE 4.1.1 (Continued)

CONTAINMENT PENETRATION CONDUCTOR OVERCURRENT PROTECTIVE DEVICES

DEVICE NUMBER AND LOCATION	SYSTEM POWERED	
4. 480VAC From Panelboards For Pressurizer Heaters	Pressurizer Heaters	
(1) groups A, B, & D		
a. Primary Breakers - General Electric Type TJJ Thermal Magnetic breakers.		
Breaker No. & Location - Ckt. Nos. 2 thru 4 of Panelboards 2EB2-1-2, 2EB3-1-2, 2EB4-1-1, 2EB4-1-2 and Ckt. Nos. 2 thru 5 of Panelboards 2EB2-1-1 and 2EB3-1-1.		3 3 3 3
b. Backup Breakers - General Electric Type THJS with longtime and insts. solid state trip devices with 400 Amp. sensor.		
Breaker No. & Location - Ckt. No. 1 of Panelboards 2EB2-1-1, 2EB2-1-2, 2EB3-1-1, 2EB3-1-2, 2EB4-1-1 and 2EB4-1-2.		3 3 1
(2) group C		
a. Primary Breakers - General Electric Type THED breakers.		
Breaker No. and Location - For both 2EB1-1-1 & 2EB1-1-2 are located at Ckt. Nos. 2 thru 4.		3
b. Backup Breakers - General Electric Type TJJ Thermal Magnetic breakers.		
Breaker No. and Location - Ckt Nos. 2 thru 4 of Switchboards 2EB1-1-1 & 2EB1-1-2.		2 3
5. 120V Space Heater Circuits from 480V Switchgears	Containment Recirc. Fan and CRDM Vent. Fan Motor Space Heaters	

TECHNICAL REQUIREMENT 4.1 (continued)

5B

UNIT 2

TABLE 4.1.1 (Continued)

CONTAINMENT PENETRATION CONDUCTOR OVERCURRENT PROTECTIVE DEVICES

5. 120V Space Heater Circuits from 480V Switchgears (Continued)

a. Primary Devices - N/A (Fuse) | 2

b. Backup Breakers | 2

BKR. LOCATION & NUMBER	WESTINGHOUSE BKR. TYPE
2 Swgr. 2EB1, Cubicle 3, B 2CP2-VAFNAV-01 Space Heater Bkr.	EB1010
2 Swgr. 2EB2, Cubicle 3, B 2CP2-VAFNAV-02 Space Heater Bkr.	EB1010
2 Swgr. 2EB3, Cubicle 9, B 2CP2-VAFNAV-03 Space Heater Bkr.	EB1010
2 Swgr. 2EB4, Cubicle 9, B 2CP2-VAFNAV-04 Space Heater Bkr.	EB1010
2 Swgr. 2EB3, Cubicle 8, B 2CP2-VAFNCB-01 Space Heater Bkr.	EB1010
2 Swgr. 2EB4, Cubicle 8, B 2CP2-VAFNCB-02 Space Heater Bkr.	EB1010

TECHNICAL REQUIREMENT 4.1 (continued)

(5-B) UNIT 2 → TABLE 4.1.1 (Continued)

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	6	TED	
XED2-1	6	TED	
XD2-3	8	TED	1
2 XED2-1	11, 14, 17	TED	
2 XED1-1	11, 14	TED	2
2 XD2-3	6, 10, 11	TED	
2 XD2-2	9	TED	
2 XED2-2	12	TED	
2 XED3-1	5	TED	
2 XED1-2	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 Breaker - Square D Type QIL located in Miscellaneous Signal Control Cabinet	1 1

9.	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
XEC 1	34 12	TED
XEC 2	2 3	TED

TECHNICAL REQUIREMENT 4.1 (continued)

5.B

UNIT 2

TABLE 4.1.1 (Continued)

CONTAINMENT PENETRATION CONDUCTOR OVERCURRENT PROTECTIVE DEVICES

DEVICE NUMBER AND LOCATION

9. 118V AC Control Power

a. Primary Devices - N/A (Fuse)

b. Backup Breakers

PANELBOARD NO.	CKT. NO.	GENERAL ELECTRIC BREAKER TYPE	
2 EC2	22	TED	
2 EPC1	10,13	TED	1
2 EPC4	6,10	TED	
2 EEC1	7	TED	
2 EEC2	7	TED	2
2 EEC5	8	TED	2
2 EEC6	3,8	TED	

10. Emergency Evacuation System Warning Lights Power | 1

a. Primary Devices - N/A (Fuse)

b. Backup Breakers

PANELBOARD NO.	CKT. NO.	SQUARE D BREAKER TYPE	
XEC4-3	9, 10	FAL-12020	1
			1

11. DRPI Data Cabinet Power Supplies | 2

a. Primary Breakers | 2

PANELBOARD NO.	CKT. NO.	SQUARE D BREAKER TYPE	
2 EC14	1,2	FA-14050A	2

b. Backup Breakers

PANELBOARD NO.	CKT. NO.	SQUARE D BREAKER TYPE	
2 EC14	Main Pnl. Bkrs.	FA-14070A	2

2

Justification

The technical requirements in this attachment contain plant specific numbers which are yet to be confirmed. Those numbers still requiring design confirmation, of applicability for Unit 2, have been enclosed within brackets for identification purposes.

TECHNICAL REQUIREMENT 1.2 (continued)

TABLE 1.2.1

ENGINEERED SAFETY FEATURES RESPONSE TIMES

INITIATION SIGNAL AND FUNCTION	RESPONSE TIME IN SECONDS
2. Containment Pressure--High-1	
a. Safety Injection (ECCS)	≤27(1,5a)/[27(4,5b)]
b. Reactor Trip	≤2
c. Feedwater Isolation	≤6.5
d. Phase "A" Isolation	≤17(2)/27(1)
e. Containment Ventilation Isolation	N.A.
f. Auxiliary Feedwater	[≤ 60]
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(7)	≤ 17/27

TECHNICAL REQUIREMENT 1.2 (continued)

TABLE 1.2.1

ENGINEERED SAFETY FEATURES RESPONSE TIMES

INITIATION SIGNAL AND FUNCTION	RESPONSE TIME IN SECONDS
3. Pressurizer Pressure--Low	
a. Safety Injection (ECCS)	≤ 27(1,5a)/[27(4,5b)]
b. Reactor Trip	≤ 2
c. Feedwater Isolation	≤ 7
d. Phase "A" Isolation	≤ 17(2)/27(1)
e. Containment Ventilation Isolation	[≤ 5(6)]
f. Auxiliary Feedwater	[≤ 60]
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(7)	N.A.

TECHNICAL REQUIREMENT 1.2 (continued)

TABLE 1.2.1

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]
d. Phase "A" Isolation	$\leq 17^{(2)}/27^{(1)}$
e. Containment Ventilation Isolation	N.A.
f. Auxiliary Feedwater	[≤ 60]
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 (7)	N.A.
n. Steam Line Isolation	[≤ 6.5]

TABLE 1.2.1

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]
6. Containment Pressure--High-2	
Steam Line Isolation	≤ 6.5
7. Steam Line Pressure - Negative Rate-High	
Steam Line Isolation	[≤ 7]
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.]
11. Trip of All Main Feedwater Pumps	
All Auxiliary Feedwater Pumps	N.A.

TECHNICAL REQUIREMENT 1.2 (continued)

TABLE 1.2.1

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	[≤ 2(8)]
b. 6.9 KV Alternate Offsite Source Undervoltage	[≤ 2(8)]
c. 6.9 KV Bus Undervoltage	[≤ 2(8)]
d. 6.9 KV and 480V Degraded Voltage	
with Safety Injection	[≤ 10(8,9)]
without Safety Injection	[≤ 63(8,9)]
e. 480 V Low Grid Undervoltage	[≤ 63(8,9)]

Several Technical Requirement Manual changes are currently being considered for CPSES Units 1 and 2. Many of these changes are not directly attributable to the licensing of Unit 2 and are not included in Attachments 1 through 8. It is however, desirable that CPSES Unit 2 be licensed incorpcrating many of these changes. As stated in the cover letter any changes submitted prior to June 30, 1992, will be transmitted by the normal process. The TRM changes currently in the TU Electric internal review process are:

A. Update definition Technical Requirement 0.1 to include the definition for the Core Operating Limits Report (COLR).

B. Revise Table 1.2.1 Technical Requirement 1.2 to reflect changes made to the Technical Specifications regarding DG undervoltage testing.

C. Update Technical Requirement 1.2, item 10 of Table 1.2.1, to revise the response time for auxiliary feedwater injection following loss of offsite power.

D. Revise Technical Requirement 1.3, "Moveable Incore Detectors," to delete the reference to Fxy.

E. Update Table 2.1.1 of Technical Requirement 2.1 to add bonnet relief valves to containment sump recirculation isolation valves.

F. Update Technical Requirement 3.3 to clarify which Nondestructive Examinations were used in the fracture analysis to demonstrate the fracture toughness of the feedwater isolation valve.

G. Revise Technical Requirement 4.1 to swap G.E. breaker type for pressurizer heater primary and backup circuit breakers.

H. Revise Table 4.1.1 of Technical Requirement 4.1 to describe changes in the penetration protection resulting from addition of distribution panel in the Reactor Containment Building.

I. Update Table 4.1.1 of Technical Requirement 4.1 to revise the breaker type from "QIL" to "QOB".

J. Adds clarification to containment penetration conductor overcurrent protective devices list (Technical Requirement 4.1). The change is based upon the guidance provided in Generic Letter 91-08.