ATTACHMENT

INSERVICE TESTING PROGRAM PLAN

Rancho Seco Nuclear Generating Station

Docket No. 50-312

Revision 5

INSERVICE TESTING PROGRAM PLAN
FOR
PUMPS AND VALVES

Record of Revisions

Revision	Date
3	6-23-87
4	1-29-88
5	8-14-89

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1.0 INTRODUCTION

Revision 5 of the Rancho Seco (Unit 1) ASME Inservice Testing Program Plan will be in effect through the end of the second 120-month (10-year) inspection interval, unless changed for other reasons. The Plan will be updated prior to the start of the third inspection interval in accordance with the requirements of 10 CFR 50.55a(g).

This document outlines the Inservice Testing (IST) Program for Rancho Seco, based on the requirements of Section XI of the ASME Boiler and Pressure Vessel Code, 1980 Edition, including Winter, 1981 Addenda. All references to IWP or IWV in this document correspond to Subsections IWP or IWV, respectively, of ASME Section XI, 1980 Edition, unless otherwise noted.

This IST Plan was developed using the ISI classification boundaries and the following documents:

* Title 10, Code of Federal Regulations, Part 50
* NRC Regulatory Guides - Division 1
* Standard Review Plan 3.9.6, "Inservice Testing of Pumps and Valves"
* Final Safety Analysis Report, Rancho Seco Unit 1
* Technical Specifications, Rancho Seco Unit 1

The inservice tests required in this Plan will verify the operational readiness of pumps and valves which have a specific function in mitigating the consequences of an accident or bringing the reactor to a safe shutdown condition.

2.0 TESTING PROGRAM FOR PUMPS

2.1 General

2.1.1 Code

This IST Program Plan for pumps meets the requirements of Subsection IWP of Section XI of the ASME B&PV Code. Where these requirements are determined to be impractical, specific requests for relief are included in Sections 2.2.

2.1.2 Pump Program Table

Appendix A lists the pumps included in the IST Program. Data contained in this table identifies those pumps subject to inservice testing with the respective inservice test parameters, intervals, and any other applicable remarks.

2.1.3 Allowable Ranges of Test Quantities

The allowable ranges specified in Table IWP-3100-2 will be used for differential pressure, flow, and vibration measurements except as provided for in relief requests. In some cases, the performance of a pump may be adequate to fulfill its safety function even though there may be a measurement that falls outside the allowable ranges as set forth in Table IWP-3100-2. Should this situation occur, an expanded allowable range may be determined, on a case base, in accordance with IWP-3210 and ASME Code Interpretation XI-1-79-19.

2.1.4 Bearing Lubricant

As specified in Table IWP-3100-1, pump bearing lubricant level or pressure will be observed prior to or during testing, when practical.

2.1.5 Instrumentation

Instrumentation used in the IST Program will generally conform to the requirements of IWP except where specific relief is requested.

2.1.6 Testing Intervals

The test frequency for pumps in the Program will be as set forth in Appendix A and the associated relief requests. A band of +25 percent of the test interval may be applied to the test schedule, as needed, to provide necessary operational flexibility.

2.1.7 Deferred Testing

In conducting inservice testing of pumps if the duplicate (redundant) pump has been declared inoperable or is out of service for any reason, a pump shall not be tested during power operation until the redundant component has been restored to operability or the operational actions required by the inoperable condition have been completed.

2.2 Relief Requests for Pump Testing

The following pages in this section include relief requests PR-1 through PR-15 for IST pump testing.

RELIEF REQUEST NO. PR-1

PUMPS:

Applicable to all pumps in the Program.

REQUIREMENT:

Reference values shall be at points of operation readily duplicated during subsequent inservice testing. (IWP-3110)

BASIS FOR RELIEF:

Operating experience has shown that it is not always practical to duplicate points of operation with the available flow control systems and instrumentation. Efforts to exactly duplicate the reference values may not be possible or would require excessive valve manipulation which could result in damage to valve components or excessive personnel exposure.

ALTERNATE TESTING:

During pump reference tests, a reference pump curve may be established or the manufacturer's pump curve confirmed. In lieu of duplicating a specific reference flowrate during subsequent inservice tests, a flowrate (Qa) will be obtained and recorded along with the corresponding differential pressure (dPa). The differential pressure value (dPa) will then be compared to the theoretical differential pressure corresponding to the measured flowrate (Qa) on the pump curve. The acceptance criteria of Table IWP-3100-2 will be applied as appropriate.

RELIEF REQUEST NO. PR-2

PUMPS:

Applicable to all pumps in the Program.

REQUIREMENT:

At least one displacement vibration amplitude (peak-to-peak composite) shall be read during inservice testing. The direction of displacement shall be measured in a plane approximately perpendicular to the rotating shaft, and in the horizontal or vertical direction that has the largest deflection for the particular pump installation. (IWP-4510)

BASIS FOR RELIEF:

Measuring vibration in velocity units rather than displacement is an industry accepted method considered to be more sensitive to small changes that are indicative of developing mechanical problems. Velocity measurements detect not only high-amplitude vibration, characteristic of major mechanical problems, but low-amplitude vibration caused by misalignment, imbalance, or bearing wear.

It is impractical to search for the direction with the largest deflection and procedurally return to that location on successive tests. Also, the direction of maximum deflection may change with pump age and material condition, thus, this is not necessarily a conservative nor proper practice.

ALTERNATE TESTING:

Vibration Measurements will be taken and evaluated in accordance with the requirements of OM-6 (Draft 11) as follows:

- Instrumentation

  Instrument Quality - ± 5%
  Analog - % of Full Scale
  Digital - over the calibrated range

  Frequency Response Range

  Frequency response range of the vibration measuring transducers and their readout system shall be from one-third minimum pump shaft rotational speed to at least 1000 Hertz.

- Vib ation Measurements

  a. On centrifugal pumps, measurements shall be taken in a plane approximately perpendicular to the rotating shaft in two orthogonal directions on each accessible pump bearing housing. Measurement also shall be taken in the axial direction on each accessible pump thrust bearing housing.

b. On vertical line shaft pumps, measurements shall be taken on the upper motor bearing housing in three orthogonal directions, one of which is the axial direction.

c. If a portable vibration indicator is used, the reference points must be clearly identified on the pump to permit subsequent duplication in both location and plane.

- Testing Method

Vibration measurements are to be broad band (unfiltered). If velocity measurements are used, they shall be peak. If displacement amplitudes are used, they shall be peak-to-peak.

- Acceptance Criteria

Acceptance Criteria shall be established per Table 2.1.

TABLE 2-1

RANGES OF TEST PARAMETERS (1)

PUMP TYPE	PUMP SPEED	TEST PARAMETER	ACCEPTABLE RANGE	ALERT RANGE	REQUIRED ACTION RANGE
Centrifugal and Vertical Line Shaft(2)					
	<600 rpm	V_d or V_v	≤2.5 V_r	>2.5 V_r to 6 V_r but not >10.5 mils	>6 V_r but not >22 mils
	≤600 rpm	V_v or V_d	≤2.5 V_r	>2.5 V_r to 6 V_r but not >0.325 in/sec	>6 V_r but not >0.70 in/sec

Notes: (1) V_d = Vibration - Displacement (peak-to-peak)

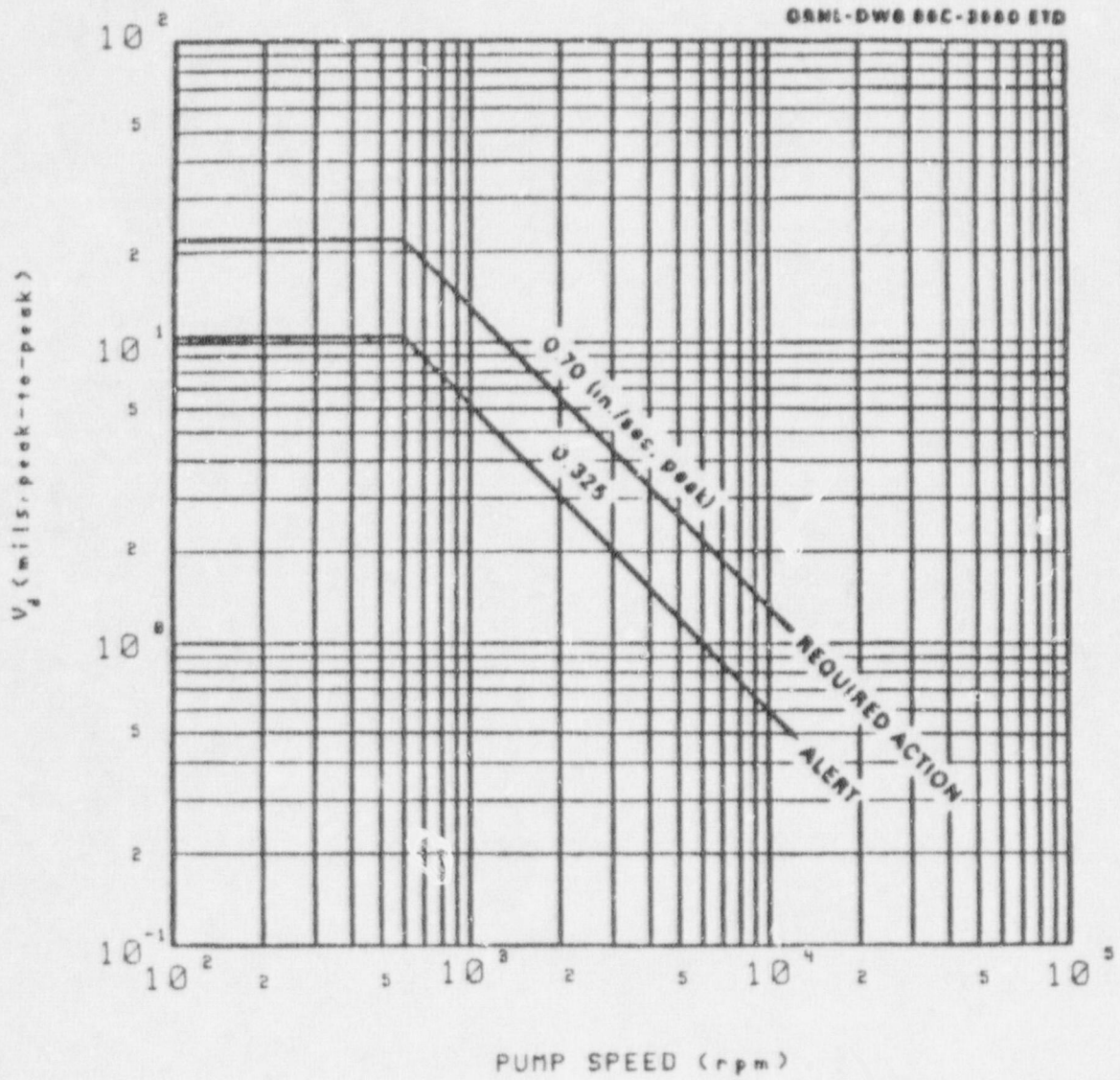
V_v = Vibration - Velocity (peak)

V_r = Vibration - Reference Valve (in selected units)

(2) Refer to Figure 2.1 to establish displacement limits for pumps with speeds ≥600 rpm or velocity limits for pumps with speeds <600 rpm.

RELIEF REQUEST NO. PR-2 (Continued)

Figure 2.1 Vibration Limits



RELIEF REQUEST NO. PR-3

PUMPS:

Applicable to all pumps in the Program.

REQUIREMENT:

The full-scale range of each instrument shall be three times the reference value or less (IWP-4120)

BASIS FOR RELIEF:

The commercially available state-of-the-art instruments used for measuring pump vibration do not provide range selections that guarantee adherence to the range limitations per Subarticle IWP-4120. Ranges are typically expanded beyond the multiple of three as required by the Code and, in the case of the digital instruments used currently at Rancho Seco, the instrument is self scaling over a broad range of measurements.

The accuracy of instruments used to measure vibration are generally based on the actual measured value and is unrelated to the instrument range. The instrument accuracies are typically approximately ± 5 percent of the reading. This is considerably better than that specified by the Code (± 5 percent FS) that can be as much as ± 15 percent of the reading.

ALTERNATE TESTING:

Commercially available instrumentation will be used to measure pump vibration with an overall reading accuracy equal to or better than that required by IWP-4100 (15 percent).

RELIEF REQUEST NO. PR-4

DELETED

RELIEF REQUEST NO. PR-5

PUMPS:

Applicable to all pumps in the Program.

REQUIREMENT:

The temperature of all centrifugal pump bearings outside the main flowpath shall be measured at points selected to be responsive to changes in the temperature of the bearings. (IWP-4310)

BASIS FOR RELIEF:

Many of the bearings of the centrifugal pumps included in the Rancho Seco IST Program are water cooled (i.e., cooling water supplied from the flowstream or auxiliary closed cooling water systems). Thus, bearing temperature measurements are highly dependent on the temperature of the cooling medium and not necessarily indicative of bearing condition.

The data associated with bearing temperatures taken at one-year intervals provides little statistical basis for determining the incremental degradation of a bearing or any meaningful trending information or correlation.

Vibration measurements are a significantly more reliable and meaningful indication of an imminent or existing bearing failure. It is highly unlikely that such a condition would go unnoticed during routine pump operation or surveillance testing. Other indications of bearing problems include audible noise, reduced pump performance, seal failure, unusual vibration, increased motor current, etc.

The gain from taking bearing measurements, which in most cases must be done locally using portable instruments, cannot offset the cost in terms of dilution of resources, distraction of operators from other primary duties, excessive operating periods for normally idle pumps, and personnel radiation exposure.

ALTERNATE TESTING:

None proposed.

RELIEF REQUEST NO. PR-6

PUMPS:

Applicable to all pumps in the Program.

REQUIREMENT:

Measure pump inlet pressure before starting the pump and during the test. (Table IWP-3100-1)

BASIS FOR RELIEF:

If the pumps being tested are in operation as a result of plant or system needs, it is unreasonable and impractical to reconfigure system lineups simply to provide for measurement of the static inlet pressure.

Inlet pressure prior to pump startup is not a significant parameter needed for evaluating pump performance or material condition.

ALTERNATE TESTING:

When performing a test on a pump that is already in operation due to system requirements, inlet pressure will only be measured during pump operation.

RELIEF REQUEST NO. PR-7

PUMPS:

P-236 Makeup Pump
P-238 A & B High Pressure Injection Pumps

REQUIREMENT:

An inservice test shall be run on each pump nominally every 3 months during normal plant operation. (IWP-3400)

Pump testing shall be based on establishing a set of reference values, then comparing subsequent test results to these reference values. Inherent in this is the requirement to determine which of the pump parameters (flowrate or differential pressure)is to be the independent variable, then, in subsequent tests, this parameter is set to the reference value by adjusting system resistance. The value obtained for the dependent variable is compared to its respective reference value with Table IWP-3100-2 establishing acceptance criteria. During the test, the test quantities shown in Table IWP-3100-1 shall be measured and recorded. (IWP-3100 & 3110)

BASIS FOR RELIEF:

The only practical method of full flow testing these pumps is to inject water into the Reactor Coolant System requiring initiation of HP Injection and pumping water from the BWST. This would cause transients in pressurizer level and reactor power and is considered to be imprudent during power operation. In addition, injection of cold water into Reactor Coolant System during operation would cause thermal shocking of the injection nozzles. During cold shutdown, the HP Injection Isolation motor-operated valves are deenergized closed and the pumps are electrically disabled to prevent low temperature over-pressurization. Consequently, the only practical method of testing is to circulate water through the minimum flow line for each pump. Because of this, the maximum flowrate achievable is approximately 20-percent of the nominal rated pump flow. Note that there is no flow measuring instrumentation installed in the minimum flow circuit.

During partial-flow testing, the region of the pump curve in which the testing will be performed is near shutoff head and flowrate readings are not necessarily meaningful from the viewpoint of trending.

Since the HP injection pumps stand idle except for periods of testing, significant inservice degradation is unlikely.

ALTERNATE TESTING:

These pumps will be tested quarterly with the fixed resistance of the minimum flow line. During these tests, all appropriate pump operational parameters will be measured and evaluated with respect to Table IWP-3100-2 and associated relief requests with the exception of flowrate.

During each refueling outage, each pump will be tested under nominal full-flow conditions and all required parameters will be measured, including flowrate.

RELIEF REQUEST NO. PR-8

PUMPS:

Nuclear Service Raw Water; Pump Nos. P-472A and P-472B
TDI-Diesel Fuel Oil; Pump Nos. P-108 A thru D
Bruce GM-Diesel Fuel Oil; Pump Nos. P-888 A thru D

REQUIREMENT:

Measure pump inlet pressure before starting the pump and during the test. (Table IWP-3100-1)

BASIS FOR RELIEF:

These pumps are submerged and, as such, have inlet pressures corresponding to the water level in the spray pond basin or oil level in the fuel oil tanks. There is no practical mechanism for measurement of suction (inlet pressure). Also, changes of level during testing is insignificant.

ALTERNATE TESTING:

Inlet pressure will be calculated from the height of liquid above the pump suction prior to or during each test, but only once per test.

RELIEF REQUEST NO. PR-9

DELETED

RELIEF REQUEST NO. PR-10

PUMPS:

Nuclear Service Raw Water, Pump Nos. P-472 A & B
Nuclear Service Cooling Water, Pump Nos. P-482 A & B

REQUIREMENT:

The test quantities shown in Table IWP-3100-1 (including flowrate) shall be measured or observed and recorded. (IWP-3100)

BASIS FOR RELIEF:

There is no installed instrumentation for measuring the flowrate in any of the above piping systems.

ALTERNATE TESTING:

Appropriate flowrate measuring instrumentation will be installed in these systems prior to or during the next Refueling Outage No. 7 (Loading Core Cycle 8). In the interim the following will apply.

For pumps P-472 A & B, flowrate will be derived by measuring the spray header pressure and determining flowrate from curves of spray header pressure vs. flowrate empirically developed during the Rancho Seco Startup Testing Program.

For pumps P-482 A & B, it is assumed that the system resistance is fixed and only pump differential pressure will be measured and evaluated.

RELIEF REQUEST PR-11

PUMPS:

P-236 - Makeup
P-238 A&B HP Injection
P-261 A&B Decay Heat Removal
P-291 A&B Reactor Building Spray
P-705 A&B Boric Acid

REQUIREMENT:

The full-scale range of each instrument shall be three times the reference value or less (IWP-4120).

BASIS FOR RELIEF:

The installed suction pressure gauge of a pump is generally sized to accommodate the maximum pressure it would experience under normal or emergency conditions. In many cases, this results in an instrument range that exceeds the Code requirement since, under test conditions, high suction pressures are typically not experienced. Strict Code compliance would require the installation of temporary gauges that would not be suitable for routine or emergency pump operation.

Suction pressure measurements serve two primary functions. First they provide assurance that the pump has an adequate suction head for proper operation. Secondly, the suction pressure is used to determine the pump differential pressure.

For the determination of suction head, the accuracy and range requirement is overly restrictive. Since, in most cases, plant pumps are provided with a considerable margin of suction head, accuracy on the order of 0.5 to 0.75 psig should be adequate.

When used in determining pump differential pressure, the accuracy of the suction pressure measurement has little or no effect on the calculation since, generally, the pump discharge pressure is higher than the suction pressure by 2 or 3 orders of magnitude.

ALTERNATE TESTING:

When measuring the suction pressure of a pump, in lieu of meeting the instrument range requirement of IWP-4120, instruments will be installed such that the accuracy meets the requirements set forth below:

- Accuracy will be at least ± .5 psi
- The accuracy of the differential pressure calculation will be limited to ± 2 percent of the differential pressure calculated value.
- Accuracy of the suction pressure instrument will be better than ±.5 percent of the calculated differential pressure.

RELIEF REQUEST PR-12

DELETED

RELIEF REQUEST PR-13

PUMPS:

TDI-Diesel Fuel Oil; Pumps Nos. P-108A thru D
Bruce GM-Diesel Fuel Oil; Pumps Nos. P-888A thru D

REQUIREMENT:

When measurement of bearing temperature is not required, each pump shall be run at least 5 minutes under conditions as stable as the system permits. At the end of this time at least one measurement or observation of each of the quantities specified shall be made and recorded. (IWP-3500(a))

→ Flowrate shall be measured using a rate or quantity meter installed in the
← pump test circuit. (IWP-4600)

BASIS FOR RELIEF:

The only mechanism of measuring flowrate for these pumps is by measuring the increase of oil level in the day tanks and relating it to the respective pump operating time. There is insufficient available volume in the day tanks to allow the pumps to run for five minutes prior to taking data without significantly affecting test accuracy.

ALTERNATE TESTING:

During testing of these pumps, data will be taken as soon as flow and pressure
→ conditions have stabilized following pump start. Flowrate will be determined by measuring the increase of oil level in the day tanks relative to the
← length of operating time for the pump being tested.

RELIEF REQUEST PR-14

PUMPS:

TDI-Diesel Fuel Oil; Pump Nos. P-108A thru D
Bruce GM-Diesel Fuel Oil; Pump Nos. P-888 A thru D

REQUIREMENT:

At least one displacement vibration amplitude (peak-to-peak composite) shall be read during each inservice test. (IWP-4510)

BASIS FOR RELIEF:

Each of these pumps is submerged within its respective fuel oil tank thus, the bearing housings are inaccessible for vibration measurements.

ALTERNATE TESTING:

Vibration measurements will not be taken.

RELIEF REQUEST PR-15

PUMPS:

Bruce GM-Diesel Fuel Oil; Pump Nos. P-888A thru D

REQUIREMENT:

If deviations fall within the Alert Range of Table IWP-3100-2, the frequency of testing specified in IWP-3400 shall be doubled until the cause of the deviation is determined and the condition corrected (IWP-3230(a)).

BASIS FOR RELIEF:

Since their in no practical mechanism for draining the day tanks, these pumps are tested by draining down the day tank with diesel generator operation and subsequently measuring the tank fill rate to determine pump flow rate. Thus, testing these pumps requires diesel generator operation. Should a pump enter an alert range, the increased test frequency per IWP-3230(a) would require additional starts and operation of the related diesel generator. Such additional testing is considered to be detrimental to diesel generator reliability.

Since the pumps are only operated during testing, their is no credible mechanism of pump deterioration between tests. Thus increasing the test frequency is of little value.

ALTERNATE TESTING:

The increased test requirements of paragraph IWP-3230(a) will not be applied to these pumps.

3.0 TESTING PROGRAM FOR VALVES

3.1 General

3.1.1 Code

This IST Program Plan for valves meets the requirements of Subsection IWV of Section XI of the ASME B&PV Code. Where these requirements were determined to be impractical, specific requests for relief are included in Section 3.2.

3.1.2 Valve Program Table

Appendix B lists the valves included in the IST Program. Data contained in this table identifies those valves subject to inservice testing with the respective descriptive information, test requirements, test intervals, and applicable remarks and references to relief requests.

3.1.3 Deferred Testing

When one or more valves in a redundant system are determined to be inoperable, non-redundant valves in the other train may not be tested, as required by procedures and this Program, but may be exercised after the inoperable valve is returned to service.

3.1.4 Manual Valves

Several manual valves are included in this Program in order to make it consistent with the Rancho Seco Technical Specifications as they relate to the issue of Appendix J leakrate testing. Although these valves are categorized as "Category A" valves, they are considered to be passive per Table IWV-3700-1 and, as such, will not be exercised as required by Paragraph IWV-3410.

3.1.5 Testing Intervals

The test frequency for valves in the Program will be a set forth in Appendix B and associated relief requests. An allowable band of +25 percent of the test interval may be applied to the testing schedule, as needed, to provide necessary operational flexibility.

3.1.6 Cold Shutdown Testing

For those valves designated to be exercised or tested during cold shutdown, exercising/testing will commence as soon as practical after the plant reaches a stable cold shutdown condition as defined by the Rancho Seco Technical Specifications but no later than 48 hours after reaching Cold Shutdown. If an outage is sufficiently long enough to allow testing of all valves required to be tested during Cold Shutdown, then the 48-hour requirement need not apply if all valves are tested during the outage. Furthermore, valve testing will not necessarily be performed more often than once every three (3) months. Completion of all valve testing during a cold shutdown outage will not be required if plant conditions preclude testing of specific valves or if the cold shutdown period is insufficient to complete all testing. Testing not completed before startup may be completed during subsequent cold shutdown outages in a sequence such that scheduled testing does not omit nor favor certain valves or groups of valves. Note: Additional restrictions may be applied as stated in specific relief requests.

Refer to Appendix C of this Program for cold shutdown justifications.

3.1.7 Position Indication Testing

For those valves with remote position indicators, tests will be performed to ensure the indication correctly reflects actual valve position and operation in accordance with the requirements of IWV-3300.

3.1.8 Fail-safe Testing

The normal methods for exercising power-operated valves also tests the failsafe functions of these valves if they exist. Thus, no additional testing is required and the respective cold shutdown justifications and relief requests apply to the requirements of paragraph IWV-3415, when applicable.

3.1.9 Stroke Time Evaluation

Where stroke time measurement of power-operated valves is required, maximum allowable stroke times will be established based on test history, manufacturer's specifications, FSAR/USAR analyses, technical specification requirements and engineering judgment. Generally, the most limiting value will dictate the limit. Measured stroke times will be evaluated and corrective action taken in accordance with IWV-3417.

3.1.10 Stop/Check Valve Testing

Where testing of stop/check valves is required, exercising the stem to the fully closed direction will be employed as an acceptable method of verifying valve closure.

3.1.11 Valve Disassembly

As per IWV-3522, check valves may be disassembled, manually exercised and inspected in lieu of flow (and flow reversal) testing as described in the Code.

Check valve sample disassembly may be used to verify full stroke capability of check valves. Check valves with the same design (manufacturer, size, model number, and materials of construction) and same service conditions will be classified as a sample group. During each inspection interval (refueling) one valve will be selected for disassembly, manual stroking and inspection. The inspection shall verify that the internals are structurally sound (no loose or corroded parts) and the valve is capable of full stroking.

A different valve shall be disassembled, inspected, and manually stroked at each inspection interval, until the entire group has been tested. If it is found that the disassembled valve's full stroke capability is in question, the remainder of the valves in the group shall be inspected.

3.2 Relief Requests for Valve Testing

The following pages in this section include relief requests VR-1 through VR-23, for IST valve testing.

RELIEF REQUEST NO. VR-1

SYSTEMS:

All systems

VALVES:

Rapid acting valves (valves with normal stroke time >2 seconds)
Turbine Stop/Throttle Valves (TV-1, TV-2, TV-3, TV-4)

CATEGORIES:

A and B

FUNCTIONS:

Various

REQUIREMENT:

If, for power-operated valves, an increase in stroke time of 50% or more for valves with full-stroke times less than or equal to 10 seconds is observed, the test frequency shall be increased to once each month until corrective action is taken, at which time the original test frequency shall be resumed. (IWV-3417)

BASIS FOR RELIEF:

The stroke times of most solenoid and the Main Turbine Stop/Throttle Valves are rapid and stroke time measurements are subject to considerable variation due to test conditions as well as operator reaction time.

ALTERNATE TESTING:

When exercising these valves with stroke times measuring less than 2 seconds, a maximum stroke time of 2 seconds will be assigned. Stroke time measurements will be recorded but will only be verified to be less than two seconds. The requirements of IWV-3417(a) will not apply. Should the stroke time for these valves exceed two seconds, corrective action will be taken as required by IWV-3417(b).

RELIEF REQUEST NO. VR-2

DELETED

RELIEF REQUEST NO. VR-3

DELETED

RELIEF REQUEST NO. VR-4

SYSTEMS:

Various

VALVES:

PENETRATION #	SYS	VALVE I.D.
3	CCW	CCW-036
		SFV-46014
4	CCW	SFV-46203
		SFV-46204
16,56,58,68	SIM	SIM-019,020,021,022
		SFV-23616
19	NGS	NGS-017
		NGS-018
24	RSS	SFV-72501
		SFV-72502
25	CBS	SFV-29107
		CBS-009
26	CBS	SFV-29108
		CBS-010
27	DHS	DHS-016
		DHS-039
		DHS-497
		SFV-26006
		HV-26011
28	DHS	DHS-015
		DHS-498
		DHS-038
		SFV-26005

SYSTEMS:

Various

VALVES:

PENETRATION #	SYS	VALVE I.D.
34	HVS	SFV-53504
		SFV-53503
35	HVS	SFV-53604
		SFV-53605
44	CFS	CFS-005
		CFS-009
		CFS-011
45	CFS	CFS-006
		RCS-042
		CFS-010
		CFS-012
47	CFS	HV-26515
		HV-26516
48	FWS	HV-20609
		HV-20610
		HV-20611
57	SYS	ASC-048
		ASC-049
62	FWS	HV-70043
		HV-70044
		FWS-101
65	HVS	HV-70041
		HV-70042
		HV-70045
		HV-70046
		SFV-53603
		SFV-53610

CATEGORIES:

A and A/C

FUNCTIONS:

Valves provide containment isolation when in the closed position.

REQUIREMENT:

Category A valves shall be seat leak tested (IWV-3423 and IWV-3424) and a maximum permissible leakage rate shall be specified (IWV-3426). Individual valve leakage rates shall be trended and analyzed as required by paragraphs IWV-3426 and IWV-3427.

BASIS FOR RELIEF:

Due to the configuration of the system piping and components, in many cases individual leakage rate tests are impractical. In these cases it is customary to perform tests with the test volume between valves in series or behind several valves in parallel paths.

ALTERNATE TESTING:

In those cases where individual valve testing is impractical, valves will be leak tested simultaneously in multiple valve arrangements and a maximum permissible leakage rate will be applied to each combination of valves. Test results from tests of multiple valve combinations will be evaluated in accordance with IWV-3426 and IWV-3427.

RELIEF REQUEST NO. VR-5

SYSTEM:

Reactor Coolant

VALVES:

RIVVWX Thru RIVVZY (8 valves)

CATEGORY:

C

FUNCTION:

These valves open to equalize pressure across reactor vessel internals.

REQUIREMENT:

Check valves shall be exercised at least once every 3 months, except as provided by IWV-3522. (IWV-3521)

BASIS FOR RELIEF:

These valves are located on the reactor core support assembly and exercising is impossible without vessel disassembly-normally performed only during refueling outages.

ALTERNATE TESTING:

Each valve will be manually exercised during each refueling outage.

RELIEF REQUEST NO. VR-6

SYSTEMS:

Makeup and Purification (M-521)

VALVES.

BWS-019
BWS-044
SIM-043
SIM-052

CATEGORY:

C

FUNCTION:

These valves open to supply water to the Makeup and High Pressure Injection Pumps from the Borated Water Storage and Concentrated Boric Acid Tanks.

REQUIREMENT:

Check valves shall be exercised at least every 3 months, except as provided by IWV-3522. (IWV-3521)

BASIS FOR RELIEF:

The only method of opening these valves during plant operation is to inject water from the Makeup or HP Injection Pumps into the Reactor Coolant System via the Pressurizer Level Control Valve or the RCP seals or via the minimum flow recirculation line to the Makeup Tank. Due to the highly concentrated boric acid solution in these tanks, injecting this water would cause undesirable changes in RCS boric acid concentration resulting in reactor power transients or difficulty in maintaining constant boric acid concentration due to over-concentration of the Makeup Tank.

During cold shutdown, recirculating solution from the Concentrated Boric Acid or Borated Water Storage Tanks would result in over-concentration of the Makeup Tank and significantly increase the time and difficulty of the plant startup.

ALTERNATE TESTING:

Each of the four (4) valves will be full-stroke exercised during each refueling outage.

RELIEF REQUEST NO. VR-7

SYSTEMS:

Makeup and Purification (M-521)

VALVES:

SIM-002
SIM-045
SIM-058

CATEGORY:

C

FUNCTION:

These valves are check valves at the discharge of the Makeup and HP Injection Pumps. They open upon pump start to provide a flow path for injection into the Reactor Coolant system and close to prevent overpressurization of the suction piping leading to the idle pump(s) and recirculation back to the Borated Water Storage and Concentrated Boric Acid tanks.

REQUIREMENT:

Check valves shall be exercised at least every 3 months, except as provided by IWV-3522. (IWV-3521)

BASIS FOR RELIEF:

The only method of full-stroke testing these valves is to inject water from the respective pump into the Reactor Coolant System. For valves SIM-045 and SIM-058, this would require initiation of HP Injection and pumping water from the BWST. This would cause transients in pressurizer level and reactor power and is considered imprudent during power operation. During cold shutdown periods, injection is precluded due to low-temperature pressurization concerns and associated procedural restrictions that require disability of pumps and valves in the injection paths.

Normal operation of the Makeup Pump and quarterly testing of the HP Injection Pumps demonstrate operability via a partial-stroke exercise (less than the 500 gpm required for full-stroking) of each valve. During this time, the flowrate is restricted by letdown and RCP Seal Water System demand.

ALTERNATE TESTING:

Each valve will be partial-stroke exercised during normal Makeup Pump operation or quarterly pump testing.

During each refueling outage all three valves will be full-stroke exercised.

RELIEF REQUEST NO. VR-8

SYSTEMS:
Makeup and Purification (M-521)

VALVES:

HV-23801
SIM-036
SIM-037
SIM-040
SIM-041
SIM-047
SIM-049
SIM-050

CATEGOR ES:

C and A/C

FUNCTIONS:

These valves open to provide a flow path from the Makeup and HP Injection Pumps into the Reactor Coolant System. Valves HV-23801, SIM-036, SIM-040, and SIM-047 close to provide containment isolation.

REQUIREMENT:

Check valves shall be exercised at least once every 3 months, except as provided by IWV-3522. (IWV-3521)

BASIS FOR RELIEF:

The only practical method of exercising these valves is to inject water into the Reactor Coolant System via the Makeup and/or HP Injection Pumps. For all valves, except SIM-036 and SIM-037, this would require initiation of HP Injection and pumping water from either the BWST or the CBAT. This would cause transients in pressurizer level and reactor power and is considered to be imprudent during power operation. In addition, injection of cold water into the Reactor Coolant System during operation would cause thermal shocking of the injection nozzles. Valves SIM-036 and SIM-037 are partial - stroke exercised to the open direction during normal operation of the Makeup System; however system flowrate is generally less than the 500 gpm required for stroking the valves to their fully opened position based on design flow conditions.

During cold shutdown, the HP Injection Isolation motor-operated valves and pumps are closed and electrically disabled to prevent low-temperature over pressurization. Cold shutdown testing is thereby precluded.

ALTERNATE TESTING:

++ Valves SIM-036 and SIM-037 will be partial-stroked to the open position in conjunction with the normal operation of the Makeup System. SIM-036 will be verified to close at cold shutdown by handwheel operation.

Each of these valves will be full-stroke exercised during each refueling outage.

RELIEF REQUEST NO. VR-9

SYSTEM:

Decay Heat Removal (M-522)

VALVES:

CFS-001
CFS-002
DHS-015
DHS-016
RCS-001
RCS-002

CATEGORY:

A/C

FUNCTION:

These valves open to provide a flowpath for water into the Reactor Coolant System and close to prevent overpressurization of the low pressure portions of the Decay Heat Removal System.

REQUIREMENT:

The leakage rate for valves 6 inches NPS or greater shall be evaluated per Subsection IWV-3427(b).

BASIS FOR RELIEF:

Leak testing of these valves is for the purpose of confirming their pressure retaining integrity with respect to their capability of preventing overpressurization and catastrophic failure of the low pressure decay heat removal piping and components. In this regard, special leakage acceptance criteria is established and included into the Rancho Seco Technical Specifications (Reference Table 3.3-1) that addresses the question of valve integrity in a more appropriate manner for these valves.

ALTERNATE TESTING

The leakage rate acceptance criteria for these valves will be as set forth in the Rancho Seco Technical Specifications, Table 3.3-1, namely:

1. Leakage rates less than or equal to 1.0 gpm are considered acceptable.

2. Leakage rates greater than 1.0 gpm but less than or equal to 5.0 gpm are considered acceptable if the latest measured rate has not exceeded the rate determined by the previous test by an amount that reduces the margin between measured leakage rate and the maximum permissible rate of 5.0 gpm by 50% or greater.

3. Leakage rates greater than 1.0 gpm but less than or equal to 5.0 gpm are considered unacceptable if the latest measured rate exceeded the rate determined by the previous test by an amount that reduces the margin between measured leakage rate and the maximum permissible rate of 5.0 gpm by 50% or greater.

4. Leakage rates greater than 5.0 gpm are considered unacceptable.

RELIEF REQUEST NO. VR-10

SYSTEM:

Decay Heat Removal (M-522)

VALVE:

BWS-045

CATEGORY:

C

FUNCTION:

This valve provides a flowpath from the boric acid pumps and filters to the suction of the decay heat removal pumps.

REQUIREMENT:

Check valves shall be exercised at least every 3 months, except as provided by IWV-3522. (IWV-3521)

BASIS FOR RELIEF:

In order to exercise this valve flow must be induced from the Boric Acid Pumps through the Decay Heat Removal System thence to the BWST. This would necessarily introduce a large quantity of highly concentrated boric acid solution (7750 ppm) into the Decay Heat System drop leg. This concentrated boric acid will remain in the drop leg until the Decay Heat Removal system is placed in service. After successive tests in this manner, a pocket of highly concentrated boric acid could accumulate with the potential of crystallization since the decay heat removal piping is not heated. Subsequently this could adversely affect the operability of the decay heat removal system.

During cold shutdown, injecting the concentrated boric acid solution would likewise cause an unwanted increase of the boric acid concentration in the Reactor Coolant System that would result in additional radwaste loads and would cause delays due to excessive deborating prior to plant startup.

ALTERNATE TESTING:

This valve will be full-stroke exercised during each refueling outage.

RELIEF REQUEST NO. VR-11

SYSTEM:

Decay Heat Removal (M-522)

VALVES:

CFS-001
CFS-002

CATEGORY:

A/C

FUNCTION:

These valves open to provide a flowpath for water from the Core Flood Tanks to the Reactor Vessel and close to provide pressure isolation between the Reactor Vessel and the Core Flood Tanks.

REQUIREMENT:

Check valves shall be exercised at least every 3 months, except as provided by IWV-3522. (IWV-3521)

BASIS FOR RELIEF:

Exercising these valves during plant operation is not possible since the maximum Core Flood Tank pressure is considerably less than that of the Reactor Coolant System.

Full-stroke testing during cold shutdown or refueling would require a rapid depressurization of the Reactor Coolant System or, conversely, rapid pressurization of the Core Flood Tanks; neither is practical.

These valves are seldom operated, therefore, valve degradation as a result of wear or abuse is not likely.

A partial-stroke test followed by a leakrate test adequately ensures that a valve of this type is intact and functioning properly. Any significant deterioration of the valve internals or operating mechanism will likely be discovered during such a leak test.

ALTERNATE TESTING:

During cold shutdown, if not tested in the previous 3 months, each valve will be partial-stroke tested prior to returning to power operation. Additionally during cold shutdown, each valve will be leak tested if not tested in the → previous 9 months. On an alternating schedule, one of these valves will be disassembled and inspected to ensure operability during each refueling outage. If this inspection results in questionable operability of the inspected valve, then the remaining valve will be similarly disassembled and ← inspected. (See Section 3.1.11)

RELIEF REQUEST NO. VR-12

DELETED

RELIEF REQUEST NO. VR-13

SYSTEM:

Decay Heat Removal (M-522)

VALVES:

CBS-035
CBS-036

CATEGORY:

C

FUNCTION:

These valves open to provide a flowpath for sodium hydroxide from the Reactor Building Spray Additive Tanks to the Decay Heat System.

REQUIREMENT:

Check valves shall be exercised at least every 3 months, except as provided by IWV-3522. (IWV-3521)

BASIS FOR RELIEF:

These are spring-loaded check valves and thus, the only method of testing requires injection of sodium hydroxide into the Decay Heat Removal System. This is highly undesirable under any plant condition. Contamination of the Decay Heat Removal System with NAOH solution could ultimately result in NAOH in the Reactor Coolant System with the possibility of causing stress cracking, increased radiation levels due to sodium activation and chloride contamination as a result of residual chlorides in the NAOH solution.

ALTERNATE TESTING:

On an alternating schedule, one of these valves will be disassembled and inspected to ensure operability during each refueling outage. If this inspection results in questionable operability of the inspected valve, then the remaining valve will be similarly disassembled and inspected. (See Section 3.1.11)

RELIEF REQUEST NO. VR-14

SYSTEM:

Reactor Building Spray (M-524)

VALVES:

CBS-009
CBS-010

CATEGORY:

A/C

FUNCTION:

These valves open to provide a flowpath from the Reactor Building Spray System to the spray headers inside the Reactor Building and close as required for containment isolation.

REQUIREMENT:

Check valves shall be exercised at least once every three months, except as provided by IWV-3522. (IWV-3521)

BASIS FOR RELIEF:

The only method of exercising these valves is to operate the Reactor Building spray pumps and inject water through the valves to the spray headers. Since there is no practical means of isolating the spray headers and providing a recirculation, this would result in spraying down the Reactor Building, which is highly undesirable.

ALTERNATE TESTING:

→ On an alternating schedule, one of these valves will be disassembled and inspected to ensure operability during each refueling outage. If this inspection results in questionable operability of the inspected valve, then the remaining valve will be disassembled, exercised and inspected in a
← similar manner. (See Section 3.1.11)

RELIEF REQUEST NO. VR-15

SYSTEM:

Reactor Building Spray (M-524)

VALVES:

CBS-021
CBS-022
CBS-027
CBS-028
SFV-29015
SFV-29016

CATEGORY:

C

FUNCTION:

These valves are check or stop-check valves that provide flowpaths from the Reactor Building spray additive tanks to the Reactor Building spray pump suction in order to effect sodium hydroxide distribution in the Reactor Building.

REQUIREMENT:

Check valves shall be exercised at least once every three months, except as provided by IWV-3522. (IWV-3521)

BASIS FOR RELIEF:

Full flow testing of these valves would require injection of sodium hydroxide into the Reactor Building spray system and the borated water storage tanks. This is undesirable since this could ultimately result in NAOH in the Reactor Coolant System with the potential for causing stress cracking, increased radiation levels due to sodium activation and chloride contamination due to residual chlorides in the NAOH solution.

Partial flow testing of these valves during plant operation requires isolation and disabling of one train of the Reactor Building Spray System along with the elimination of the redundancy of Reactor Building Spray Additive Tanks. This is undesirable from the aspect of plant safety.

ALTERNATE TESTING:

During cold shutdown periods, each of these valves will be partial-stroke tested.

The motor operators and stem assemblies of SFV-29015 and SFV-29016 will be exercised quarterly.

- On an alternating schedule, one of each type of valve will be disassembled and inspected to ensure operability during each refueling outage. If this inspection results in questionable operability of the inspected valve, then the remainder of the valves of that type will be disassembled, exercised and
- inspected in a similar manner. (See Section 3.1.11)

RELIEF REQUEST NO. VR-16

SYSTEM:

Various

VALVES:

This relief request applies to all safety/relief valves included in the Program.

CATEGORY:

C

FUNCTION:

These valves provide overpressure protection to the associated system components.

REQUIREMENT:

Safety and relief valves shall be tested in accordance with Subsection IWV-3510.

BASIS FOR RELIEF:

ANSI/ASME OM-1-1981 - Requirements for Inservice Performance Testing of Nuclear Power Plant Pressure Relief Devices, was developed to supersede the requirements of Subsection IWV-3510. This standard is more definitive and better suited to operational testing than is ASME/PTC 25.3 which is referenced in IWV-3510.

ALTERNATE TESTING:

Safety and relief valves will be tested in accordance with the requirements of ANSI/ASME OM-1-1981.

RELIEF REQUEST NO. VR-17

SYSTEM:

High Pressure Feedwater Heater (M-533)

VALVES:

FWS-049
FWS-050

CATEGORY:

C

FUNCTION:

These valves open to provide a flowpath for minimum flow from the respective auxiliary feedwater pumps.

REQUIREMENT:

Check valves shall be exercised at least once every 3 months, except as provided by IWV-3522 (IWV-3521)

BASIS FOR RELIEF:

There is no way these valves can be verified to be in the full open position without isolating the recirculation line for both auxiliary feedwater pumps from the LP condenser which would result both auxiliary feedwater pumps to be considered inoperable. Thus, testing during plant operation is not practical from the viewpoint of reactor safety.

Performing the tests, including verification of full flow, requires special (unusual) valve lineups and the installation of special test equipment. Such testing is considered out of the normal workscope expected during a typical cold shutdown (non-refueling) outage.

ALTERNATE TESTING:

These valves will be exercised on a quarterly basis without verification of full flow. Verification of full-flow through the valves will be performed during each refueling outage.

RELIEF REQUEST NO. VR-18

DELETED

RELIEF REQUEST NO. VR-19

SYSTEMS:

Coolant Radwaste (M-560)

VALVES:

SFV-60001
SFV-60003

CATEGORY:

A

FUNCTION:

Primary containment isolation for Reactor Coolant Vent and Drain Header.

REQUIREMENT:

Valve seat leakage tests shall be made with the pressure differential in the same direction as when the valve is performing its function, with exceptions as stated in IWV-3423(a) through (d) (IWV-3423).

BASIS FOR RELIEF:

In these cases it is impractical to test gate valves in their functional direction. Where valves are provided with a bonnet tap or other means of venting between the seats, it is conservative to pressurize in the reverse direction with the valve internal space between the seats vented. This provides an acceptable means of determining the material condition of the downstream seating surface that must perform the leaktight service.

ALTERNATE TESTING:

Category A gate valves may be seat leak tested in a direction opposite to that when the valve is performing its function. When testing is performed in this manner, a valve body vent will be open to atmosphere to vent the cavity between the seats. The seating surface is subjected to the full differential pressure in the reverse direction. This is conservative since the effect of the imposed pressure tends to unseat the valve.

RELIEF REQUEST NO. VR-20

SYSTEM

Decay Heat Removal (M-522)

VALVES:

HV-26515
HV-26516

CATEGORY:

A

FUNCTIONS:

These valves are used for occasional sampling and draining of the core flood tanks and close to provide containment isolation.

REQUIREMENT:

Valve seat leakage tests shall be made with the pressure differential in the same direction as when the valve is performing its function, with exceptions as stated in IWV-3423(a) through (d) (IWV-3423).

BASIS FOR RELIEF:

Testing these valves in the "accident direction" would require draining the core flood tanks, resulting in a large quantity of liquid radwaste (7500 gallons/tank) requiring processing and disposal. This is considered impractical from the view point of placing undue demands on the existing radioactive waste processing facility and increases in personnel radiation exposure.

These valves are one-inch solid wedge gate valves. It is reasonable to assume that, for this size and type of valve, the seating performance at a test pressure of 52 psig is equivalent in either direction. In the past, with a nominal pressure differential of approximately 600 psig present during normal plant operation, these valves have proven to be highly reliable with respect to their leaktight integrity.

ALTERNATE TESTING:

Each of these valves may be leaktested in a direction opposite to that expected when the valve is performing its containment isolation function.

At least once per operating cycle each valve will be checked for excessive leakage while the core flood tanks are pressurized to normal operating pressure.

RELIEF REQUEST NO: VR-21

SYSTEM

Bruce GM-Emergency Diesel Generator (M-583)
TDI Diesel Generator - Train "A" (M-585)
TDI Diesel Generator - Train "B" (M-585)

VALVES:

FY-89025	FY-89028	FV-89029	FV-89031
FY-89027	FY-89026	FV-89030	FV-89032
HV-10050A	HV-10050B		
HV-10051A	HV-10051B		

CATEGORY:

B

FUNCTIONS:

These valves open to supply compressed air to their respective diesel generators to provide the motive force for engine starting.

REQUIREMENT:

The stroke time of all power operated valves shall be measured to the nearest second, for stroke times 10 seconds or less, or 10% of the specified limiting stroke time for full-stroke times longer than 10 seconds whenever such a valve is full stroke tested. (IWV-3413(b))

BASIS FOR RELIEF:

Since these valves have no position indication mechanism, stroke timing is not practical.

ALTERNATE TESTING:

These valves will be full-stroke exercised in conjunction with starting of the diesel generators per testing required by Rancho Seco Technical Specifications. Proper startup and operating of the diesel generators will demonstrate satisfactory valve operation - - valve stroke time will not be measured.

RELIEF REQUEST NO: VR-22

SYSTEM

Reactor Coolant (M-520)

VALVES:

PSV-21511

CATEGORY:

B

FUNCTIONS:

This valve opens to prevent cold overpressurization while in cold shutdown conditions.

REQUIREMENT:

Category B valves shall be exercised at least every three months.

BASIS FOR RELIEF:

This valve requires system pressure to open. Thus, opening while installed requires the use of reactor coolant system pressure. This could subject the associated system and piping components to undesirable transients. Removal of the valve during each cold shutdown would be an unwarranted burden on the plant staff.

ALTERNATIVE TESTING:

During each Reactor Coolant System cooldown, this valve will be functionally tested with the Block Valve (HV-21505) closed. During each refueling, PSV-21511 will be full-stroke exercised via bench testing.

RELIEF REQUEST NO: VR-23

SYSTEM

TDI Diesel Generator - Train "A" & "B" Air Start (M-585 Sheet 2 & 4)

VALVES:

EGS-565 EGS-564
EGS-567 EGS-566

CATEGORY:

C

FUNCTIONS:

These valves are check valves at the inlet to the receiver. They open to provide a flow path from the Air Compressor to the receivers and close to isolate the air receivers.

REQUIREMENT:

Check valves shall be exercised at least once every 3 months, except as provided by IWV-3522 (IWV-3521)

BASIS FOR RELIEF:

Due to the piping configuration of this system the only method of testing would require depressurization of the upstream piping. This would be an unacceptable method since it would require removing a portion of the air start system and compromising the start capabilities of the Emergency Diesel Generator System.

ALTERNATE TESTING:

On an alternating schedule, one of these valves will be disassembled and inspected to ensure operability during each refueling outage. If this inspection results in questionable operability of the inspected valve, then the remaining valves will be similarly disassembled and inspected. (See Section 3.1.11)

APPENDIX A
SUMMARY
INSERVICE TESTING PROGRAM
- PUMPS -

Appendix A: Summary-Inservice Testing Program - Pumps

LEGEND

Notation used in the pump summary table is as follows:

PUMP The pump identification number.

NAME The functional name of the pump.

CLASS The inservice inspection classification of the pump.

P&ID The Rancho Seco drawing number for the P&ID referring to the particular pump of interest. (See drawing list in Appendix B.)

PARAMETERS Refers to the test quantities to be measured or observed. When the character "Y" appears under a specific parameters then that measurement is made for that pump in accordance with the Code. A reference to a relief request accompanying the "Y" indicates some deviation from Code requirements. If the character "N" appears, that particular parameter will not be measured or observed and a relief request is provided if requ.red. Requests for relief are identified as "PRXX". All relief requests are included in Section 2.2.

TEST INTERVAL The respective frequency of testing for each pump. The letter "Q" denotes a quarterly interval.

APPENDIX A: SUMMARY-INSERVICE TESTING PROGRAM - PUMPS

				PARAMETERS						
PUMP	NAME	CLASS	P & ID	INLET SPEED	DIFF PRESS	PRESS	FLOW	VIB	TEMP	TEST INTERVAL
P-108A	TDI DIESEL FO PUMP "A"	NC	M-547	NA	N-PR8	Y	Y-PR13	N-PR14	N	Q
P-108B	TDI DIESEL FO PUMP "B"	NC	M-547	NA	N-PR8	Y	Y-PR13	N-PR14	N	Q
P-108C	TDI DIESEL FO PUMP "A"	NC	M-547	NA	N-PR8	Y	Y-PR13	N-PR14	N	Q
P-108D	TDI DIESEL FO PUMP "B"	NC	M-547	NA	N-PR8	Y	Y-PR13	N-PR14	N	Q
P-236	MAKEUP	2	M-521	NA	Y-PR11	Y	N-PR7	Y	N	Q
P-238A	HP INJECTION	2	M-521	NA	Y-PR11	Y	N-PR7	Y	N	Q
P-238B	HP INJECTION	2	M-521	NA	Y-PR11	Y	N-PR7	Y	N	Q
P-261A	DECAY HEAT REMOVAL	2	M-522	NA	Y-PR11	Y	Y	Y	N	Q
P-261B	DECAY HEAT REMOVAL	2	M-522	NA	Y-PR11	Y	Y	Y	N	Q
P-291A	REACTOR BUILDING SPRAY	2	M-524	NA	Y-PR11	Y	Y	Y	N	Q
P-291B	REACTOR BUILDING SPRAY	2	M-524	NA	Y-PR11	Y	Y	Y	N	Q
P-318	DUAL DR AUXILIARY FEEDWATER	3	M-533	Y*	Y	Y	Y	Y	N	Q
P-319	MOTOR-DRIVEN AUX. FEEDWATER	3	M-533	NA	Y	Y	Y	Y	N	Q

NOTE: Relief requests PR1 through PR6 apply to all pumps, as applicable.

* Speed will be measured only during turbine-driven operation.

APPENDIX A: SUMMARY-INSERVICE TESTING PROGRAM - PUMPS (Continued)

				PARAMETERS						
PUMP	NAME	CLASS	P & ID	INLET SPEED	DIFF PRESS	PRESS	FLOW	VIB	TEMP	TEST INTERVAL
P-472A	NUCLEAR SERVICE RAW WATER	3	M-544	NA	N-PR8	Y	N-PR10	Y	N	Q
P-472B	NUCLEAR SERVICE RAW WATER	3	M-544	NA	N-PR8	Y	N-PR10	Y	N	Q
P-482A	NUCLEAR SERVICE COOLING WATER	3	M-545	NA	Y	Y	N-PR10	Y	N	Q
P-482B	NUCLEAR SERVICE COOLING WATER	3	M-545	NA	Y	Y	N-PR10	Y	N	Q
P-705A	BORIC ACID	2	M-570	NA	Y-PR11	Y	Y	Y	N	Q
P-705B	BORIC ACID	2	M-570	NA	Y-PR11	Y	Y	Y	N	Q
P-888A	Bruce GM DIESEL FO PUMP "A"	NC	M-582	NA	N-PR8	Y	Y-PR13	N-PR14	N	Q-PR15
P-888B	Bruce GM DIESEL FO PUMP "A"	NC	M-582	NA	N-PR8	Y	Y-PR13	N-PR14	N	Q-PR15
P-888C	Bruce GM DIESEL FO PUMP "B"	NC	M-582	NA	N-PR8	Y	Y-PR13	N-PR14	N	Q-PR15
P-888D	Bruce GM DIESEL FO PUMP "B"	NC	M-582	NA	N-PR8	Y	Y-PR13	N-PR14	N	Q-PR15

NOTE: Relief requests PR1 through PR6 apply to all pumps, as applicable.

APPENDIX B

SUMMARY
INSERVICE TESTING PROGRAM
- VALVES -

Reference Drawings

	Drawing No.	Rev.	System	Page
	M-520, Sh 1	34	Reactor Coolant System	B-5
	M-520, Sh 2	14	Reactor Coolant System	B-6
	M-521, Sh 1	14	Make-up and Purification System	B-7
	M-521, Sh 2	15	Make-up and Purification System	B-8
	M-522, Sh 1	33	Decay Heat Removal System	B-12
	M-524	10	Reactor Building Spray System	B-18
	M-530, Sh 1	13	HP and Auxiliary Turbines System	B-20
	M-530, Sh 2	12	HP and Auxiliary Turbines System	B-21
←→	M-530, Sh 2A	9	HP and Auxiliary Turbines System	B-22
	M-530, Sh 3	17	HP and Auxiliary Turbines System	B-26
←→	M-532, Sh 1	25	Steam Generator System	B-27
	M-532, Sh 2	6	Steam Generator System	B-30
	M-532, Sh 3	6	Steam Generator System	B-31
	M-533, Sh 3	10	High Pressure Feedwater Heater System	B-32
	M-536	26	Condenser System	B-33
	M-537, Sh 3	12	Auxiliary Steam System	B-34
	M-543, Sh 1	6	Component Cooling Water System	B-35
	M-543, Sh 4	13	Component Cooling Water System	B-36
	M-544	20	Nuclear Service Raw Water System	B-37
	M-545	15	Nuclear Service Cooling Water System	B-38
	M-547	0	TDI Diesel Fuel Oil System	B-41
	M-551	27	Reactor Building Heating, Ventilating, and Air Conditioning Systems	B-42
	M-560, Sh 3	8	Coolant Radwaste System	B-45
	M-561, Sh 3	5	Miscellaneous Liquid Radwaste System	B-46
	M-570	25	Reactor Coolant Chemical Addition and Sampling System	B-47
	M-573	17	Turbine Plant Sampling System	B-49
	M-582, Sh 1	25	Diesel Oil Systems	B-50
	M-583, Sh 1	14	Emergency Diesel Generator	B-51
	M-585, Sh 1	0	TDI Diesel Generator System - Train "A"	B-52
	M-585, Sh 2	0	TDI Diesel Generator System - Train "A"	B-53
	M-585, Sh 3	0	TDI Diesel Generator System - Train "B"	B-54
	M-585, Sh 4	0	TDI Diesel Generator System - Train "B"	B-55
	M-590, Sh 1	37	Plant Air System	B-56
	M-591, Sh 1	37	Auxiliary Gas System	B-57
	M-593, Sh 2	12	Miscellaneous Water Systems	B-58

Appendix B: Summary-Inservice Testing Program - Valves

LEGEND

Notation used in the valve summary table is as follows:

VALVE — The valve alpha-numerical identification.

COOR — The location of the valve on the referenced P&ID.

FUNCTION — The functional system description of the valve.

CLASS — The ISI classification. The characters "NC" denote that the particular valve is outside the ISI boundary.

CAT — The valve category per paragraph IWV-2200.

SIZE — The nominal valve size in inches.

TYPE — The valve type as follows:

CK	Check
GT	Gate
GL	Globe
BF	Butterfly
PSV	Safety/relief
SCK	Stop-check

ACT — The valve actuator type as follows:

MO	Motor-operated
AO	Air-operated
SO	Solenoid
SA	Self-actuated
MAN	Manual

POS — The normal position of the valve during plant operation - open or closed.

Appendix B: Summary-Inservice Testing Program - Valves

LEGEND (Cont.)

REQMT Test requirement as follows:

FSTO	Full-stroke exercise to open position with stroke-time measurement for power-operated valves.
FSTC	Full-stroke exercise to the closed position with stroke-time measurement for power-operated valves.
SSTC	Slow speed exercising to the closed direction. Stroke time will not be measured.
PEO	Partial-stroke exercise to open position.
PEC	Partial-stroke exercise to the closed position
SLTJ	Leakage test in accordance with 10 CFR 50. Appendix J
SLTP	Leakage test - Event V
GLT	Leakage test for gross leakage. Leakrate will not be measured nor trended.
VI	Visual inspection of valve internals.
→ VSP	Setpoint test of safety/relief valves per ANSI/ASME Standard OM-1-1981. (See VR-16)
VPI	Verification of remote position indicator to verify valve ← operation is accurately indicated.

FREQ The required test interval as follows:

Q	Quarterly during plant operation.
CS	Cold shutdown. See Paragraph 3.1.5.
RF	Nominally every two years during reactor refueling outage.
SP	See appropriate relief request.
5Y	Refers to the test period for testing safety/relief valves ANSI/ASME Standard OM-1-1981 (5 or 10 years, as appropriate)
10Y	See applicable relief request.
AP	As practical or available. Refer to appropriate relief request.

REMARKS Relief Requests are designated VR-XX. Refer to Section 3.2 for relief requests.

SYSTEM: REACTOR COOLANT DRAWING NO: -----

VALVE	COOR	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARK
RIVVWX	-	Rx Internals Vent	-	C	14	CK	SA	C	FSTO	RF	VR-5
RIVVWZ	-	Rx Internals Vent	-	C	14	CK	SA	C	FSTO	RF	VR-5
RIVVXW	-	Rx Internals Vent	-	C	14	CK	SA	C	FSTO	RF	VR-5
RIVVXY	-	Rx Internals Vent	-	C	14	CK	SA	C	FSTO	RF	VR-5
RIVVYX	-	Rx Internals Vent	-	C	14	CK	SA	C	FSTO	RF	VR-5
RIVVYZ	-	Rx Internals Vent	-	C	14	CK	SA	C	FSTO	RF	VR-5
RIVVZW	-	Rx Internals Vent	-	C	14	CK	SA	C	FSTO	RF	VR-5
RIVVZY	-	Rx Internals Vent	-	C	14	CK	SA	C	FSTO	RF	VR-5

SYSTEM: REACTOR COOLANT DRAWING NO: M-520 Sh 1

VALVE	COOR	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARK
HV-21505	F5	PORV Blocking	1	B	2.5	GT	MO	O	FSTC VPI	Q RF	
HV-21522	C6	Press Hi Pt Vent-Otbd	1	B	.5	GT	SO	C	FSTO VPI	CS RF	
HV-21528	D6	Press Hi Pt Vent-Inbd	1	B	.5	GT	SO	C	FSTO VPI	CS RF	
PSV-21506	D5	Pressurizer Safety	1	C	3.0	PSV	SA	C	VSP	5Y	
PSV-21507	E3	Pressurizer Safety	1	C	3.0	PSV	SA	C	VSP	5Y	
PSV-21511	C5	Power Oper Relief Valve	1	B	2.5	POV	SO	C	FSTO PEO	RF CS	VR-22 VR-22

SYSTEM: REACTOR COOLANT DRAWING NO: M-520 Sh 2

VALVE	COOR	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARK
HV-20533	D2	Stm Gen E-205A INBD Hi Pt Vent	1	B	.5	GT	SO	C	FSTO VPI	CS RF	
HV-20534	D13	Stm Gen E-205B INBD Hi Pt Vent	1	B	.5	GT	SO	C	FSTO VPI	CS RF	
HV-20579	C2	Stm Gen E-205A OTBD Hi Pt Vent	1	B	.5	GT	SO	C	FSTO VPI	CS RF	
HV-20580	E13	Stm Gen E-205B OTBD Hi Pt Vent	1	B	.5	GT	SO	C	FSTO VPI	CS RF	

SYSTEM: MAKE-UP AND PURIFICATION DRAWING NO: M-521 Sh 1

VALVE	COOR	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARK
SFV-22005	B2	Letdown to E-220A	1	B	2.5	GT	MO	O	FSTC VPI	CS RF	
SFV-22006	D2	Letdown to E-220B and E-220C	1	B	2.5	GT	MO	O	FSTC VPI	CS RF	
SFV-22009	C6	Letdown-Otbd Isol	2	A	2.5	GT	AO	O	FSTC SLTJ VPI	CS RF RF	
SFV-22023	C5	Letdown-Inbd Isol	2	A	2.5	GT	MO	O	FSTC SLTJ VPI	CS RF RF	
SFV-22025	C1	Letdown from Stm Gen 205A	1	B	2.5	GT	MO	O	FSTC VPI	CS RF	
SFV-23645	H7	HP INJ/MU Pump Min Flow	2	B	2	GT	MO	O	FSTC VPI	Q RF	
SFV-23646	I7	HP INJ/MU Pump Min Flow	2	B	2	GT	MO	O	FSTC VPI	Q RF	
SFV-24004	G5	RCP Seal Water Ret Inbd	2	A	4	GT	MO	O	FSTC SLTJ VPI	CS RF RF	
SFV-24013	G6	RCP Seal Water Ret Otbd	2	A	4	GT	AO	O	FSTC SLTJ VPI	CS RF RF	

SYSTEM: MAKE-UP AND PURIFICATION DRAWING NO: M-521 Sh 2

VALVE	COOR	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARK
BWS-019	G14	Supply from CBAT	2	C	2	CK	SA	C	FSTO	RF	VR-6
BWS-044	B14	Supply from CBAT	2	C	2	CK	SA	C	FSTO	RF	VR-6
HV-23801	J3	Disch to Rx Inlet Loop B	1	A/C	2.5	SCK	MO	O	FSTC FSTO SLTJ VPI	Q RF RF RF	 VR-8 VR-4 Stem Only
HV-23802	I5	Disch to Aux Spray	1	A	2	GL	MO	C	FSTO FSTC SLTJ VPI	Q Q RF RF	 VR-4
SFV-23508	E14	Disch from Make-up Tank	2	B	4	GT	MO	O	FSTC VPI	CS RF	
SFV-23604	C7	Makeup Line Isol.	2	A	2.5	GL	MO	O	FSTC SLTJ VPI	CS RF RF	 VR-4
SFV-23616	E8	RCP Seal Supply	2	A	4	GT	MO	O	FSTC SLTJ VPI	CS RF RF	 VR-4
SFV-23809	A4	Disch to Rx Inlet Loop A	2	A	2.5	GL	MO	C	FSTO FSTC SLTJ VPI	Q Q RF RF	 VR-4

SYSTEM: MAKE-UP AND PURIFICATION DRAWING NO: M-521 Sh 2

	VALVE	COOR	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARK
	SFV-23810	J4	Disch to Rx Inlet Loop B	2	A	2.5	GL	MO	C	FSTO	Q	
										FSTC	Q	
										SLTJ	RF	VR-4
										VPI	RF	
	SFV-23811	B4	Disch to Rx Inlet Loop A	2	A	2.5	GL	MO	C	FSTO	Q	
										FSTC	Q	
										SLTJ	RF	VR-4
										VPI	RF	
	SFV-23812	J4	Disch to Rx Inlet Loop B	2	A	2.5	GL	MO	C	FSTO	Q	
										FSTC	Q	
										SLTJ	RF	VR-4
										VPI	RF	
	SIM-002	E11	Make-up Pump Disch.	2	C	4	CK	SA	O	PEO	Q	VR-7
										PEC	Q	VR-7
										FSTO	RF	VR-7
										FSTC	RF	VR-7
→←	SIM-019	H2	RCP 210A Seal Sup	1	A/C	2	SCK	MAN	O	FSTC	CS	
										SLTJ	RF	VR-4
→←	SIM-020	E2	RCP 210B Seal Sup	1	A/C	2	SCK	MAN	O	FSTC	CS	
										SLTJ	RF	VR-4
→←	SIM-021	F2	RCP 210C Seal Sup	1	A/C	2	SCK	MAN	O	FSTC	CS	
										SLTJ	RF	VR-4
→←	SIM-022	G2	RCP 210D Seal Sup	1	A/C	2	SCK	MAN	O	FSTC	CS	
										SLTJ	RF	VR-4
	SIM-023	H2	RCP "A" Seal Inj Vent	2	A	1	GL	MAN	C	SLTJ	RF	Passive

SYSTEM: MAKE-UP AND PURIFICATION DRAWING NO: M-521 Sh 2

VALVE	COOR	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARK
SIM-025	F2	RCP "C" Seal Inj Vent	2	A	1	GL	MAN	C	SLTJ	RF	Passive
SIM-026	G3	RCP "D" Seal Inj Vent	2	A	1	GL	MAN	C	SLTJ	RF	Passive
SIM-036	C4	Disc to Rx Inlet Loop A	1	A/C	2.5	SCK	MAN	O	PEO	Q	VR-8
									FSTO	RF	VR-8
									FSTC	CS	VR-8
									SLTJ	RF	VR-4
SIM-037	C1	Disc to Rx Inlet Lp A	1	C	2.5	CK	SA	O	PEO	Q	VR-8
									FSTO	RF	VR-8
SIM-040	B4	Disc to Rx Inlet Lp A	1	A/C	2.5	SCK	MAN	O	FSTO	RF	VR-8
									FSTC	RF	VR-8
									SLTJ	RF	VR-4
SIM-041	B1	Disc to Rx Inlet Lp A	1	C	2.5	CK	SA	C	FSTO	RF	VR-8
SIM-043	H14	Disch from BST	2	C	6	CK	SA	C	FSTO	RF	VR-6
SIM-045	H11	HP Inj Pup 238B Disch	2	C	4	CK	SA	C	PEO	Q	
									PEC	Q	
									FSTO	RF	VR-7
									FSTC	RF	VR-7
SIM-047	J3	Disch to Rx Inlet Lp B	1	A/C	2.5	SCK	MAN	O	FSTO	RF	VR-8
									FSTC	RF	VR-8
									SLTJ	RF	VR-4
SIM-049	J1	Disch to Rx Inlet Lp B	1	C	2.5	CK	SA	C	FSTO	RF	VR-8
SIM-050	J1	Disch to Rx Inlet Lp B	1	C	2.5	CK	SA	C	FSTO	RF	VR-8

SYSTEM: MAKE-UP AND PURIFICATION DRAWING NO: M-521 Sh 2

VALVE	COOR	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARK
SIM-052	A13	Disch from BST	2	C	6	CK	SA	C	FSTO	RF	VR-6
SIM-058	B11	HP Inj Pump 238A Disch	2	C	4	CK	SA	C	PEO	Q	
									PEC	Q	
									FSTO	RF	VR-7
									FSTC	RF	VR-7
SIM-078	G11	HP Inj. Pump"B"Min Flow	2	C	2.5	SCK	MAN	O	FSTC	Q	
SIM-079	D11	Makeup Pump Min Flow	2	C	2.5	SCK	MAN	O	FSTC	Q	
SIM-081	A11	HP Inj. Pump"A"Min Flow	2	C	2.5	SCK	MAN	O	FSTC	Q	

SYSTEM: DECAY HEAT REMOVAL DRAWING NO: M-522

VALVE	COOR	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARK
BWS-003	G4	Disch Fr BWST to P-261B	2	C	16	CK	SA	C	FSTO	Q	
BWS-004	G4	Disch Fr BWST to P-261A	2	C	16	CK	SA	C	FSTO	Q	
BWS-045	E12	Boric Ac. Pump Disc To DHR	2	C	.75	CK	SA	C	FSTO	RF	VR-10
CBS-035	I10	Spray Add to P-261B	2	C	2	CK	SA	C	VI	RF	VR-13
CBS-036	J8	Spray Add to P-261A	2	C	2	CK	SA	C	VI	RF	VR-13
CFS-001	C7	Inj from Core Flood Tk 265A	1	A/C	14	CK	SA	C	PEO PEC VI SLTP	CS CS RF RF	VR-11 VR-11 VR-11 VR-9
CFS-002	C9	Inj from Core Flood Tk 265B	1	A/C	14	CK	SA	C	PEO PEC VI SLTP	CS CS RF RF	VR-11 VR-11 VR-11 VR-9
CFS-003	B3	CFT Sample Isolation	2	A	.5	GL	MAN	C	SLTJ	RF	Passive
CFS-004	C3	CFT Drain Line Isol	2	A	.5	GL	MAN	C	SLTJ	RF	Passive
CFS-005	A4	N2 Supply to CFT 265A	2	A	1	GL	MAN	C	SLTJ	RF	VR-4,Passive
CFS-006	A4	N2 Supply to CFT 265B	2	A	1	GL	MAN	C	SLTJ	RF	VR-4,Passive
CFS-009	B4	CFT 265A Fill Line	2	A	1	GL	MAN	C	SLTJ	RF	VR-4,Passive
CFS-010	B4	CFT 265B Fill Line	2	A	1	GL	MAN	C	SLTJ	RF	VR-4,Passive

SYSTEM: DECAY HEAT REMOVAL DRAWING NO: M-522

VALVE	COOR	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARK
CFS-011	B5	CFT 265A Fill Fr BAAP	2	A	.75	GL	MAN	C	SLTJ	RF	VR-4, Passive
CFS-012	B4	CFT 265B Fill Fr BAAP	2	A	.75	GL	MAN	C	SLTJ	RF	VR-4, Passive
DHS-003	I8	P-261-B Suct Fr BWST	2	C	16	CK	SA	C	FSTO	Q	
DHS-004	I9	P-261-B Suct Fr BWST	2	C	16	CK	SA	C	FSTO	Q	
DHS-007	H8	Decay Ht Rem Pmp 261A Disch.	2	C	10	CK	SA	C	FSTO	Q	
DHS-008	H9	Decay Ht Rem Pmp 261B Disch.	2	C	10	CK	SA	C	FSTO	Q	
DHS-015	D7	Decay Ht Ret from E-260A	1	A/C	10	SCK	MAN	O	FSTO FSTC SLTP SLTJ	CS CS RF RF	 VR-9 VR-4
DHS-016	D9	Decay Ht Ret from E-260B	1	A/C	10	SCK	MAN	O	FSTO FSTC SLTP SLTJ	CS CS RF RF	 VR-9 VR-4
DHS-017	E7	Dec Ht Rem to CFT "A"	2	A/C	.75	SCK	MAN	O	FSTC SLTJ	CS RF	
DHS-018	D9	Dec Ht Rem to CFT "B"	2	A/C	.75	SCK	MAN	O	FSTC SLTJ	CS RF	
DHS-038	E7	Fuel Xfer Canal Fill	2	A	10	GT	MAN	C	SLTJ	RF	VR-4, Passive
DHS-039	E10	Fuel Xfer Canal Fill	2	A	10	GT	MAN	C	SLTJ	RF	VR-4, Passive

SYSTEM: DECAY HEAT REMOVAL DRAWING NO: M-522

VALVE	COOR	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARK
DHS-059	E10	Dec Ht Rem to Pres Spr.	1	C	1.5	CK	SA	C	FSTO	CS	
DHS-497	E10	Fuel Xfer Canal Fill	2	A	1	GL	MAN	C	SLTJ	RF	VR-4, Passive
DHS-498	E7	Fuel Xfer Canal Fill	2	A	1	GL	MAN	C	SLTJ	RF	VR-4, Passive
HV-20001	D11	Rx Cool Supply to DH Rem Pmps	1	B	12	GT	MO	C	FSTO FSTC GLT VPI	CS CS RF RF	
HV-20002	D12	Rx Cool Supply to DH Rem Pmps	1	B	12	GT	MO	C	FSTO FSTC GLT VPI	CS CS RF RF	
HV-20003	D13	DH Remov. Dump to Sump	2	B	2	GL	MO	C	FSTO VPI	CS RF	
HV-20005	I13	Dec Ht Supply to P-261B	2	B	12	GT	MO	C	FSTO FSTC VPI	Q Q RF	
HV-20006	I12	Dec Ht Supply to P-261A	2	B	12	GT	MO	C	FSTO FSTC VPI	Q Q RF	
HV-26007	F6	Dec Ht Disch to P-238A	2	B	4	GT	MO	C	FSTO VPI	Q RF	
HV-26008	F10	Dec Ht Disch to P-238B	2	B	4	GT	MO	C	FSTO VPI	Q RF	

SYSTEM: DECAY HEAT REMOVAL DRAWING NO: M-522

VALVE	COOR	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARK
HV-26011	D10	Dec Ht Rem To Press Sp	1	A	1.5	GT	MO	C	SLTJ	RF	VR-4
HV-26046	F8	Dec Ht Rem X Conn to SFP	2	B	8	GL	MO	C	FSTO VPI	Q RF	
HV-26047	F8	Dec Ht Rem X Conn to SFP	2	B	8	GL	MO	C	FSTO VPI	Q RF	
HV-26105	E13	P-261 "A" Suct fr Sump	2	A	18	GT	MO	C	FSTO FSTC SLTJ VPI	CS CS RF RF	
HV-26106	E13	P-261 "B" Suct fr Sump	2	A	18	GT	MO	C	FSTO FSTC SLTJ VPI	CS CS RF RF	
HV-26515	D7	CFT "A" Drain/Samp	2	A	1	GT	MO	C	FSTC SLTJ VPI	Q RF RF	VR-4, VR-20
HV-26516	D10	CFT "B" Drain/Samp	2	A	1	GT	MO	C	FSTC SLTJ VPI	Q RF RF	VR-4, VR-20
HV-26517	B7	CFT "A" N2 Sup/Fill	2	A	1	GT	MO	C	FSTC SLTJ VPI	Q RF RF	
HV-26518	B10	CFT "B" N2 Sup/Fill	2	A	1	GT	MO	C	FSTC SLTJ VPI	Q RF RF	

SYSTEM: DECAY HEAT REMOVAL DRAWING NO: M-522

VALVE	COOR	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARK
PSV-20004	D13	Dec Ht Rem Ret Rel.	2	C	.75	PSV	SA	C	VSP	5Y	
PSV-25009	J7	P-261A Suct fr BWST Relief	2	C	.75	PSV	SA	C	VSP	5Y	
PSV-25010	I9	P-261B Suct fr BWST Relief	2	C	.75	PSV	SA	C	VSP	5Y	
PSV-26101	H7	P-261A Disch Relief	2	C	.75	PSV	SA	C	VSP	5Y	
PSV-26102	H9	P-261B Disch Relief	2	C	.75	PSV	SA	C	VSP	5Y	
PSV-26109	F14	P-261A Suct fr Sump Relief	2	C	.75	PSV	SA	C	VSP	5Y	
PSV-26110	F13	P-261B Suct fr Sump Relief	2	C	.75	PSV	SA	C	VSP	5Y	
PSV-26509	A7	Core Flood Tank 265A Safety	2	C	1	PSV	SA	C	VSP	5Y	
PSV-26510	A10	Core Flood Tank 265B Safety	2	C	1	PSV	SA	C	VSP	5Y	
RCS-001	D8	Dec Ht/Core Flood to Rx Vess	1	A/C	14	CK	SA	C	FSTO FSTC SLTP	CS CS RF	 VR-9
RCS-002	D9	Dec Ht/Core Flood to Rx Vess	1	A/C	14	CK	SA	C	FSTO FSTC SLTP	CS CS RF	 VR-9
RCS-042	A6	N2 to Nitro. Prehtr	2	A	1	GL	MAN	C	SLTJ	RF	VR-4, Passive

SYSTEM: DECAY HEAT REMOVAL DRAWING NO: M-522

VALVE	COOR	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARK
SFV-25003	I6	P-260A Suct fr BWST	2	B	16	GT	MO	C	FSTO	Q	
									FSTC	Q	
									VPI	RF	
SFV-25004	I6	P-260B Suct fr BWST	2	B	16	GT	MO	C	FSTO	Q	
									FSTC	Q	
									VPI	RF	
SFV-26005	E7	E-260A Disch to RCS	2	A	10	GT	MO	C	FSTO	Q	
									FSTC	Q	
									SLTJ	RF	VR-4
									VPI	RF	
SFV-26006	E9	E-260B Disch to RCS	2	A	10	GT	MO	C	FSTO	Q	
									FSTC	Q	
									SLTJ	RF	VR-4
									VPI	RF	
SFV-26039	G7	E-260A Disch	2	B	10	BA	MO	O	FSTO	Q	
									VPI	RF	
SFV-26040	G9	E-260B Disch	2	B	10	BA	MO	O	FSTO	Q	
									VPI	RF	

SYSTEM: REACTOR BUILDING SPRAY DRAWING NO: M-524

VALVE	COOR	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARK
CBS-001	E6	R B Spr. P 291A Suct.	2	C	10	CK	SA	C	FSTO	Q	
CBS-002	E10	R B Spr. P 291B Suct.	2	C	10	CK	SA	C	FSTO	Q	
CBS-005	F6	R B Spr. P 291A Disc.	2	C	8	CK	SA	C	FSTO	Q	
CBS-006	F9	R B Spr. P 291B Disc.	2	C	8	CK	SA	C	FSTO	Q	
CBS-009	D7	R B Spr. A-Inbd Isol.	2	A/C	8	SCK	MAN	C	VI SLTJ	RF RF	VR-14 VR-4
CBS-010	D8	R B Spr. B-Inbd Isol.	2	A/C	8	SCK	MAN	C	VI SLTJ	RF RF	VR-14 VR-4
CBS-021	H6	Sp Add Tank 290A Disc	2	C	2	CK	SA	C	PEO VI	CS RF	VR-15 VR-15
CBS-022	H9	Sp Add Tank 290B Disc	2	C	2	CK	SA	C	PEO VI	CS RF	VR-15 VR-15
CBS-027	H7	Sp Add Tank 290B Disc	2	C	2	CK	SA	C	PEO VI	CS RF	VR-15 VR-15
CBS-028	H9	Sp Add Tank 290A Disc	2	C	2	CK	SA	C	PEO VI	CS RF	VR-15 VR-15
CBS-029	I7	NAOH to Dec Ht. Rem	2	B	2	GT	MAN	C	FSTO	Q	
CBS-030	I9	NAOH to Dec Ht. Rem	2	B	2	GT	MAN	C	FSTO	Q	
CBS-033	J10	NAOH to Dec Ht. Rem	NC	B	2	GT	MAN	C	FSTO	Q	

SYSTEM: REACTOR BUILDING SPRAY DRAWING NO: M-524

VALVE	COOR	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARK
CBS-034	J10	NAOH to Dec Ht. Rem	NC	B	2	GT	MAN	C	FSTO	Q	
CBS-504	F12	Rx Bldg Sp Add Tank 290B Vac Bkr	2	C	2	CK	SA	C	FSTO	Q	
CBS-505	F3	Rx Bldg Sp Add Tank 290A Vac Bkr	2	C	2	CK	SA	C	FSTO	Q	
PSV-29117	G5	Cont Sp Disch Rel	2	C	.75	PSV	SA	C	VSP	5Y	
PSV-29118	G10	Cont Sp Disch Rel	2	C	.75	PSV	SA	C	VSP	5Y	
SFV-29015	H7	Sup to Eject. 292A	2	C	2	SCK	MO	C	FSTO	Q	Motor only
									PEO	CS	VR-15
									VI	RF	VR-15
									VPI	RF	Stem only
SFV-29016	H9	Sup to Eject. 292B	2	C	2	SCK	MO	C	FSTO	Q	Motor only
									PEO	CS	VR-15
									VI	RF	VR-15
									VPI	RF	Stem only
SFV-29107	D7	Rx Bldg Spray "A" Otdb Isol	2	A	8	GT	MO	C	FSTO	Q	
									FSTC	Q	
									SLTJ	RF	VR-4
									VPI	RF	
SFV-29108	D8	Rx Bldg Spray "B" Otdb Isol	2	A	8	GT	MO	C	FSTO	Q	
									FSTC	Q	
									SLTJ	RF	VR-4
									VPI	RF	

SYSTEM: HP AND AUXILIARY TURBINES DRAWING NO: M-530, Sh 1

VALVE	COOR	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARK
TV-1	H11	Main Turbine Throttle	2	B	26	GT	HYD	O	SSTC FSTC VPI	Q CS RF	VR-1
TV-2	D11	Main Turbine Throttle	2	B	26	GT	HYD	O	SSTC FSTC VPI	Q CS RF	VR-1
TV-3	I11	Main Turbine Throttle	2	B	26	GT	HYD	O	SSTC FSTC VPI	Q CS RF	VR-1
TV-4	C11	Main Turbine Throttle	2	B	26	GT	HYD	O	SSTC FSTC VPI	Q CS RF	VR-1

SYSTEM: HP AND AUXILIARY TURBINES DRAWING NO: M-530, Sh 2

VALVE	COOR	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARK
HV-20560	D8	Stm to Aux Steam	2	B	8	GT	MO	O	FSTC VPI	Q RF	
HV-20565	H8	Stm to Aux Steam	2	B	8	GT	MO	O	FSTC VPI	Q RF	
HV-20597	H6	Stm to Rhtrs. A and C	2	B	8	GT	MO	O	FSTC VPI	CS RF	
HV-20598	E6	Stm to Rhtrs. B and D	2	B	8	GT	MO	O	FSTC VPI	CS RF	
HV-32243	H10	Stm Drain and Pegging Steam	2	B	14	GT	MO	O	FSTC VPI	Q RF	
HV-35069	D4	Steam Drain	2	B	2	GT	MO	O	FSTC VPI	Q RF	
HV-35070	H4	Steam Drain	2	B	2	GT	MO	O	FSTC VPI	Q RF	

SYSTEM: HP AND AUXILIARY TURBINES DRAWING NO: M-530, Sh 2A

VALVE	COOR	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARK
HV-20517	H4	Atmos. Stm Dump Iso	2	B	8	GT	MO	O	FSTO FSTC VPI	Q Q RF	
HV-20518	C4	Atmos Stm Dump Iso	2	B	8	GT	MO	O	FSTO FSTC VPI	Q Q RF	
HV-20521	I8	Turb BP Iso "A"	2	B	10	GT	MO	O	FSTC VPI	CS RF	
HV-20522	B8	Turb BP Iso "B"	2	B	10	GT	MO	O	FSTC VPI	CS RF	
HV-20569	G11	Supply to Aux FP Turbine	2	B	6	GT	MO	O	FSTO FSTC VPI	Q Q RF	
HV-20570	I13	Stm drain to LP Cond	2	B	2	GT	MO	O	FSTC VPI	Q RF	
HV-20571	C13	Stm drain to LP Cond	2	B	2	GT	MO	O	FSTC VPI	Q RF	
HV-20596	E11	Supply to Aux FP Turbine	2	B	6	GT	MO	O	FSTO FSTC VPI	Q Q RF	
MSS-051	C11	Supply to Aux FP	2	C	6	CK	SA	C	FSTO FSTC	Q CS	
MSS-052	I11	Supply to Aux FP	2	C	6	CK	SA	C	FSTO FSTC	Q CS	

SYSTEM: HP AND AUXILIARY TURBINES DRAWING NO: M-530, Sh 2A

VALVE	COOR	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARK
PSV-20533	K3	Main Steam Relief	2	C	6	PSV	SA	C	VSP	5Y	
PSV-20534	B5	Main Steam Relief	2	C	6	PSV	SA	C	VSP	5Y	
PSV-20544	B7	Main Steam Relief	2	C	6	PSV	SA	C	VSP	5Y	
PSV-20545	K6	Main Steam Relief	2	C	6	PSV	SA	C	VSP	5Y	
PSV-20546	B7	Main Steam Relief	2	C	6	PSV	SA	C	VSP	5Y	
PSV-20547	K6	Main Steam Relief	2	C	6	PSV	SA	C	VSP	5Y	
PSV-20548	B6	Main Steam Relief	2	C	6	PSV	SA	C	VSP	5Y	
PSV-20549	K5	Main Steam Relief	2	C	6	PSV	SA	C	VSP	5Y	
PSV-20550	B5	Main Steam Relief	2	C	6	PSV	SA	C	VSP	5Y	
PSV-20551	K4	Main Steam Relief	2	C	6	PSV	SA	C	VSP	5Y	
PSV-20552	B4	Main Steam Relief	2	C	6	PSV	SA	C	VSP	5Y	
PSV-20553	K4	Main Steam Relief	2	C	6	PSV	SA	C	VSP	5Y	
PSV-20554	B3	Main Steam Relief	2	C	6	PSV	SA	C	VSP	5Y	
PSV-20555	K2	Main Steam Relief	2	C	6	PSV	SA	C	VSP	5Y	
PSV-20556	B3	Main Steam Relief	2	C	6	PSV	SA	C	VSP	5Y	
PSV-20557	K2	Main Steam Relief	2	C	6	PSV	SA	C	VSP	5Y	
PSV-20558	B2	Main Steam Relief	2	C	6	PSV	SA	C	VSP	5Y	

SYSTEM: HP AND AUXILIARY TURBINES DRAWING NO: M-530, Sh 2A

	VALVE	COOR	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARK
	PSV-20559	K1	Main Steam Relief	2	C	6	PSV	SA	C	VSP	5Y	
→←	PV-20561	G9	Main Turbine Bypass	NC	B	8	GT	AO	C	FSTO FSTC VPI	CS CS RF	
	PV-20562A	D4	Atmos. Steam Dump	2	B	8	GT	AO	C	FSTO FSTC VPI	CS CS RF	
	PV-20562B	D1	Atmos. Steam Dump	2	B	8	GT	AO	C	FSTO FSTC VPI	CS CS RF	
	PV-20562C	D3	Atmos. Steam Dump	2	B	8	GT	AO	C	FSTO FSTC VPI	CS CS RF	
→←	PV-20563	G8	Main Turbine Bypass	NC	B	8	GT	AO	C	FSTO FSTC VPI	CS CS RF	
→←	PV-20564	E9	Main Turbine Bypass	NC	B	8	GT	AO	C	FSTO FSTC VPI	CS CS RF	
→←	PV-20566	E8	Main Turbine Bypass	NC	B	8	GT	AO	C	FSTO FSTC VPI	CS CS RF	
	PV-20571A	G4	Atmos Steam Dump	2	B	8	GT	AO	C	FSTO FSTC VPI	CS CS RF	

SYSTEM: HP AND AUXILIARY TURBINES DRAWING NO: M-530, Sh 2A

VALVE	COOR	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARK
PV-20571B	G1	Atmos Steam Dump	2	B	8	GT	AO	C	FSTO FSTC VPI	CS CS RF	
PV-20571C	G3	Atmos Steam Dump	2	B	8	GT	AO	C	FSTO FSTC VPI	CS CS RF	

SYSTEM: HP AND AUXILIARY TURBINES DRAWING NO: M-530, Sh 3

VALVE	COOR	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARK
HV-30801	I9	Aux FP Turbine Stop	3	B	4	GL	MO	C	FSTO VPI	Q RF	

SYSTEM. STEAM GENERATOR DRAWING NO: M-532 Sh 1

	VALVE	COOR	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARK
→←	FV-20525	D8	Main Feed to SG 205A	NC	B	16	GL	AO	O	FSTC VPI	CS RF	
→←	FV-20526	H9	Main Feed to SG 205B	NC	B	16	GL	AO	O	FSTC VPI	CS RF	
→←	FV-20527	B7	Emerg FW Stop to SG 205A	3	B	6	GT	AO	C	FSTO FSTC VPI	Q Q RF	
→←	FV-20528	G10	Emerg FW Stop to SG 205B	3	B	6	GT	AO	C	FSTO FSTC VPI	Q Q RF	
→←	FV-20531	C7	Emerg Feed to SG205A	3	A	6	GT	SO	C	FSTO FSTC VPI	Q Q RF	
→←	FV-20532	H10	Emerg Feed to SG205B	3	B	6	GT	MO	C	FSTO FSTC VPI	Q Q RF	
	FV-20575	E6	Feed BP to SG 205A	2	B	6	GL	AO	O	FSTC VPI	CS RF	
	FV-20576	I8	Feed GP to SG 205B	2	B	6	GL	AO	O	FSTC VPI	CS RF	
	FWS-061	B12	Emerg Feed to SG 205A	2	C	6	CK	SA	C	FSTO	CS	See Para 3.1.6
	FWS-062	G12	Emerg Feed to SG 205B	2	C	6	CK	SA	C	FSTO	CS	See Para 3.1.6
→←	FWS-101	F12	Stm Gen Cleaning	NC	A	10	GT	MAN	C	SLTJ	RF	VR-4, Passive

SYSTEM: STEAM GENERATOR DRAWING NO: M-532 Sh 1

VALVE	COOR	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARK
HV-20515	D12	Main Feed to SG 205B	2	B	20	GT	MO	O	FSTC VPI	CS RF	
HV-20516	H12	Main Feed to SG 205A	2	B	20	GT	MO	O	FSTC VPI	CS RF	
HV-20529	D8	Main Feed Stop to SG 205A	2	B	20	GT	MO	O	FSTC VPI	CS RF	
HV-20530	H9	Main Feed Stop to SG 205B	2	B	20	GT	MO	O	FSTC VPI	CS RF	
HV-20577	C7	Emerg Feed to SG 205A	2	B	6	GT	MO	C	FSTO FSTC VPI	Q Q RF	
HV-20578	G10	Emerg Feed to SG 205B	2	B	6	GT	MO	C	FSTO FSTC VPI	Q Q RF	
HV-20581	B7	Emerg Feed to SG 205A	2	B	6	GT	MO	C	FSTO FSTC VPI	Q Q RF	
HV-20582	H10	Emerg Feed to SG 205B	2	B	6	GT	MO	C	FSTO FSTC VPI	Q Q RF	
→← HV-20611	J12	SG Dr Boost Pump Disc	2	A	4	GL	MO	C	FSTC SLTJ VPI	Q RF RF	VR-4

SYSTEM: STEAM GENERATOR DRAWING NO: M-532 Sh 1

VALVE	COOR	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARK
HV-31826	C3	Aux FP Crossover	3	B	6	GT	MO	O	FSTO FSTC VPI	Q Q RF	
HV-31827	G3	Aux FP Crossover	3	B	6	GT	MO	O	FSTO FSTC VPI	Q Q RF	

SYSTEM: STEAM GENERATOR DRAWING NO: M-532 Sh 2

	VALVE	COOR	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARK
→←	FWS-102	J3	Stm Gen Cleaning Iso	2	A	10	GT	MAN	C	SLTJ	RF	Passive
→←	HV-20609	H11	Stm Gen 205A Drain	2	A	1.5	GL	MO	C	FSTC SLTJ VPI	Q RF RF	VR-4

SYSTEM: STEAM GENERATOR DRAWING NO: M-532 Sh 3

VALVE	COOR	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARK
FWS-080	J2	Stm Gen Booster Pump Disch	2	A	4	GT	MAN	C	SLTJ	RF	Passive
HV-20610	H11	Stm Gen 205B Drain	2	A	1.5	GL	MO	C	FSTC SLTJ VPI	Q RF RF	VR-4

SYSTEM: HIGH PRESSURE FEEDWATER HEATER DRAWING NO: M-533, Sh 3

VALVE	COOR	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARK
FWS-047	D9	Aux FP 318 Disch	3	C	6	CK	SA	C	FSTO FSTC	Q Q	
FWS-048	H9	Aux FP 319 Disch	3	C	6	CK	SA	C	FSTO FSTC	Q Q	
FWS-049	C9	Aux FP 318 Min Flow	3	C	2.5	CK	SA	C	PEO FSTO	Q RF	VR-17
FWS-050	G9	Aux FP 319 Min Flow	3	C	2.5	CK	SA	C	PEO FSTO	Q RF	VR-17

SYSTEM: CONDENSER DRAWING NO: M-536

VALVE	COOR	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARK
MCM-059	I2	CST disch to Aux FP P-318	3	C	8	CK	SA	C	FSTO	Q	
MCM-060	I2	CST disch to Aux FP P-319	3	C	8	CK	SA	C	FSTO	Q	
PSV-31800	J3	Aux FP P-318 Suct Rel	3	C	.75	PSV	SA	C	VSP	5Y	
PSV-31900	J3	Aux FP P-319 Suct Rel	3	C	.75	PSV	SA	C	VSP	5Y	
PSV-35804	G2	CST Relief/Vac Bkr	3	C	2	PSV	SA	C	VSP	5Y	
PSV-35805	G3	CST Relief/Vac Bkr	3	C	2	PSV	SA	C	VSP	5Y	

SYSTEM: AUXILIARY STEAM DRAWING NO: M-537, Sh 3

	VALVE	COOR	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	RQMT	FREQ	REMARK
→	ASC-048	E10	Aux. Steam to RB-Otbd	2	A	1	GT	MAN	C	SLTJ	RF	VR-4, Passive
←	ASC-049	E12	Aux. Steam to RB-Inbd	2	A/C	1	SCK	MAN	C	SLTJ	RF	VR-4, Passive

SYSTEM: COMPONENT COOLING WATER DRAWING NO: M-543, Sh 1

VALVE	COOR	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARK
CCW-036	H11	CCW Supply to RB-INBD	2	A/C	12	SCK	MAN	O	FSTC	CS	
									SLTJ	RF	VR-4
SFV-46014	J11	CCW Supply to RB-OTBD	2	A	12	BF	AO	O	FSTC	CS	
									SLTJ	RF	VR-4
									VPI	RF	
SFV-46203	H12	CCW Ret FR RB - INBD	2	A	12	BF	MO	O	FSTC	CS	
									SLTJ	RF	VR-4
									VPI	RF	
SFV-46204	J12	CCW Ret FR RB - OTBD	2	A	12	BF	AO	O	FSTC	CS	
									SLTJ	RF	VR-4
									VPI	RF	

SYSTEM: COMPONENT COOLING WATER DRAWING NO: M-543, Sh 4

VALVE	COOR	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARK
CCW-194	B11	CCW Supply to CRD-INBD	2	A/C	3	SCK	MAN	O	FSTC SLTJ	CS RF	
SFV-46906	D11	CCW Supply to CRD-OTBD	2	A	3	GL	AO	O	FSTC SLTJ VPI	CS RF RF	
SFV-46907	B11	CCW Ret Fr CRD-INBD	2	A	3	GT	MO	O	FSTC SLTJ VPI	CS RF RF	
SFV-46908	D11	CCW Ret. FR CRD-OTBD	2	A	3	GL	AO	O	FSTC SLTJ VPI	CS RF RF	

SYSTEM: NUCLEAR SERVICE COOLING WATER DRAWING NO: M-545

VALVE	COOR	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARK
SFV-26016	H4	Dec HT Rem Clr 260B Inlet	3	B	12	BF	MO	C	FSTO VPI	Q RF	
SFV-26017	G4	Dec HT Rem Clr 260A Inlet	3	B	12	BF	MO	C	FSTO VPI	Q RF	
SFV-26018	I4	Dec HT Rem Clr 260B Outlet	3	B	12	BF	MO	C	FSTO VPI	Q RF	
SFV-26019	F4	Dec HT Rem Clr 260A Outlet	3	B	12	BF	MO	C	FSTO VPI	Q RF	
PSV-48411	A4	Nuc Svc Clg Wtr Surge Tank	3	C	3	PSV	SA	C	VSP	5Y	
PSV-48412	A11	Nuc Svc Clg Wtr Surge Tank	3	C	3	PSV	SA	C	VSP	5Y	
PSV-48415	A4	Nuc Svc Clg Wtr Surge Tank Vac Bkr	3	C	3	PSV	SA	C	VSP	5Y	
PSV-48416	A11	Nuc Svc Clg Wtr Surge Tank Vac Bkr	3	C	3	PSV	SA	C	VSP	5Y	

SYSTEM: NUCLEAR SERVICE COOLING WATER DRAWING NO: M-545

VALVE	COOR	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARK
SFV-50005	F6	Rx Bldg. Clg Unit 500A Inlet	2	B	10	BF	MO	C	FSTO VPI	Q RF	
SFV-50006	H6	Rx Bldg. Clg Unit 500B Inlet	2	B	10	BF	MO	C	FSTO VPI	Q RF	
SFV-50007	G6	Rx Bldg. Clg Unit 500C Inlet	2	B	10	BF	MO	C	FSTO VPI	Q RF	
SFV-50008	I6	Rx Bldg. Clg Unit 500D Inlet	2	B	10	BF	MO	C	FSTO VPI	Q RF	
SFV-50009	E6	Rx Bldg. Clg Unit 500A Outlet	2	B	10	BF	MO	C	FSTO VPI	Q RF	
SFV-50010	I6	Rx Bldg. Clg Unit 500B Outlet	2	B	10	BF	MO	C	FSTO VPI	Q RF	
SFV-50011	F6	Rx Bldg. Clg Unit 500C Outlet	2	B	10	BF	MO	C	FSTO VPI	Q RF	
SFV-50012	J6	Rx Bldg. Clg Unit 500D Outlet	2	B	10	BF	MO	C	FSTO VPI	Q RF	

SYSTEM: TDI DIESEL FUEL OIL DRAWING NO: M-547

VALVE	COOR	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARK
DFO-318	B4	Diesel Fo Pump 108B Disch	NC	C	2	CK	SA	C	FSTO FSTC	Q Q	
DFO-319	B6	Diesel Fo Pump 108A Disch	NC	C	2	CK	SA	C	FSTO FSTC	Q Q	
DFO-322	B4	Diesel Fo Pump 108D Disch	NC	C	2	CK	SA	C	FSTO FSTC	Q Q	
DFO-323	B6	Diesel Fo Pump 108C Disch	NC	C	2	CK	SA	C	FSTO FSTC	Q Q	

SYSTEM: REACTOR BUILDING HEATING, VENTILATING AND AIR COND. DRAWING NO: M-551

VALVE	COOR	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARK
HGS-005	G11	H2 Purge Intake	2	A	1	GT	MAN	C	SLTJ	RF	Passive
HGS-010	F11	H2 Purge Intake	2	A	1	GT	MAN	C	SLTJ	RF	Passive
HGS-012	C11	ILRT Test Conn	2	A	.75	GL	MAN	C	SLTJ	RF	Passive
HGS-013	C12	ILRT Test Conn	2	A	.75	GL	MAN	C	SLTJ	RF	Passive
HV-53617	J14	H2 Purge Inbd Iso	2	A	2	GT	SO	C	FSTC SLTJ VPI	Q RF RF	
HV-53618	I14	H2 Purge Inbd Iso	2	A	2	GT	SO	C	FSTC SLTJ VPI	Q RF RF	
HV-53620	H2	H2 Recombiner	2	A	4	GT	MO	C	SLTJ	RF	Passive
HV-53621	H2	H2 Recombiner	2	A	4	GT	MO	C	SLTJ	RF	Passive
HV-53622	H1	H2 Recombiner	2	A	4	GT	MO	C	SLTJ	RF	Passive
HV-53623	H1	H2 Recombiner	2	A	4	GT	MO	C	SLTJ	RF	Passive
HV-70040	J8	H2 Mon. Return	2	A	1	GT	SO	C	FSTC SLTJ VPI	Q RF RF	
HV-70041	J8	RB Air Sample	2	A	1	GT	SO	C	FSTC SLTJ VPI	Q RF RF	VR-4

SYSTEM: REACTOR BUILDING HEATING, VENTILATING AND AIR COND. DRAWING NO: M-551

	VALVE	COOR	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARK
↔	HV-70042	J8	RB Air Sample	2	A	1	GT	SO	C	FSTC	Q	
										SLTJ	RF	VR-4
										VPI	RF	
↔	HV-70043	I11	Pass Return	2	A	1	GT	SO	C	FSTC	Q	
										SLTJ	RF	VR-4
										VPI	RF	
↔	HV-70044	I11	Pass Return	2	A	1	GT	SO	C	FSTC	Q	
										SLTJ	RF	VR-4
										VPI	RF	
↔	HV-70045	J11	Pass Atmos. Sample	2	A	1	GT	SO	C	FSTC	Q	
										SLTJ	RF	VR-4
										VPI	RF	
↔	HV-70046	J11	Pass Atmos. Sample	2	A	1	GT	SO	C	FSTC	Q	
										SLTJ	RF	VR-4
										VPI	RF	
↔	HV-70047	I8	H2 Mon. Return	2	A	1	GT	SO	C	FSTC	Q	
										SLTJ	RF	
										VPI	RF	
↔	SFV-53503	E11	RB Purge Inlet-Otbd	2	A	66	BF	AO	C	FSTC	CS	
									SLTJ	RF	VR-4	
										VPI	RF	
↔	SFV-53504	F11	RB Purge Inlet-Inbd	2	A	66	BF	MO	C	FSTC	CS	
										SLTJ	RF	VR-4
										VPI	RF	

SYSTEM: REACTOR BUILDING HEATING, VENTILATING AND AIR COND. DRAWING NO: M-551

	VALVE	COOR	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARK
↔	SFV-53603	H11	RB Purge Inlet-Inbd	2	A	12	BF	MO	O	FSTC SLTJ VPI	Q RF RF	VR-4
↔	SFV-53604	F11	RB Purge Outlet-Inbd	2	A	66	BF	AO	C	FSTC SLTJ VPI	CS RF RF	VR-4
↔	SFV-53605	F11	RB Purge Outlet-Inbd	2	A	66	BF	MO	C	FSTC SLTJ VPI	CS RF RF	VR-4
↔	SFV-53610	H11	RB Purge Inlet-Inbd	2	A	12	BF	AO	O	FSTC SLTJ VPI	Q RF RF	VR-4
↔	SFV-53612	F11	From H2 Purge Ex Blr "B"	2	A	1	GT	AO	C	FSTC SLTJ VPI	Q RF RF	
↔	SFV-53613	G12	From H2 Purge Ex Blr "A"	2	A	1	GT	AO	C	FSTC SLTJ VPI	Q RF RF	
↔	SFV-53615	H14	H2 Purge Exh Isol	2	A	2	GT	SO	C	FSTC SLTJ VPI	Q RF RF	
↔	SFV-53616	I14	H2 Purge Exh Isol	2	A	2	GT	SO	C	FSTC SLTJ VPI	Q RF RF	

SYSTEM: COOLANT RADWASTE SYSTEM DRAWING NO: M-560, Sh 3

VALVE	COOR	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARK
SFV-60001	B3	Rx Cool Vent Hdr Isol	2	A	3	GT	MO	C	FSTC SLTJ VPI	Q RF RF	VR-19
SFV-60002	B4	Rx Cool Vent Hdr Iso	2	A	3	GL	AO	C	FSTC SLTJ VPI	Q RF RF	
SFV-60003	E4	Rx Cool Dr Hdr Iso	2	A	6	GT	MO	C	FSTC SLTJ VPI	Q RF RF	VR-19
SFV-60004	E5	Rx Cool Dr Hdr Iso	2	A	6	GL	AO	C	FSTC SLTJ VPI	Q RF RF	

SYSTEM: MISCELLANEOUS LIQUID RADWASTE DRAWING NO: M-561, Sh 3

	VALVE	COOR	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARK
↔	SFV-66308	F2	Rx Bldg Sump Pump Disc	2	A	4	GT	MO	C	FSTC SLTJ VPI	Q RF RF	
↔	SFV-66309	G2	Rx Bldg Sump Pump Disc	2	A	4	GT	MO	C	FSTC SLTJ VPI	Q RF RF	

SYSTEM: REACTOR COOLANT CHEMICAL ADDITION AND SAMPLING DRAWING NO: M-570

	VALVE	COOR	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARK
→←	BWS-033	H8	Boric Acid Pump 705A Disc	2	C	2	CK	SA	C	FSTO	Q	
→←	BWS-034	H9	Boric Acid Pump 705B Disc	2	C	2	CK	SA	C	FSTO	Q	
	BWS-035	I8	Boric Acid Pump 705A Isolation	2	B	2	GT	MAN	C/O	FSTO	Q	
	BWS-036	J9	Boric Acid Pump 705B Isolation	2	B	2	GT	MAN	C/O	FSTO	Q	
	BWS-040	J5	Boric Acid Disch to HPI Pumps	2	B	2	GL	MAN	C	FSTO	Q	
	BWS-041	J5	Boric Acid Disch to Decay HT Rem Sys.	2	B	.75	GL	MAN	C	FSTO	Q	
	BWS-054	J5	Boric Acid Disch to P-238B	2	B	2	GL	MAN	C	FSTO	Q	
	RSS-500	C3	Sample to Makeup	2	A	.75	GT	MAN	C	SLTJ	RF	Passive
→←	PSV-70505	J8	Boric Acid Pump Disch Relief	2	C	.75	PSV	SA	C	VSP	5Y	
	SFV-70001	C2	Press Liq Sample-Inbd	1	A	.75	GT	MO	C	FSTC SLTJ VPI	Q RF RF	
	SFV-70002	C3	Press Sample-Otbd	2	A	.75	GL	AO	C	FSTC SLTJ VPI	Q RF RF	

SYSTEM: REACTOR COOLANT CHEMICAL ADDITION AND SAMPLING DRAWING NO: M-570

VALVE	COOR	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARK
SFV-70003	C2	Press Vapor Sample-Inbd	1	A	.75	GT	MO	C	FSTC SLTJ VPI	Q RF RF	
SFV-72501	D2	PRT Gas Sample-Inbd	2	A	.75	GT	MO	C	FSTC SLTJ VPI	Q RF RF	VR-4
SFV-72502	E2	PRT Gas Sample-Otbd	2	A	.75	GL	MO	C	FSTC SLTJ VPI	Q RF RF	VR-4

SYSTEM: TURBINE PLANT SAMPLING DRAWING NO: M-573

	VALVE	COOR	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARK
→←	HV-20587	B3	Stm Gen Sample	NC	B	.75	GT	AO	C	FSTC VPI	Q RF	
→←	HV-20588	D4	Stm Gen Sample	NC	B	.75	GT	AO	C	FSTC VPI	Q RF	
→←	HV-20593	F3	Stm Gen Sample	NC	B	.75	GT	AO	C	FSTC VPI	Q RF	
→←	HV-20594	F2	Stm Gen Sample	NC	B	.75	GT	AO	C	FSTC VPI	Q RF	

SYSTEM: BRUCE GM-DIESEL OIL DRAWING NO: M-582

VALVE	COOR	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARK
DFO-017	H9	Diesel FO Pump 888A Disch	NC	C	2	CK	SA	C	FSTO FSTC	Q Q	
DFO-018	H9	Diesel FO Pump 888B Disch	NC	C	2	CK	SA	C	FSTO FSTC	Q Q	
DFO-019	H11	Diesel FO Pump 888C Disch	NC	C	2	CK	SA	C	FSTO FSTC	Q Q	
DFO-020	H11	Diesel FO Pump 888D Disch	NC	C	2	CK	SA	C	FSTO FSTC	Q Q	

SYSTEM: EMERGENCY DIESEL GENERATOR DRAWING NO: M-583

VALVE	COOR	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARK
EGS-010	C7	Air Comp C-889A Disch	NC	C	1.5	CK	SA	C	FSTC	Q	
EGS-011	C7	Air Comp C-891A Disch	NC	C	1.5	CK	SA	C	FSTC	Q	
EGS-021	C7	Air Comp C-889B Disch	NC	C	1.5	CK	SA	C	FSTC	Q	
EGS-022	C7	Air Comp C-891B Disch	NC	C	1.5	CK	SA	C	FSTC	Q	
FY-89025	E6	Emer Diesel G886A Air Start	NC	B	1.5	GL	SO	C	FSTO	Q	VR-21
FY-89026	E6	Emer Diesel G886B Air Start	NC	B	1.5	GL	SO	C	FSTO	Q	VR-21
FY-89027	E6	Emer Diesel G886A Air Start	NC	B	1.5	GL	SO	C	FSTO	Q	VR-21
FY-89028	E6	Emer Diesel G886B Air Start	NC	B	1.5	GL	SO	C	FSTO	Q	VR-21
FV-89029	E6	Air Supply to Y-890-1C&1D	NC	B	1.5	GL	AO	C	FSTO	Q	VR-21
FV-89030	E6	Air Supply to Y-890-1E&1F	NC	B	1.5	GL	AO	C	FSTO	Q	VR-21
FV-89031	E6	Air Supply to Y-890-1A&1B	NC	B	1.5	GL	AO	C	FSTO	Q	VR-21
FV-89032	E6	Air Supply to Y-890-1G&1H	NC	B	1.5	GL	AO	C	FSTO	Q	VR-21

SYSTEM: TDI DIESEL GENERATOR - TRAIN "A" DRAWING NO: M-585, Sh 1

VALVE	COOR	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARK
EGS-843	D3	EDG G-100A Air Start	NC	C	3	CK	SA	C	FSTO FSTC	Q Q	
EGS-845	E3	EDG G-100A Air Start	NC	C	3	CK	SA	C	FSTO FSTC	Q Q	
HV-10051A	E3	EDG G-100A Air Start	NC	B	3	CK	SO	C	FSTO	Q	VR-21
HV-10051B	D3	EDG G-100A Air Start	NC	B	3	CK	SO	C	FSTO	Q	VR-21

SYSTEM: TDI DIESEL GENERATOR - TRAIN "A" DRAWING NO: M-585, Sh 2

VALVE	COOR	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARK
EGS-565	F3	Receiver V-101 C Inlet	NC	C	1.5	CK	SA	C	FSTC	RF	VR-23
EGS-567	F4	Receiver V-101 A Inlet	NC	C	1.5	CK	SA	C	FSTC	RF	VR-23

SYSTEM: TDI DIESEL GENERATOR - TRAIN "B" DRAWING NO: M-585, Sh 3

VALVE	COOR	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARK
EGS-844	D3	EDG G-100B Air Start	NC	C	3	CK	SA	C	FSTO FSTC	Q Q	
EGS-846	E3	EDG G-100B Air Start	NC	C	3	CK	SA	C	FSTO FSTC	Q Q	
HV-10050A	E3	EDG G-100B Air Start	NC	B	3	GL	SO	C	FSTO	Q	VR-21
HV-10050B	D3	EDG G-100B Air Start	NC	B	3	GL	SO	C	FSTO	Q	VR-21

SYSTEM: TDI DIESEL GENERATOR - TRAIN "B" DRAWING NO: M-585, Sh 4

VALVE	COOR	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARK
EGS-564	F3	Receiver V-101D Inlet	NC	C	1.5	CK	SA	C	FSTC	RF	VR-23
EGS-566	F4	Receiver V-101B Inlet	NC	C	1.5	CK	SA	C	FSTC	RF	VR-23

SYSTEM: PLANT AIR DRAWING NO: M-590, Sh 1

VALVE	COOR	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARK
SAS-052	E13	Service Air Supply	NC	A	2	GT	MAN	C	SLTJ	RF	Passive
SAS-054	E13	Service Air Supply	NC	A	2	GT	MAN	C	SLTJ	RF	Passive

SYSTEM: AUXILIARY GAS DRAWING NO: M-591, Sh 1

VALVE	COOR	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARK
NGS-011	F12	N2 Supply to PRT	NC	A/C	1	SCK	MAN	C	SLTJ	RF	Passive
NGS-017	H12	N2 Sup to Stm. Gen	NC	A	2	GL	MAN	C	SLTJ	RF	VR-4, Passive
NGS-018	I12	N2 Supply to Stm. Gen	NC	A/C	2	SCK	MAN	C	SLTJ	RF	VR-4, Passive
SFV-92520	F11	N2 Supp to PRT	NC	A	1	GL	AO	C	FSTC SLTJ VPI	Q RF RF	

SYSTEM: MISCELLANEOUS WATER DRAWING NO: M-593, Sh 2

VALVE	COOR	FUNCTION	CLASS	CAT	SIZE	TYPE	ACT	POS	REQMT	FREQ	REMARK
DMW-024	I10	Misc Water to RB	2	A	3	GT	MAN	C	SLTJ	RF	Passive
DMW-025	I11	Misc Water to RB	2	A/C	3	SCK	MAN	C	SLTJ	RF	Passive

Appendix C

COLD SHUTDOWN VALVE TESTING JUSTIFICATION

COLD SHUTDOWN TEST JUSTIFICATION

Reactor Coolant System (M-520)

HV-20533 - Steam Generator E-205A Hi-Point Vent
HV-20534 - Steam Generator E-205B Hi-Point Vent
HV-20579 - Steam Generator E-205A Hi-Point Vent
HV-20580 - Steam Generator E-205B Hi-Point Vent
HV-21522 - Pressurizer Hi-Point Vent
HV-21528 - Pressurizer Hi-Point Vent

Opening any of these valves during normal operation would reduce the isolation of the reactor coolant system to only one valve which could result in leakage into the reactor building. In addition, during plant operation, power to the valve actuators is removed per Rancho Seco Technical Specifications, Section 3.1 (Appendix R).

Makeup and Purification (M-521)

SFV-22005 - Letdown Isolation to Heat Exchanger E-220A
SFV-22006 - Letdown Isolation to Heat Exchanger E-220B & C
SFV-22009 - Letdown Outboard Containment Isolation
SFV-22023 - Letdown Inboard Containment Isolation
SFV-22025 - Letdown Isolation from Steam Generator 205A

Valves SFV-22009, SFV-22023, and SFV-22025 and either SFV-22005 or SFV-22006 are normally open during plant operation to provide continuous letdown and reactor coolant purification flow. Closing any of these valves would interrupt letdown flow and result in fluctuations in pressurizer level and a potential plant trip or forced shutdown.

SFV-24004 - Reactor Coolant Pump Seal Water Return
SFV-24013 - Reactor Coolant Pump Seal Water Return

These valves are normally open to provide a return path for reactor coolant pump seal water. Closure of these valves during pump operation would result in a loss of seal water flow and an imbalance in the interstage pressures within the seal. This could result in seal failure and ultimately plant shutdown.

SFV-23508 - Makeup Tank Isolation Valve

During plant operation, this valve must remain open to supply water to the makeup pump. Closing this valve would result in potential damage to the makeup pump and loss of RCP seal injection and pressurizer level control flow with the potential for a plant trip or forced shutdown.

SFV-23604 - Makeup Line Isolation Valve

During plant operation, this valve is normally open to permit automatic pressurizer level control via LV-21503. Failure of SFV-23604 in the closed position would require operator action to manually control pressurizer level. During this evolution, a transient in pressurizer level could occur which could lead to a plant trip.

SFV-23616 - Reactor Coolant Pump Seal Water Supply

This valve is normally open to provide a flow path for injection water to the reaction coolant pumps. Closure of this valve during pump operation would result in a loss of seal water flow with the probability of seal failure and subsequent plant shutdown.

SIM-019 - RCP 210A Seal Water Supply
SIM-020 - RCP 210B Seal Water Supply
SIM-021 - RCP 210C Seal Water Supply
SIM-022 - RCP 210D Seal Water Supply

Closure of these valves during plant operations would stop seal water flow to their respective reactor coolant pump seal and would ultimately result in seal failure. Furthermore, these valves are located inside the secondary shield walls and this access is limited.

Decay Heat Removal (M-522)

DHS-015 - Decay Heat Removal Discharge to RCS
DHS-016 - Decay Heat Removal Discharge to RCS
RCS-001 - Decay Heat Removal/Core Flood Discharge to RCS
RCS-002 - Decay Heat Removal/Core Flood Discharge to RCS

Neither the decay heat removal pumps nor the core flow tanks are capable of overcoming reactor pressure during operation which would be required to exercise these valves.

DHS-017 - Decay Heat Leakage to CFT "A"
DHS-018 - Decay Heat Leakage to CFT "B"

These valves are inside containment and are not accessible during plant operation. They will be verified closed by handwheel operation.

DHS-059 - Decay Heat Removal Supply to Pressurizer Spray

In order to exercise this valve during plant operation, spray flow must be initiated from the high-pressure injection system into the pressurizer. Initiating flow into the pressurizer in this manner would subject the spray nozzle to unnecessary thermal shocking and potential damage.

HV-20001 and HV-20002 - Decay Heat Removal Supply Valves

These valves are normally closed to isolate the decay heat removal system from the reactor coolant system. Opening either of these valves during power operation would reduce the level of protection of the decay heat removal system from overpressurization. In addition, these valves are electrically interlocked to prevent opening when RCS pressure is greater than 215 psig.

HV-20003 - Decay Heat Removal Dump to Sump

In order to open HV-20003 without draining the decay heat removal piping, DHS-461 must be closed. DHS-461 is not accessible while the plant is in operation, thus, testing of HV-20003 is not practical during operation.

HV-26105 - P-261 Suction from Rx Building Sump
HV-26106 - P-261 Suction from Rx Building Sump

To preclude flooding into the Reactor Building sump when either of these two valves is opened, the manual isolation valve(s) at the borated water storage tank must be closed. This, in turn, renders one train of each of the decay heat, safety injection, and containment spray systems inoperable simultaneously. This is considered imprudent during normal (power) plant operation.

HP and Auxiliary Turbines (M-530)

TV-1 through TV-4 - Main Turbine Throttle Valves

Exercising these valves in the normal, fail-safe manner requires initiating a main turbine trip which would result in an inacceptable plant transient. There is, however, a feature on the valve operating mechanism that provides the capability of slow exercising of each valve individually. Thus, on a quarterly basis, each valve will be slowly exercised to its closed position. Since this is a special mode of operation, the stroke time is insignificant and will not be measured. At cold shutdown, the valves will be full stroked at normal speed and stroke times will be measured.

HV-20597 - Main Steam Supply to Reheaters A and C
HV-20598 - Main Steam Supply To Reheaters B and D

These valves are normally open to provide reheat steam for the turbine cycle. Closure and reopening of these valves would interrupt the steam supply to the reheaters and could result undesirable and potentially damaging pressure and thermal transients on plant equipment. In addition, there is some question regarding the capability of the installed motor-operators to reopen the valves with the plant at power.

PV-20561 - Main Turbine Bypass Valve
PV-20563 through PV-20566 - Main Turbine Bypass Valves

These valves are normally closed. In order to test them without subjecting the plant to unnecessary transients, each would be required to be isolated from the main steam lines. During the period of time that a valve is isolated, the ability to respond to plant upset conditions such as reactor or turbine trips is diminished. Thus, performing such tests during plant operation at power is not considered prudent.

PV-20562A through C - Atmospheric Steam Dumps
PV-20571A through C - Atmospheric Steam Dumps

These valves are normally closed. Since they are electrically interlocked such that the three (3) valves on each main steam header must open simultaneously, this would require isolating the "A" valves to prevent unnecessary transients to the steam dumps piping. During the period of time that the valves are isolated, the ability to respond to plant upset condition such as reactor and turbine trips is diminished. Thus, performing such tests during plant operation at power is not considered prudent.

MSS-051 and MSS-052 Steam Supply to Auxiliary Feedwater Pump.

In order to verify closure of these valves, the supply line to the auxiliary feedwater pump must be isolated and the line pressurized with air. This would also require depressurization of the related steam generator.

HV-20521 and HV-20522 - Isolation Valves to Turbine Bypass Valves.

These valves are normally open. Closing these valves would depressurize and possibly cool the downstream piping. Due to the length of piping downstream of these valves, upon reopening, a pressure transient could result with the potential for damaging the downstream piping or associated components.

Steam Generator (M-532)

FV-20525 Main Feedwater Iso to Steam Gen 205A
FV-20526 Main Feedwater Iso to Steam Gen 205B
FV-20575 Main Feedwater Bypass to Steam Gen 205A
FV-20576 Main Feedwater Bypass to Steam Gen 205B
HV-20529 Main Feedwater Stop to Steam Gen 205A
HV-20530 Main Feedwater Stop to Steam Gen 205B

These valves are located in the main feedwater supply lines to the steam generators. Closing or opening any these valves while operating at power could result in a loss of steam generator level control and a plant trip.

FWS-061 - Emergency Feedwater Check to Steam Gen 205A
FWS-062 - Emergency Feedwater Check to Steam Gen 205B

Exercising these valves requires injection of feedwater from the auxiliary feedwater pumps into the steam generators. With the reactor plant at operating temperature, injection of cold water from the auxiliary feedwater pumps would result in thermal shocking of the auxiliary feedwater nozzles and possibly undesirable reactor plant transients.

HV-20515 and HV-20516 - Main Feedwater Stops to Steam Generators 205 A and B

Closing either of these valves during plant operation will interrupt makeup flow to the respective steam generator resulting in a loss of steam generator water level control and a probable plant trip.

Component Cooling Water System (M-543)

CCW-036 & SFV-46014 - Cooling Water Supply to Reactor Building
SFV-46203 & SFV-46204 - Cooling Water Return From Reactor Building
CCW-194 & SFV-46906 - Cooling Water Supply to Control Rod Drives
SFV-46907 & SFV-46908 - Cooling Water Return From Control Rod Drives

Closure of any of these valves during plant operation at power will interrupt cooling to the reactor coolant pumps, letdown coolers, or the control rod drive mechanisms--depending on which valves are closed. This would likely cause damage to associated equipment and components that require continuous cooling.

Reactor Building Heating, Ventilating and Air Cond System (M-551)

SFV-53503 and SFV-53504 - Reactor Building Purge Inlet Valves
SFV-53603 and SFV-53604 - Reactor Building Purge Outlet Valves

These valves must remain closed and electrically disabled during plant operation per Rancho Seco Technical Specification 3.6.7.

Appendix D

SUMMARY OF PROGRAM CHANGES

SUMMARY OF PROGRAM CHANGES

Summary of Changes: Second 10-Year Inservice Testing Program - Revision 5 vs. Revision 4 (Submitted 8/14/89)

Revision 5 to the IST Program Plan incorporates changes required to meet the NRC Safety Evaluation Report (SER) [Reynolds to Firlit 5/16/89]. Some editorial changes were also made as noted below.

GENERAL:

1. Section 1.0 revised to reflect revision 5.

2. Revised REFERENCE DRAWING LIST to list proper drawings for EFIC valves.

3. Revised LEGEND to correct VSP code reference. Added definition of VPI.

PUMPS:

1. Revised Pump Relief No. PR-2 to incorporate vibration monitoring requirements of OM-6 as "Alternate Testing" per SER.

2. Deleted Pump Relief No. PR-4 (Acceptance criteria range expansion). Relief denied per SER.

3. Revised PR-13 to include relief for flow measuring equipment to meet requirements of the SER.

VALVES:

1. Added additional discussion of "sample/disassembly" method of check valve testing to clearly state NRC philosophy as defined in the SER.

2. Revised Valve Releif No. VR-1 to clafify definition of "rapid acting valve" and to include required corrective action should the 2 second stroke time be exceeded as discussed in SER.

3. Deleted Valve Relief No. VR-2 (Increased testing for valves tested only at CSD). Relief was denied.

4. Revised Valve Relief No. VR-4 to clarify code section for which relief is being requested.

5. Revised Valve Relief No. VR-8 to correct "Alternate Testing" for SIM-037. This valve is a check valve and cannot be storked per handwheel operation as previously stated.

6. Revised Valve Relief VR-11 as required by SER. Testing of CFS-001/002 will be performed each refueling per sample disassembly method.

7. Revised Valve Relief No.s VR-13, 14, 15, & 23 to reference section 3.1.11 for clarification of sample disassembly test method.

8. Revised valve testing to show correct class identity as reflected on M-1500 series drawings.

9. (M-521) - HV-23801 - Corrected listing of valves testing as specified in VR-4.

10. (M-521 sh 2) - SIM-036 - Corrected testing as specified in VR-8.

11. (M-068) Remove testing of MSS-068. Per DCP 89-0038 the internals of this valve have been removed.

12. (M-544) Removed testing of PSV-47205A/B since they are not within the scope of IWV-1100 as they do not serve as a pressure relief device required to perform a specific function in shutting down the reactor or in mitigating the consequences of an accident. These valves serve as system air vents for filling and draining of the system. They function by float action and have no setpoint adjustments. Each is provided with an isolation valve.

13. Revised COLD SHUTDOWN TEST JUSTIFICATION for HV-20001/2 to reflect correct interlock set pressure.