SUMMARY OF CHANGES TO NORTH ANNA UNIT 1
IST PROGRAM, REVISION 7

The following summary describes the changes from Revision 6 to Revision 7 of the North Anna Unit 1 Inservice Testing (IST) Program Plan. In addition to describing the changes to the program, the summary indicates the approval mechanism for each relief request given in Sections 2.2.6 and 2.3.5. The changes in the IST Program result from a review of the scope of the program and from the NRC Safety Evaluation Report (SER) for Revision 6, dated September 17, 1993.

2.2.5 PUMP INSERVICE TESTING TABLE

UNIT 1 PUMP <u>NUMBER</u>	<u>COMMENT/PROGRAM CHANGE</u>
1-CC-P-1A 1-CC-P-1B 1-CH-P-1A 1-CH-P-1B 1-CH-P-1C	Program change: Added Relief Request P-16.
1-CH-P-2A 1-CH-P-2B	Relief Request P-13, which deals with instrument accuracy, no longer applies to these pumps. Added Relief Request P-16. Program change: Deleted reference to Relief Request P-13.
1-EG-P-1HA 1-EG-P-1HB 1-EG-P-1JA 1-EG-P-1JB	These non-Code diesel fuel oil transfer pumps are positive displacement pumps. The ASME OM Code-1987, Part 6, with Addenda to OMa-1988, Table 2, requires that only discharge pressure need be measured for positive displacement pumps. Per the requirements of OM Part 6, discharge pressure instead of inlet and differential pressure will be measured. Non-Code Alternative Testing description PNC-1 was added to document this fact. Relief Request P-4 is being withdrawn and the contents of P-4 moved to PNC-1. Program change: Non-Code Alternative Testing description PNC-1 was added and Relief Request P-4 is being withdrawn.

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SUMMARY OF CHANGES TO NORTH ANNA UNIT 1
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1-FW-P-2 1-FW-P-3A 1-FW-P-3B	Relief Request P-13, which deals with instrument accuracy, no longer applies to these pumps. Also, a full flow test loop was installed that allows these pumps to be tested to the requirements of Section XI on a quarterly basis. Program change: Deleted reference to Relief Request P-13 and deleted Relief Request P-14. Added Relief Request P-16.
1-QS-P-1A 1-QS-P-1B 1-RH-P-1A 1-RH-P-1B	Relief Request P-13, which deals with instrument accuracy, no longer applies to these pumps. Program change: Deleted reference to Relief Request P-13. Added Relief Request P-16.
1-RS-P-1A 1-RS-P-1B	Withdrew Relief Request P-6.
1-RS-P-2A 1-RS-P-2B	Withdrew Relief Request P-7.
1-RS-P-3A 1-RS-P-3B	The system resistance description was changed from FIXED to VAR. Relief Request P-13 no longer applies to these pumps. Program change: Deleted reference to Relief Request P-13 and replaced FIXED with VAR. Added Relief Request P-16.
1-SI-P-1A 1-SI-P-1B	The lube oil description was changed from N/A to Q. Relief Request P-13 no longer applies to these pumps. Program change: Deleted reference to Relief Request P-13 and added lube oil check.
1-SW-P-1A 1-SW-P-1B 1-SW-P-4	Relief Request P-13 for flow instrumentation no longer applies to these pumps. Program change: Deleted reference to flow instrumentation in Relief Request P-13.

SUMMARY OF CHANGES TO NORTH ANNA UNIT 1
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1-HV-P-20A 1-HV-P-20B 1-HV-P-20C 1-HV-P-22A 1-HV-P-22B 1-HV-P-22C	The ASME classification was upgraded from non-Class to Class 3. Program change: Replaced non-Class with Class 3. Added Relief Request P-16.

2.2.6 PUMP INSERVICE TESTING PROGRAM RELIEF REQUESTS

The following summarizes the changes to relief requests since Revision 6. It also contains a description of the approval mechanism for each relief request. That is, the summary indicates whether the approval is:

1) through a position in Generic Letter 89-04,

2) through a previously issued NRC SER or

3) obtained using a relief request that will need approval by the NRC. Relief requests requiring NRC approval are marked with an asterisk *.

UNIT 1 RELIEF <u>REQUEST</u>	<u>COMMENT/STATUS</u>
P-1	No change. This relief request was approved by the NRC in the SER for Revision 6 dated September 17, 1993.
P-2 and 3	These relief request numbers are no longer active.
P-4	<u>This relief request is being withdrawn.</u> The basis for relief was moved to Alternative Testing description PNC-1 and revised to enhance clarity.
P-5*	The test frequency was changed from cold shutdown to reactor refueling. Also, the basis for relief was expanded to describe the conditions where the residual heat removal system is needed during cold shutdowns. The Revision 6 version of P-5 was approved by the NRC in their SER dated September 17, 1993.
P-6	<u>This relief request is being withdrawn.</u> According to the SER for Revision 6 dated September 17, 1993, the testing described for the inside recirculation spray pumps in Revision 6 is in accordance with the requirements of OM Part 6. Therefore, relief is not necessary as long as all related requirements in OM Part 6 are met.

P-7 This relief request is being withdrawn. According to the SER for Revision 6 dated September 17, the testing described for the outside recirculation spray pumps in Revision 6 is in accordance with the requirements of OM Part 6. Therefore, relief is not necessary as long as all related requirements in OM Part 6 are met.

P-8 This relief request number is no longer active.

P-9* The discussion dealing with static inlet pressure was expanded to explain why just using the discharge pressure for these deep draft pumps is a more conservative application of the Section XI acceptance criteria then using differential pressure and to describe the burden associated with recording the static suction pressure. This revision is in response to concerns raised by the NRC in their SER dated September 17, 1993.

P-10* The discussion dealing with static inlet pressure was expanded to explain why just using the discharge pressure for these deep draft pumps is a more conservative application of the Section XI acceptance criteria then using differential pressure and to describe the burden associated with recording the static suction pressure. This revision is in response to concerns raised by the NRC in their SER dated September 17, 1993.

P-11 This relief request number is no longer active.

P-12 Reference to the third degree polynomial was deleted from the alternate testing section. Also, reference to establisning the pump curve using a minimum of six points was replaced by reference to using a minimum of five points. The use of five points to describe the pump curve was taken from guidance provided by the NRC in their SER for the Surry Units 1 and 2 IST Programs which was received in March of 1993. The Revision 6 version of P-12 was approved by the NRC in their SER dated September 17, 1993. The approval was granted as long as the calculated curve bounds the operational band in which the pump operates.

P-13* Reference to the accuracy for the calculated differential pressure was deleted and the number of instruments that exceed the Section XI accuracy requirements was reduced. Also, the flow accuracy for the charging pumps (1-CH-P-1A, B and C) was changed from 2.5% to 2.34%, and the discharge pressure accuracies for the service water pumps (1-SW-P-1A, 1B and 4) were changed from 2.69% to 3.18% for pumps 1A and 1B, and to 2.61% for pump 4. The Revision 6 version of P-13 was approved by the NRC in their SER dated September 17, 1993.

P-14 <u>This relief request is being withdrawn.</u> Full flow test loops were installed for the auxiliary feedwater pumps. Therefore, this relief request is no longer necessary.

P-15* Reference to running the boric acid transfer pumps on the recirculation flow path for three minutes was deleted. This relief request was submitted to the NRC by letter dated October 17, 1990. Except for the duration of the run period prior to measuring the test quantities, the alternate testing complies with Generic Letter 89-04, Attachment 1, Position 9. The Revision 6 version of P-15 was approved by the NRC in their SER dated September 17, 1993.

P-16* This relief request is being submitted to address the situation of having to measure the static inlet pressure for a pump that is in operation prior to the test.

2.2.7 ALTERNATIVE TESTING FOR NON-CODE PUMPS

Starting with Revision 7 to the IST Program, non-Code pumps that are included in the IST Program but are not tested to the provisions of the Code will be discussed in this new section. Although a request for relief is not required for non-Code components, the reasons for why the Code provisions are not met and the alternative testing description should be documented with the IST Program.

NON-CODE ALTERNATIVE TESTING DESCRIPTION	COMMENT
PNC-1	The diesel fuel oil transfer pumps are positive displacement pumps. One characteristic of positive displacement pumps is that the discharge pressure is independent of inlet pressure. Therefore, to determine pump degradation, only discharge pressure need be measured. Also, the basis from Relief Request P-4 was moved into PNC-1. This basis deals with the Code required five minute run time before the test quantities are measured.

2.3.4 VALVE INSERVICE TESTING TABLE

Valves marked with an * are being added to the IST Program.

UNIT 1 VALVE NUMBER	COMMENT/PROGRAM CHANGE
1-AS-FCV-100A 1-AS-FCV-100B	These normally open valves are on the auxiliary steam supply line to the condenser air ejectors. They automatically close in the event of a containment isolation signal. Although they have an automatic trip function, closing of these valves has no specific function with respect to accident recovery or mitigation. Program change: The valves were removed from the IST Program.
1-CA-026	This non-Code control room bottled air supply discharge check valve is adequately tested as part of the control room bottled air supply test. Because the valve is non-Code and adequately tested outside the IST Program, this valve is being removed from the IST Program. Program change: The valve was removed from the IST Program.
1-CC-020 1-CC-045	These valves open to provide flowpaths for constant vents from the CC pump casings to the surge tank to ensure the pumps are maintained full of water. Venting of these pumps is not considered to be critical to their performance. Backflow through this line to an idle pump is insignificant due to the small size of the line. Program change: The valves were removed from the IST Program.

1-CC-RV-102 This valve protects the non-regenerative heat exchangers from over-pressure in the event an isolated heat exchanger is subjected to heating. Since this valve is a thermal relief valve and performs no specific safety function, testing is not required.

Program change: The valve was removed from the IST Program.

1-CC-RV-103 This valve protects the seal water heat exchangers from over-pressure in the event an isolated heat exchanger is subjected to heating. Since this valve is a thermal relief valve and performs no specific safety function, testing is not required.

Program change: The valve was removed from the IST Program.

1-CC-RV-126 This relief valve protects the excess letdown heat exchanger (shell side) from over-pressure as a result of thermal expansion when the heat exchanger is isolated. It is unlikely that CC to the heat exchanger would be isolated and even if it were, damage to this non-safety-related heat exchanger would be inconsequential. Note that protection of the header is provided by 1-CC-RV-128A and B.

Program change: The valve was removed from the IST Program.

1-CH-215* During normal operation this check valve opens to provide flow from the VCT's to the charging pump suction headers. Under accident conditions when the upstream motor-operated valves are closed, it provides recirculation pathways from the charging pump minimum flow lines to the charging pump suction headers. This valve must close to prevent contaminated water from entering the VCT after recirculation mode transfer.

Program change: The valve was added to the IST Program to be tested to the full open position every three months and closure and leak tested every reactor refueling. Refer to Relief Request V-72.

1-CH-217	This primary grade water supply to make-up blender manual valve is outside the ISI class boundaries and performs no safety function. Credit for isolation of this line during emergency boration is attributed to the downstream air-operated valve. Program change: The valve was removed from the IST Program.
1-CH-252 1-CH-264 1-CH-277	These charging pump discharge recirculation line check valves open to provide flowpaths from the charging pumps' discharge to the seal water return lines in order to protect the charging pumps from overheating during low or minimal flow operations. Since the pump suction headers are common and recirculation is not secured except when in recirculation cooling when the individual pump recirculation valves are closed, backflow through an idle pump via these lines has no safety consequence. Thus, no closure test is required for these valves. Program change: The closure test was deleted.
1-CH-FCV-1114A*	This normally-closed (fail closed) valve opens as required to supply water to the VCT or charging pump suctions in order to control the reactor coolant system boric acid concentration during normal boration (dilution) and plant shutdown. During manual emergency boration it must be closed to prevent diversion of boric acid into the primary water system. Program change: The valve was added to the

IST Program to be tested to the closed position every three months and to have its remote position indicator verified every 24 months.

1-CH-FCV-1160

This normally-closed (administratively controlled) valve remains closed during plant operation and accident recovery to ensure safety injection flow from the charging pumps is directed to the safety injection headers and to provide containment isolation. Thus it is categorized as passive and no exercising is required.

Program change: A remote position indication verification test was added to be performed every 24 months and the closure test was deleted.

1-CH-HCV-1303A
1-CH-HCV-1303B
1-CH-HCV-1303C

These normally open valves may be closed at operator discretion during an accident to isolate an individual reactor coolant pump in the event of a pump seal failure. The abnormal operating procedure requires closure within 5 minutes of discovering a seal leak. Under accident conditions this function is redundant with that of containment isolation valves 1-CH-MOV-1380 and 1381 which isolate all three seals. Thus, these valves are not required to be in the Program.

Program change: The valves were removed from the IST Program.

1-CH-LCV-1460A*
1-CH-LCV-1460B*

These normally open letdown isolation valves are closed in the event of an accident where continued letdown flow is undesirable and automatically close on low pressurizer level to retain reactor water inventory. This would be important in the case of a small-break LOCA where containment isolation does not occur. Also, in the event of an incident that results in a containment isolation signal, these valves must close to isolate

downstream low-pressure piping and to prevent lifting of downstream relief valve 1-CH-RV-1203. They fail closed on loss of electric power or air header pressure.

Program change: The valves were added to the IST Program to be tested to the closed position every cold shutdown and to have their remote position indicators verified every 24 months. Refer to Cold Shutdown Justification CSV-5.

1-CH-MOV-1115B
1-CH-MOV-1115D

After recirculation mode transfer, there exists a path for contaminated sump water through the piping from the suction of the charging pumps to the RWST. These valves isolate this piping and should be leak tested.

Program change: Leakage testing was added.

1-CH-MOV-1267A*
1-CH-MOV-1269A*
1-CH-MOV-1270A*

These normally-open valves remain open following an accident to provide flowpaths from the RWST and LHSI Train "B" to each of the charging pumps during an accident and for post-accident recirculation. Thus, they are considered to be passive.

Program change: The valves were added to the IST Program to have their remote position indicators verified every 24 months.

1-CH-MOV-1267B*
1-CH-MOV-1269B*
1-CH-MOV-1270B*

These normally-open valves would remain open following an accident to provide flowpaths from the "A" LHSI Pumps to each of the charging pumps during post-accident recirculation. Thus, they are considered to be passive.

Program change: The valves were added to the IST Program to have their remote position indicators verified every 24 months.

1-CH-MOV-1373	This valve is normally open to provide a flowpath from the charging pumps common discharge to the seal water return line in order to protect the charging pumps from overheating during low or minimal flow operations. It may be closed by the operator to maximize flow to the RCS during safety injection; however, this action is not desirable since it affects all three pumps and the individual pump minimum flow isolation valves (1-MOV-1275A-C) provide adequate means of isolation. Since the valve need not be repositioned during an accident it is considered to be passive. Program change: The exercise test was deleted.
1-CH-RV-1209	This valve provides over-pressure protection for the low-pressure letdown piping and components downstream of the non-regenerative heat exchangers but does not have any specific function with respect to plant shutdown or accident mitigation. Program change: The valve was removed from the IST Program.
1-CH-RV-1257	This valve protects the volume control tanks and associated components from over-pressure. It performs no specific safety function related to accident mitigation. During and following an accident, the VCT is typically isolated from the charging pump suction headers. Therefore, this valve need not be included in the test program. Program change: The valve was removed from the IST Program.
1-CH-RV-1382A	This valve protects the seal water leakoff piping from over-pressure during an accident when the associated piping segment is isolated and may be subjected to heating or

	seal failure. The portion of piping being protected is not critical. Thus, testing of this valve per the IST Program is not required. Program change: The valve was removed from the IST Program.
1-CV-08* 1-CV-14*	These valves must open to allow the removal of hydrogen from the containment atmospnere following an accident. Program change: The valves were added to the IST Program to be tested to the open position every three months.
1-CV-TV-100	This valve is a normally closed (administratively controlled) air-operated valve opened only during operation of the containment hogger at plant startup. Thus it is considered to be passive. Program change: The exercise test was deleted.
1-EB-015 1-EB-034 1-EB-065 1-EB-084 1-EG-SOV-600HA 1-EG-SOV-601HA 1-EG-SOV-600HB 1-EG-SOV-600JA 1-EG-SOV-607JA 1-EG-SOV-600JB	Program change: Relief Request V-55 is being withdrawn and replaced by Non-Code Alternative Testing Description VNC-4.
1-EB-041 1-EB-053 1-EB-072 1-EB-091	These non-Code valves open to provide flowpaths from the air dryers to the EDG starting air receivers and close to prevent blowdown of the receivers through the compressors when they shut down. Since receiver pressures are monitored and alarmed such that at "time zero" in the accident it can be assumed they are charged to the

required minimum pressure at the onset of an accident and the capacity of the tanks allows for the minimum of three engine starts required, compressor operation is not required. Thus, exercising these valves to the open position is likewise not required (Air compressors are not safety-related). However, these valves must close and remain leak tight to preserve the air inventory in the receivers. Therefore, each of these valves should be leak tested to verify its capability to perform its safety function.

Program change: Leakage testing was added to be performed very reactor refueling.

1-EG-254 1-EG-266 1-EG-278 1-EG-295	Flow instrumentation has been installed on the diesel fuel oil transfer pump discharge piping. Therefore, these valves can be full flow tested every three months. Program change: Relief Request V-49 is being withdrawn.
1-EG-SOV-601HA 1-EG-SOV-607JA	These non-Code valves are normally open to ensure the air start header (and engine cylinders) remain de-pressurized during idle periods. They close during the starting sequence and reopen to protect the air supply line. Each line has an orifice which permits pressurizing of the starting air header even if the SOV failed to close. Therefore, no closure testing is required. However, these valves should be tested open. Program change: The closure test was replaced by an open test.
1-FP-272	This valve is designated as containment a isolation valve and is leak tested per 10CFR50, Appendix J. Program change: Leakage testing was added.

1-FP-275

This valve is no longer subject to Type C leakage testing.

Program change: The valve was removed from the IST Program.

1-FW-062*
1-FW-064*
1-FW-094*
1-FW-096*
1-FW-126*
1-FW-128*

These valves are manipulated as required by the abnormal operating procedures to align each of the motor-driven pump headers to the steam generators via the desired control valve (MOV or HCV).

Program change: The valves were added to the IST Program to be exercised to the open and closed positions every cold shutdown. Refer to Cold Shutdown Justification CSV-40.

1-FW-068
1-FW-100
1-FW-132

These valves open on initiation of auxiliary feedwater flow to provide flowpaths from the AFW pumps to the steam generators. They close in the event of a rupture (passive failure) of the upstream AFW piping . Since this evaluation does not postulate passive failure of ISI-classed components, testing of the closure function is not required. Therefore, Relief Request V-61, which deals with closure testing, is being withdrawn.

Program change: The closure test was deleted.

1-FW-145*
1-FW-162*
1-FW-180*

These normally locked-closed manual valves are opened as required by the abnormal operating procedures in the event of an accident where all of the normal sources of steam generator makeup water have been exhausted (or are otherwise unavailable). The emergency condensate storage tanks are only sized to provide sufficient makeup to allow the AFW system to satisfy its safety function for hot shutdown. The next safety-related backup water supply is the service water system. Thus, these valves should be exercised in the open direction.

Program change: The valves were added to the IST Program to be exercised to the open position every cold shutdown. Refer to Cold Shutdown Justification CSV-41.

1-FW-148 1-FW-165 1-FW-183	These valves open to provide flowpaths from their respective AFW pumps to the designated steam generator. Since each pump is aligned to a single steam generator, reverse flow through an idle pump is of no concern. Therefore, Cold Shutdown Justification CSV-25, which deals with closure testing, is being withdrawn. Program change: The closure test was deleted.
1-FW-149* 1-FW-155* 1-FW-166* 1-FW-172* 1-FW-184* 1-FW-190*	These manual valves are manipulated as required by the abnormal operating procedures to align each AFW pumps to a desired header (MOV or HCV) and to isolate the unused line. Program change: The valves were added to the IST Program to be exercised to the open and closed positions every cold shutdown. Refer to Cold Shutdown Justification CSV-40.
1-FW-150 1-FW-167 1-FW-185	These check valves open to ensure minimum recirculation flow through the auxiliary feedwater pumps to prevent pump damage in the event of isolation of an AFW discharge line. Since flow through these lines is limited by inline orifices and the head on these lines is merely that of the emergency condensate tank, there is no adverse operational consequence if these valves failed to prevent reverse flow. Therefore, Cold Shutdown Justification CSV-25, which deals with closure testing, is being withdrawn. Program change: The closure test was deleted.

1-FW-227*	This normally locked-closed manual valve is opened in the event of an accident where all of the normal sources of steam generator makeup water have been exhausted (or are otherwise unavailable). The emergency condensate storage tanks are only sized to provide sufficient makeup to allow the AFW system to satisfy its safety function for hot shutdown. The next safety-related backup water supply is the service water system. Thus, this valve should be exercised in the open direction. Program change: The valve was added to the IST Program to be exercised to the open position every cold shutdown. Refer to Cold Shutdown Justification CSV-41.
1-FW-526 1-FW-527 1-FW-528	These valves open to ensure flow through the AFW pumps and to provide cooling water flow to the respective bearing oil cooler. The potential for reverse flow through a cooler is of no consequence to the safety functions of the AFW pumps. Therefore, Cold Shutdown Justification CSV-25, which deals with closure testing, is being withdrawn. Program change: The closure test was deleted.
1-FW-FCV-1479 1-FW-FCV-1489 1-FW-FCV-1499	These feedwater bypass regulating valves do not have remote position indication. Also, these valves do not need to be partial stroke exercised as explained in Cold Shutdown Justification CSV-11. Program change: The remote position indicator verification test was deleted.
1-FW-MOV-100A 1-FW-MOV-100C	Valves 1-FW-MOV-100A and C are normally closed during plant operation. During the course of an accident, the operator may manually position these valves as required to modulate flow to the steam generators, or to

isolate the affected steam generator in the case of a tube rupture or steam leak. Thus these valves should be exercised in both directions.

Program change: The closure test was added to be performed every three months.

1-FW-RV-101

This valve was installed to protect the emergency condensate storage tanks from over-pressure in the event of operator error or regulator failure while pressurizing from the plant nitrogen system. The piping from the plant nitrogen system has been removed and the associated tank penetration permanently opened for a vent. Therefore, pressurization is not possible.

Program change: The valve was removed from the IST Program.

1-GN-RV-108A-1*
1-GN-RV-108A-2*
1-GN-RV-108A-3*
1-GN-RV-108B-1*
1-GN-RV-108B-2*
1-GN-RV-108B-3*

These relief valves protect the PORV air and nitrogen supply piping from over-pressure in the event that a pressure control valve should malfunction. An over-pressure condition could also result from a temperature transient in containment.

Program change: The valves were added to the IST Program to be setpoint tested per OM-1.

1-GN-225*
1-GN-451*

These non-Code valves open to provide flowpaths for nitrogen from the safety injection nitrogen header to the nitrogen reserve tanks and the PORVs. Since the reserve tanks are normally maintained in a charged condition, there is no requirement for these valves to open upon accident initiation. They close to maintain the nitrogen pressure in the reserve tanks in the event of a loss of pressure in the nitrogen supply piping.

Program change: The valves were added to the

IST Program to be tested to the closed position and leak tested every reactor refueling. Refer to Non-Code Alternative Testing description VNC-1.

1-HC-014 1-HC-018	These valves are opened periodically following an accident to sample and process hydrogen from the containment atmosphere and; thus, are considered to be active in the open and closed direction. Program change: The open test was added to the program to be performed every reactor refueling. Refer to Relief Request V-20.
1-HC-64 1-HC-TV-109A 1-HC-TV-109B	These non-Code valves open to provide return pathways from the High Radiation Sampling Subsystem (HRSS) panels and the HRSS waste tank to the return header leading to the containment. They close to prevent recirculation through the idle sample panel should a discharge valve be open. The HRSS function is not considered critical for accident recovery or mitigation. Program change: The valves were removed from the IST Program.
1-HC-TV-108A 1-HC-TV-108B	These valves open to provide return pathways from the High Radiation Sampling Subsystem (HRSS) panels and the HRSS waste tank to the return header leading to the containment. The HRSS function is not considered critical for accident recovery or mitigation. Program change: The open test was deleted.
1-HV-AOD-160-1 1-HV-AOD-160-2 1-HV-AOD-161-1 1-HV-AOD-161-2	These are non-Code air operated dampers that close to isolate the control room. Dampers are outside the scope of the Section XI testing program. Also, the dampers are adequately tested during the control room bottled air system tests.

	Program change: The dampers were removed from the IST Program.
1-HV-MOV-111A 1-HV-MOV-111B 1-HV-MOV-111C 1-HV-MOV-113A 1-HV-MOV-113B 1-HV-MOV-113C 1-HV-PCV-1235A1 1-HV-PCV-1235A2 1-HV-PCV-1235B1 1-HV-PCV-1235B2 1-HV-PCV-1235C1 1-HV-PCV-1235C2 1-HV-RV-1200 1-HV-RV-1201 1-HV-RV-1202A 1-HV-RV-1202B 1-HV-RV-1202C 1-HV-RV-1205A 1-HV-RV-1205B 1-HV-RV-1205C 1-HV-SOV-1200A 1-HV-SOV-1200B 1-HV-SOV-1200C	Program change: The ASME Class was upgraded from non-Class to Class 3.
1-HV-MOV-111B 1-HV-MOV-111C 1-HV-MOV-113B 1-HV-MOV-113C	These valves have no remote position indication. Also, the ASME Class was upgraded from non-Class to Class 3. Program change: The remote position indication verification tested was deleted and the ASME Class changed to Class 3.
1-HV-MOV-115-1 1-HV-MOV-115-2 1-HV-MOV-116-1 1-HV-MOV-116-2	These valves are normally closed and may be cycled occasionally to clear a fouled strainer. However, if necessary the strainers could be cleared manually. Program change: The valves were removed from the IST Program.

1-HV-TV-1306A 1-HV-TV-1306B	These trip valves provide flowpaths from the control room bottled air supply tanks to the control room via the ventilation system. These non-Code valves are adequately tested during the control room bottled air system tests and need not be included in the IST Program. Program change: The valves were removed from the IST Program.
1-IA-925 1-IA-926 1-IA-934 1-IA-935	These valves open to provide flowpaths for air from the normal instrument air supply header to the main valve operators and controllers of dampers 1-HV-1301A and B. Since the normal air supply is not relied upon to operate the dampers, no exercising in the open direction is required. In the event of a loss of pressure in the respective air supply header they close to prevent blowdown of the reserve air volume tank into the depressurized header. Note that following the loss of pressure in the main header, back-leakage through these valves must be limited to that amount that will ensure the air bottle supply will be available to operate the main valves for a specified period during the accident scenario. Thus, these valves should be verified to be leak tight. Relief Request V-64 is being withdrawn and replaced by Non-Code Alternative Testing description VNC-2 for these non-Code valves. Also, the leak test method to be used for these valves is included in VNC-2. Program change: The IWV category was changed from C to AC and a leak test was added to be performed every reactor refueling.
1-IA-944 1-IA-948 1-IA-952	These valves open to provide a flowpath for air from the normal instrument air supply header to the main valve operators. Since the normal air supply is not relied upon to

operate the main valves, no exercising in the open direction is required. In the event of a loss of pressure in the respective air supply header, they close to prevent blowdown of the reserve air bottle into the depressurized header. Note that following the loss of pressure in the main header, back-leakage through these valves must be limited to that amount that will ensure the air bottle supply will be available to operate the main valves for a specified period of time during the accident scenario. Thus, these valves should be verified to be leak tight.

In lieu of a leakage test for the isolation check valves, the main valves will be cycled the required number of times over the required period as defined by their design requirements with the normal air supply isolated and vented.

Program change: The IWV category was changed from C to AC and a leak test was added to be performed every reactor refueling. Non-Code Alternative Testing description VNC-3 documents the alternative leak testing.

1-IA-959
1-IA-963
1-IA-971

These valves open to provide flowpaths for air from the normal instrument air supply header to the main valve operators and controllers of 1-FW-HCV-100A-C. Since the normal air supply is not relied upon to operate the main valves, no exercising in the open direction is required. In the event of a loss of pressure in the respective air supply header, they close to prevent blowdown of the reserve air volume tank into the depressurized header. Note that following the loss of pressure in the main header, back-leakage through these valves must be limited to that amount that will ensure the air bottle supply will be available to operate the main valves for a specified period during the accident scenario. Thus, these valves should be verified to be leak

tight.

In lieu of a leakage test for the isolation check valves, the main valves will be cycled the required number of times over the required period as defined by their design requirements with the normal air supply isolated and vented.

Program change: The IWV category was changed from C to AC and a leak test was added to be performed every reactor refueling. Non-Code Alternative Testing Description VNC-3 documents the alternative leak testing.

1-IA-967 1-IA-975	These valves open to provide flowpaths for air from the normal instrument air supply header to the main valve operators and controllers of 1-FW-PCV-159A and B. Since the normal air supply is not relied upon to operate the main valves, no exercising in the open direction is required. In the event of a loss of pressure in the respective air supply header, they close to prevent blowdown of the reserve air bottles into the depressurized header. Note that following the loss of pressure in the main header, back-leakage through these valves must be limited to that amount that will ensure the air bottle supply will be available to operate the main valves for a specified time period during the accident scenario. Thus, these valves should be verified to be leak tight.

In lieu of a leakage test for the isolation check valves, the main valves will be cycled the required number of times over the required period as defined by their design requirements with the normal air supply isolated and vented.

Program change: The IWV category was changed from C to AC and a leak test was added to be performed every reactor refueling. Non-Code Alternative Testing Description VNC-3

	documents the alternative leak testing.
1-IA-2152* 1-IA-2153* 1-IA-2154* 1-IA-2155*	These valves open to provide a flowpath for air from the normal containment air supply header to the PORV operators. Since the normal air supply is not relied upon to operate the main valves, no exercising in the open direction is required. In the event of a loss of pressure in the respective air supply header, they close to prevent blowdown of the air bottle into the depressurized header. Note that following the loss of pressure in the main header back-leakage through these valves must be limited to that amount that will ensure the air bottle supply will be available to operate the main valves during the accident scenario. Thus, these valves should be leak tested as well as exercised. Program change: These valves were added to the IST Program to be back seat tested and leakage tested every reactor refueling. Refer to Non-Code Alternative Testing Description VNC-1.
1-IA-TV-102A	The Appendix J leakage requirements were deleted for this valve. Program change: The leakage test was deleted.
1-MS-119 1-MS-122 1-MS-124	These valves can be back seat tested every three months. Therefore, Relief Request V-52 is being withdrawn. Program change: Valves will be closure tested every three months instead of every reactor refueling.
1-MS-NRV-101A 1-MS-NRV-101B 1-MS-NRV-101C	Program change: The test method was changed to use the Valve Operation Test and Evaluation System (VOTES) to verify disk

position. Refer to Cold Shutdown Justification CSV-13.

1-MS-NRV-103A
1-MS-NRV-103B
1-MS-NRV-103C

These motor-operated stop-check valves are opened only during plant startup to provide flowpaths for steam from each of the steam generators to equalize pressure across the main line non-return valves. They remain closed during normal operation. The upstream trip valve 1-MS-TV-113A, B and C will isolate the line if necessary. Therefore, the stop-check valves are passive.

Program change: The valves were removed from the IST Program.

1-MS-PCV-101A
1-MS-PCV-101B
1-MS-PCV-101C

These valves provide a means of rejecting reactor core heat when the main condenser heat sink is unavailable. In the event of a small break LOCA these valves would be opened to remove heat and reduce reactor coolant system pressure until RHR system operational limits are achieved. The valves are required to close, if open, to limit release of fission products in the event of a steam generator tube rupture. Although it is unlikely that a tube rupture incident would occur simultaneously with a plant condition where opening of these valves is required, the emergency operating procedure (EOP) identifies the need for closure in such an event and, for that reason, is considered prudent to include a requirement for exercising in the closed direction. Since there are several cases where the EOP's depend on these valves to operate under accident conditions to effect a safe and orderly plant shutdown, it is prudent to include them in the test program. These valves open with air and close on loss of air pressure or electric power.

Program change: The open test was added to be performed every three months and their remote position indicators will be verified

	every 24 months. The closure test frequency was changed from every cold shutdown to every three months.
1-MS-TV-113A 1-MS-TV-113B 1-MS-TV-113C	Program change: A fail safe test was added.
1-MS-TV-115*	This normally open (passive) valve provides a flowpath for steam from the steam generators to the steam-driven AFW Pumps. The valve closes to shutdown the AFW pump turbine in the event of turbine overspeed - not a safety function. Program change: The valve was added to the IST Program to have its remote position indicator verified every 24 months.
1-QS-MOV-100A 1-QS-MOV-100B	These valves are normally-open to provide flowpaths from the RWST's to the quench spray pumps. Since they are not normally closed, except for maintenance, they are considered to be passive and no exercising is required. Program change: The exercise test was deleted.
1-RC-HCV-1556A* 1-RC-HCV-1556B* 1-RC-HCV-1556C*	Since these valves are normally closed (administratively controlled) and remain closed whenever the RCS is pressurized, they are determined to be passive and exercising is not required. However, their remote position indicators need to be verified. Program change: These valves were added to the IST Program to have their remote position indicators verified every 24 months.

1-RC-PCV-1455C 1-RC-PCV-1456	The test frequency was changed from during cold shutdowns when the RCS is depressurized to every cold shutdown and Relief Request V-27 was withdrawn and replaced with Cold Shutdown Justification CSV-42. Program change: Test frequency was changed to every cold shutdown.
1-RC-SOV-102A-1 1-RC-SOV-102A-2 1-RC-SOV-102B-1 1-RC-SOV-102B-2	These valves are opened as needed to vent non-condensible gases trapped in the pressurizer. This is considered to be a backup function to that of the PORV's and thus are not relied upon in an accident. Program change: These valves were removed from the IST Program.
1-RH-7 1-RH-15	These RHR pump discharge check valves can only be tested during the RHR pump tests. The pump test frequency has been changed from cold shutdown to reactor refueling. Program change: The test frequency was changed from cold shutdown to reactor refueling. Refer to Relief Request V-74.
1-RH-MOV-1700 1-RH-MOV-1701	These valves are opened to provide flowpaths for reactor coolant from the RCS to the suctions of the RHR pumps to effect shutdown cooling recirculation from the RCS to the RHR heat exchangers. They are closed and remain so during plant operation to isolate the low pressure portions of the RHR System from the high pressure of the RCS. Therefore, these valves have no requirement to change position to perform their closed function. Thus, testing in the closed direction is not required. Program change: The closure test was deleted.

1-RH-MOV-1720A 1-RH-MOV-1720B	These valves are opened to provide flowpaths for reactor coolant from the discharge of the RHR heat exchangers to the RCS to effect shutdown cooling recirculation from the RHR heat exchangers back to the RCS. They are normally closed and remain so during plant operation to isolate the low pressure portions of the RHR System from the high pressure of the RCS. There is no requirement for the valves to change position to perform their closed function, thus they are passive in the closed position. Program change: The closure test was deleted.
1-RM-TV-100D	This valve is no longer subject to Type C leakage testing per Appendix J. Program change: The leakage testing was deleted.
1-RS-123 1-RS-138	These valves open to provide flowpaths from the casing cooling pumps to the suctions of the outside recirculation spray pumps. They close to prevent backflow through an idle pump. However, if a pump is idle the casing cooling discharge valve (1-MOV-RS-101A and B) will automatically close to isolate the line due to the action of the associated casing cooling flow switch. Program change: The closure test was deleted.
1-RS-MOV-155A 1-RS-MOV-155B	These valves are normally-open (automatically open if closed) to provide flowpaths from the containment sump and the casing cooling pumps to the outside recirculation spray pumps (passive function). They are considered to be active in the closed direction since they are designated as containment isolation valves (non-leak tested). They also would be closed if a leak were to develop in the outside recirculation spray system. In the

course of an accident there could be intermittent operation of the recirculation spray system that would require closing and opening these valves.

Program change: The closure test was added to be performed every three months.

1-SI-004 1-SI-021	These valves open to provide flowpaths from the RWST's to the LHSI pump seal. The RWST head provides sealing pressure during idle periods to prevent seal leakage when a pump is not in operation. When the related LHSI pump is running, the seal pressure is supplied from the pump discharge and these valves must close to prevent recirculation to the respective RWST. This function is primarily related to operations while in the recirculation mode. Seal leakage from an idle pump is not considered a critical function. Thus, exercising in the open direction is not required. After recirculation mode transfer, these valves isolate the RWST from contaminated sump water. Therefore, they should be leak tested. Program change: The open test was deleted and the leak test was added.
1-SI-012 1-SI-029	These valves open to provide flowpaths for the LHSI pump minimum flow to ensure adequate pump cooling during low-flow conditions. They have no function to close that is related to accident recovery or mitigation. Program change: The closure test was deleted.
1-SI-47	After recirculation mode transfer, there exists a path for contaminated sump water through the piping from the suction of the charging pumps to the RWST. This valve

	isolates the piping and should be leak tested. Program change: Leakage testing was added and the closure test frequency was changed from cold shutdown to reactor refueling. Refer to Relief Request V-39.
1-SI-125 1-SI-142 1-SI-159	These valves are normally closed and upon depressurization of the RCS during a LOCA open to provide flowpaths from each of the SI Accumulators to the RCS cold legs. There is no specific safety function for these valves to close following discharge from the associated accumulator. Thus, they need not be tested in the closed direction. Program change: The closure test was deleted.
1-SI-HCV-1853A 1-SI-HCV-1853B 1-SI-HCV-1853C	These valves are normally closed (fail closed) and are only required to open from time to time to adjust the pressure within the respective accumulators to assure compliance with the Technical Specification requirements for SI accumulator pressure and level. Following an accident where gross blowdown of the RCS does not occur and there is insufficient inventory of water in the containment sump for recirculation, the accumulator discharge motor-operated valves (1-SI-MOV-1865A, B and C) will be closed prior to depressurization to preclude injecting large quantities of nitrogen into the RCS that could ultimately cause the RHR pumps to become air bound. The alternate method of preventing nitrogen injection into the RCS requires using these valves to vent the accumulators; however, since these vent valves require instrument air to open, it is assumed that this option is unavailable. Thus, during emergency cooldown operations, no credit is taken for venting the accumulators since the air supply to the operators is not considered to be reliable

and the outlet motor-operated valves would be closed. During post-accident conditions, these valves will remain closed until plant conditions are stable and long-term recovery valve lineups are established.

Program change: These valves were removed from the IST Program.

1-SI-HCV-1936

This valve is normally closed (fail closed) and is only required to be opened infrequently to reduce the pressure (vent) within the accumulators. Since the valve is opened intermittently during operation and receive a Phase A signal to close, it is considered an active valve and should be tested in the closed direction. During emergency cooldown operations no credit is taken for venting the accumulators and this valve will remain closed until plant conditions are stable and long-term recovery valve lineups are established.

Program change: The open test was deleted.

1-SI-MOV-1863A
1-SI-MOV-1863B

These normally-closed valves automatically open when SI is initiated and the respective RWST reaches its Low-Low level setpoint to provide a pathway from the LHSI pumps to the HHSI pumps while in the recirculation mode. As an alternative, they may be closed to direct LHSI pump recirculation flow directly to the RCS instead of the HHSI pumps.

Program change: The closure test was added.

1-SI-MOV-1865A
1-SI-MOV-1865B
1-SI-MOV-1865C

During plant operation at power these valves remain open with the power to their motor controller removed; however, during startup they could be closed at RCS pressures of 1000 psig or less per Technical Specification Section 3.5.1 thus they are considered to be active in the open direction. Following an accident where gross blowdown of the RCS does

not occur and there is insufficient inventory of water in the containment sump for recirculation, these valves will be closed prior to depressurization to preclude injecting large quantities of nitrogen into the RCS that could ultimately cause the RHR pumps to become air bound. There is no case where these valves would be reopened after closure during an accident. The alternate method of preventing nitrogen injection into the RCS requires venting of the accumulators; however, since the valves associated with the venting process require instrument air to open, it is assumed that this option is unavailable.

Program change: The closure test was added.

1-SI-MOV-1885A 1-SI-MOV-1885B 1-SI-MOV-1885C 1-SI-MOV-1885D	After recirculation mode transfer, there exists a path for contaminated sump water through the piping from the discharge of the low head safety injection pumps to the RWST. These valves isolate the piping and should be leak tested. Program change: Leakage testing was added.
1-SI-RV-1857	These valves protect the high head safety injection line downstream of the boron injection tank from over-pressure. This is primarily a thermal relief to protect from pressure developed by the heat tracing in the isolated portion of the piping and BIT. Therefore, they do not require testing per the IST Program. Program change: The valve was removed from the IST Program.
1-SI-RV-1858A 1-SI-RV-1858B 1-SI-RV-1858C	These valves protect the SI accumulators and associated piping and components from overpressure. Since the accumulator system is a passive system and not subject to operational pressure transients, the only

potential source of over-pressure of an accumulator is overfilling with nitrogen. Specifically, in-leakage from the RCS does not present a significant potential for over-pressurization since the volume in the tanks allows sufficient time for operator action by draining or isolating the affected tank(s) to prevent exceeding design limits should significant in-leakage develop during plant operation. If in-leakage were so great as to preclude operator action, then the plant would be shutdown as required to satisfy the requirements of Technical Specification 3.4.6.2.

Program change: The valves were removed from the IST Program.

1-SI-TV-101

This valve is normally closed. It is opened infrequently to reduce the pressure in the SI accumulators. During emergency cooldown operations no credit is taken for venting the accumulators. Therefore, this valve need not be tested in the open direction.

Program change: The open test was deleted.

1-SS-TV-103A
1-SS-TV-103B

These valves are opened to draw samples from the RHR system when in operation. Since the RHR system would only be operating at or near cold shutdown, it is not likely that they would be opened during an accident resulting in containment isolation. Therefore, they are considered to be passive valves for their function of containment isolation.

Program change: The exercise test was deleted.

1-SV-TV-102-1

This normally closed valve is opened following a steam generator tube leak or rupture or on receipt of a high radiation signal from the vent stack monitoring instrumentation when it is desirable to have

	the main condenser air ejectors lined up to discharge into containment. Although this is identified as a step in the emergency procedure, such action is considered to be precautionary and preferable but not mandatory for accident mitigation. Also, this valve is no longer subject to Appendix J leak testing. Program change: The open test and leak test were deleted.
1-SV-TV-102-2	This normally open valve is closed following a steam generator tube leak or rupture or on receipt of a high radiation signal from the vent stack monitoring instrumentation when it is desirable to have the main condenser air ejectors lined up to discharge into containment and receive a Phase A signal to close. Although this is identified as a step in the emergency procedure, closure of this valve is precautionary and not required to meet 10CFR100 limits during prescribed accidents. Program change: The valve was removed from the IST Program.
1-SV-TV-103	This normally closed valve is opened following a steam generator tube leak or rupture when it is desirable to have the main condenser air ejectors lined up to discharge into containment. Although this is identified as a step in the emergency procedure, such action is considered to be precautionary and preferable but not mandatory for accident mitigation. Program change: The open test was deleted.
1-SW-3 1-SW-10	Observation of the non-running pump's discharge pressure gauge every three months was added to Relief Request V-63 to enhance the verification of check valve closure.

	Program change: Added quarterly closure test.
1-SW-22	Program change: The valve was moved from Relief Request V-63 to V-73.
1-SW-681	Program change: The valve number was changed from 1-SW-695 to 1-SW-681.
1-SW-MOV-102A 1-SW-MOV-102B	During normal plant operation these valves are normally open and they would be closed to isolate a ruptured header. Since passive failure is not considered for this evaluation and operationally they can be in any position, no exercising of these valves is required. Program change: The exercise test was deleted.
1-SW-MOV-106A 1-SW-MOV-106B	During normal plant operation these valves are open. They would be closed to isolate a ruptured header. Since passive failure is not considered for this evaluation and operationally they can be in any position, no exercising of these valves is required. Program change: The exercise test was deleted.
1-SW-MOV-110A* 1-SW-MOV-110B*	During plant operation these valves are normally closed with their breakers locked open. If open when a CDA signal is received, they will automatically close for containment isolation and service water conservation. Since they are normally closed they are considered to be passive and no exercising is required. Program change: These valves were added to the IST Program to have their remote position indicators verified every 24 months.

1-SW-MOV-113A 1-SW-MOV-113B	During plant operation these valves are normally locked closed and are only opened as a emergency backup supply of cooling water to the fuel pit coolers. Since component cooling is a safety grade system and considered to be highly reliable, this backup capability is considered to be a convenient operational backup and not required for accident mitigation. Therefore, exercising of these valves is not required. If open when a CDA signal is received, they would be closed for service water conservation and to minimize non-essential heat loads. Since they are normally closed they are considered to be passive and no exercising is required. Program change: The exercise test was deleted.
1-SW-MOV-114A* 1-SW-MOV-114B*	During plant operation these valves are normally closed with their breakers locked open. If open when a CDA signal is received, they will automatically close for containment isolation and service water conservation. Since they are normally closed they are considered to be passive and no exercising is required. Program change: These valves were added to the IST Program to have their remote position indicators verified every 24 months.
1-SW-MOV-118*	This valve is normally closed and is used to provide operational flexibility. Therefore, no exercising is required. Program change: This valve was added to the IST Program to have its remote position indicators verified every 24 months.
1-SW-MOV-119*	This valve opens to provide a flowpath for makeup to the reservoirs via the screen wash pumps. Since this mode of makeup is not

relied upon during an accident, exercising in the open direction is not required. In the event an accident occurs while this valve is open, it would be closed to isolate the non-classed portions of the system from the safety-related portions.

Program change: This valve was added to the IST Program to be tested to the closed position every three months and to have its remote position indicator verified every 24 months.

1-SW-MOV-120A* 1-SW-MOV-120B*	During plant operation these valves are normally closed except when in the lake-to-lake cooling mode. Since the plant is seldom, if ever, in this mode, these valves are passive in the closed position. Since each line must remain closed to retain the water in the service water reservoir, it is prudent to verify the accuracy of the remote position indication of these valves. Program change: These valves were added to the IST Program to have their remote position indicators verified every 24 months.
1-SW-RV-101A 1-SW-RV-101B	These valves open to provide over-pressure protection for an isolated heat exchanger. Since the only time a heat exchanger would be isolated is when it is out of service and unavailable, protection of the heat exchanger is not significant. Therefore, testing of these valves is not required. Program change: The valves were removed from the IST Program.

SUMMARY OF CHANGES TO NORTH ANNA UNIT 1
IST PROGRAM, REVISION 7

2.3.5 VALVE INSERVICE TESTING PROGRAM RELIEF REQUESTS

The following summarizes the changes to relief requests since Revision 6. It also contains a description of the approval mechanism for each relief request. That is, the summary indicates whether the approval is:

1) through a position in Generic Letter 89-04,

2) through a previously issued NRC SER or

3) obtained using a relief request that will need approval by the NRC. Relief requests requiring NRC approval are marked with an asterisk *.

UNIT 1 RELIEF REQUEST	COMMENT/STATUS
V-1 and V-2	These relief request numbers are no longer active.
V-3	The basis for going from a cold shutdown test frequency to a reactor refueling frequency was expanded. Also, reference to a partial stroke test was deleted. The only safety function for valves 1-CC-84, 119 and 154 is to close. An open test is not required in conjunction with a closed test for valves that only need to close. The Revision 6 version of V-3 was approved by the NRC in their SER dated September 17, 1993. The minor changes made to V-3 should not affect the conclusion reached by the NRC in their SER.
V-4 to V-8	These relief request numbers are no longer active.
V-9	No change. This relief request was approved by the NRC in the SER for Revision 6 dated September 17, 1993.
V-10	The basis was expanded for valve 1-CH-330. Also, reference to a partial stroke test was deleted. The only safety function for valves 1-CH-322, 330, 336, 358, 380 and 402 is to close. An open test is not required in conjunction with a closed test

	for valves that only need to close. The Revision 6 version of V-10 was approved by the NRC in their SER dated September 17, 1993. The minor changes made to V-10 should not affect the conclusion reached by the NRC in their SER.
V-11 to V-13	These relief request numbers are no longer active.
V-14	<u>This relief request is being withdrawn.</u> It was determined that valve 1-CV-TV-100 is a passive valve and is not subject to an exercise test. Therefore, Relief Request V-14, which dealt with the exercise test, is not necessary.
V-15	This relief request number is no longer active.
V-16	Reference to a partial stroke test was deleted. The only safety function for the normally closed valve 1-FP-272 is to close. An open test is not required in conjunction with a closed test for valves that only need to close. The Revision 6 version of V-16 was approved by the NRC in their SER dated September 17, 1993. The minor change made to V-16 should not affect the conclusion reached by the NRC in their SER.
V-17 to V-19	These relief request numbers are no longer active.
V-20*	This relief request was revised to addressed the open test for valves 1-HC-14 and 18. The open test was added in Revision 7 to the IST Program. The alternative testing methods meet the requirements of Generic Letter 89-04, Attachment 1, Positions 1 and 3. The test frequency for the new open test needs approval from the NRC. The Revision 6 version of V-20 was approved by the NRC in their SER dated September 17, 1993.
V-21	Reference to a partial stroke test was deleted. The only safety function for these normally closed instrument air valves is to close. An open test is not required in conjunction with a closed test for valves that only need to close. The Revision 6 version of V-21 was approved by the NRC in their SER dated September 17, 1993. The minor change

	made to V-21 should not affect the conclusion reached by the NRC in their SER.
V-22 to V-26	These relief request numbers are no longer active.
V-27	<u>This relief request is being withdrawn.</u> This relief request is being replaced by Cold Shutdown Justification CSV-42 and the test frequency for the PORV's 1-RC-PCV-1455C and 1456 changed to every cold shutdown. This change is in response to NRC concerns described in their SER dated September 17, 1993.
V-28	Reference to a partial stroke test was deleted. The only safety function for the normally closed valve 1-RC-149 is to close. An open test is not required in conjunction with a closed test for valves that only need to close. The Revision 6 version of V-28 was approved by the NRC in their SER dated September 17, 1993. The minor change made to V-28 should not affect the conclusion reached by the NRC in their SER.
V-29 to V-32	These relief request numbers are no longer active.
V-33	Reference to back seat testing valves 1-RS-123 and 138 was deleted. The Revision 6 version of V-33 was approved by the NRC in their SER dated September 17, 1993. The minor change made to V-33 should not affect the conclusion reached by the NRC in their SER. The alternative testing conforms to NRC Generic Letter 89-04, Attachment 1, Position 2.
V-34 to V-36	These relief request numbers are no longer active.
V-37	No change. This relief request was approved by the NRC in the SER for Revision 6 dated September 17, 1993. The alternative testing conforms to NRC Generic Letter 89-04, Attachment 1, Position 2.
V-38	No change. This relief request was approved by the NRC in the SER for Revision 6 dated September 17, 1993.

V-39* Reference to leakage testing was added for valve 1-SI-47. Also, the frequency for closure testing was changed from every cold shutdown to every reactor refueling to coincide with the leakage test frequency. The test frequency for the closure test needs approval from the NRC. The Revision 6 version of V-39 was approved by the NRC in their SER dated September 17, 1993.

V-40 Reference to a partial stroke test was deleted. The only safety function for valves 1-SI-106 and 110 is to close. An open test is not required in conjunction with a closed test for valves that only need to close. The Revision 6 version of V-40 was approved by the NRC in their SER dated September 17, 1993. The minor change made to V-40 should not affect the conclusion reached by the NRC in their SER.

V-41 No change. This relief request was approved by the NRC in the SER for Revision 6 dated September 17, 1993.

V-42 Reference to using a sampling program for non-intrusive testing for the SI accumulator discharge check valves was added. The sampling program is similar to the one given in Generic Letter 89-04, Attachment 1, Position 2 for check valve disassembly and inspection. This change is in response to NRC qualifications for approval of the relief request that are described in their SER dated September 17, 1993. Also, reference to closure testing for valves 1-SI-125, 142 and 159 was deleted because the closure test for these valves was deleted from the program. The minor change of deleting the closure tests should not affect the conclusion reached by the NRC in their SER.

V-43 No change. This relief request was approved by the NRC in the SER for Revision 6 dated September 17, 1993.

V-44 No change. This relief request was approved by the NRC in the SER for Revision 6 dated September 17, 1993.

V-45	Reference to FSAR Section 6.2.2.2.5 was added in Revision 7. The Revision 6 version of V-45 was approved by the NRC in their SER dated September 17, 1993. The minor change made to V-45 should not affect the conclusion reached by the NRC in their SER.
V-46	Reference to a partial stroke test was deleted. The only safety function for valve 1-VP-12 is to close. An open test is not required in conjunction with a closed test for valves that only need to close. The Revision 6 version of V-46 was approved by the NRC in their SER dated September 17, 1993. The minor change made to V-46 should not affect the conclusion reached by the NRC in their SER.
V-47	No change. This relief request was approved by the NRC in the SER for Revision 6 dated September 17, 1993.
V-48	This relief request number is no longer active.
V-49	<u>This relief request is being withdrawn.</u> Flow instrumentation has been installed. Therefore, the diesel fuel oil pump discharge check valves can be full flow tested every three months.
V-50	No change. This relief request was approved by the NRC in the SER for Revision 6 dated September 17, 1993.
V-51	This relief request number is no longer active.
V-52	<u>This relief request is being withdrawn.</u> The mainsteam to the turbine driven auxiliary feedwater pump check valves (1-MS-119, 122 and 124) can be exercised closed every three months.
V-53*	The method of closure testing was changed from disassembly and inspection to back seat/leak testing for valves 1-SI-4 and 21 every reactor refueling. Also, the basis was expanded to justify the reactor refueling test frequency. The Revision 6 version of V-53 was approved by the NRC in their SER dated September 17, 1993.

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V-54 The list of rapid acting valves was deleted. This list is maintained by the site ISI engineer. The Revision 6 version of V-54 was approved by the NRC in their SER dated September 17, 1993. The minor change made to V-54 should not affect the conclusion reached by the NRC in their SER.

V-55 The relief request is being withdrawn and replaced by Non-Code Alternative Testing Description VNC-4. The basis for relief was revised slightly to enhance clarity. Because the diesel air start valves are non-Code components, approval is not required from the NRC to deviate from Code provisions.

V-56 This relief request number is no longer active.

V-57' The basis was expanded to describe the risks associated with stroking the vessel head vent valves while the RCS is pressurized. This change is in response to NRC concerns described in their SER dated September 17, 1993. Also, valves 1-RC-SOV-102A-1, 102A-2, 102B-1 and 102B-2 were deleted from the IST Program and are being deleted from this relief request.

V-58 This relief request number is no longer active.

V-59 Valves 1-HV-MOV-100A and C were deleted from the relief request. The Revision 6 version of V-59 was approved by the NRC in their SER dated September 17, 1993. The minor change made to V-59 should not affect the conclusion reached by the NRC in their SER.

V-60 No change. This relief request was approved by the NRC in the SER for Revision 6 dated September 17, 1993.

V-61 The relief request is being withdrawn. The closure test was deleted for valves 1-FW-68, 100 and 132. Therefore, the request for relief is no longer necessary.

V-62 No change. This relief request was approved by the NRC in the SER for Revision 6 dated September 17, 1993.

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V-63 The alternative testing was expanded to include observation of the discharge pressure gauge on the non-running pump every three months. This test was added in response to NRC concerns described in their SER dated September 17, 1993. Even without this change, the NRC approved the relief request in their SER for Revision 6 dated September 17, 1993. Valve 1-SW-22 was deleted from this relief request and put into Relief request V-73. This minor change should not affect the conclusion reached by the NRC in their SER.

V-64 <u>The relief request is being withdrawn</u> and replaced by Non-Code Alternative Testing Description VNC-2. Reference to back seat/leak testing the non-Code instrument air valves 1-IA-925, 926, 934 and 935 every reactor refueling was added. Also, the method for performing the leak test was added.

V-65 No change. This relief request was approved by the NRC in the SER for Revision 6 dated September 17, 1993.

V-66 No change. This relief request was approved by the NRC in the SER for Revision 6 dated September 17, 1993.

V-67 No change. This relief request was approved by the NRC in the SER for Revision 6 dated September 17, 1993.

V-68 This relief request number is no longer active.

V-69 This relief request deals with using an evaluation instead of repair as corrective action for Appendix J valves that exceed their maximum leakage but do not allow the overall leakage to exceed 0.6La. V-69 was originally submitted on June 14, 1990. Following a meeting with the NRC held on September 6, 1990, V-69 was withdrawn per guidance from the NRC. The SER dated September 17, 1993, approved the original version of V-69 with certain restrictions. V-69 is being resubmitted with the restrictions included and is considered approved for use by the SER.

V-70 No change. The basis was expanded to indicate that the vessel is defueled every reactor refueling. This change is in response to NRC concerns described in their SER dated September 17, 1993. With the clarification included, V-70 is considered approved for use by the SER.

V-71 <u>The relief request is being withdrawn.</u> Valves 1-CA-26, 1-HV-TV-1306A and 1-HV-TV-1306B were deleted from the IST Program. Therefore, Relief Request V-71 is no longer necessary.

V-72 This relief request is being added to the program. Due to the plant configuration, the VCT discharge check valve 1-CH-215 cannot be verified closed using flow. The only method to verify closure other than disassembly and inspection is to perform a leak rate/back pressure test.

During normal operation, this valve cannot be isolated to perform a back pressure test because normal letdown and reactor coolant flow would be interrupted.

This valve is also subject to leak testing, which is performed every reactor refueling. Verification of closure will be performed during the leak test every reactor refueling instead of every cold shutdown because the small increase in safety gained by testing during cold shutdown does not justify draining the lines and performing a leak rate test.

V-73 This relief request is being added to the program. Full accident flow cannot be established through the auxiliary service water pump discharge check valve 1-SW-22 using the normal system lineup because the accident heat loads and corresponding demand on the service water system cannot be duplicated. The accident flow can be established using a lake-to-lake configuration. However, the lake-to-lake lineup could contaminate Lake Anna with chemicals used in treating the service water system. Therefore, the lake-to-lake lineup is never used.

This check valve can be disassembled while the

plant is operating. To allow for flexibility in planning for refueling outages and still meet the intent of Generic Letter 89-04, Attachment 1, Position 2, the valve will be disassembled on a reactor refueling frequency but not necessarily during refueling outages. Because V-73 meets the requirements of Generic Letter 89-04, Attachment 1, Position 2, no approval by the NRC is necessary prior to implementation.

V-74* This relief request replaces Cold Shutdown Justification CSV-19 for valves 1-RHR-7 and 15. These RHR pump discharge check valves can only be tested during the RHR pump tests. During cold shutdowns of short duration or if the reactor coolant pumps are left running during the cold shutdown, both trains of RHR may be required for decay heat removal and to maintain RCS temperature. Taking one train of RHR out of service for testing purposes even for a short period could allow the RCS temperature to increase to the point that the pressurizer power operated relief valve would be challenged. Therefore, these pumps and the discharge check valves should only be tested during reactor refuelings.

2.3.6 VALVE INSERVICE TESTING PROGRAM COLD SHUTDOWN JUSTIFICATIONS

UNIT 1 COLD SHUTDOWN JUSTIFICATION	COMMENT/STATUS
CSV-1	No change.
CSV-2	This CSV number is no longer active.
CSV-3	No change.
CSV-4	Reference to valve 1-CH-217 was deleted.
CSV-5	Valves 1-CH-TV-1204A and B were added. Also, more technical bases were added to the justification.
CSV-6 and 7	No change.
CSV-8	Justification is being withdrawn because the exercise test for valve 1-CH-MOV-1373 was deleted from the IST program.
CSV-9	This CSV number is no longer active.
CSV-10	Justification is being withdrawn because the exercise test for valve 1-CH-FCV-1160 was deleted.
CSV-11	The justification was expanded to say that the feedwater bypass valves 1-FW-FCV-1479, 1489 and 1499 do not have to be partial stroke exercised every three months and the motor operated valves 1-FW-MOV-154A, B and C cannot be partial stroke exercised.
CSV-12	Reference to a partial stroke test was deleted. The only safety function for valves 1-FW-47, 79 and 111 is to close. An open test is not required in conjunction with a closed test for valves that only need to close.
CSV-13	The justification was revised to describe the use of VOTES to determine the position of the disk on the main steam non-return valves.

CSV-14	No change.
CSV-15	This CSV number is no longer active.
CSV-16	No change.
CSV-17	This CSV number is no longer active.
CSV-18	No change.
CSV-19	Replaced by Relief Request V-74.
CSV-20	No change.
CSV-21 and 22	These CSV numbers are no longer active.
CSV-23 and 24	No change.
CSV-25	Justification is being withdrawn because the closure test for the auxiliary feedwater check valves was deleted.
CSV-26	This CSV number is no longer active.
CSV-27	Justification is being withdrawn because the main steam PCVs 1-MS-PCV-101A, B and C can be isolated and tested every three months.
CSV-28	This CSV number is no longer active.
CSV-29 to 32	No change.
CSV-33	References to valves 1-MS-NRV-103A, B, C and D were deleted because these valves were deleted from the IST Program.
CSV-34 to 35	No change.
CSV-36	Justification is being withdrawn because valves 1-CH-HCV-1303A, B and C were deleted from the IST Program.
CSV-37	Justification is being withdrawn because valves 1-CC-20 and 45 were deleted from the IST Program.
CSV-38	The cold shutdown justification was revised to delete the partial flow testing requirement for

the charging recirculation check valves 1-CH-252, 264 and 277.

CSV-39 Reference to using ultrasonic flow transducers for measuring flow through the service water header check valves 1-SW-252 and 255 was replaced by a reference to using installed flow instrumentation.

CSV-40 This cold shutdown justification was added to the program to describe why the auxiliary feedwater manual lineup valves should not be exercised during normal operation.

CSV-41 This cold shutdown justification was added to the program. The normally locked closed auxiliary feedwater manual valves discussed in this relief request are opened as required by the abnormal operating procedures to provide service water to the auxiliary feedwater pumps in the event of an accident where all normal auxiliary feedwater pump supplies have been exhausted. Opening these valves every three months to fulfill quarterly testing requirements would accelerate the buildup of sludge in the supply lines from the service water system.

The supply lines are flushed once every 18 months to reduce the buildup of sludge and to identify if there is any accumulation of asiatic clams or shell debris in the lines. Because these manual valves remain in the closed position during normal operation and are not subject to wear, exercising these valves on a cold shutdown test frequency is adequate to demonstrate that the valves can be opened in the case where service water is required as a supply for the auxiliary feedwater pumps.

CSV-42 This cold shutdown justification for the power operated relief valves 1-RC-PCV-1455C and 1456 is being added to replace Relief request V-27.

2.3.7 ALTERNATIVE TESTING FOR NON-CODE VALVES

Starting with Revision 7 to the IST Program, non-Code valves that are included in the IST Program but are not tested to the provisions of the Code will be discussed in this new section. Although a request for relief is not required for non-Code components, the reasons for why the Code provisions are not met and the alternative testing description should be documented with the IST Program.

NON-CODE ALTERNATIVE TESTING DESCRIPTION	COMMENT
VNC-1	Due to the plant configuration, the PORV service air valves cannot be verified closed using flow. The only method to verify closure other than disassembly and inspection is to perform a local leak rate/back pressure test. To perform the leak rate/back pressure test, the normal instrument air and nitrogen supplies to the PORVs must be isolated. The PORVs are required to be operable during normal operation. Also, these valves are located inside containment and are inaccessible during normal operation. These valves are also subject to leak testing, which is performed every reactor refueling. Verification of closure will be performed during the leak test every reactor refueling instead of every cold shutdown because the small increase in safety gained by testing during cold shutdown does not justify the burden of performing a back pressure test. Valves 1-IA-2152 and 2153 are in series and valves 1-IA-2154 and 2155 are in series. There are no vents in between the two sets of valves; therefore, these valves cannot be individually back pressure tested or leak tested.
VNC-2	Relief Request V-64 was replaced by this non-Code alternative testing description because the valves in V-64 (1-IA-925, 926, 934 and 935) are non-Code.

Also, the following leak test method description was added. The leak test will consist of pressurizing the volume upstream of the two valves in series and venting downstream of the valves. Then the upstream test volume will be isolated. If a given differential pressure across the two valves in series can be maintained for a predetermined period of time, the test will be satisfactory. The actual leak rate will not be measured.

VNC-3 In lieu of a leakage test for the non-Code isolation check valves 1-IA-944, 948, 952, 959, 963, 967, 971 and 975, the main valves will be cycled the required number of times over the required period as defined by their design requirements with the normal air supply isolated and vented.

VNC-4 Relief Request V-55 was replaced by this non-Code alternative testing description because the diesel air start system valves in V-55 are non-Code.

VIRGINIA ELECTRIC AND POWER COMPANY

NORTH ANNA POWER STATION UNIT 1

INSERVICE TESTING PROGRAM PLAN

FOR PUMPS AND VALVES

SECOND INSPECTION INTERVAL

DECEMBER 14, 1990 - DECEMBER 14, 2000

REVISION 7

ABSTRACT
VIRGINIA ELECTRIC AND POWER COMPANY
NORTH ANNA POWER STATION UNIT 1
INSERVICE TESTING PROGRAM PLAN
FOR PUMPS AND VALVES
SECOND INSPECTION INTERVAL
DECEMBER 14, 1990 TO DECEMBER 14, 2000

The interval for which the North Anna Unit 1 Inservice Testing Program (IST) program is applicable commenced on December 14, 1990, and will end on December 14, 2000.

The Inservice Testing Program was developed employing 10CFR50 which references ASME Section XI, 1986 Edition, and Reg. Guide 1.26. Quality Groups A, B, and C are the same as ASME Classes 1, 2, and 3 respectively.

Section 1: Introduces the Inservice Testing Program.

Section 2: Describes the Class 1, 2, and 3 pump and valve Inservice Testing Program developed in accordance with Subsections IWP and IWV of ASME Section XI. Certain pumps and valves within the boundaries defined by the ISI Classification Boundary Drawings are subject to testing except where relief from examination is noted in Section 2. A Component listing is also provided in Section 2.

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REVISION 7

1.0 INTRODUCTION

1.1 GENERAL INFORMATION

North Anna Power Station Unit 1 is a Pressurized Water Reactor located on Lake Anna in Louisa County, Virginia. The plant employs a Westinghouse Electric Corp. Nuclear Steam System.

The Inservice Testing (IST) Program Plan for Pumps and Valves for North Anna Station Unit 1 was developed in compliance with the rules and regulations of 10CFR50.55a and Section XI of the ASME Boiler and Pressure Vessel Code, 1986 Edition. Where these rules are determined to be impractical, specific relief is requested in writing.

The Inservice Testing Program for Class 1, 2, and 3 and certain non-Code class pumps and valves is applicable for the second ten year interval beginning December 14, 1990 and ending December 14, 2000. The end of the first inspection interval for IST was extended from June 6, 1988 to December 14, 1990 to coincide with the end of the first inspection interval for North Anna Unit 2. This extension was granted in the form of an exemption to 10CFR50.55a(g)(4) per NRC letter (Serial Number 88-242), dated April 26, 1988.

1.2 SYSTEM CLASSIFICATION

The construction permit for North Anna Unit 1 was issued on February 19, 1971. At that time, the ASME Boiler and Pressure Vessel Code covered only pressure vessels. Pumps and valves were built primarily to the rules of USAS B31.7. Essentially, North Anna Power Station was designed and constructed prior to the origination of the ASME Code classifications named Class 1, 2, and 3. Therefore, the system classifications used as a basis for the Inservice Testing Program are based on the requirements set forth in 10CFR50 and Regulatory Guide 1.26. Pursuant to 10CFR50.55a paragraph (g)(1), inservice testing requirements of Section XI of the ASME Code are then assigned to these components, within the constraints of existing plant design.

Classification Boundary Drawings (CBD's) documenting the system classifications and defining the scope of the ISI and IST Programs, were developed to aid in the review and implementation of the subject programs.

VIRGINIA ELECTRIC AND POWER COMPANY

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INSERVICE TESTING PROGRAM PLAN
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2.0 INSERVICE TESTING PROGRAM PLAN FOR PUMPS AND VALVES

2.1 INTRODUCTION

This program plan has been prepared as the controlling document governing Pump and Valve Inservice Testing for North Anna Power Station Unit 1. The requirements for the Pump and Valve Inservice Testing Program comes from three inter-related sources: 10CFR50, Section XI of the ASME Boiler and Pressure Vessel Code, and North Anna Unit 1 Technical Specifications.

This program plan supersedes the plan that was submitted to the Nuclear Regulatory Commission by letter dated June 14, 1990. An update to Revision 6 was issued by letter dated October 17, 1990. The NRC issued a Safety Evaluation Report (SER) for Revision 6 dated September 17, 1993. IST Program changes that resulted from the SER are incorporated in to Revision 7. This program meets the requirements of Generic Letter 89-04, except where noted in relief requests.

This program plan is composed of two independent subprograms - the Pump Inservice Testing Program and the Valve Inservice Testing Program. The development, implementation, and administration of these two programs are detailed in the following subsections.

This program will govern testing for the Unit 1 second interval which ends December 14, 2000. The program will be updated as required by the addition of new pumps and valves, relief requests, etc. Prior to the end of the second inspection interval, the program will be reviewed and upgraded to assure continued compliance with 10CFR50.55a(g)(4) for the third inspection interval.

2.2 PUMP INSERVICE TESTING PROGRAM DESCRIPTION

2.2.1 PROGRAM DEVELOPMENT PHILOSOPHY

The North Anna Unit 1 Pump Inservice Testing Program has been developed to meet the requirements of 10CFR50, Section XI of the ASME Boiler and Pressure Vessel Code, Subsection IWP, and Technical Specifications. This Program has been designed to detect and evaluate significant hydraulic or mechanical changes in the operating parameters of vital pumps and to initiate corrective action when necessary.

North Anna Unit 1 Technical Specification 4.0.5 requires "Inservice testing of ASME Code Class 1, 2, and 3 pumps shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable addenda as required by 10CFR50, Section 50.55a(g), except where specific written relief has been granted by the Commission pursuant to 10CFR50, Section 50.55a(g)(6)(i)."

10CFR50, Section 50.55a(g)(4)(iv) states that, inservice examinations of components, tests of pumps and valves, and system pressure tests, may meet the requirements set forth in subsequent editions and addenda of ASME Section XI that have been approved by the NRC, subject to Commission approval. North Anna Unit 1 will test those pumps that fall under the scope of ASME Section XI using Subsection IWP of the 1986 Edition. The scope of the program includes ASME Section XI Class 1, 2 and 3, and certain non-Code class pumps that are required to perform a specific function in shutting down the reactor or in mitigating the consequences of an accident.

A review has identified those pumps whose function is safety, (Section 2.2.4, Pump Testing List). These pumps will be tested in accordance with the 1986 Edition of ASME Section XI to the extent practical. It must be recognized that due to design differences among plants, some code testing requirements are impractical. Where such impracticalities exist, relief has been requested and alternate testing requirements have been proposed when warranted.

2.2.2 PROGRAM IMPLEMENTATION

The Pump Inservice Testing Program will be executed as part of the normal plant surveillance program which is implemented by periodic tests.

Reference values were established using original surveillance test data or data from later tests when the pump was operating acceptably in accordance with IWP-3110. Acceptance criteria for the periodic tests are based on the reference values and the allowable ranges specified in IWP-3210 or technical specifications, whichever is more restrictive. Following pump corrective maintenance, the previous reference values will be reconfirmed or a new set of reference values will be determined in accordance with IWP-3111. This post maintenance testing will be performed in accordance with the applicable pump periodic test.

2.2.3 PROGRAM ADMINISTRATION

The Engineering staff at North Anna is responsible for the administration of the Pump Inservice Testing Program. The Operations staff is responsible for performing the periodic tests as required by this program. The Pump Inservice Test Program is implemented by Station ISI Administrative Procedure 2.0 "ASME Section XI Pump Program" and Periodic Test Procedures.

2.2.4 PUMP TESTING LIST

This list gives a brief description of each pump identified in the Pump Inservice Test Program.

1-CC-P-1A Component Cooling Water Pumps
1-CC-P-1B Drawing: 11715-CBM-79A, Sh 1 of 3

Function: Supply cooling water to transfer heat from heat exchangers containing reactor coolant or other radioactive fluids.

1-CH-P-1A High Head Safety Injection/Charging Pumps
1-CH-P-1B Drawing: 11715-CBM-95B, Sh 2 of 2
1-CH-P-1C

Function: Supply high pressure borated water to the Reactor Coolant System following a Safety Injection Signal, and to provide normal charging to the Reactor Coolant System.

1-CH-P-2A Boric Acid Transfer Pumps
1-CH-P-2B Drawing: 11715-CBM-95A, Sh 1 of 4

Function: Supply boric acid to the suction of the charging pumps for emergency boration. Recirculate the contents of the Boron Injection Tank.

1-EG-P-1HA Emergency Diesel Generator Fuel Oil
1-EG-P-1HB Transfer Pumps
1-EG-P-1JA Drawing: 11715-CBB-35A, Sh 2 of 2
1-EG-P-1JB

Function: Supply fuel oil to the Emergency Diesel Generator Fuel Oil Day Tank which directly supplies the Emergency Diesel Generator.

1-FW-P-2 Auxiliary Feedwater Pumps
1-FW-P-3A Drawing: 11715-CBM-74A, Sh 3 of 3
1-FW-P-3B

Function: Supply feedwater to the steam generators following a loss of normal feedwater flow.

1-QS-P-1A Quench Spray Pumps
1-QS-P-1B Drawing: 11715-CBM-91A, Sh 2 of 4

Function: Supply a borated, chemically treated spray to cool, remove iodine from, and depressurize the containment atmosphere following a Containment Depressurization Actuation signal.

1-RH-P-1A Residual Heat Removal Pumps
1-RH-P-1B Drawing: 11715-CBM-94A, Sh 1 of 2

Function: Remove decay heat from the reactor core and the Reactor Coolant System during plant cooldown.

1-RS-P-1A Inside Recirculation Spray Pumps
1-RS-P-1B Drawing: 11715-CBM-91A, Sh 3 of 4

Function: Supply a borated spray to cool and depressurize the containment atmosphere following a Containment Depressurization Actuation signal and maintain containment subatmospheric following an accident.

1-RS-P-2A Outside Recirculation Spray Pumps
1-RS-P-2B Drawing: 11715-CBM-91A, Sh 4 of 4

Function: Supply borated spray to cool and depressurize the containment atmosphere following a Containment Depressurization Actuation signal and maintain containment subatmospheric following an accident.

1-RS-P-3A Casing Cooling Pumps
1-RS-P-3B Drawing: 11715-CBM-91B, Sh 1 of 1

Function: Supply cool borated water to the outside Recirculation Spray Pumps to increase the net positive suction head of these pumps.

1-SI-P-1A Low Head Safety Injection Pumps
1-SI-P-1B Drawing: 11715-CBM-96A, Sh 1 of 3

Function: Supply low pressure borated water to the Reactor Coolant System following a Safety Injection signal.

1-SW-P-1A Service Water Pumps
1-SW-P-1B Drawing: 11715-CBM-78A, Sh 3 of 4

Function: Supply cooling water to the Component Cooling and Recirculation Spray heat exchangers as well as other safety related components.

1-SW-P-4 Auxiliary Service Water Pump
Drawing: 11715-CBM-78A, Sh 1 of 4

Function: Provide make up to the Service Water Reservoir and can be used as the normal supply to the Service Water system.

1-HV-P-20A Control and Relay Room Chilled Water
1-HV-P-20B Pumps
1-HV-P-20C Drawing: 11715-CBB-40C, Sh 1 of 3

Function: Circulate chilled water for the Control and Relay Room Cooling Coils.

1-HV-P-22A Control and Relay Room Condenser
1-HV-P-22B Water Pumps
1-HV-P-22C Drawing: 11715-CBB-40D, Sh 1 of 3

Function: Supply service water to the Control and Relay Room air conditioning condenser water system.

2.2.5 PUMP INSERVICE TESTING TABLE

The Pump Inservice Testing Table identifies the pumps to be tested in accordance with ASME Section XI. The following information is provided for each pump; ASME Code Class, test quantities to be measured, test frequency, and relief requests if required. The following is a brief explanation of the abbreviations used in the Pump Inservice Test Table.

NC - Non-class

Var. - Variable Resistance System

Fixed - Fixed Resistance System

Q - Quarterly Test Frequency

CS - Cold Shutdown Test Frequency (not more frequently than quarterly)

RR - Reactor Refueling (nominally 18 months, not to exceed 24 months)

2Y - 24 Months

N/A - Not applicable or impractical, relief requests will explain in detail

Under Speed, N/A applies to constant speed pumps which do not require the measurement of speed. Therefore, no relief is necessary.

Under Lube Oil, N/A applies to pumps that have a lubrication system with no level or pressure indication. Therefore, no relief is necessary.

PUMP INSERVICE TESTING TABLE

Pump Ident	ASME Class	System Resist	(1) Speed	Inlet Pressure	Differential Pressure	Flow Rate	Vibration	Lube Oil	Bear Temp.	Relief Request (P-)
1-CC-P-1A	3	VAR.	N/A	Q	Q	Q	Q	Q	N/A	1,12,13,16
1-CC-P-1B	3	VAR.	N/A	Q	Q	Q	Q	Q	N/A	1,12,13,16
1-CH-P-1A	2	VAR.	N/A	Q	Q	Q	Q	Q	N/A	1,13,16
1-CH-P-1B	2	VAR.	N/A	Q	Q	Q	Q	Q	N/A	1,13,16
1-CH-P-1C	2	VAR.	N/A	Q	Q	Q	Q	Q	N/A	1,13,16
1-CH-P-2A	3	FIXED	N/A[2]	Q	Q	RR	Q	Q	N/A	1,15,16
1-CH-P-2B	3	FIXED	N/A[2]	Q	Q	RR	Q	Q	N/A	1,15,16
1-EG-P-1HA	NC	VAR.	N/A	N/A	N/A	Q	Q	N/A	N/A	1,PCN-1
1-EG-P-1HB	NC	VAR.	N/A	N/A	N/A	Q	Q	N/A	N/A	1,PCN-1
1-EG-P-1JA	NC	VAR.	N/A	N/A	N/A	Q	Q	N/A	N/A	1,PCN-1
1-EG-P-1JB	NC	VAR.	N/A	N/A	N/A	Q	Q	N/A	N/A	1,PCN-1

PUMP INSERVICE TESTING TABLE

Pump Ident	ASME Class	System Resist	(1) Speed	Inlet Pressure	Differential Pressure	Flow Rate	Vibration	Lube Oil	Bear Temp.	Relief Request (P-)
1-FW-P-2	3	VAR.	Q	Q	Q	Q	Q	Q	N/A	1,16
1-FW-P-3A	3	VAR.	N/A	Q	Q	Q	Q	Q	N/A	1,16
1-FW-P-3B	3	VAR.	N/A	Q	Q	Q	Q	Q	N/A	1,16
1-QS-P-1A	2	FIXED	N/A	Q	Q	Q	Q	Q	N/A	1,16
1-QS-P-1B	2	FIXED	N/A	Q	Q	Q	Q	Q	N/A	1,16
1-RH-P-1A	2	VAR.	N/A	RR	RR	RR	RR	RR	N/A	1,5,16
1-RH-P-1B	2	VAR.	N/A	RR	RR	RR	RR	RR	N/A	1,5,16
1-RS-P-1A	2	VAR.	N/A	RR	RR	RR	RR	N/A	N/A	1
1-RS-P-1B	2	VAR.	N/A	RR	RR	RR	RR	N/A	N/A	1
1-RS-P-2A	2	VAR.	N/A	2Y	2Y	2Y	2Y	N/A	N/A	1
1-RS-P-2B	2	VAR.	N/A	2Y	2Y	2Y	2Y	N/A	N/A	1
1-RS-P-3A	3	VAR.	N/A	Q	Q	Q	Q	Q	N/A	1,16
1-RS-P-3B	3	VAR.	N/A	Q	Q	Q	Q	Q	N/A	1,16

PUMP INSERVICE TESTING TABLE

Pump Ident	ASME Class	System Resist	(1) Speed	Inlet Pressure	Differential Pressure	Flow Rate	Vibration	Lube Oil	Bear Temp.	Relief Request (P-)
1-SI-P-1A	2	FIXED	N/A	Q	Q	Q	Q	Q	N/A	1
1-SI-P-1B	2	FIXED	N/A	Q	Q	Q	Q	Q	N/A	1
1-SW-P-1A	3	VAR.	N/A	N/A	N/A	Q	Q	Q	N/A	1,9,12
1-SW-P-1B	3	VAR.	N/A	N/A	N/A	Q	Q	Q	N/A	1,9,12
1-SW-P-4	3	VAR.	N/A	N/A	N/A	Q	Q	Q	N/A	1,10,12
1-HV-P-20A	3	VAR.	N/A	Q	Q	Q	Q	N/A	N/A	1,16
1-HV-P-20B	3	VAR.	N/A	Q	Q	Q	Q	N/A	N/A	1,16
1-HV-P-20C	3	VAR.	N/A	Q	Q	Q	Q	N/A	N/A	1,16

PUMP INSERVICE TESTING TABLE

Pump Ident	ASME Class	System Resist	(1) Speed	Inlet Pressure	Differential Pressure	Flow Rate	Vibration	Lube Oil	Bear Temp.	Relief Request (P-)
1-HV-P-22A	3	VAR.	N/A	Q	Q	Q	Q	N/A	N/A	1,16
1-HV-P-22B	3	VAR.	N/A	Q	Q	Q	Q	N/A	N/A	1,16
1-HV-P-22C	3	VAR.	N/A	Q	Q	Q	Q	N/A	N/A	1,16

(1) Speed is measured for variable speed pumps. 1-FW-P-2 is the only variable speed pump in this program.

(2) Pumps 1-CH-P-2A and B have two speeds; however, they are tested at the high speed and are considered constant speed pumps per this program.

2.2.6 PUMP INSERVICE TESTING PROGRAM RELIEF REQUESTS

Relief requests identify those ASME Section XI Code requirements considered to be impractical. The basis for the relief request and the alternate testing to be performed is given.

RELIEF REQUEST P-1

I. IDENTIFICATION OF COMPONENTS

Systems: Various

Pump(s): IWP Program Pumps
See PUMP INSERVICE TEST TABLE.

Class :

II. IMPRACTICAL CODE REQUIREMENTS

Measure pump bearing temperatures and vibration in mils.

III. BASIS FOR RELIEF

Pump vibration and bearing temperature measurements are used to detect changes in the mechanical characteristics of a pump. Regular testing should detect developing problems, thus repairs can be initiated prior to a pump becoming inoperable. The ASME Section XI minimum standards require measurements of the vibration amplitude (displacement) in mils every three months and bearing temperatures once per year.

Our proposed program is based on vibration readings in velocity units rather than vibration amplitude in mils displacement. This technique is an industry accepted method which is more sensitive to small changes that are indicative of developing mechanical problems and hence more meaningful. Velocity measurements detect not only high amplitude vibrations that indicate a major mechanical problem, but also the equally harmful low amplitude high frequency vibrations due to misalignment in balance, or bearing wear that usually go undetected by simple displacement measurements.

In addition, these readings go far beyond the capabilities of a bearing temperature monitoring program. A bearing will be seriously degraded prior to the detection of increased heat at the bearing housing. Quarterly vibration velocity readings should achieve a much higher probability

of detecting developing problems than the once per year reading of bearing temperatures. Bearing temperature tests present problems which include the following:

1. Certain systems have no recirculation test loops and a limited source of water. An enforced thirty minute run time would deplete the source.

2. The lubrication fluid for some pumps is taken from the process water, which can change temperature depending on ambient conditions. Data trending for these cases is not meaningful.

The small probability of detection of a bearing failure by temperature measurement does not justify the additional pump operating time required to obtain the measurements. In addition, it is impractical to measure bearing temperatures on many pumps. Therefore, the detection of possible bearing failure by a yearly temperature measurement is extremely unlikely.

IV. ALTERNATE TESTING

Pump vibration measurements will be taken in vibration velocity (in/sec). The evaluation of the readings will be per the attached table. The ranges of test parameters given in the attached table were taken from ANSI/ASME OM (Part 6), An American National Standard In-Service Testing of Pumps.

RELIEF REQUEST P-1 (cont.)

RANGES OF TEST PARAMETERS (1)

PUMP TYPE	PUMP SPEED	TEST PARAMETER	ACCEPTABLE RANGE	ALERT RANGE	REQUIRED ACTION RANGE
Centrifugal, Vertical Line Shaft and positive displacement screw pumps[3]	@600 rpm[2]	V_v	$\leq 2.5\ V_r$[4]	$>2.5\ V_r$ to $6V_r$ but not >0.325 in/sec	$\geq 6\ V_r$ but not >0.70 in/sec

Note: (1) V_r is the vibration reference value in the selected units
V_v is vibration velocity measured peak, unfiltered

(2) There are no pumps in this program that operate below 600 rpm

(3) OM-6 does not address positive displacement screw pumps. The Emergency Diesel Generator Fuel Oil pumps are of this type and will be subject to the OM-6 Criteria.

(4) Small values for V_r will produce small acceptable ranges for pump operation. Based on a small acceptance range, an adequately and smoothly running pump could be subject to corrective action. To avoid this situation, a minimum value for V_r of 0.05 in/sec has been established for velocity measurements. Pumps with a measured reference value below 0.05 in/sec shall have subsequent test results compared to an acceptable range based on 0.05 in/sec.

RELIEF REQUEST P-2

Relief Request Withdrawn

RELIEF REQUEST P-3

Relief Request withdrawn.

RELIEF REQUEST P-4

Relief Request withdrawn.

RELIEF REQUEST P-5

I. IDENTIFICATION OF COMPONENTS

System : Residual Heat Removal

Pump(s): 1-RH-P-1A
1-RH-P-1B

Class : 2

II. IMPRACTICAL CODE REQUIREMENTS

Frequency of Pump Test.

III. BASIS FOR RELIEF

The low pressure pumps take suction from and discharge to the Reactor Coolant System (RCS) which operates at 2235 psig. This pressure is well above the operating pressure of the pumps; therefore, testing during normal operation is not possible.

During cold shutdowns of short duration or if the reactor coolant pumps are left running during the cold shutdown, both trains of RHR may be required for decay heat removal and to maintain RCS temperature. Taking one train of RHR out of service for testing purposes even for a short period could allow the RCS temperature to increase to the point that the pressurizer power operated relief valve would be challenged. Therefore, these pumps should only be tested during reactor refuelings.

IV. ALTERNATE TESTING

These pumps will be tested every reactor refueling.

RELIEF REQUEST P-6

Relief Request Withdrawn

RELIEF REQUEST P-7

Relief Request Withdrawn

RELIEF REQUEST P-8

Relief Request withdrawn.

RELIEF REQUEST P-9

I. IDENTIFICATION OF COMPONENTS

System : Service Water

Pump(s): 1-SW-P-1A
1-SW-P-1B

Class : 3

II. IMPRACTICAL CODE REQUIREMENTS

Measure inlet pressure and differential pressure.

III. BASIS FOR RELIEF

These pumps take suction from the Service Water Reservoir. No inlet pressure instrumentation is installed. The service water reservoir level indicator is located outside and several feet away from the observation point. Also, the measuring stick tends to collect residue from the surface of the reservoir, thus obscuring the markers. Therefore, measuring the reservoir level can be difficult during periods of inclement weather or low light conditions.

However, the reservoir level fluctuates very little and can be considered to be constant. The Service Water Reservoir has a minimum level of 313 feet elevation as required by Technical Specifications and a maximum recorded level during past testing of 314.9 feet. Therefore, the expected maximum variation in reservoir level is less than 2 feet, which is less than 1 psi. The discharge pressure gauge has a full scale reading of 100 psig and typical discharge pressures range from 50 to 65 psig. Even the maximum variation, which in all probability will not occur between successive tests, is a small percentage of the total head developed by the pump. Therefore, the repeatability of the tests and the ability to detect degradation will not be significantly affected if only discharge pressure is measured.

Applying the Code acceptance criteria to discharge pressure instead of differential pressure is a conservative application of the acceptance criteria for deep draft pumps. For these pumps, the total developed head is calculated by adding the measured discharge pressure to the height from the discharge pressure

gauge to the pump impeller, and subtracting the height from the reservoir surfac~ to the pump impeller.

Therefore, the measured scharge pressure will always be a smaller number tha he actual total head developed by the pump. Applying the Section XI acceptance criteria to just the discharge pressure instead of the total developed head for a deep draft pump is a conservative application of the acceptance criteria because the operability band is smaller.

IV. ALTERNATE TESTING

Discharge pressure will be measured in place of differential pressure.

RELIEF REQUEST P-10

I. IDENTIFICATION OF COMPONENTS

System : Service Water

Pump(s): 1-SW-P-4

Class : 3

II. IMPRACTICAL CODE REQUIREMENTS

Measure inlet pressure and differential pressure.

III. BASIS FOR RELIEF

This pump takes suction from Lake Anna. No inlet pressure instrumentation is installed. The North Anna lake level indicator is located outside and several feet away from the observation point. Also, the measuring stick tends to collect residue from the surface of the lake, thus obscuring the markers. Therefore, measuring the lake level can be difficult during periods of inclement weather or low light conditions.

However, the lake level fluctuates very little from test to test and can be considered to be constant. The lake has a minimum level of 244 feet elevation as required by Technical Specifications, and maximum and minimum recorded levels during past testing of 250.24 feet and 248.16 feet, respectively. Therefore, the expected maximum variation in lake level is about 2 feet, which is less than 1 psi. The discharge pressure gauge has a full scale reading of 100 psig and the discharge pressures range from 50 to 65 psig. Even the maximum variation, which in all probability will not occur between successive tests, is a small percentage of the total head developed by the pump. Therefore, the repeatability of the tests and the ability to detect degradation will not be significantly affected if only discharge pressure is measured.

Applying the Code acceptance criteria to discharge pressure instead of differential pressure is a conservative application of the acceptance criteria for the deep draft pump. For this pump, the total developed head is calculated by adding the measured discharge pressure to the height from the discharge pressure gauge to the pump impeller, and subtracting

the height from the lake surface to the pump impeller.

Therefore, the measured discharge pressure will always be a smaller number than the actual total head developed by the pump. Applying the Section XI acceptance criteria to just the discharge pressure instead of the total developed head for a deep draft pump is a conservative application of the acceptance criteria because the operability band is smaller.

IV. ALTERNATE TESTING

Discharge pressure will be measured in place of differential pressure.

RELIEF REQUEST P-11

Relief Request withdrawn.

RELIEF REQUEST P-12

I. IDENTIFICATION OF COMPONENTS

System : Component Cooling and Service Water

Pump(s):	1-CC-P-1A	1-SW-P-1A
	1-CC-P-1B	1-SW-P-1B
		1-SW-P-4

Class : 3

II. IMPRACTICAL CODE REQUIREMENTS

ASME XI, Subarticle IWP-3110 requires reference values to be one or more fixed set of measured values. All subsequent test results shall be compared to these reference values.

III. BASIS FOR RELIEF

Plant conditions may not be the same as when the reference values were established. Many reference points must be established to anticipate future plant conditions. In the Component Cooling and Service Water Systems, reproducing one of these reference flow points is difficult with the large butterfly valves installed and it may not be desirable to alter cooling because of other plant operating parameters.

Past vibration data for the subject pumps has been reviewed and it has been determined that pump vibration does not vary significantly with flow rate over the range of the test flow rates.

IV. ALTERNATE TESTING

All subsequent test results will be compared to calculated reference values which are determined using the following method. A set of at least five pressure/flow points will be recorded. From these points an equation for the line will be calculated by a computer using polynomial regression. The resulting polynomial equation describes the reference curve.

Flow points will be taken between the limits of the original data points. The resulting pressure is then compared to the ASME XI, Table IWP-3100-2 limits. Pumps may then be tested during normal operation without any valve throttling. An example of acceptance criteria based on a reference curve is shown in Figure 1.

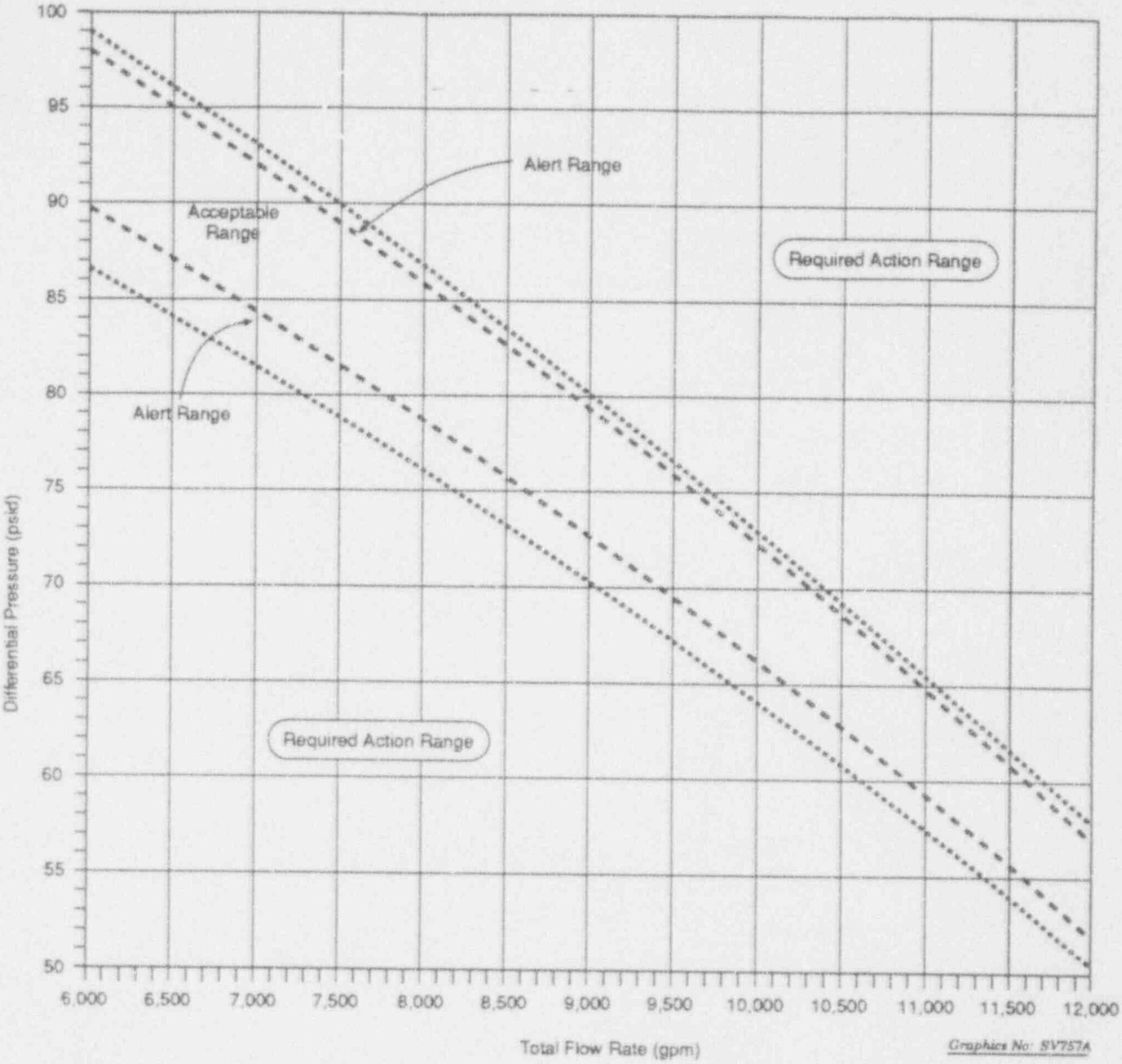

Figure 1. Pump Acceptance Criteria Based on a Reference Curve

RELIEF REQUEST P-13

I. IDENTIFICATION OF COMPONENTS

System : Component Cooling
Chemical and Volume Control

Pump(s):	1-CH-P-1A	1-CC-P-1A	1-SW-P-1A
	1-CH-P-1B	1-CC-P-1B	1-SW-P-1B
	1-CH-P-1C		1-SW-P-4

Class : Class 2 for CH and Class 3 for CC and SW

II. IMPRACTICAL CODE REQUIREMENTS

Instrument Error

III. BASIS FOR REQUEST

Instruments used to measure certain pump parameters receive their signal at the equipment, which is transmitted to a process rack and then to a control room indicator. The sensor and rack accuracy can be affected by drift, temperature, and calibration accuracy. The indicator has a limit of accuracy. The total loop accuracy is found by the root sum of the squares. The only variables in this formula are the sensor calibration accuracy and the indicator accuracy. Installing new sensors and indicators to reduce the accuracy by one percent is not warranted by the increase in safety obtained.

The following instrument loops exceed the ±2% tolerance listed in Table IWP 4110-1.

Instrument	Component	Parameter	Accuracy
FI-1122	1-CH-P-1A,B,C	Flow	2.34%
FI-CC-100A	1-CC-P-1A	Flow	2.69%
FI-CC-100B	1-CC-P-1B	Flow	2.69%
PI-SW-101A	1-SW-P-1A	Discharge Pressure	3.18%
PI-SW-101B	1-SW-P-1B	Discharge Pressure	3.18%
PI-SW-110	1-SW-P-4	Discharge Pressure	2.61%

IV. ALTERNATE TESTING

None

RELIEF REQUEST P-14

Relief Request withdrawn.

RELIEF REQUEST P-15

I. IDENTIFICATION OF COMPONENTS

System : Boric Acid Transfer

Pump(s): 1-CH-P-2A
1-CH-P-2B

Class : 3

II. IMPRACTICAL CODE REQUIREMENTS

Frequency of pump testing.

III. BASIS FOR RELIEF

Permanent flow instrumentation is not installed on the recirculation piping, which is the only test loop available for quarterly testing. To measure flow, flow must be established to the emergency and alternate boration paths and then to the charging pump suctions. This flow would increase the reactor coolant system (RCS) boron inventory and cause a reactivity transient during normal operation.

During cold shutdown, the emergency and alternate boration path valves are tested with flow. However, this test is short in duration to minimize the amount of boric acid injected into the RCS. The pump test requires an extended period of boric acid injection, which would upset the RCS boron balance and possibly impact the ability of the plant to restart. Therefore, this test should only be performed during cold shutdowns on the way to reactor refueling while the RCS is being borated or during reactor refuelings.

During RCS boration or during reactor refuelings, extended periods of pump operation on high speed can either interfere with the boration process or adversely affect the boron balance in the RCS. Therefore, to limit the amount of boric acid injected into the RCS during the pump tests, the pumps will be run for two minutes with flow to the RCS before the test quantities are measured.

IV. ALTERNATE TESTING

These pumps will be tested every quarter on the recirculation loop. Inlet pressure, differential pressure and vibration will be measured. Every reactor refueling, inlet pressure, differential pressure, flow and vibration will be measured after the pumps have been run for two minutes with flow to the RCS.

RELIEF REQUEST P-16

I. IDENTIFICATION OF COMPONENTS

System : Various

Pump(s): IWP Program Pumps
See PUMP INSERVICE TEST TABLE.

Class :

II. IMPRACTICAL CODE REQUIREMENTS

Pump inlet pressure shall be measured before starting a pump and during the test (Table IWP-3100-1)

III. BASIS FOR REQUEST

If the pump being tested is in operation as a result of normal plant or system needs, it is unreasonable to reconfigure system lineups just to provide for the measurement of static inlet pressure. Inlet pressure prior to pump startup is not a significant parameter needed for evaluating pump performance or condition.

IV. ALTERNATE TESTING

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

2.2.7 ALTERNATIVE TESTING FOR NON-CODE PUMPS

According to the Minutes of the Public Meeting on Generic Letter 89-04, "Paragraph (g) of 10CFR 50.55a requires the use of Section XI of the ASME Code for inservice testing of components covered by the Code. For other components important to safety, the licensee also has the burden of demonstrating their continued operability." The minutes go on to state that, "The Code-required IST program is a reasonable vehicle to provide a periodic demonstration of the operability of pumps and valves not covered by the Code. If non-Code components are included in the ASME Code IST program (or some other licensee-developed inservice testing program) and certain Code provisions cannot be met, the Commission regulations (10 CFR 50.55a) do not require a 'request for relief' to be submitted to the staff. Nevertheless, documentation that provides assurance of the continued operability of the non-Code components through the performed tests should be available at the plant site." Non-Code components are components that are important to safety, but are not in systems or portions of systems that are classified ASME Class 1, 2 or 3.

North Anna Power Station has elected to include certain non-Code components in the ASME IST program. Where the Code provisions cannot be met for non-Code components, alternative testing is performed that is adequate to ensure continued operability. The alternate testing is described in this section. There may be other deviations from Code provisions that are not described in this section. For these cases, documentation is available at the plant site.

As indicated in the Minutes of the Public Meeting on Generic Letter 89-04, a 'request for relief' need not be submitted for non-Code components. Therefore, the alternative tests described in this section are not 'requests for relief' but are provided for information.

NON-CODE ALTERNATIVE TESTING PNC-1

I. IDENTIFICATION OF COMPONENTS

System : Fuel Oil

Pump(s):	1-EG-P-1HA	1-EG-P-1JA
	1-EG-P-1HB	1-EG-P-1JB

Class : NC

II. IMPRACTICAL CODE REQUIREMENTS

Measure test quantities after the pump has been running for five minutes.

Measure pump bearing temperatures and vibration in mils.

Measure Inlet and differential pressure.

III. BASIS FOR ALTERNATIVE TESTING

The pump operating time is limited due to operational restraints. These pumps start automatically when fuel oil level in the day tank reaches the low level switch, and stop when the level reaches the high level switch. If the pumps are allowed to run for five minutes prior to measuring the test quantities, the day tank may fill past the high level switch and cause the pump to stop. Therefore, the day tank will fill and the pump will stop prior to the gathering of all of the required Section XI test data.

The basis for alternative testing for vibration and temperature is described in Relief Request P-1.

The diesel fuel oil transfer pumps are positive displacement pumps. One characteristic of positive displacement pumps is that the discharge pressure is independent of inlet pressure. Therefore, to determine pump degradation, only discharge pressure need be measured. The ASME OM Part 6, Code-1987, with Addenda to OMa-1988, Table 2, which is replacing Section XI, Subsection IWP, requires that only discharge pressure need be measured for positive displacement pumps.

IV. ALTERNATE TESTING

The measurement of Section XI quantities will begin when the flow indication stabilizes after the pump is started (i.e., less than five minutes after the pump is started).

The alternative testing for vibration and temperature is described in Relief Request P-1.

Inlet pressure will not be measured. Discharge pressure, flow and vibration will be measured at least once every three months in accordance with Section XI requirements. The acceptance criteria for flow and discharge pressure will be based on the criteria given in ASME OM Part 6, Code-1987, with Addenda to OMa-1988, Table 2. The acceptance criteria for vibration is addressed in Relief Request P-1.

2.3 VALVE INSERVICE TESTING PROGRAM DESCRIPTION

2.3.1 PROGRAM DEVELOPMENT PHILOSOPHY

The North Anna Unit 1 Valve Inservice Testing (IST) Program has been established to meet the requirements of the 10CFR50, Section XI of the ASME Boiler and Pressure Vessel Code, Subsection IWV and Technical Specifications.

North Anna Unit 1 Technical Specification 4.0.5 states that Inservice Testing of ASME Code Class 1, 2 and 3 valves shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable addenda as required by 10CFR50, Section 50.55a(g), except where specific written relief has been granted by the Commission pursuant to 10CFR50, Section 50.55a(g)(6)(i).

10CFR50, Section 50.55a(g)(4)(iv) states that inservice examinations of components, test of pumps and valves, and system pressure tests, may meet the requirements set forth in subsequent editions and addenda of ASME Section XI that have been approved by the NRC, subject to Commission approval. North Anna Unit 1 will test those valves that fall under the scope of ASME Section XI using Subsection IWV of the 1986 Edition of ASME Section XI. The scope of the program includes ASME Section XI Class 1, 2 and 3, and certain non-Code class valves that are required to perform a specific function in shutting down the reactor or in mitigating the consequences of an accident.

Subsection IWV of ASME Section XI defines the rules and requirements of inservice testing of Code Class 1 ,2, and 3 valves and states that each specific valve to be tested by the rules of this subsection shall be identified by the owner and listed in the plant records.

The purpose of the IST program is to identify the valves that are considered by Virginia Electric and Power Company as having a safety function and are therefore subject to the testing requirements of Section XI, Subsection IWV. The intent of the Code is to assess operational readiness and detect potentially adverse changes in the mechanical condition of these valves. The relief requests for the Valve Inservice Test Program identify Code requirements considered to be impractical, provide technical basis for the request and propose alternate testing when warranted.

One reason for requesting relief from the ASME Section XI testing requirements for exercising check valves to the closed position is that the small increase in safety gained by performing these tests does not justify the complications arising from performing such tests. In some cases, to verify a check valve closes, a leak rate test must be performed. To perform a leak rate test, systems must be removed from service. Many systems are still required during cold shutdowns and cannot be removed from service. Lines must also be drained or vented. The contents of the lines are often radioactive and require processing prior to release. Draining and venting lines significantly increases the amount of radioactive waste produced by the plant.

An extended containment entry is required to perform leak rate tests. During short cold shutdowns, the concentrations of radioactive isotopes (Iodine-131, Xenon-133, etc.) are high because the isotopes do not have sufficient time to decay. Entering containment under these conditions requires respirators or air packs to be worn. Working under these conditions is difficult and significantly increases the chances of internal contamination.

For the above reasons, all check valves inside containment with the exception of those check valves listed in T.S. 4.4.6.2.2 shall be exercised to the closed position each refueling shutdown.

Leak rate testing for containment isolation valves is performed in accordance with 10CFR50, Appendix J, which imposes specific requirements, and in accordance with IWV-3426 and 3427. Appendix J satisfies the testing requirements of Section XI, Paragraphs IWV-3421 to 3425.

2.3.2 PROGRAM IMPLEMENTATION

The Valve Inservice Testing Program will be executed as part of the normal plant surveillance program which is implemented by periodic tests.

The Operability Tests will verify:

1) The valve responds to control commands.

2) The valve stroke time is within specific limits.

3) Remote valve position indication accurately reflects the valve position.

Failsafe valves will be tested by observing valve operation upon loss of actuating power. In most cases, this can be accomplished using normal control circuits.

Safety and relief valve setpoints are tested in accordance with ANSI/ASME OM-1-1981 as directed by IWV-3510.

Valve exercising during cold shutdown shall commence within 48 hours of achieving cold shutdown, and continue until all testing is complete or the plant is ready to return to power. For extended outages, testing need not be commenced in 48 hours provided all valves required to be tested during cold shutdown will be tested prior to startup.

Certain valves cannot be full stroke exercised during normal operation following maintenance. These valves are described in the relief requests and cold shutdown justifications. If maintenance cannot be deferred to a shutdown condition, then an engineering evaluation must be performed prior to the maintenance to determine the effect of the maintenance on valve operability. If the evaluation shows that operability will not be affected, then no post maintenance testing will be required. A partial stroke test will be performed if possible.

2.3.3 PROGRAM ADMINISTRATION

The Engineering staff at North Anna is responsible for the administration of the Valve Inservice Testing Program. The Operations staff is responsible for performing the periodic tests as required by this program. The Valve Inservice Testing Program is implemented by Station ISI Administrative Procedure 2.1 "ASME Section XI Valve Program" and Periodic Test Procedures.

2.3.4 VALVE INSERVICE TESTING TABLE

The Valve Inservice Testing Table provides a list of North Anna Unit 1 ASME Section XI valves and their testing requirements. The following is a brief explanation of the table headings and abbreviations.

Valve Number - Each valve has a unique identification number.

Drawing Number - Classification Boundary Drawing Number.

Sheet Number - Classification Boundary Drawing Sheet Number.

Dwg Coor - Drawing Coordinate of valve.

Valve Type - The type of valve. Some abbreviations are used for valve type which are explained below.

AO - air operated
SO - solenoid operated
DIA - diaphragm
MO - motor operated
MAN - manual
BFLY - butterfly

Valve Size - Valve size.

Valve Function - A brief description of the function of the valve.

ASME Class - ASME Code Class of each valve.

Note: NC is for non-class valves.

ASME XI IWV Category - Categories as defined by ASME Section XI. Categories determine test requirements. Valves marked with an "E" are passive valves.

Test Position - The following abbreviations are used to describe normal valve positions to which the valves are tested (including the valve safety position):

O - open
C - closed
OC - open and closed

Isolation Valve Type - Valves that are assigned a maximum leakage. The following abbreviations are used to describe the isolation valve types:

CIV - Containment Isolation Valve subject to Appendix J leakage testing

PIV - Pressure Isolation Valve which protects low pressure safety related piping from RCS pressure

C&P - Valves that serve both CIV and PIV functions

Test Required - Testing requirements identified for the valves are identified here.

ST - Stroke times shall be measured per Section XI, Subsubarticle IWV-3410 or as modified by a specific relief request.

EV - Exercise Valve for operability at least once every 3 months per Section XI, Subsubarticle IWV-3410 or as modified by a specific relief request or cold shutdown justification.

LT - Leak Test shall be performed per Section XI, Subsubarticle IWV-3420 or as modified by specific relief request.

CV - Check Valves shall be exercised at least once every 3 months per Section XI, Subsubarticle IWV-3520 or as modified by a specific relief request or cold shutdown justification.

VP - Valve Position Indication Verification shall be verified per Section XI, Subsubarticle IWV-3300 or as modified by a specific relief request.

SP - Set points of safety and relief valves shall be tested per Section XI, Subsubarticle IWV-3510 or as modified by a specific relief request.

FS - Valves with fail-safe actuators shall be tested by observing the operation of the valves upon loss of the actuator power at least once every 3 months per Section XI, Subsubarticle IWV-3415 or as modified by a specific relief request or cold shutdown justification.

Relief Request - The relief requests corresponding to the numbers in the table are in Section 2.3.5.

Cold Shutdown Justification - The cold shutdown justifications corresponding to the numbers in the table are in Section 2.3.6.

Non-Code Alternative Testing Description - The non-Code alternative testing descriptions corresponding to the numbers in the table are in Section 2.3.7.

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
1-BD-TV-100A	11715-CBM-098A	2 OF 5	C5	AO GLOBE	3.000	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C			
									VP	OC			
	"A" STEAM GENERATOR BLOWDOWN, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-BD-TV-100B	11715-CBM-098A	2 OF 5	C6	AO GLOBE	3.000	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C			
									VP	OC			
	"A" STEAM GENERATOR BLOWDOWN, INSIDE CONTAINMENT ISOLATION VALVE												
1-BD-TV-100C	11715-CBM-098A	3 OF 5	C5	AO GLOBE	3.000	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C			
									VP	OC			
	"B" STEAM GENERATOR BLOWDOWN, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-BD-TV-100D	11715-CBM-098A	3 OF 5	C6	AO GLOBE	3.000	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C			
									VP	OC			
	"B" STEAM GENERATOR BLOWDOWN, INSIDE CONTAINMENT ISOLATION VALVE												
1-BD-TV-100E	11715-CBM-098A	4 OF 5	C5	AO GLOBE	3.000	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C			
									VP	OC			
	"C" STEAM GENERATOR BLOWDOWN, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-BD-TV-100F	11715-CBM-098A	4 OF 5	C6	AO GLOBE	3.000	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C			
									VP	OC			
	"C" STEAM GENERATOR BLOWDOWN, INSIDE CONTAINMENT ISOLATION VALVE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
1-CC-024	11715-CBM-079A	1 OF 3	C5	CHECK VALVE	18.000	3	C		CV	C O			
	"A" COMPONENT COOLING PUMP DISCHARGE CHECK VALVE												
1-CC-047	11715-CBM-079A	1 OF 3	B5	CHECK VALVE	18.000	3	C		CV	C O			
	"B" COMPONENT COOLING PUMP DISCHARGE CHECK VALVE												
1-CC-084	11715-CBM-079B	2 OF 5	F7	CHECK VALVE	6.000	2	AC	CIV	CV LT	C C	3		
	CC SUPPLY TO "A" RC PUMP LO, STATOR SHROUD & THERM BARRIER COOLERS, IN CONT ISOL CHECK VLV												
1-CC-111	11715-CBM-079B	2 OF 5	C7	CHECK VALVE	3.000	3	C		CV	C	65		
	CC SUPPLY TO "A" RC PUMP THERMAL BARRIER COOLER CHECK VALVE												
1-CC-119	11715-CBM-079B	3 OF 5	F7	CHECK VALVE	6.000	2	AC	CIV	CV LT	C C	3		
	CC SUPPLY TO "B" RC PUMP LO, STATOR SHROUD & THERM BARRIER COOLERS, IN CONT ISOL CHECK VLV												
1-CC-146	11715-CBM-079B	3 OF 5	C7	CHECK VALVE	3.000	3	C		CV	C	65		
	CC SUPPLY TO "B" RC PUMP THERMAL BARRIER COOLER CHECK VALVE												
1-CC-154	11715-CBM-079B	4 OF 5	F7	CHECK VALVE	6.000	2	AC	CIV	CV LT	C C	3		
	CC SUPPLY TO "C" RC PUMP LO, STATOR SHROUD & THERM BARRIER COOLERS, IN CONT ISOL CHECK VLV												
1-CC-181	11715-CBM-079B	4 OF 5	C7	CHECK VALVE	3.000	3	C		CV	C	65		
	CC SUPPLY TO "C" RC PUMP THERMAL BARRIER COOLER CHECK VALVE												
1-CC-193	11715-CBM-079B	1 OF 5	F7	CHECK VALVE	18.000	2	AC	CIV	CV LT	C O C	70 70		
	CC SUPPLY TO "A" RHR HEAT EXCHANGER												
1-CC-198	11715-CBM-079B	1 OF 5	F7	CHECK VALVE	18.000	2	AC	CIV	CV LT	C O C	70 70		
	CC SUPPLY TO "B" RHR HEAT EXCHANGER												
1-CC-546	11715-CBM-079D	4 OF 5	E8	CHECK VALVE	6.000	2	AC	CIV	CV LT	C C	62		

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
	CC SUPPLY TO "A" RECIRC AIR COOLING COILS, OUTSIDE CONTAINMENT ISOLATION CHECK VALVE												
1-CC-559	11715-CBM-079D	4 OF 5	D8	CHECK VALVE	6.000	2	AC	CIV	CV	C	62		
									LT	C			
	CC SUPPLY TO "B" RECIRC AIR COOLING COILS, OUTSIDE CONTAINMENT ISOLATION CHECK VALVE												
1-CC-572	11715-CBM-079D	4 OF 5	C8	CHECK VALVE	6.000	2	AC	CIV	CV	C	62		
									LT	C			
	CC SUPPLY TO "C" RECIRC AIR COOLING COILS, OUTSIDE CONTAINMENT ISOLATION CHECK VALVE												
1-CC-MOV-100A	11715-CBM-079B	1 OF 5	A3	MO BFLY	18.000	3	B		EV	O			
									ST	O			
									VP	OC			
	COMPONENT COOLING WATER RETURN THROTTLING VALVE FROM "A" RHR HEAT EXCHANGER												
1-CC-MOV-100B	11715-CBM-079B	1 OF 5	B3	MO BFLY	18.000	3	B		EV	O			
									ST	O			
									VP	OC			
	COMPONENT COOLING WATER RETURN THROTTLING VALVE FROM "B" RHR HEAT EXCHANGER												
1-CC-RV-124A	11715-CBM-079B	2 OF 5	F6	RELIEF VALVE	3.000	3	C		SP	O			
	COMPONENT COOLING WATER TO REACTOR SHROUD HEAT EXCHANGER RELIEF VALVE												
1-CC-RV-124B	11715-CBM-079B	3 OF 5	F6	RELIEF VALVE	3.000	3	C		SP	O			
	COMPONENT COOLING WATER TO REACTOR SHROUD HEAT EXCHANGER RELIEF VALVE												
1-CC-RV-124C	11715-CBM-079B	4 OF 5	F6	RELIEF VALVE	3.000	3	C		SP	O			
	COMPONENT COOLING WATER TO REACTOR SHROUD HEAT EXCHANGER RELIEF VALVE												
1-CC-RV-125A	11715-CBM-079B	2 OF 5	C6	RELIEF VALVE	.750	3	C		SP	O			
	CC SUPPLY TO "A" RC PUMP THERMAL BARRIER RELIEF VALVE												
1-CC-RV-125B	11715-CBM-079B	3 OF 5	C6	RELIEF VALVE	.750	[illegible]	C		SP	O			
	CC SUPPLY TO "B" RC PUMP THERMAL BARRIER RELIEF VALVE												
1-CC-RV-125C	11715-CBM-079B	4 OF 5	C6	RELIEF VALVE	.750	3	C		SP	O			
	CC SUPPLY TO "C" RC PUMP THERMAL BARRIER RELIEF VALVE												
1-CC-RV-128A	11715-CBM-079B	1 OF 5	E3	RELIEF VALVE	.750	3	C		SP	O			

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
	"A" RHR HEAT EXCHANGER COMPONENT COOLING RELIEF VALVE												
1-CC-RV-128B	11715-CBM-079B	1 OF 5	D3	RELIEF VALVE	.750	3	C		SP	O			
	"B" RHR HEAT EXCHANGER COMPONENT COOLING RELIEF VALVE												
1-CC-TV-100A	11715-CBM-079D	4 OF 5	E4	AO BFLY	6.000	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C			
									VP	OC			
	CC RETURN FROM "A" RECIRC AIR COOLING COILS, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-CC-TV-100B	11715-CBM-079D	4 OF 5	D4	AO BFLY	6.000	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C			
									VP	OC			
	CC RETURN FROM "B" RECIRC AIR COOLING COILS, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-CC-TV-100C	11715-CBM-079D	4 OF 5	C4	AO BFLY	6.000	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C			
									VP	OC			
	CC RETURN FROM "C" RECIRC AIR COOLING COILS, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-CC-TV-101A	11715-CBM-079B	1 OF 5	D7	AO GLOBE	4.000	2	A	CIV	EV	C		1	
									FS	C		1	
									LT	C			
									ST	C		1	
									VP	OC			
	CC RETURN FROM REACTOR COOLANT PUMP THERMAL BARRIERS, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-CC-TV-101B	11715-CBM-079B	1 OF 5	D6	AO GLOBE	4.000	2	A	CIV	EV	C		1	
									FS	C		1	
									LT	C			
									ST	C		1	
									VP	OC			
	CC RETURN FROM REACTOR COOLANT PUMP THERMAL BARRIERS, INSIDE CONTAINMENT ISOLATION VALVE												
1-CC-TV-102A	11715-CBM-079B	4 OF 5	A5	AO BFLY	8.000	2	A	CIV	EV	C		1	
									FS	C		1	
									LT	C			
									ST	C		1	
									VP	OC			
	CC RETURN FROM "C" RC PUMP LO,STATOR & SHROUD COOLERS, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-CC-TV-102B	11715-CBM-079B	4 OF 5	A3	AO BFLY	8.000	2	A	CIV	EV	C		1	

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
1-CC-TV-102B	11715-CBM-079B	4 OF 5	A3	AO BFLY	8.000	2	A	CIV	FS	C		1	
									LT	C			
									ST	C		1	
									VP	OC			
	CC RETURN FROM "C" RC PUMP LO,STATOR & SHROUD COOLERS, INSIDE CONTAINMENT ISOLATION VALVE												
1-CC-TV-102C	11715-CBM-079B	3 OF 5	A5	AO BFLY	8.000	2	A	CIV	EV	C		1	
									FS	C		1	
									LT	C			
									ST	C		1	
									VP	OC			
	CC RETURN FROM "B" RC PUMP LO,STATOR & SHROUD COOLERS, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-CC-TV-102D	11715-CBM-079B	3 OF 5	A3	AO BFLY	8.000	2	A	CIV	EV	C		1	
									FS	C		1	
									LT	C			
									ST	C		1	
									VP	OC			
	CC RETURN FROM "B" RC PUMP LO,STATOR & SHROUD COOLERS, INSIDE CONTAINMENT ISOLATION VALVE												
1-CC-TV-102E	11715-CBM-079B	2 OF 5	A5	AO BFLY	[illegible].000	2	A	CIV	EV	C		1	
									FS	C		1	
									LT	C			
									ST	C		1	
									VP	OC			
	CC RETURN FROM "A" RC PUMP LO,STATOR & SHROUD COOLERS, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-CC-TV-102F	11715-CBM-079B	2 OF 5	A3	AO BFLY	8.000	2	A	CIV	EV	C		1	
									FS	C		1	
									LT	C			
									ST	C		1	
									VP	OC			
	CC RETURN FROM "A" RC PUMP LO,STATOR & SHROUD COOLERS, INSIDE CONTAINMENT ISOLATION VALVE												
1-CC-TV-103A	11715-CBM-079B	1 OF 5	A7	AO BFLY	18.000	2	A	CIV	EV	C			
										O			
									FS	C			
									LT	C			
									ST	C			
										O			
									VP	OC			
	CC RETURN FROM "A" RHR HEAT EXCHANGER, OUT-SIDE CONTAINMENT ISOLATION VALVE												
1-CC-TV-103B	11715-CBM-079B	1 OF 5	B7	AO BFLY	18.000	2	A	CIV	EV	C			
										O			
									FS	C			
									LT	C			
									ST	C			
										O			
									VP	OC			

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
	CC RETURN FROM "B" RHR HEAT EXCHANGER, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-CC-TV-104A	11715-CBM-079B	2 OF 5	E8	AO BFLY	8.000	2	A	CIV	EV	C		1	
									FS	C		1	
									LT	C			
									ST	C		1	
									VP	OC			
	CC SUPPLY TO "A" RC PUMP LO, STATOR, SHROUD & THERM BARRIER COOLERS, OUTSIDE CONT ISOL VLV												
1-CC-TV-104B	11715-CBM-079B	3 OF 5	E8	AO BFLY	8.000	2	A	CIV	EV	C		1	
									FS	C		1	
									LT	C			
									ST	C		1	
									VP	OC			
	CC SUPPLY TO "B" RC PUMP LO, STATOR, SHROUD & THERM BARRIER COOLERS, OUTSIDE CONT ISOL VLV												
1-CC-TV-104C	11715-CBM-079B	4 OF 5	E8	AO BFLY	8.000	2	A	CIV	EV	C		1	
									FS	C		1	
									LT	C			
									ST	C		1	
									VP	OC			
	CC SUPPLY TO "C" RC PUMP LO, STATOR, SHROUD & THERM BARRIER COOLERS, OUTSIDE CONT ISOL VLV												
1-CC-TV-105A	11715-CBM-079D	4 OF 5	E4	AO BFLY	6.000	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C			
									VP	OC			
	CC RETURN FROM "A" RECIRC AIR COOLING COILS, INSIDE CONTAINMENT ISOLATION VALVE												
1-CC-TV-105B	11715-CBM-079D	4 OF 5	D4	AO BFLY	6.000	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C			
									VP	OC			
	CC RETURN FROM "B" RECIRC AIR COOLING COILS, INSIDE CONTAINMENT ISOLATION VALVE												
1-CC-TV-105C	11715-CBM-079D	4 OF 5	C4	AO BFLY	6.000	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C			
									VP	OC			
	CC RETURN FROM "C" RECIRC AIR COOLING COILS, INSIDE CONTAINMENT ISOLATION VALVE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
1-CD-161	11715-CBB-040C	1 OF 3	E6	CHECK VALVE	3.000	3	C		CV	O			
	CONTROL ROOM CHILLED WATER SYSTEM PUMP DISCHARGE CHECK VALVE												
1-CD-182	11715-CBB-040C	1 OF 3	D6	CHECK VALVE	3.000	3	C		CV	O			
	CONTROL ROOM CHILLED WATER SYSTEM PUMP DISCHARGE CHECK VALVE												
1-CD-209	11715-CBB-040C	1 OF 3	C6	CHECK VALVE	3.000	3	C		CV	O			
	CONTROL ROOM CHILLED WATER SYSTEM PUMP DISCHARGE CHECK VALVE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
1-CH-084	11715-CBM-095A	1 OF 4	C4	CHECK VALVE	2.000	3	C		CV	O		3	
	"A" BORIC ACID TRANSFER PUMP DISCHARGE CHECK VALVE												
1-CH-102	11715-CBM-095A	1 OF 4	C5	CHECK VALVE	2.000	3	C		CV	O		3	
	"B" BORIC ACID TRANSFER PUMP DISCHARGE CHECK VALVE												
1-CH-215	11715-CBM-095B	1 OF 2	B6	CHECK VALVE	4.000	2	AC		CV	C	72		
										O			
									LT	C			
	CHARGING PUMP SUPPLY FROM VOLUME CONTROL TANK ISOLATION VALVE												
1-CH-238	11715-CBM-095B	1 OF 2	B5	CHECK VALVE	2.000	2	C		CV	O		4	
	MAIN EMERGENCY BORATION LINE TO CHARGING PUMP SUCTION CHECK VALVE												
1-CH-240	11715-CBM-095B	1 OF 2	C3	CHECK VALVE	1.000	3	C		CV	O		4	
	ALTERNATE EMERGENCY BORATION LINE CHECK VALVE												
1-CH-241	11715-CBM-095B	1 OF 2	B4	MANUAL GATE	1.000	3	B		EV	O		4	
	ALTERNATE EMERGENCY BORATION LINE MANUAL VALVE												
1-CH-242	11715-CBM-095B	1 OF 2	B5	CHECK VALVE	1.000	2	C		CV	O		4	
	ALTERNATE EMERGENCY BORATION LINE TO CHARGING PUMP SUCTION CHECK VALVE												
1-CH-252	11715-CBM-095B	2 OF 2	D7	CHECK VALVE	3.000	2	C		CV	O		38	
	"A" CHARGING PUMP DISCHARGE RECIRC LINE CHECK VALVE												
1-CH-254	11715-CBM-095B	2 OF 2	D7	CHECK VALVE	3.000	2	C		CV	C	47		
										O	47		
	"A" CHARGING PUMP DISCHARGE CHECK VALVE												
1-CH-264	11715-CBM-095B	2 OF 2	D6	CHECK VALVE	3.000	2	C		CV	O		38	
	"B" CHARGING PUMP DISCHARGE RECIRC LINE CHECK VALVE												
1-CH-267	11715-CBM-095B	2 OF 2	D6	CHECK VALVE	3.000		C		CV	C	47		
										O	47		
	"B" CHARGING PUMP DISCHARGE CHECK VALVE												
1-CH-277	11715-CBM-095B	2 OF 2	D4	CHECK VALVE	3.000	2	C		CV	O		38	
	"C" CHARGING PUMP DISCHARGE RECIRC LINE CHECK VALVE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
1-CH-279	11715-CBM-095B	2 OF 2	D6	CHECK VALVE	3.000	2	C		CV	C	47		
										O	47		
	"C" CHARGING PUMP DISCHARGE CHECK VALVE												
1-CH-322	11715-CBM-095C	1 OF 2	D4	CHECK VALVE	3.000	2	AC	CIV	CV	C	10		
									LT	C			
	MAIN CHARGING SUPPLY HEADER, INSIDE CONTAINMENT ISOLATION CHECK VALVE												
1-CH-330	11715-CBM-095C	1 OF 2	A6	CHECK VALVE	2.000	1	AC	CIV	CV	C	10		
									LT	C			
	CHARGING SUPPLY TO LOOP FILL HEADER, INSIDE CONTAINMENT ISOLATION CHECK VALVE												
1-CH-336	11715-CBM-095C	2 OF 2	B8	CHECK VALVE	2.000	1	C		CV	C	10		
	"A" RC PUMP SEAL WATER SUPPLY, INSIDE CONTAINMENT ISOLATION CHECK VALVE												
1-CH-358	11715-CBM-095C	2 OF 2	B7	CHECK VALVE	2.000	1	C		CV	C	10		
	"B" RC PUMP SEAL WATER SUPPLY, INSIDE CONTAINMENT ISOLATION CHECK VALVE												
1-CH-380	11715-CBM-095C	2 OF 2	B5	CHECK VALVE	2.000	1	C		CV	C	10		
	"C" RC PUMP SEAL WATER SUPPLY, INSIDE CONTAINMENT ISOLATION CHECK VALVE												
1-CH-402	11715-CBM-095C	2 OF 2	F4	CHECK VALVE	.750	2	AC	CIV	CV	C	10		
									LT	C	59		
	RC PUMP SEAL WATER RETURN, INSIDE CONTAINMENT ISOLATION CHECK VALVE												
1-CH-FCV-1113A	11715-CBM-095B	1 OF 2	C3	AO GATE	1.000	3	B		EV	O			
									FS	O			
									ST	O			
									VP	OC			
	ALTERNATE EMERGENCY BORATION LINE FLOW CONTROL VALVE												
1-CH-FCV-1114A	11715-CBM-095B	1 OF 2	D4	AO GLOBE	1.000	3	B		EV	C			
									FS	C			
									ST	C			
									VP	OC			
	PRIMARY GRADE WATER FLOW CONTROL VALVE												
1-CH-FCV-1160	11715-CBM-095C	1 OF 2	A4	AO GLOBE	2.000	2	AE	CIV	LT	C			
									VP	OC			
	CHARGING FLOW CONTROL TO LOOP FILL HEADER, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-CH-LCV-1460A	11715-CBM-095C	1 OF 2	F7	AO GLOBE	2.000	1	B		EV	C		5	
									FS	C		5	
									ST	C			

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
1-CH-LCV-1460A	11715-CBM-095C	1 OF 2	F7	AO GLOBE	2.000	1	B		VP	OC			
	LETDOWN ISOLATION VALVE												
1-CH-LCV-1460B	11715-CBM-095C	1 OF 2	F7	AO GLOBE	2.000	1	B		EV	C		5	
									FS	C		5	
									ST	C			
									VP	OC			
	LETDOWN ISOLATION VALVE												
1-CH-MOV-1115B	11715-CBM-095B	2 OF 2	B8	MO GATE	8.000	2	A		EV	C		6	
										O		6	
									LT	C			
									ST	C		6	
										O		6	
									VP	OC			
	CHARGING PUMP SUPPLY ISOLATION VALVE FROM REFUELING WATER STORAGE TANK												
1-CH-MOV-1115C	11715-CBM-095B	1 OF 2	C6	MO GATE	4.000	2	B		EV	C		6	
									ST	C		6	
									VP	OC			
	CHARGING PUMP SUPPLY ISOLATION FROM VOLUME CONTROL TANK												
1-CH-MOV-1115D	11715-CBM-095B	2 OF 2	B8	MO GATE	8.000	2	A		EV	C		6	
										O		6	
									LT	C			
									ST	C		6	
										O		6	
									VP	OC			
	CHARGING PUMP SUPPLY ISOLATION VALVE FROM REFUELING WATER STORAGE TANK												
1-CH-MOV-1115E	11715-CBM-095B	1 OF 2	C6	MO GATE	4.000	2	B		EV	C		6	
									ST	C		6	
									VP	OC			
	CHARGING PUMP SUPPLY ISOLATION VALVE FROM VOLUME CONTROL TANK												
1-CH-MOV-1267A	11715-CBM-095B	2 OF 2	C7	MO GATE	6.000	2	E		VP	OC			
	"A" CHARGING PUMP SUCTION ISOLATION FROM RWST AND VCT												
1-CH-MOV-1267B	11715-CBM-095B	2 OF 2	C7	MO GATE	6.000	2	E		VP	OC			
	"A" CHARGING PUMP SUCTION ISOLATION FROM LHSI												
1-CH-MOV-1269A	11715-CBM-095B	2 OF 2	C5	MO GATE	6.000	2	E		VP	OC			
	"B" CHARGING PUMP SUCTION ISOLATION FROM RWST AND VCT												
1-CH-MOV-1269B	11715-CBM-095B	2 OF 2	C5	MO GATE	6.000	2	E		VP	OC			

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
	"B" CHARGING PUMP SUCTION ISOLATION FROM LHSI												
1-CH-MOV-1270A	11715-CBM-095B	2 OF 2	C3	MO GATE	6.000	2	E		VP	OC			
	"C" CHARGING PUMP SUCTION ISOLATION FROM RWST AND VCT												
1-CH-MOV-1270B	11715-CBM-095B	2 OF 2	C3	MO GATE	6.000	2	E		VP	OC			
	"C" CHARGING PUMP SUCTION ISOLATION FROM LHSI												
1-CH-MOV-1275A	11715-CBM-095B	2 OF 2	D7	MO GATE	2.000	2	B		EV	C			
										O			
									ST	C			
										O			
									VP	OC			
	"A" CHARGING PUMP MINIMUM RECIRCULATION ISOLATION VALVE												
1-CH-MOV-1275B	11715-CBM-095B	2 OF 2	D5	MO GATE	2.000	2	B		EV	C			
										O			
									ST	C			
										O			
									VP	OC			
	"B" CHARGING PUMP MINIMUM RECIRCULATION ISOLATION VALVE												
1-CH-MOV-1275C	[illegible]CBM-095B	2 OF 2	D4	MO GATE	2.000	2	B		EV	C			
										O			
									ST	C			
										O			
									VP	OC			
	"C" CHARGING PUMP MINIMUM RECIRCULATION ISOLATION VALVE												
1-CH-MOV-1286A	11715-CBM-095B	2 OF 2	E7	MO GATE	3.000	2	B		EV	C			
										O			
									ST	C			
										O			
									VP	OC			
	"A" CHARGING PUMP MAIN DISCHARGE ISOLATION VALVE												
1-CH-MOV-1286B	11715-CBM-095B	2 OF 2	E6	MO GATE	3.000	2	B		EV	C			
										O			
									ST	C			
										O			
									VP	OC			
	"B" CHARGING PUMP MAIN DISCHARGE ISOLATION VALVE												
1-CH-MOV-1286C	11715-CBM-095B	2 OF 2	E4	MO GATE	3.000	2	B		EV	C			
										O			
									ST	C			
										O			
									VP	OC			

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
	"C" CHARGING PUMP MAIN DISCHARGE ISOLATION VALVE												
1-CH-MOV-1287A	11715-CBM-095B	2 OF 2	D7	MO GATE	3.000	2	B		EV	C			
										O			
									ST	C			
										O			
									VP	OC			
	"A" CHARGING PUMP ALTERNATE AND LOOP FILL DISCHARGE ISOLATION VALVE												
1-CH-MOV-1287B	11715-CBM-095B	2 OF 2	D6	MO GATE	3.000	2	B		EV	C			
										O			
									ST	C			
										O			
									VP	OC			
	"B" CHARGING PUMP ALTERNATE AND LOOP FILL DISCHARGE ISOLATION VALVE												
1-CH-MOV-1287C	11715-CBM-095B	2 OF 2	D4	MO GATE	3.000	2	B		EV	C			
										O			
									ST	C			
										O			
									VP	OC			
	"C" CHARGING PUMP ALTERNATE AND LOOP FILL DISCHARGE ISOLATION VALVE												
1-CH-MOV-1289A	11715-CBM-095C	1 OF 2	D4	MO GATE	3.000	2	A	CIV	EV	C		7	
									LT	C			
									ST	C		7	
									VP	OC			
	MAIN CHARGING HEADER ISOLATION VALVE, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-CH-MOV-1289B	11715-CBM-095C	1 OF 2	B3	MO GATE	3.000	2	B		EV	C		7	
									ST	C		7	
									VP	OC			
	MAIN CHARGING HEADER ISOLATION VALVE, OUTSIDE CONTAINMENT												
1-CH-MOV-1350	11715-CBM-095B	1 OF 2	B5	MO GATE	2.000	2	B		EV	O		4	
									ST	O		4	
									VP	OC			
	EMERGENCY BORATION TO CHARGING PUMP SUCTION												
1-CH-MOV-1373	11715-CBM-095B	1 OF 2	A8	MO GATE	3.000	2	E		VP	OC			
	CHARGING PUMP RECIRCULATION HEADER ISOLATION VALVE												
1-CH-MOV-1380	11715-CBM-095C	2 OF 2	F4	MO GATE	3.000	2	A	CIV	EV	C	9		
									LT	C	59		
									ST	C	9		
									VP	OC			

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
	REACTOR COOLANT PUMP SEAL WATER RETURN, INSIDE CONTAINMENT ISOLATION VALVE												
1-CH-MOV-1381	11715-CBM-095B	1 OF 2	C8	MO GATE	3.000	2	A	CIV	EV	C	9		
									LT	C			
									ST	C	9		
									VP	OC			
	REACTOR COOLANT PUMP SEAL WATER RETURN, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-CH-RV-1203	11715-CBM-095C	1 OF 2	F4	RELIEF VALVE	2.000	2	C		SP	O			
	LETDOWN RELIEF VLV DOWNSTREAM OF REGEN HX, RV DISCHARGE TO PRESSURIZER RELIEF TANK												
1-CH-RV-1382B	11715-CBM-095B	1 OF 2	C7	RELIEF VALVE	2.000	2	C		SP	O			
	SEAL WATER HEAT EXCHANGER RELIEF VALVE, RV DISCHARGE TO VOLUME CONTROL TANK												
1-CH-TV-1204A	11715-CBM-095C	1 OF 2	E3	AO GLOBE	2.000	2	A	CIV	EV	C		5	
									FS	C		5	
									LT	C			
									ST	C		5	
									VP	OC			
	LETDOWN CONTROL FROM REGEN HX, INSIDE CONTAINMENT ISOLATION VALVE												
1-CH-TV-1204B	11715-CBM-095A	4 OF 4	C3	AO GLOBE	3.000	2	A	CIV	EV	C		5	
									FS	C		5	
									LT	C			
									ST	C		5	
									VP	OC			
	LETDOWN CONTROL FROM REGEN HX, OUTSIDE CONTAINMENT ISOLATION VALVE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
1-CV-004	11715-CBM-092A	2 OF 2	A5	MANUAL GATE	8.000	2	AE	CIV	LT	C			
	CONTAINMENT VACUUM EJECTOR SUPPLY, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-CV-08	11715-CBM-092A	2 OF 2	B3	CHECK VALVE	2.000	2	C		CV	O			
	CONTAINMENT VACUUM SYSTEM ISOLATION CHECK VALVE												
1-CV-14	11715-CBM-092A	2 OF 2	C3	CHECK VALVE	2.000	2	C		CV	O			
	CONTAINMENT VACUUM SYSTEM ISOLATION CHECK VALVE												
1-CV-TV-100	11715-CBM-092A	2 OF 2	A3	AO BFLY	8.000	2	AE	CIV	LT	C			
									VP	OC			
	CONTAINMENT VACUUM EJECTOR, INSIDE CONTAIN-MENT ISOLATION VALVE												
1-CV-TV-150A	11715-CBM-092A	2 OF 2	B4	AO GLOBE	2.000	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C	54		
									VP	OC			
	"A" CONTAINMENT VACUUM PUMP SUCTION ISOLATION VALVE, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-CV-TV-150B	11715-CBM-092A	2 OF 2	B5	AO GLOBE	2.000	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C	54		
									VP	OC			
	"A" CONTAINMENT VACUUM PUMP SUCTION ISOLATION VALVE, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-CV-TV-150C	11715-CBM-092A	2 OF 2	C4	AO GLOBE	2.000	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C	54		
									VP	OC			
	"B" CONTAINMENT VACUUM PUMP SUCTION ISOLATION VALVE, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-CV-TV-150D	11715-CBM-092A	2 OF 2	C5	AO GLOBE	2.000	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C	54		
									VP	OC			
	"B" CONTAINMENT VACUUM PUMP SUCTION ISOLATION VALVE, OUTSIDE CONTAINMENT ISOLATION VALVE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
1-DA-039	11715-CBM-090C	3 OF 3	D3	MAN DIAPHRAM	2.000	2	AE	CIV	LT	C			
	VENT LINE FROM PRIMARY VENT POT, INSIDE CONTAINMENT ISOLATION VALVE												
1-DA-041	11715-CBM-090C	3 OF 3	E3	MAN DIAPHRAM	2.000	2	AE	CIV	LT	C			
	VENT LINE FROM PRIMARY VENT POT, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-DA-TV-100A	11715-CBM-090A	1 OF 2	E7	AC GLOBE	2.000	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C	54		
									VP	OC			
	REACTOR CONTAINMENT SUMP PUMPS DISCHARGE, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-DA-TV-100B	11715-CBM-090C	3 OF 3	C3	AO GLOBE	2.000	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C	54		
									VP	OC			
	REACTOR CONTAINMENT SUMP PUMPS DISCHARGE, INSIDE CONTAINMENT ISOLATION VALVE												
1-DA-TV-103A	11715-CBM-090C	3 OF 3	B7	AO GLOBE	2.000	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C	54		
									VP	OC			
	POST ACCIDENT SAMPLE SYSTEM RETURN, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-DA-TV-103B	11715-CBM-090C	3 OF 3	B8	AO GLOBE	2.000	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C	54		
									VP	OC			
	POST ACCIDENT SAMPLE SYSTEM RETURN, OUTSIDE CONTAINMENT TRIP VALVE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
1-DG-TV-100A	11715-CBM-090C	1 OF 3	B8	AO GLOBE	2.000	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C			
									VP	OC			
	PRIMARY DRAIN TRANSFER PUMPS DISCHARGE, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-DG-TV-100B	11715-CBM-090C	1 OF 3	B7	AO GLOBE	2.000	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C	54		
									VP	OC			
	PRIMARY DRAIN TRANSFER PUMPS DISCHARGE, INSIDE CONTAINMENT ISOLATION VALVE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
1-EB-015	11715-FM -107A	1 OF 4	E6	CHECK VALVE	1.500	NC	C		CV	O			4
	1H DIESEL "HA" AIR RECEIVER TANK DISCHARGE VALVE												
1-EB-034	11715-FM -107A	3 OF 4	E6	CHECK VALVE	1.500	NC	C		CV	O			4
	1J DIESEL "JA" AIR RECEIVER TANK DISCHARGE VALVE												
1-EB-041	11715-FM -107A	1 OF 4	D6	CHECK VALVE	.750	NC	AC		CV LT	C C			
	1H DIESEL "HA" AIR RECEIVER TANK ISOLATION VALVE												
1-EB-053	11715-FM -107A	3 OF 4	D6	CHECK VALVE	.750	NC	AC		CV LT	C C			
	1J DIESEL "JA" AIR RECEIVER TANK ISOLATION VALVE												
1-EB-065	11715-FM -107A	2 OF 4	E6	CHECK VALVE	1.500	NC	C		CV	O			4
	1H DIESEL "B" AIR RECEIVER TANK DISCHARGE VALVE												
1-EB-072	11715-FM -107A	2 OF 4	D6	CHECK VALVE	.750	NC	AC		CV LT	C C			
	1H DIESEL "B" AIR RECEIVER TANK ISOLATION VALVE												
1-EB-084	11715-FM -107A	4 OF 4	E6	CHECK VALVE	1.500	NC	C		CV	O			4
	1J DIESEL "B" AIR RECEIVER TANK DISCHARGE VALVE												
1-EB-091	11715-FM -107A	4 OF 4	D6	CHECK VALVE	.750	NC	AC		CV LT	C C			
	1J DIESEL "B" AIR RECEIVER TANK ISOLATION VALVE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
1-EG-254	11715-FB -035A	2 OF 2	B7	CHECK VALVE	1.500	NC	C		CV	O			
	1H DIESEL "A" EMERGENCY GENERATOR PUMP DISCHARGE CHECK VALVE												
1-EG-266	11715-FB -035A	2 OF 2	B6	CHECK VALVE	1.500	NC	C		CV	O			
	1J DIESEL "A" EMERGENCY GENERATOR PUMP DISCHARGE CHECK VALVE												
1-EG-278	11715-FB -035A	2 OF 2	B6	CHECK VALVE	1.500	NC	C		CV	O			
	1H DIESEL "B" EMERGENCY GENERATOR PUMP DISCHARGE CHECK VALVE												
1-EG-295	11715-FB -035A	2 OF 2	D6	CHECK VALVE	1.500	NC	C		CV	O			
	1J DIESEL "B" EMERGENCY GENERATOR PUMP DISCHARGE CHECK VALVE												
1-EG-RV-103A	11715-FB -035A	2 OF 2	B7	RELIEF VALVE	1.000	NC	C		SP	O			
	1H DIESEL "A" EMER GENERATOR PUMP DISCHARGE RELIEF VALVE, RV DISCHARGE TO PUMP SUCTION												
1-EG-RV-103B	11715-FB -035A	2 OF 2	B6	RELIEF VALVE	1.000	NC	C		SP	O			
	1H DIESEL "B" EMER GENERATOR PUMP DISCHARGE RELIEF VALVE, RV DISCHARGE TO PUMP SUCTION												
1-EG-RV-105A	11715-FB -035A	2 OF 2	E7	RELIEF VALVE	1.000	NC	C		SP	O			
	1J DIESEL "A" EMER GENERATOR PUMP DISCHARGE RELIEF VALVE, RV DISCHARGE TO PUMP SUCTION												
1-EG-RV-105B	11715-FB -035A	2 OF 2	E6	RELIEF VALVE	1.000	NC	C		SP	O			
	1J DIESEL "B" EMER GENERATOR PUMP DISCHARGE RELIEF VALVE, RV DISCHARGE TO PUMP SUCTION												
1-EG-RV-602HA	11715-FM -107A	1 OF 4	E4	RELIEF VALVE	2.000	NC	C		SP	O			
	1H DIESEL "A" AIR RECEIVER TANK RELIEF VALVE, RV DISCHARGE TO ATMOSPHERE												
1-EG-RV-602HB	11715-FM -107A	2 OF 4	E4	RELIEF VALVE	2.000	NC	C		SP	O			
	1H DIESEL "B" AIR RECEIVER TANK RELIEF VALVE, RV DISCHARGE TO ATMOSPHERE												
1-EG-RV-602JA	11715-FM -107A	3 OF 4	E4	RELIEF VALVE	2.000	NC	C		SP	O			
	1J DIESEL "A" AIR RECEIVER TANK RELIEF VALVE, RV DISCHARGE TO ATMOSPHERE												
1-EG-RV-602JB	11715-FM -107A	4 OF 4	E4	RELIEF VALVE	2.000	NC	C		SP	O			
	1J DIESEL "B" AIR RECEIVER TANK RELIEF VALVE, RV DISCHARGE TO ATMOSPHERE												
1-EG-SOV-600HA	11715-FM -107A	1 OF 4	E6	SO GATE	1.500	NC	B		EV	O			
									ST	O			4

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
	DIESEL AIR START SOLENOID VALVE												
1-EG-SOV-600HB	11715-FM -107A	2 OF 4	E6	SO GATE	1.500	NC	B		EV	O			
									ST	O			4
	DIESEL AIR START SOLENOID VALVE												
1-EG-SOV-600JA	11715-FM -107A	3 OF 4	E6	SO GATE	1.500	NC	B		EV	O			
									ST	O			4
	DIESEL AIR START SOLENOID VALVE												
1-EG-SOV-600JB	11715-FM -107A	4 OF 4	E6	SO GATE	1.500	NC	B		EV	O			
									ST	O			4
	DIESEL AIR START SOLENOID VALVE												
1-EG-SOV-601HA	11715-FM -107A	1 OF 4	E6	SO GATE	1.500	NC	B		EV	O			
									ST	O			4
	DIESEL AIR START SOLENOID VALVE												
1-EG-SOV-607JA	11715-FM -107A	3 OF 4	E6	SO GATE	1.500	NC	B		EV	O			
									ST	O			4
	DIESEL AIR START SOLENOID VALVE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
1-FP-272	11715-CBB-102B	1 OF 1	C6	CHECK VALVE	4.000	2	AC	CIV	CV LT	C C	16		
	FIRE PROTECTION SUPPLY TO CONTAINMENT, INSIDE CONTAINMENT ISOLATION CHECK VALVE												
1-FP-274	11715-CBB-102B	1 OF 1	C7	MANUAL GATE	4.000	2	AE	CIV	LT	C			
	FIRE PROTECTION SUPPLY TO CONTAINMENT, OUTSIDE CONTAINMENT ISOLATION VALVE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
1-FW-047	11715-CBM-074A	1 OF 4	E6	CHECK VALVE	16.000	2	C		CV	C		12	
	"A" MAIN FEEDWATER SUPPLY, CONTAINMENT PENETRATION CHECK VALVE												
1-FW-061	11715-CBM-074A	1 OF 4	B5	CHECK VALVE	3.000	3	C		CV	O		29	
	STANDBY "A" AUXILIARY FEEDWATER HEADER CHECK VALVE, OUTSIDE OF CONTAINMENT												
1-FW-062	11715-CBM-074A	1 OF 4	B5	MANUAL GATE	3.000	3	B		EV	C		40	
										O		40	
	AUXILIARY FEEDWATER HEADER MANUAL ISOLATION VALVE FROM MOTOR-DRIVEN PUMP HEADERS												
1-FW-063	11715-CBM-074A	1 OF 4	B6	CHECK VALVE	3.000	3	C		CV	O		29	
	STANDBY "A" AUXILIARY FEEDWATER HEADER CHECK VALVE, OUTSIDE OF CONTAINMENT												
1-FW-064	11715-CBM-074A	1 OF 4	B5	MANUAL GATE	3.000	3	B		EV	C		40	
										O		40	
	AUXILIARY FEEDWATER HEADER MANUAL ISOLATION VALVE FROM MOTOR-DRIVEN PUMP HEADERS												
1-FW-068	11715-CBM-074A	1 OF 4	D6	CHECK VALVE	3.000	2	C		CV	O			
	"A" AUXILIARY FEEDWATER HEADER CHECK VALVE AT MAIN FEEDWATER HEADER												
1-FW-079	11715-CBM-074A	1 OF 4	D6	CHECK VALVE	16.000	2	C		CV	C		12	
	"B" MAIN FEEDWATER HEADER SUPPLY, CONTAINMENT PENETRATION CHECK VALVE												
1-FW-093	11715-CBM-074A	1 OF 4	B6	CHECK VALVE	3.000	3	C		CV	O			
	"B" AUXILIARY FEEDWATER HEADER CHECK VALVE, OUTSIDE OF CONTAINMENT												
1-FW-094	11715-CBM-074A	1 OF 4	B6	MANUAL GATE	3.000	3	B		EV	C		40	
										O		40	
	AUXILIARY FEEDWATER HEADER MANUAL ISOLATION VALVE FROM MOTOR-DRIVEN PUMP HEADERS												
1-FW-095	11715-CBM-074A	1 OF 4	B6	CHECK VALVE	3.000	3	C		CV	O		29	
	STANDBY "B" AUXILIARY FEEDWATER HEADER CHECK VALVE, OUTSIDE OF CONTAINMENT												
1-FW-096	11715-CBM-074A	1 OF 4	B6	MANUAL GATE	3.000	3	B		EV	C		40	
										O		40	
	AUXILIARY FEEDWATER HEADER MANUAL ISOLATION VALVE FROM MOTOR-DRIVEN PUMP HEADERS												
1-FW-100	11715-CBM-074A	1 OF 4	C6	CHECK VALVE	3.000	2	C		CV	O			
	"B" AUXILIARY FEEDWATER HEADER CHECK VALVE AT MAIN FEEDWATER HEADER												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
1-FW-111	11715-CBM-074A	1 OF 4	B6	CHECK VALVE	16.000	2	C		CV	C		12	
	"C" MAIN FEEDWATER SUPPLY, CONTAINMENT PENETRATION CHECK VALVE												
1-FW-125	11715-CBM-074A	1 OF 4	B7	CHECK VALVE	3.000	3	C		CV	O		29	
	STANDBY "C" AUXILIARY FEEDWATER HEADER CHECK VALVE, OUTSIDE OF CONTAINMENT												
1-FW-126	11715-CBM-074A	1 OF 4	B7	MANUAL GATE	3.000	3	B		EV	C O		40 40	
	AUXILIARY FEEDWATER HEADER MANUAL ISOLATION VALVE FROM MOTOR-DRIVEN PUMP HEADERS												
1-FW-127	11715-CBM-074A	1 OF 4	B7	CHECK VALVE	3.000	3	C		CV	O			
	"C" AUXILIARY FEEDWATER HEADER CHECK VALVE, OUTSIDE OF CONTAINMENT												
1-FW-128	11715-CBM-074A	1 OF 4	B7	MANUAL GATE	3.000	3	B		EV	C O		40 40	
	AUXILIARY FEEDWATER HEADER MANUAL ISOLATION VALVE FROM MOTOR-DRIVEN PUMP HEADERS												
1-FW-132	11715-CBM-074A	1 OF 4	B7	CHECK VALVE	3.000	2	C		CV	O			
	"C" AUXILIARY FEEDWATER HEADER CHECK VALVE AT MAIN FEEDWATER HEADER												
1-FW-145	11715-CBM-074A	3 OF 4	B7	MANUAL GATE	6.000	3	B		EV	O		41	
	ALTERNATE WATER SUPPLY TO AFW PUMP SUCTIONS												
1-FW-148	11715-CBM-074A	3 OF 4	D8	CHECK VALVE	6.000	3	C		CV	O			
	TURBINE DRIVEN AUXILIARY FEEDWATER PUMP DISCHARGE CHECK VALVE												
1-FW-149	11715-CBM-074A	3 OF 4	E8	MANUAL GATE	6.000	3	B		EV	C O		40 40	
	AFW PUMP DISCHARGE HEADER ALIGNMENT/CROSS CONNECT VALVE												
1-FW-150	11715-CBM-074A	3 OF 4	D7	CHECK VALVE	1.000	3	C		CV	O			
	TURBINE DRIVEN AUXILIARY FEEDWATER PUMP RECIRC LINE CHECK VALVE												
1-FW-155	11715-CBM-074A	3 OF 4	E7	MANUAL GATE	6.000	3	B		EV	C O		40 40	
	AFW PUMP DISCHARGE HEADER ALIGNMENT/CROSS CONNECT VALVE												
1-FW-162	11715-CBM-074A	3 OF 4	B6	MANUAL GATE	6.000	3	B		EV	O		41	
	ALTERNATE WATER SUPPLY TO AFW PUMP SUCTIONS												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
1-FW-165	11715-CBM-074A	3 OF 4	D6	CHECK VALVE	4.000	3	C		CV	O			
	"A" MOTOR DRIVEN AUXILIARY FEEDWATER PUMP DISCHARGE CHECK VALVE												
1-FW-166	11715-CBM-074A	3 OF 4	E6	MANUAL GATE	6.000	3	B		EV	C O		40 40	
	AFW PUMP DISCHARGE HEADER ALIGNMENT/CROSS CONNECT VALVE												
1-FW-167	11715-CBM-074A	3 OF 4	D6	CHECK VALVE	1.000	3	C		CV	O			
	"A" MOTOR DRIVEN AUXILIARY FEEDWATER PUMP RECIRC LINE CHECK VALVE												
1-FW-172	11715-CBM-074A	3 OF 4	E6	MANUAL GATE	6.000	3	B		EV	C O		40 40	
	AFW PUMP DISCHARGE HEADER ALIGNMENT/CROSS CONNECT VALVE												
1-FW-180	11715-CBM-074A	3 OF 4	B5	MANUAL GATE	6.000	3	B		EV	O		41	
	ALTERNATE WATER SUPPLY TO AFW PUMP SUCTIONS												
1-FW-183	11715-CBM-074A	3 OF 4	D5	CHECK VALVE	4.000	3	C		CV	O			
	"B" MOTOR DRIVEN AUXILIARY FEEDWATER PUMP DISCHARGE CHECK VALVE												
1-FW-184	11715-CBM-074A	3 OF 4	E5	MANUAL GATE	6.000	3	B		EV	C O		40 40	
	AFW PUMP DISCHARGE HEADER ALIGNMENT/CROSS CONNECT VALVE												
1-FW-185	11715-CBM-074A	3 OF 4	D5	CHECK VALVE	1.000	3	C		CV	O			
	"B" MOTOR DRIVEN AUXILIARY FEEDWATER PUMP RECIRC LINE CHECK VALVE												
1-FW-190	11715-CBM-074A	3 OF 4	E5	MANUAL GATE	6.000	3	B		EV	C O		40 40	
	AFW PUMP DISCHARGE HEADER ALIGNMENT/CROSS CONNECT VALVE												
1-FW-227	11715-CBM-074A	3 OF 4	A7	MANUAL GATE	6.000	3	B		EV	O		41	
	SERVICE WATER SUPPLY TO AFW PUMP SUCTIONS												
1-FW-279	11715-CBM-074A	3 OF 4	D8	CHECK VALVE	4.000	3	C		CV	O			
	"A" AUXILIARY FEEDWATER HEADER CHECK VALVE, OUTSIDE OF CONTAINMENT												
1-FW-526	11715-CBM-074A	3 OF 4	D7	CHECK VALVE	1.000	3	C		CV	O			
	PUMP LUBE OIL COOLER CHECK VALVE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
1-FW-527	11715-CBM-074A	3 OF 4	E6	CHECK VALVE	1.000	3	C		CV	O			
	PUMP LUBE OIL COOLER CHECK VALVE												
1-FW-528	11715-CBM-074A	3 OF 4	E4	CHECK VALVE	1.000	3	C		CV	O			
	PUMP LUBE OIL COOLER CHECK VALVE												
1-FW-FCV-1478	11715-CBM-074A	1 OF 4	E3	AO GLOBE	16.000	NC	B		EV	C		11	
									FS	C		11	
									ST	C		11	
									VP	OC			
	"A" MAIN FEEDWATER REG VALVE												
1-FW-FCV-1479	11715-CBM-074A	1 OF 4	F4	AO GLOBE	6.000	NC	B		EV	C		11	
									FS	C		11	
									ST	C		11	
	"A" BYPASS FEEDWATER REG VALVE												
1-FW-FCV-1488	11715-CBM-074A	1 OF 4	D4	AO GLOBE	16.000	NC	B		EV	C		11	
									FS	C		11	
									ST	C		11	
									VP	OC			
	"B" MAIN FEEDWATER REG VALVE												
1-FW-FCV-1489	11715-CBM-074A	1 OF 4	D4	AO GLOBE	6.000	NC	B		EV	C		11	
									FS	C		11	
									ST	C		11	
	"B" BYPASS FEEDWATER REG VALVE												
1-FW-FCV-1498	11715-CBM-074A	1 OF 4	B4	AO GLOBE	16.000	NC	B		EV	C		11	
									FS	C		11	
									ST	C		11	
									VP	OC			
	"C" MAIN FEEDWATER REG VALVE												
1-FW-FCV-1499	11715-CBM-074A	1 OF 4	C4	AO GLOBE	6.000	NC	B		EV	C		11	
									FS	C		11	
									ST	C		11	
	"C" BYPASS FEEDWATER REG VALVE												
1-FW-HCV-100A	11715-CBM-074A	1 OF 4	B5	AO GLOBE	3.000	3	B		EV	O		31	
									FS	O		31	
									ST	O		31	
									VP	OC			
	STANDBY AUXILIARY FEEDWATER SUPPLY TO "A" STEAM GENERATOR												
1-FW-HCV-100B	11715-CBM-074A	1 OF 4	B6	AO GLOBE	3.000	3	B		EV	O		31	

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
1-FW-HCV-100B	11715-CBM-074A	1 OF 4	B6	AO GLOBE	3.000	3	B		FS	O		31	
									ST	C		31	
									VP	OC			
	STANDBY AUXILIARY FEEDWATER SUPPLY TO "B" STEAM GENERATOR												
1-FW-HCV-100C	11715-CBM-074A	1 OF 4	A7	AO GLOBE	3.000	3	B		EV	O		31	
									FS	O		31	
									ST	O		31	
									VP	OC			
	NORMAL AUXILIARY FEEDWATER SUPPLY TO "C" STEAM GENERATOR												
1-FW-MOV-100A	11715-CBM-074A	1 OF 4	B5	MO GLOBE	3.000	3	B		EV	C			
										O			
									ST	C			
										O			
									VP	OC			
	STANDBY AUXILIARY FEEDWATER SUPPLY TO "A" STEAM GENERATOR												
1-FW-MOV-100B	11715-CBM-074A	1 OF 4	A6	MO GLOBE	3.000	3	B		EV	C			
										O			
									ST	C			
										O			
									VP	OC			
	NORMAL AUXILIARY FEEDWATER SUPPLY TO "B" STEAM GENERATOR												
1-FW-MOV-100C	11715-CBM-074A	1 OF 4	B7	MO GLOBE	3.000	3	B		EV	C			
										O			
									ST	C			
										O			
									VP	OC			
	STANDBY AUXILIARY FEEDWATER SUPPLY TO "C" STEAM GENERATOR												
1-FW-MOV-100D	11715-CBM-074A	3 OF 4	E8	MO GLOBE	3.000	3	B		EV	C			
										O			
									ST	C			
										O			
									VP	OC			
	NORMAL AUXILIARY FEEDWATER SUPPLY TO "A" STEAM GENERATOR												
1-FW-MOV-154A	11715-CBM-074A	1 OF 4	E3	MO GATE	16.000	NC	B		EV	C		11	
									ST	C		11	
									VP	OC			
	"A" MAIN FEEDWATER SUPPLY ISOLATION VALVE												
1-FW-MOV-154B	11715-CBM-074A	1 OF 4	D3	MO GATE	16.000	NC	B		EV	C		11	
									ST	C		11	
									VP	OC			

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
	"B" MAIN FEEDWATER SUPPLY ISOLATION VALVE												
1-FW-MOV-154C	11715-CBM-074A	1 OF 4	B3	MO GATE	16.000	NC	B		EV	C		11	
									ST	C		11	
									VP	OC			
	"C" MAIN FEEDWATER SUPPLY ISOLATION VALVE												
1-FW-PCV-159A	11715-CBM-074A	3 OF 4	F8	AO GLOBE	4.000	3	B		EV	O		32	
									FS	O		32	
									ST	O		32	
									VP	OC			
	AUXILIARY FEEDWATER PRESSURE CONTROL VALVE												
1-FW-PCV-159B	11715-CBM-074A	3 OF 4	E8	AO GLOBE	4.000	3	B		EV	O		32	
									FS	O		32	
									ST	O		32	
									VP	OC			
	AUXILIARY FEEDWATER PRESSURE CONTROL VALVE												
1-FW-RV-100	11715-CBM-074A	3 OF 4	D8	RELIEF VALVE	3.000	3	C		SP	O			
	TURBINE DRIVEN AUXILIARY FEED PUMP FEEDWATER DISCHARGE RELIEF VALVE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
1-GN-225	11715-FM -105A	1 OF 3	E4	CHECK VALVE	.750	NC	AC		CV LT	C C			1
	BOTTLED NITROGEN SUPPLY TO PORV ISOLATION CHECK VALVE												
1-GN-451	11715-FM -105A	1 OF 3	E6	CHECK VALVE	.750	NC	AC		CV LT	C C			1
	BOTTLED NITROGEN SUPPLY TO PORV ISOLATION CHECK VALVE												
1-GN-RV-108A-1	11715-FM -105A	1 OF 3	E7	RELIEF VALVE	.750	NC	C		SP	O			
	BOTTLED NITROGEN SUPPLY TO PORV RELIEF VALVE												
1-GN-RV-108A-2	11715-FM -105A	1 OF 3	F6	RELIEF VALVE	.750	NC	C		SP	O			
	BOTTLED NITROGEN SUPPLY TO PORV RELIEF VALVE												
1-GN-RV-108A-3	11715-FM -105A	1 OF 3	E6	RELIEF VALVE	.750	NC	C		SP	O			
	BOTTLED NITROGEN SUPPLY TO PORV RELIEF VALVE												
1-GN-RV-108B-1	11715-FM -105A	1 OF 3	E3	RELIEF VALVE	.750	NC	C		SP	O			
	BOTTLED NITROGEN SUPPLY TO PORV RELIEF VALVE												
1-GN-RV-108B-2	11715-FM -105A	1 OF 3	F5	RELIEF VALVE	.750	NC	C		SP	O			
	BOTTLED NITROGEN SUPPLY TO PORV RELIEF VALVE												
1-GN-RV-108B-3	11715-FM -105A	1 OF 3	E5	RELIEF VALVE	.750	NC	C		SP	O			
	BOTTLED NITROGEN SUPPLY TO PORV RELIEF VALVE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
1-HC-005	11715-CBM-106A	4 OF 4	C7	CHECK VALVE	2.000	NC	C		CV	O	50		
	CONTAINMENT ATMOSPHERE PURGE BLOWER DISCHARGE CHECK VALVE												
1-HC-014	11715-CBM-106A	1 OF 4	E8	CHECK VALVE	2.000	2	AC	CIV	CV	C	20		
										O	20		
									LT	C			
	UNIT 1 RETURN LINE FROM UNIT 1 HYDROGEN ANALYZERS & RECOMB, INSIDE CONT ISOL CHECK VALVE												
1-HC-018	11715-CBM-106A	2 OF 4	E6	CHECK VALVE	2.000	2	AC	CIV	CV	C	20		
										O	20		
									LT	C			
	UNIT 1 RETURN LINE FROM UNIT 2 HYDROGEN ANALYZERS & RECOMB, INSIDE CONT ISOL CHECK VALVE												
1-HC-062	11715-CBM-106A	1 OF 4	C7	CHECK VALVE	.375	NC	C		CV	O			
	HYDROGEN ANALYZER DISCHARGE CHECK VALVE												
1-HC-063	11715-CBM-106A	1 OF 4	C7	CHECK VALVE	.375	NC	C		CV	O			
	HYDROGEN ANALYZER DISCHARGE CHECK VALVE												
1-HC-TV-100A	11715-CBM-106A	1 OF 4	E8	SO GLOBE	.375	2	A	CIV	EV	C			
										O			
									FS	C			
									LT	C			
									ST	C	54		
										O	54		
									VP	OC			
	UNIT 1 SAMPLE LINE TO UNIT 1 HYDROGEN ANALYZERS, INSIDE CONTAINMENT ISOLATION VALVE												
1-HC-TV-100B	11715-CBM-106A	1 OF 4	E7	SO GLOBE	.375	2	A	CIV	EV	C			
										O			
									FS	C			
									LT	C			
									ST	C	54		
										O	54		
									VP	OC			
	UNIT 1 SAMPLE LINE TO UNIT 1 HYDROGEN ANALYZERS, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-HC-TV-101A	11715-CBM-106A	1 OF 4	D7	SO GLOBE	.375	2	A	CIV	EV	C			
										O			
									FS	C			
									LT	C			
									ST	C	54		
										O	54		
									VP	OC			
	RETURN ISOLATION FROM UNIT 1 HYDROGEN ANALYZERS TO UNIT 1 CONT,OUTSIDE CONT ISOL VALVE												
1-HC-TV-101B	11715-CBM-106A	1 OF 4	D7	SO GLOBE	.375	2	A	CIV	EV	C			
										O			

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
1-HC-TV-101B	11715-CBM-106A	1 OF 4	D7	SO GLOBE	.375	2	A	CIV	FS	C			
									LT	C			
									ST	C	54		
										O	54		
									VP	OC			
	RETURN ISOLATION FROM UNIT 1 HYDROGEN ANALYZERS TO UNIT 1 CONT,OUTSIDE CONT ISOL VALVE												
1-HC-TV-102A	11715-CBM-106A	2 OF 4	E6	SO GLOBE	.375	2	A	CIV	EV	C			
										O			
									FS	C			
									LT	C			
									ST	C	54		
										O	54		
									VP	OC			
	UNIT 1 SAMPLE LINE TO UNIT 2 HYDROGEN ANALYZERS, INSIDE CONTAINMENT ISOLATION VALVE												
1-HC-TV-102B	11715-CBM-106A	2 OF 4	E7	SO GLOBE	.375	2	A	CIV	EV	C			
										O			
									FS	C			
									LT	C			
									ST	C	54		
										O	54		
									VP	OC			
	UNIT 1 SAMPLE LINE TO UNIT 2 HYDROGEN ANALYZERS, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-HC-TV-103A	11715-CBM-106A	2 OF 4	D7	SO GLOBE	.375	2	A	CIV	EV	C			
										O			
									FS	C			
									LT	C			
									ST	C	54		
										O	54		
									VP	OC			
	RETURN ISOLATION FROM UNIT 2 HYDROGEN ANALYZERS TO UNIT 1 CONT,OUTSIDE CONT ISOL VALVE												
1-HC-TV-103B	11715-CBM-106A	2 OF 4	D7	SO GLOBE	.375	2	A	CIV	EV	C			
										O			
									FS	C			
									LT	C			
									ST	C	54		
										O	54		
									VP	OC			
	RETURN ISOLATION FROM UNIT 2 HYDROGEN ANALYZERS TO UNIT 1 CONT,OUTSIDE CONT ISOL VALVE												
1-HC-TV-104A	11715-CBM-106A	4 OF 4	F6	AO GLOBE	2.500	2	A	CIV	EV	C			
										O			
									FS	C			
									LT	C			
									ST	C	54		
										O	54		
									VP	OC			
	SUPPLY ISOL FROM UNIT 1 CONT TO #1 HYDRO RECOMB & #2 CONT BLOWER,OUTSIDE CONT ISOL VALVE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
1-HC-TV-104B	11715-CBM-106A	4 OF 4	F6	AO GLOBE	2.500	2	A	CIV	EV	C			
										O			
									FS	C			
									LT	C			
									ST	C	54		
										O	54		
									VP	OC			
	SUPPLY ISOL FROM UNIT 1 CONT TO N1 HYDRO RE-COMB & N2 CONT BLOWER,OUTSIDE CONT ISOL VALVF												
1-HC-TV-105A	11715-CBM-106A	1 OF 4	E6	AO GLOBE	2.500	2	A	CIV	EV	C			
										O			
									FS	C			
									LT	C			
									ST	C	54		
										O	54		
									VP	OC			
	RETURN ISOLATION FROM UNIT 1 HYDROGEN RECOMB & ANAL TO UNIT1 CONT, OUTSIDE CONT ISOL VALVE												
1-HC-TV-105B	11715-CBM-106A	1 OF 4	E6	AO GLOBE	2.500	2	A	CIV	EV	C			
										O			
									FS	C			
									LT	C			
									ST	C	54		
										O	54		
									VP	OC			
	RETURN ISOLATION FROM UNIT 1 HYDROGEN RECOMB & ANAL TO UNIT1 CONT, OUTSIDE CONT ISOL VALVE												
1-HC-TV-106A	11715-CBM-106A	4 OF 4	F8	AO GLOBE	2.500	2	A	CIV	EV	C			
										O			
									FS	C			
									LT	C			
									ST	C	54		
										O	54		
									VP	OC			
	UNIT 1 SUPPLY ISOLATION TO N1 CONT ATMO PURGE BLOW & N2 HYDRO RECOMB, OUTSIDE CONT ISOL VLV												
1-HC-TV-106B	11715-CBM-106A	4 OF 4	F8	AO GLOBE	2.500	2	A	CIV	EV	C			
										O			
									FS	C			
									LT	C			
									ST	C	54		
										O	54		
									VP	OC			
	UNIT 1 SUPPLY ISOLATION TO N1 CONT ATMO PURGE BLOW & N2 HYDRO RECOMB, OUTSIDE CONT ISOL VLV												
1-HC-TV-107A	11715-CBM-106A	2 OF 4	E7	AO GLOBE	2.500	2	A	CIV	EV	C			
										O			
									FS	C			
									LT	C			
									ST	C	54		
										O	54		
									VP	OC			

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
	RETURN ISOLATION FROM UNIT 2 HYDROGEN RECOMB & ANAL TO UNIT1 CONT, OUTSIDE CONT ISOL VALVE												
1-HC-TV-107B	11715-CBM-106A	2 OF 4	E8	AO GLOBE	2.500	2	A	CIV	EV	C			
										O			
									FS	C			
									LT	C			
									ST	C	54		
										O	54		
									VP	OC			
	RETURN ISOLATION FROM UNIT 2 HYDROGEN RECOMB & ANAL TO UNIT1 CONT, OUTSIDE CONT ISOL VALVE												
1-HC-TV-108A	11715-CBM-106A	3 OF 4	E8	SO GLOBE	.375	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C	54		
									VP	OC			
	UNIT 1 SAMPLE LINE TO AIR SAMPLE PANEL, INSIDE CONTAINMENT ISOLATION VALVE												
1-HC-TV-108B	11715-CBM-106A	3 OF 4	E7	SO GLOBE	.375	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C	54		
									VP	OC			
	UNIT 1 SAMPLE LINE TO AIR SAMPLE PANEL, OUTSIDE CONTAINMENT ISOLATION VALVE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
1-HV-MOV-100A	11715-CBB-006A	1 OF 3	D7	MO BFLY	36.000	2	AE	CIV	LT VP	C OC			
	CONTAINMENT PURGE SUPPLY, INSIDE CONTAINMENT ISOLATION VALVE												
1-HV-MOV-100B	11715-CBB-006A	1 OF 3	D7	MO BFLY	36.000	2	AE	CIV	LT VP	C OC	59		
	CONTAINMENT PURGE SUPPLY, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-HV-MOV-100C	11715-CBB-006A	1 OF 3	C7	MO BFLY	36.000	2	AE	CIV	LT VP	C OC			
	CONTAINMENT PURGE EXHAUST, INSIDE CONTAINMENT ISOLATION VALVE												
1-HV-MOV-100D	11715-CBB-006A	1 OF 3	C7	MO BFLY	36.000	2	AE	CIV	LT VP	C OC	59		
	CONTAINMENT PURGE EXHAUST, OUTSIDE CONTAIN-MENT ISOLATION VALVE												
1-HV-MOV-101	11715-CBB-006A	1 OF 3	C7	MO BFLY	8.000	2	AE	CIV	LT VP	C OC	59		
	CONTAINMENT PURGE BYPASS, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-HV-MOV-102	11715-CBB-006A	1 OF 3	D7	MO BFLY	18.000	2	AE	CIV	LT VP	C OC	59		
	CONTAINMENT PURGE ALTERNATE SUPPLY, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-HV-MOV-111A	11715-CBB-40C	1 OF 3	E8	MO GATE	4.000	3	B		EV ST VP	O O OC			
	CONTROL ROOM CHILLER ISOLATION VALVE												
1-HV-MOV-111B	11715-CBB-40C	1 OF 3	C8	MO GATE	4.000	3	B		EV ST	O O			
	CONTROL ROOM CHILLER ISOLATION VALVE												
1-HV-MOV-111C	11715-CBB-40C	1 OF 3	D8	MO GATE	4.000	3	B		EV ST	O O			
	CONTROL ROOM CHILLER ISOLATION VALVE												
1-HV-MOV-113A	11715-CBB-040D	1 OF 3	E3	MO GATE	4.000	3	B		EV ST VP	O O OC			
	CONTROL ROOM CONDENSER WATER SYSTEM ISOLATION VALVE												
1-HV-MOV-113B	11715-CBB-040D	1 OF 3	B3	MO GATE	4.000	3	B		EV ST	O O			

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
1-HV-MOV-113C	11715-CBB-040D	1 OF 3	C3	MO GATE	4.000	3	B		EV ST	O O			
	CONTROL ROOM CONDENSER WATER SYSTEM ISOLATION VALVE												
1-HV-PCV-1235A1	11715-CBB-040D	1 OF 3	D6	AO GLOBE	3.000	3	B		EV FS ST	C C C			
	CONTROL ROOM CONDENSER WATER BYPASS LINE PRESSURE CONTROL VALVE												
1-HV-PCV-1235A2	11715-CBB-040D	1 OF 3	E3	AO GLOBE	3.000	3	B		EV FS ST	O O O			
	CONTROL ROOM CONDENSER WATER PRESSURE CONTROL VALVE												
1-HV-PCV-1235B1	11715-CBB-040D	1 OF 3	A6	AO GLOBE	3.000	3	B		EV FS ST	C C C			
	CONTROL ROOM CONDENSER WATER BYPASS LINE PRESSURE CONTROL VALVE												
1-HV-PCV-1235B2	11715-CBB-040D	1 OF 3	C3	AO GLOBE	3.000	3	B		EV FS ST	O O O			
	CONTROL ROOM CONDENSER WATER PRESSURE CONTROL VALVE												
1-HV-PCV-1235C1	11715-CBB-040D	1 OF 3	C6	AO GLOBE	3.000	3	B		EV FS ST	C C C			
	CONTROL ROOM CONDENSER WATER BYPASS LINE PRESSURE CONTROL VALVE												
1-HV-PCV-1235C2	11715-CBB-040D	1 OF 3	B3	AO GLOBE	3.000	3	B		EV FS ST	O O O			
	CONTROL ROOM CONDENSER WATER PRESSURE CONTROL VALVE												
1-HV-RV-1200	11715-CBB-40C	1 OF 3	D4	RELIEF VALVE		3	C		SP	O			
	CONTROL ROOM CHILLER SYSTEM RELIEF VALVE												
1-HV-RV-1201	11715-CBB-40C	1 OF 3	C5	RELIEF VALVE		3	C		SP	O			
	CONTROL ROOM CHILLER SYSTEM RELIEF VALVE												
1-HV-RV-1202A	11715-CBB-40C	1 OF 3	E8	RELIEF VALVE	.750	3	C		SP	O			

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
	CONTROL ROOM CHILLER SYSTEM RELIEF VALVE												
1-HV-RV-1202B	11715-CBB-40C	1 OF 3	C8	RELIEF VALVE	.750	3	C		SP	O			
	CONTROL ROOM CHILLER SYSTEM RELIEF VALVE												
1-HV-RV-1202C	11715-CBB-40C	1 OF 3	D8	RELIEF VALVE	.750	3	C		SP	O			
	CONTROL ROOM CHILLER SYSTEM RELIEF VALVE												
1-HV-RV-1205A	11715-CBB-040D	1 OF 3	E3	RELIEF VALVE		3	C		SP	O			
	CONTROL ROOM CONDENSER WATER SYSTEM RELIEF VALVE												
1-HV-RV-1205B	11715-CBB-040D	1 OF 3	B3	RELIEF VALVE		3	C		SP	O			
	CONTROL ROOM CONDENSER WATER SYSTEM RELIEF VALVE												
1-HV-RV-1205C	11715-CBB-040D	1 OF 3	D3	RELIEF VALVE		3	C		SP	O			
	CONTROL ROOM CONDENSER WATER SYSTEM RELIEF VALVE												
1-HV-RV-1302A	11715-FM -082M	1 OF 1	F7	RELIEF VALVE	.750	NC	C		SP	O			
	SAFEGUARD AREA FANS AIR RECEIVER RELIEF VALVE												
1-HV-RV-1302B	11715-FM -082M	1 OF 1	F6	RELIEF VALVE	.750	NC	C		SP	O			
	SAFEGUARD AREA FANS AIR RECEIVER RELIEF VALVE												
1-HV-SOV-1200A	11715-CBB-040D	1 OF 3	F7	SO GATE	.500	3	B		EV ST	O O			
	CONTROL ROOM CONDENSER PUMP SEAL COOLING WATER LINE ISOLATION VALVE												
1-HV-SOV-1200B	11715-CBB-040D	1 OF 3	B7	SO GATE	.500	3	B		EV ST	O O			
	CONTROL ROOM CONDENSER PUMP SEAL COOLING WATER LINE ISOLATION VALVE												
1-HV-SOV-120[illegible]	11715-CBB-040D	1 OF 3	D7	SO GATE	.500	3	B		EV ST	O O			
	CONTROL ROOM CONDENSER PUMP SEAL COOLING WATER LINE ISOLATION VALVE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CV JUST CSV-	NC ALT TEST VCN-
1-IA-055	11715-CBM-082A	1 OF 3	F5	CHECK VALVE	2.000	2	AC	CIV	CV LT	C C	21		
	INSTRUMENT AIR SUPPLY TO CONTAINMENT, INSIDE CONTAINMENT ISOLATION CHECK VALVE												
1-IA-149	11715-CBM-082N	3 OF 3	C4	CHECK VALVE	1.000	2	AC	CIV	CV LT	C C	21		
	RETURN TO CONTAINMENT FROM RADIATION MONITORING CABINET, INSIDE CONT ISOL CHECK VALVE												
1-IA-2152	11715-FM-082A	2 OF 3	F7	CHECK VALVE	.750	NC	AC		CV LT	C C			1 1
	BOTTLED NITROGEN SUPPLY TO PORV ISOLATION CHECK VALVE												
1-IA-2153	11715-FM-082A	2 OF 3	F8	CHECK VALVE	.750	NC	AC		CV LT	C C			1 1
	BOTTLED NITROGEN SUPPLY TO PORV ISOLATION CHECK VALVE												
1-IA-2154	11715-FM-082A	2 OF 3	F7	CHECK VALVE	.750	NC	AC		CV LT	C C			1 1
	BOTTLED NITROGEN SUPPLY TO PORV ISOLATION CHECK VALVE												
1-IA-2155	11715-FM-082A	2 OF 3	F8	CHECK VALVE	.750	NC	AC		CV LT	C C			1 1
	BOTTLED NITROGEN SUPPLY TO PORV ISOLATION CHECK VALVE												
1-IA-925	11715-FM -082M	1 OF 1	E7	CHECK VALVE	.250	NC	AC		CV LT	C C			 2
	SAFEGUARD AREA FANS AIR RECEIVER ISOLATION CHECK VALVE												
1-IA-926	11715-FM -082M	1 OF 1	E7	CHECK VALVE	.250	NC	AC		CV LT	C C			 2
	SAFEGUARD AREA FANS AIR RECEIVER ISOLATION CHECK VALVE												
1-IA-934	11715-FM -082M	1 OF 1	E6	CHECK VALVE	.250	NC	AC		CV LT	C C			 2
	SAFEGUARD AREA FANS AIR RECEIVER ISOLATION CHECK VALVE												
1-IA-935	11715-FM -082M	1 OF 1	E6	CHECK VALVE	.250	NC	AC		CV LT	C C			 2
	SAFEGUARD AREA FANS AIR RECEIVER ISOLATION CHECK VALVE												
1-IA-944	11715-FM -082M	1 OF 1	F5	CHECK VALVE	.750	NC	AC		CV LT	C C		30	 3

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
	MAIN STEAM PCV VALVE AIR ACCUMULATOR ISOLATION CHECK VALVE												
1-IA-948	11715-FM -082M	1 OF 1	F4	CHECK VALVE	.750	NC	AC		CV	C		30	
									LT	C			3
	MAIN STEAM PCV VALVE AIR ACCUMULATOR ISOLATION CHECK VALVE												
1-IA-952	11715-FM -082M	1 OF 1	F3	CHECK VALVE	.750	NC	AC		CV	C		30	
									LT	C			3
	MAIN STEAM PCV VALVE AIR ACCUMULATOR ISOLATION CHECK VALVE												
1-IA-959	11715-FM -082M	1 OF 1	C4	CHECK VALVE	.750	NC	AC		CV	C		30	
									LT	C			3
	AUXILIARY FEEDWATER VALVE AIR ACCUMULATOR ISOLATION CHECK VALVE												
1-IA-963	11715-FM -082M	1 OF 1	C5	CHECK VALVE	.750	NC	AC		CV	C		30	
									LT	C			3
	AUXILIARY FEEDWATER VALVE AIR ACCUMULATOR ISOLATION CHECK VALVE												
1-IA-967	11715-FM -082M	1 OF 1	C6	CHECK VALVE	.750	NC	AC		CV	C		30	
									LT	C			3
	AUXILIARY FEEDWATER VALVE AIR ACCUMULATOR ISOLATION CHECK VALVE												
1-IA-971	11715-FM -082M	1 OF 1	C6	CHECK VALVE	.750	NC	AC		CV	C		30	
									LT	C			3
	AUXILIARY FEEDWATER VALVE AIR ACCUMULATOR ISOLATION CHECK VALVE												
1-IA-975	11715-FM -082M	1 OF 1	C7	CHECK VALVE	.750	NC	AC		CV	C		30	
									LT	C			3
	AUXILIARY FEEDWATER VALVE AIR ACCUMULATOR ISOLATION CHECK VALVE												
1-IA-SV-105A	11715-FM -082M	1 OF 1	E5	RELIEF VALVE		NC	C		SP	O			
	MAIN STEAM PCV VALVE AIR ACCUMULATOR RELIEF VALVE												
1-IA-SV-105B	11715-FM -082M	1 OF 1	E4	RELIEF VALVE		NC	C		SP	O			
	MAIN STEAM PCV VALVE AIR ACCUMULATOR RELIEF VALVE												
1-IA-SV-105C	11715-FM -082M	1 OF 1	E3	RELIEF VALVE		NC	C		SP	O			
	MAIN STEAM PCV VALVE AIR ACCUMULATOR RELIEF VALVE												
1-IA-SV-105D	11715-FM -082M	1 OF 1	A4	RELIEF VALVE		NC	C		SP	O			

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
	AUXILIARY FEEDWATER VALVE AIR ACCUMULATOR RELIEF VALVE												
1-IA-SV-105E	11715-FM -082M	1 OF 1	A4	RELIEF VALVE		NC	C		SP	O			
	AUXILIARY FEEDWATER VALVE AIR ACCUMULATOR RELIEF VALVE												
1-IA-SV-105F	11715-FM -082M	1 OF 1	A6	RELIEF VALVE		NC	C		SP	O			
	AUXILIARY FEEDWATER VALVE AIR ACCUMULATOR RELIEF VALVE												
1-IA-SV-105G	11715-FM -082M	1 OF 1	A7	RELIEF VALVE		NC	C		SP	O			
	AUXILIARY FEEDWATER VALVE AIR ACCUMULATOR RELIEF VALVE												
1-IA-SV-105H	11715-FM -082M	1 OF 1	A5	RELIEF VALVE		NC	C		SP	O			
	AUXILIARY FEEDWATER VALVE AIR ACCUMULATOR RELIEF VALVE												
1-IA-TV-102A	11715-CBM-082N	1 OF 3	D3	AO GLOBE	2.000	2	B		EV FS ST VP	C C C OC			
	INSTRUMENT AIR SUPPLY TO CONTAINMENT, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-IA-TV-102B	11715-CBM-082N	1 OF 3	D3	AO GLOBE	2.000	2	A	CIV	EV FS LT ST VP	C C C C OC			
	INSTRUMENT AIR SUPPLY TO CONTAINMENT, OUTSIDE CONTAINMENT ISOLATION VALVE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
1-LM-TV-100A	11715-CBM-092A	1 OF 2	E7	AO GLOBE	.375	2	AE	CIV	LT VP	C OC			
	CONTAINMENT LEAKAGE MONITORING OPEN SYSTEM SUPPLY, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-LM-TV-100B	11715-CBM-092A	1 OF 2	E6	AO GLOBE	.375	2	AE	CIV	LT VP	C OC			
	CONTAINMENT LEAKAGE MONITORING OPEN SYSTEM SUPPLY, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-LM-TV-100C	11715-CBM-092A	1 OF 2	E6	AO GLOBE	.375	2	AE	CIV	LT VP	C OC			
	CONTAINMENT LEAKAGE MONITORING OPEN SYSTEM SUPPLY, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-LM-TV-100D	11715-CBM-092A	1 OF 2	E5	AO GLOBE	.375	2	AE	CIV	LT VP	C OC			
	CONTAINMENT LEAKAGE MONITORING OPEN SYSTEM SUPPLY, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-LM-TV-100E	11715-CBM-092A	1 OF 2	F6	AO GLOBE	.375	2	AE	CIV	LT VP	C OC			
	CONTAINMENT LEAKAGE MONITORING OPEN SYSTEM SUPPLY, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-LM-TV-100F	11715-CBM-092A	1 OF 2	F5	AO GLOBE	.375	2	AE	CIV	LT VP	C OC			
	CONTAINMENT LEAKAGE MONITORING OPEN SYSTEM SUPPLY, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-LM-TV-100G	11715-CBM-092A	1 OF 2	E7	AO GLOBE	.375	2	AE	CIV	LT VP	C OC			
	CONTAINMENT LEAKAGE MONITORING OPEN SYSTEM SUPPLY, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-LM-TV-100H	11715-CBM-092A	1 OF 2	E6	AO GLOBE	.375	2	AE	CIV	LT VP	C OC			
	CONTAINMENT LEAKAGE MONITORING OPEN SYSTEM SUPPLY, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-LM-TV-101A	11715-CBM-092A	1 OF 2	D5	AO GLOBE	.375	2	AE	CIV	LT VP	C OC			
	CONTAINMENT LEAKAGE MONITORING SEALED SYSTEM SUPPLY, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-LM-TV-101B	11715-CBM-092A	1 OF 2	D5	AO GLOBE	.375	2	AE	CIV	LT VP	C OC			
	CONTAINMENT LEAKAGE MONITORING SEALED SYSTEM SUPPLY, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-LM-TV-101C	11715-CBM-092A	1 OF 2	D5	AO GLOBE	.375	2	AE	CIV	LT VP	C OC			

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
	CONTAINMENT LEAKAGE MONITORING SEALED SYSTEM SUPPLY, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-LM-TV-101D	11715-CBM-092A	1 OF 2	D4	AO GLOBE	.375	2	AE	CIV	LT VP	C OC			
	CONTAINMENT LEAKAGE MONITORING SEALED SYSTEM SUPPLY, OUTSIDE CONTAINMENT ISOLATION VALVE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
1-MS-018	11715-CBM-070B	1 OF 3	C6	MANUAL GATE	3.000	2	B		EV	C			
	MAIN STEAM TO AUXILIARY FEEDWATER TURBINE LINE ISOLATION VALVE												
1-MS-019	11715-CBM-070B	1 OF 3	C5	MAN CHECK VLV	3.000	2	C		CV	C			
	"A" MAIN STEAM HEADER SUPPLY CHECK VALVE TO DECAY HEAT RELEASE												
1-MS-057	11715-CBM-070B	2 OF 3	C6	MANUAL GATE	3.000	2	B		EV	C			
	MAIN STEAM TO AUXILIARY FEEDWATER TURBINE LINE ISOLATION VALVE												
1-MS-058	11715-CBM-070B	2 OF 3	D5	MAN CHECK VLV	3.000	2	C		CV	C			
	"B" MAIN STEAM HEADER SUPPLY CHECK VALVE TO DECAY HEAT RELEASE												
1-MS-095	11715-CBM-070B	3 OF 3	C6	MANUAL GATE	3.000	2	B		EV	C			
	MAIN STEAM TO AUXILIARY FEEDWATER TURBINE LINE ISOLATION VALVE												
1-MS-096	11715-CBM-070B	3 OF 3	D5	MAN CHECK VLV	3.000	2	C		CV	C			
	"C" MAIN STEAM HEADER SUPPLY CHECK VALVE TO DECAY HEAT RELEASE												
1-MS-119	11715-CBM-070A	3 OF 3	E7	CHECK VALVE	3.000	2	C		CV	C O			
	"A" MAIN STEAM HEADER SUPPLY CHECK VALVE TO TURBINE DRIVEN AUXILIARY FEEDWATER PUMP												
1-MS-122	11715-CBM-070A	3 OF 3	F7	CHECK VALVE	3.000	2	C		CV	C O			
	"B" MAIN STEAM HEADER SUPPLY CHECK VALVE TO TURBINE DRIVEN AUXILIARY FEEDWATER PUMP												
1-MS-124	11715-CBM-070A	3 OF 3	F7	CHECK VALVE	3.000	2	C		CV	C O			
	"C" MAIN STEAM HEADER SUPPLY CHECK VALVE TO TURBINE DRIVEN AUXILIARY FEEDWATER PUMP												
1-MS-NRV-101A	11715-CBM-070B	1 OF 3	D3	CHECK VALVE	32.000	2	C		CV VP	C OC		13	
	"A" MAIN STEAM HEADER NON-RETURN VALVE												
1-MS-NRV-101B	11715-CBM-070B	2 OF 3	D3	CHECK VALVE	32.000	2	C		CV VP	C OC		13	
	"B" MAIN STEAM HEADER NON-RETURN VALVE												
1-MS-NRV-101C	11715-CBM-070B	3 OF 3	D3	CHECK VALVE	32.000	2	C		CV VP	C OC		13	

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
	"C" MAIN STEAM HEADER NON-RETURN VALVE												
1-MS-PCV-101A	11715-CBM-070B	1 OF 3	E5	AO ANGLE	6.000	2	B		EV	C			
										O			
									FS	C			
									ST	C			
										O			
									VP	OC			
	"A" MAIN STEAM HEADER DISCHARGE TO ATMOSPHERE PRESSURE CONTROL VALVE												
1-MS-PCV-101B	11715-CBM-070B	2 OF 3	E6	AO ANGLE	6.000	2	B		EV	C			
										O			
									FS	C			
									ST	C			
										O			
									VP	OC			
	"B" MAIN STEAM HEADER DISCHARGE TO ATMOSPHERE PRESSURE CONTROL VALVE												
1-MS-PCV-101C	11715-CBM-070B	3 OF 3	D3	AO ANGLE	6.000	2	B		EV	C			
										O			
									FS	C			
									ST	C			
										O			
									VP	OC			
	"C" MAIN STEAM HEADER DISCHARGE TO ATMOSPHERE PRESSURE CONTROL VALVE												
1-MS-SV-101A	11715-CBM-070B	1 OF 3	E6	SAFETY VALVE	6.000	2	C		SP	O			
	"A" MAIN STEAM HEADER SAFETY VALVE, SV DISCHARGE TO ATMOS												
1-MS-SV-101B	11715-CBM-070B	2 OF 3	E6	SAFETY VALVE	6.000	2	C		SP	O			
	"B" MAIN STEAM HEADER SAFETY VALVE, SV DISCHARGE TO ATMOS												
1-MS-SV-101C	11715-CBM-070B	3 OF 3	D6	SAFETY VALVE	6.000	2	C		SP	O			
	"C" MAIN STEAM HEADER SAFETY VALVE, SV DISCHARGE TO ATMOS												
1-MS-SV-102A	11715-CBM-070B	1 OF 3	E5	SAFETY VALVE	6.000	2	C		SP	O			
	"A" MAIN STEAM HEADER SAFETY VALVE, SV DISCHARGE TO ATMOS												
1-MS-SV-102B	11715-CBM-070B	2 OF 3	E5	SAFETY VALVE	6.000	2	C		SP	O			
	"B" MAIN STEAM HEADER SAFETY VALVE, SV DISCHARGE TO ATMOS												
1-MS-SV-102C	11715-CBM-070B	3 OF 3	D6	SAFETY VALVE	6.000	2	C		SP	O			
	"C" MAIN STEAM HEADER SAFETY VALVE, SV DISCHARGE TO ATMOS												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
1-MS-SV-103A	11715-CBM-070B	1 OF 3	E6	SAFETY VALVE	6.000	2	C		SP	O			
	"A" MAIN STEAM HEADER SAFETY VALVE, SV DISCHARGE TO ATMOS												
1-MS-SV-103B	11715-CBM-070B	2 OF 3	E5	SAFETY VALVE	6.000	2	C		SP	O			
	"B" MAIN STEAM HEADER SAFETY VALVE, SV DISCHARGE TO ATMOS												
1-MS-SV-103C	11715-CBM-070B	3 OF 3	D6	SAFETY VALVE	6.000	2	C		SP	O			
	"C" MAIN STEAM HEADER SAFETY VALVE, SV DISCHARGE TO ATMOS												
1-MS-SV-104A	11715-CBM-070B	1 OF 3	E6	SAFETY VALVE	6.000	2	C		SP	O			
	"A" MAIN STEAM HEADER SAFETY VALVE, SV DISCHARGE TO ATMOS												
1-MS-SV-104B	11715-CBM-070B	2 OF 3	E6	SAFETY VALVE	6.000	2	C		SP	O			
	"B" MAIN STEAM HEADER SAFETY VALVE, SV DISCHARGE TO ATMOS												
1-MS-SV-104C	11715-CBM-070B	3 OF 3	D6	SAFETY VALVE	6.000	2	C		SP	O			
	"C" MAIN STEAM HEADER SAFETY VALVE, SV DISCHARGE TO ATMOS												
1-MS-SV-105A	11715-CBM-070B	1 OF 3	E5	SAFETY VALVE	6.000	2	C		SP	O			
	"A" MAIN STEAM HEADER SAFETY VALVE, SV DISCHARGE TO ATMOS												
1-MS-SV-105B	11715-CBM-070B	2 OF 3	E5	SAFETY VALVE	6.000	2	C		SP	O			
	"B" MAIN STEAM HEADER SAFETY VALVE, SV DISCHARGE TO ATMOS												
1-MS-SV-105C	11715-CBM-070B	3 OF 3	D5	SAFETY VALVE	6.000	2	C		SP	O			
	"C" MAIN STEAM HEADER SAFETY VALVE, SV DISCHARGE TO ATMOS												
1-MS-TV-101A	11715-CBM-070B	1 OF 3	D4	AO DISC	32.000	2	B		EV	C		16	
									FS	C		16	
									ST	C		16	
									VP	OC			
	"A" MAIN STEAM HEADER TRIP VALVE												
1-MS-TV-101B	11715-CBM-070B	2 OF 3	C4	AO DISC	32.000	2	B		EV	C		16	
									FS	C		16	
									ST	C		16	
									VP	OC			
	"B" MAIN STEAM HEADER TRIP VALVE												
1-MS-TV-101C	11715-CBM-070B	3 OF 3	C4	AO DISC	32.000	2	B		EV	C		16	
									FS	C		16	
									ST	C		16	

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
1-MS-TV-101C	11715-CBM-070B	3 OF 3	C4	AO DISC	32.000	2	B		VP	OC			
	"C" MAIN STEAM HEADER TRIP VALVE												
1-MS-TV-109	11715-CBM-070A	1 OF 3	A8	AO GLOBE	3.000	2	B		EV	C		14	
									FS	C		14	
									ST	C		14	
									VP	OC			
	MAIN STEAM HIGH PRESSURE DRAIN ISOLATION TO CONDENSER												
1-MS-TV-110	11715-CBM-070B	3 OF 3	A4	AO GLOBE	1.500	2	B		EV	C			
									FS	C			
									ST	C			
									VP	OC			
	MAIN STEAM HIGH PRESSURE DRAIN HEADER ISO-LATION TO STEAM GENERATOR BLOWDOWN SYSTEM												
1-MS-TV-111A	11715-CBM-070A	3 OF 3	E5	AO GLOBE	3.000	2	B		EV	C			
										O			
									FS	O			
									ST	C			
										O			
									VP	OC			
	MAIN STEAM SUPPLY TRIP VALVE TO TURBINE DRIVEN AUXILIARY FEEDWATER PUMP												
1-MS-TV-111B	11715-CBM-070A	3 OF 3	E4	AO GLOBE	3.000	2	B		EV	C			
										O			
									FS	O			
									ST	C			
										O			
									VP	OC			
	MAIN STEAM SUPPLY TRIP VALVE TO TURBINE DRIVEN AUXILIARY FEEDWATER PUMP												
1-MS-TV-113A	11715-CBM-070B	1 OF 3	D4	AO GLOBE	3.000	2	B		EV	C		33	
									FS	C		33	
									ST	C		33	
									VP	OC			
	"A" MAIN STEAM TRIP BYPASS VALVE												
1-MS-TV-113B	11715-CBM-070B	2 OF 3	D4	AO GLOBE	3.000	2	B		EV	C		33	
									FS	C		33	
									ST	C		33	
									VP	OC			
	"B" MAIN STEAM TRIP BYPASS VALVE												
1-MS-TV-113C	11715-CBM-070B	3 OF 3	D4	AO GLOBE	3.000	2	[illegible]		EV	C		33	
									FS	C		33	
									ST	C		33	
									VP	OC			

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
	"C" MAIN STEAM TRIP BYPASS VALVE												
1-MS-TV-115	11715-CBM-070A	3 OF 3	C4	MECH TRIP VLV	3.000	3	E		VP	OC			
	MAIN STEAM SUPPLY TRIP VALVE TO TURBINE DRIVEN AFW PUMP												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
1-QS-011	11715-CBM-091A	2 OF 4	D6	WL CHECK VLV	8.000	2	AC	CIV	CV	C	67		
										O	67		
									LT	C			
	"A" QUENCH SPRAY PUMP INSIDE CONTAINMENT ISOLATION CHECK VALVE												
1-QS-019	11715-CBM-091A	2 OF 4	E6	WL CHECK VLV	8.000	2	AC	CIV	CV	C	67		
										O	67		
									LT	C			
	"B" QUENCH SPRAY PUMP INSIDE CONTAINMENT ISOLATION CHECK VALVE												
1-QS-MOV-100A	11715-CBM-091A	2 OF 4	A3	MO GATE	10.000	2	E		VP	OC			
	"A" QUENCH SPRAY PUMP SUCTION ISOLATION VALVE FROM REFUELING WATER STORAGE TANK												
1-QS-MOV-100B	11715-CBM-091A	2 OF 4	A3	MO GATE	10.000	2	E		VP	OC			
	"B" QUENCH SPRAY PUMP SUCTION ISOLATION VALVE FROM REFUELING WATER STORAGE TANK												
1-QS-MOV-101A	11715-CBM-091A	2 OF 4	D5	MO GATE	8.000	2	A	CIV	EV	C			
										O			
									LT	C			
									ST	C			
										O			
									VP	OC			
	"A" QUENCH SPRAY PUMP DISCHARGE ISOLATION VALVE, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-QS-MOV-101B	11715-CBM-091A	2 OF 4	E5	MO GATE	8.000	2	A	CIV	EV	C			
										O			
									LT	C			
									ST	C			
										O			
									VP	OC			
	"B" QUENCH SPRAY PUMP DISCHARGE ISOLATION VALVE, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-QS-MOV-102A	11715-CBM-091A	1 OF 4	D5	MO GATE	6.000	2	B		EV	O			
									ST	O			
									VP	OC			
	CHEMICAL ADDITION TANK DISCHARGE ISOLATION VALVE												
1-QS-MOV-102B	11715-CBM-091A	1 OF 4	D6	MO GATE	6.000	2	B		EV	O			
									ST	O			
									VP	OC			
	CHEMICAL ADDITION TANK DISCHARGE ISOLATION VALVE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
1-RC-149	11715-CBM-093B	2 OF 3	D7	CHECK VALVE	3.000	2	AC	CIV	CV	C	28		
									LT	C			
	PRIMARY GRADE WATER SUPPLY TO PRT-#2 RCP SEAL STANDPIPES/FLUSH CONNECT, INSIDE CONT ISO VLV												
1-RC-176	11715-CBM-093B	1 OF 3	A4	MANUAL NEEDLE	.125	1	AE	CIV	LT	C			
	PRESSURIZER PRESSURE DEAD WEIGHT TESTER ISOLATION, OUTSIDE CONT ISOLATION VALVE												
1-RC-178	11715-CBM-093B	1 OF 3	A3	MANUAL NEEDLE	.125	1	AE	CIV	LT	C			
	PRESSURIZER PRESSURE DEAD WEIGHT TESTER ISOLATION, OUTSIDE CONT ISOLATION VALVE												
1-RC-HCV-1556A	11715-CBM-093A	1 OF 3	D7	AO GLOBE	2.000	1	E		VP	OC			
	RCS LOOP FILL BOUNDARY VALVE												
1-RC-HCV-1556B	11715-CBM-093A	2 OF 3	D8	AO GLOBE	2.000	1	E		VP	OC			
	RCS LOOP FILL BOUNDARY VALVE												
1-RC-HCV-1556C	11715-CBM-093A	3 OF 3	D3	AO GLOBE	2.000	1	E		VP	OC			
	RCS LOOP FILL BOUNDARY VALVE												
1-RC-MOV-1535	11715-CBM-093B	1 OF 3	E4	MO GATE	3.000	1	B		EV	C			
										O			
									ST	C			
										O			
									VP	OC			
	BLOCK VALVE FOR PRESSURIZER POWER OPERATED RELIEF VALVE												
1-RC-MOV-1536	11715-CBM-093B	1 OF 3	D4	MO GATE	3.000	1	B		EV	C			
										O			
									ST	C			
										O			
									VP	OC			
	BLOCK VALVE FOR PRESSURIZER POWER OPERATED RELIEF VALVE												
1-RC-PCV-1455C	11715-CBM-093B	1 OF 3	D3	AO GLOBE	3.000	1	BC		EV	C		42	
										O		42	
									FS	C		42	
									SP	O			
									ST	C	54	42	
										O		42	
									VP	OC			
	PRESSURIZER POWER OPERATED PRESSURE CONTROL VALVE DISCHARGE TO PRESSURIZER RELIEF TANK												
1-RC-PCV-1456	11715-CBM-093B	1 OF 3	E3	AO GLOBE	3.000	1	BC		EV	C		42	
										O		42	
									FS	C		42	
									SP	O			

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
1-RC-PCV-1456	11715-CBM-093B	1 OF 3	E3	AO GLOBE	3.000	1	BC		ST	C	54	42	
										O		42	
									VP	OC			
	PRESSURIZER POWER OPERATED PRESSURE CONTROL VALVE DISCHARGE TO PRESSURIZER RELIEF TANK												
1-RC-SOV-101A-1	11715-CBM-093A	3 OF 3	A5	SO GLOBE	1.000	1	B		EV	C	57		
										O	57		
									FS	C	57		
									ST	C	54		
										O	54		
									VP	OC			
	REACTOR VESSEL VENT LINE ISOLATION VALVE TO REFUELING CAVITY												
1-RC-SOV-101A-2	11715-CBM-093A	3 OF 3	B5	SO GLOBE	1.000	1	B		EV	C	57		
										O	57		
									FS	C	57		
									ST	C	54		
										O	54		
									VP	OC			
	REACTOR VESSEL VENT LINE ISOLATION VALVE TO REFUELING CAVITY												
1-RC-SOV-101B-1	11715-CBM-093A	3 OF 3	A5	SO GLOBE	1.000	1	B		EV	C	57		
										O	57		
									FS	C	57		
									ST	C	54		
										O	54		
									VP	OC			
	REACTOR VESSEL VENT LINE ISOLATION VALVE TO REFUELING CAVITY												
1-RC-SOV-101B-2	11715-CBM-093A	3 OF 3	B5	SO GLOBE	1.000	1	B		EV	C	57		
										O	57		
									FS	C	57		
									ST	C	54		
										O	54		
									VP	OC			
	REACTOR VESSEL VENT LINE ISOLATION VALVE TO REFUELING CAVITY												
1-RC-SV-1551A	11715-CBM-093B	1 OF 3	E5	SAFETY VALVE	6.000	1	C		SP	O			
	PRESSURIZER SAFETY VALVE, SV DISCHARGE TO PRESSURIZER RELIEF TANK												
1-RC-SV-1551B	11715-CBM-093B	1 OF 3	E5	SAFETY VALVE	6.000	1	C		SP	O			
	PRESSURIZER SAFETY VALVE, SV DISCHARGE TO PRESSURIZER RELIEF TANK												
1-RC-SV-1551C	11715-CBM-093B	1 OF 3	E6	SAFETY VALVE	6.000	1	C		SP	O			
	PRESSURIZER SAFETY VALVE, SV DISCHARGE TO PRESSURIZER RELIEF TANK												
1-RC-TV-1519A	11715-CBM-093B	2 OF 3	D8	AO GLOBE	3.000	2	A	CIV	EV	C			
									FS	C			

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
1-RC-TV-1519A	11715-CBM-093B	2 OF 3	DB	AO GLOBE	3.000	2	A	CIV	LT	C			
									ST	C			
									VP	OC			

PRIMARY GRADE WATER SUPPLY TO PRT-#2 RCP SEAL
STANDPIPES & FLUSH CONNECT, OUT CONT ISO VLV

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
1-RH-007	11715-CBM-094A	1 OF 2	E5	CHECK VALVE	10.000	2	C		CV	C	74		
										O	74		
	"B" RHR PUMP DISCHARGE CHECK VALVE												
1-RH-015	11715-CBM-094A	1 OF 2	E7	CHECK VALVE	10.000	2	C		CV	C	74		
										O	74		
	"A" RHR PUMP DISCHARGE CHECK VALVE												
1-RH-036	11715-CBM-094A	2 OF 2	C4	MANUAL GATE	6.000	2	AE	CIV	LT	C			
	RHR SUPPLY ISOLATION TO REFUEL WATER STORAGE TANK, INSIDE CONTAINMENT ISOLATION VALVE												
1-RH-037	11715-CBM-094A	2 OF 2	E3	MANUAL GATE	6.000	2	AE	CIV	LT	C			
	RHR SUPPLY ISOLATION TO REFUEL WATER STORAGE TANK, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-RH-FCV-1605	11715-CBM-094A	2 OF 2	C7	AO BFLY	12.000	2	B		EV	C		20	
									FS	C		20	
									ST	C		20	
	RHR HEAT EXCHANGERS BYPASS FLOW CONTROL VALVE												
1-RH-HCV-1758	11715-CBM-094A	2 OF 2	C5	AO BFLY	12.000	2	B		EV	O		20	
									FS	O		20	
									ST	O		20	
	RHR HEAT EXCHANGERS DISCHARGE FLOW CONTROL VALVE												
1-RH-MOV-1700	11715-CBM-094A	1 OF 2	A5	MO GATE	14.000	1	B		EV	O		18	
									ST	O		18	
									VP	OC			
	RHR PUMP SUPPLY ISOLATION FROM "A" HOT LEG, INSIDE MISSILE BARRIER												
1-RH-MOV-1701	11715-CBM-094A	1 OF 2	A4	MO GATE	14.000	1	B		EV	O		18	
									ST	O		18	
									VP	OC			
	RHR PUMP SUPPLY ISOLATION FROM "A" HOT LEG, OUTSIDE MISSILE BARRIER												
1-RH-MOV-1720A	11715-CBM-094A	2 OF 2	C3	MO GATE	10.000	1	B		EV	O		18	
									ST	O		18	
									VP	OC			
	RHR RETURN ISOLATION TO "B" ACCUMULATOR DISCHARGE LINE												
1-RH-MOV-1720B	11715-CBM-094A	2 OF 2	B3	MO GATE	10.000	1	B		EV	O		18	
									ST	O		18	
									VP	OC			
	RHR RETURN ISOLATION TO "C" ACCUMULATOR DISCHARGE LINE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
1-RH-RV-1721A	11715-CBM-094A	1 OF 2	E6	RELIEF VALVE	3.000	2	C		SP	O			
	RHR SYSTEM RELIEF VALVE AT "A" RHR PUMP SUCTION, RV DISCHARGE TO PRESSURIZER RELIEF TANK												
1-RH-RV-1721B	11715-CBM-094A	1 OF 2	E4	RELIEF VALVE	3.000	2	C		SP	O			
	RHR SYSTEM RELIEF VALVE AT "B" RHR PUMP SUCTION, RV DISCHARGE TO PRESSURIZER RELIEF TANK												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
1-RM-TV-100A	11715-CBM-082N	3 OF 3	C5	AO GLOBE	1.000	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C	54		
									VP	OC			
	RETURN ISOLATION FROM AIR RADIATION MONITOR TO CONTAINMENT, OUTSIDE CONT ISOLATION VALVE												
1-RM-TV-100B	11715-CBM-082N	3 OF 3	D5	AO GLOBE	1.000	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C	54		
									VP	OC			
	SUPPLY ISOL TO AIR RAD MONITOR FROM CONTAIN-MENT VENT DUCT, OUTSIDE CONT ISOLATION VALVE												
1-RM-TV-100C	11715-CBM-082N	3 OF 3	D4	AO GLOBE	1.000	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C	54		
									VP	OC			
	SUPPLY ISOL TO AIR RAD MONITOR FROM CONTAIN-MENT VENT DUCT, INSIDE CONT ISOLATION VALVE												
1-RM-TV-100D	11715-CBM-082N	3 OF 3	C5	AO GLOBE	1.000	2	B		EV	C			
									FS	C			
									ST	C	54		
									VP	OC			
	RETURN ISOL FROM AIR RADIATION MONITOR TO CONTAINMENT, OUTSIDE CONT ISOLATION VALVE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
1-RP-006	11715-CBM-088A	2 OF 4	C6	MANUAL DIA	6.000	2	AE	CIV	LT	C			
	REFUELING PURIFICATION FROM REACTOR CAVITY TO RP PUMPS, INSIDE CONT ISOLATION VALVE												
1-RP-008	11715-CBM-088A	2 OF 4	C4	MANUAL DIA	6.000	2	AE	CIV	LT	C			
	REFUELING PURIFICATION FROM REACTOR CAVITY TO RP PUMPS, OUTSIDE CONT ISOLATION VALVE												
1-RP-026	11715-CBM-088A	2 OF 4	C4	MANUAL DIA	6.000	2	AE	CIV	LT	C			
	REFUELING PURIFICATION FROM RP PUMPS TO REACTOR CAVITY, OUTSIDE CONT ISOLATION VALVE												
1-RP-028	11715-CBM-088A	2 OF 4	D5	MANUAL DIA	6.000	2	AE	CIV	LT	C			
	REFUELING PURIFICATION FROM RP PUMPS TO REACTOR CAVITY, INSIDE CONT ISOLATION VALVE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
1-RS-018	11715-CBM-091A	4 OF 4	D6	WL CHECK VLV	10.000	2	AC	CIV	CV	C	67		
										O	67		
									LT	C			
	"A" OUTSIDE RECIRC SPRAY PUMP INSIDE CONTAINMENT ISOLATION CHECK VALVE												
1-RS-027	11715-CBM-091A	4 OF 4	D6	WL CHECK VLV	10.000	2	AC	CIV	CV	C	67		
										O	67		
									LT	C			
	"B" OUTSIDE RECIRC SPRAY PUMP INSIDE CONTAINMENT ISOLATION CHECK VALVE												
1-RS-123	11715-CBM-091B	1 OF 1	E7	CHECK VALVE	8.000	2	C		CV	O	33		
	"A" CASING COOLING PUMP DISCHARGE CHECK VALVE TO "A" OUTSIDE RECIRC SPRAY PUMP SUCT												
1-RS-138	11715-CBM-091B	1 OF 1	F7	CHECK VALVE	8.000	2	C		CV	O	33		
	"B" CASING COOLING PUMP DISCHARGE CHECK VALVE TO "B" OUTSIDE RECIRC SPRAY PUMP SUCT												
1-RS-MOV-100A	11715-CBM-091B	1 OF 1	E7	MO GATE	8.000	2	A	CIV	EV	C			
										O			
									LT	C			
									ST	C			
										O			
									VP	OC			
	"A" CASING COOLING PUMP DISCHARGE ISOLATION TO "A" OUTSIDE RECIRC SPRAY PUMP SUCTION												
1-RS-MOV-100B	11715-CBM-091B	1 OF 1	F7	MO GATE	6.000	2	A	CIV	EV	C			
										O			
									LT	C			
									ST	C			
										O			
									VP	OC			
	"B" CASING COOLING PUMP DISCHARGE ISOLATION TO "B" OUTSIDE RECIRC SPRAY PUMP SUCTION												
1-RS-MOV-101A	11715-CBM-091B	1 OF 1	E7	MO GATE	6.000	3	A	CIV	EV	C			
										O			
									LT	C			
									ST	C			
										O			
									VP	OC			
	"A" CASING COOLING PUMP DISCHARGE ISOLATION TO "A" OUTSIDE RECIRC SPRAY PUMP SUCTION												
1-RS-MOV-101B	11715-CBM-091B	1 OF 1	F7	MO GATE	6.000	3	A	CIV	EV	C			
										O			
									LT	C			
									ST	C			
										O			
									VP	OC			
	"B" CASING COOLING PUMP DISCHARGE ISOLATION TO "B" OUTSIDE RECIRC SPRAY PUMP SUCTION												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
1-RS-MOV-155A	11715-CBM-091A	4 OF 4	B6	MO GATE	12.000	2	B		EV	C			
										O			
									ST	C			
										O			
									VP	OC			
	"A" OUTSIDE RECIRC SPRAY PUMP SUCTION ISOLAT VALVE FROM CONTAINMENT SUMP & CASING COOLING												
1-RS-MOV-155B	11715-CBM-091A	4 OF 4	A6	MO GATE	12.000	2	B		EV	C			
										O			
									ST	C			
										O			
									VP	OC			
	"B" OUTSIDE RECIRC SPRAY PUMP SUCTION ISOLAT VALVE FROM CONTAINMENT SUMP & CASING COOLING												
1-RS-MOV-156A	11715-CBM-091A	4 OF 4	D5	MO GATE	10.000	2	A	CIV	EV	C			
										O			
									LT	C			
									ST	C			
										O			
									VP	OC			
	"A" OUTSIDE RECIRC SPRAY PUMP DISCHARGE ISOLATION, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-RS-MOV-156B	11715-CBM-091A	4 OF 4	D5	MO GATE	10.000	2	A	CIV	EV	C			
										O			
									LT	C			
									ST	C			
										O			
									VP	OC			
	"B" OUTSIDE RECIRC SPRAY PUMP DISCHARGE ISOLATION, OUTSIDE CONTAINMENT ISOLATION VALVE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
1-SA-002	11715-CBM-082F	1 OF 1	C7	MANUAL GATE	2.000	2	AE	CIV	LT	C			
	SERVICE AIR SUPPLY TO UNIT 1 CONTAINMENT, INSIDE CONTAINMENT ISOLATION VALVE												
1-SA-029	11715-CBM-082F	1 OF 1	B7	MANUAL GLOBE	2.000	2	AE	CIV	LT	C			
	SERVICE AIR SUPPLY TO UNIT 1 CONTAINMENT, OUTSIDE CONTAINMENT ISOLATION VALVE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
1-SI-001	11715-CBM-096A	1 OF 3	B7	CHECK VALVE	12.000	2	C		CV	O	37		
	"A" LOW HEAD SI PUMP SUCTION CHECK VALVE FROM CONTAINMENT SUMP												
1-SI-004	11715-CBM-096A	1 OF 3	C7	CHECK VALVE	.750	2	AC		CV	C	53		
									LT	C			
	"A" LOW HEAD SI PUMP SEAL WATER SUPPLY CHECK VALVE FROM RWST												
1-SI-009	11715-CBM-096A	2 OF 3	B6	CHECK VALVE	10.000	2	C		CV	C	38		
										O	38		
	"A" LOW HEAD SI PUMP DISCHARGE CHECK VALVE												
1-SI-012	11715-CBM-096A	2 OF 3	B5	CHECK VALVE	2.000	2	C		CV	O			
	"A" LOW HEAD SI PUMP MINIMUM FLOW/TEST LINE DISCHARGE CHECK VALVE												
1-SI-016	11715-CBM-096A	1 OF 3	B5	CHECK VALVE	12.000	2	C		CV	O	37		
	"B" LOW HEAD SI PUMP SUCTION CHECK VALVE FROM CONTAINMENT SUMP												
1-SI-018	11715-CBM-096A	1 OF 3	B3	CHECK VALVE	12.000	2	C		CV	O	38		
	RWST SUPPLY CHECK VALVE TO "B" LOW HEAD SI PUMP SUCTION												
1-SI-021	11715-CBM-096A	1 OF 3	C5	CHECK VALVE	.750	2	AC		CV	C	53		
									LT	C			
	"B" LOW HEAD SI PUMP SEAL WATER SUPPLY CHECK VALVE												
1-SI-026	11715-CBM-096A	2 OF 3	B4	CHECK VALVE	10.000	2	C		CV	C	38		
										O	38		
	"B" LOW HEAD SI PUMP DISCHARGE CHECK VALVE												
1-SI-029	11715-CBM-096A	2 OF 3	B4	CHECK VALVE	2.000	2	C		CV	O			
	"B" LOW HEAD SI PUMP MINIMUM FLOW/TEST LINE DISCHARGE CHECK VALVE												
1-SI-047	11715-CBM-096A	1 OF 3	E5	CHECK VALVE	8.000	2	AC		CV	C	39		
										O	39		
									LT	C			
	RWST SUPPLY CHECK VALVE TO CHARGING PUMP SUCTION HEADER												
1-SI-058	11715-CBM-096A	1 OF 3	E7	MANUAL GLOBE	1.000	2	AE	CIV	LT	C			
	ACCUMULATOR MAKEUP LINE, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-SI-066	11715-CBM-096A	3 OF 3	D4	CHECK VALVE	1.000	2	C		CV	C			

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
	BORON INJECTION TANK SUPPLY CHECK VALVE FROM BORIC ACID TRANSFER PUMPS												
1-SI-077	11715-CBM-096A	3 OF 3	F7	MANUAL GLOBE	1.000	2	AE	CIV	LT	C			
	BORON INJECTION TANK BYPASS LINE ISOLATION VALVE - TO RCS COLD LEG												
1-SI-079	11715-CBM-096B	4 OF 4	E3	CHECK VALVE	3.000	2	AC	CIV	CV	C	43		
										O	43		
									LT	C			
	HIGH HEAD SI FROM CHARGING PUMPS TO RCS COLD LEGS, INSIDE CONT ISOLATION CHECK VALVE												
1-SI-083	11715-CBM-096B	4 OF 4	F8	CHECK VALVE	6.000	1	AC	PIV	CV	C	41		
										O	41		
									LT	C			
	"A" RCS COLD LEG SI ADMISSION CHECK VALVE												
1-SI-086	11715-CBM-096B	4 OF 4	E8	CHECK VALVE	6.000	1	AC	PIV	CV	C	41		
										O	41		
									LT	C			
	"B" RCS COLD LEG SI ADMISSION CHECK VALVE												
1-SI-089	11715-CBM-096B	4 OF 4	D8	CHECK VALVE	6.000	1	AC	PIV	CV	C	41		
										O	41		
									LT	C			
	"C" RCS COLD LEG SI ADMISSION CHECK VALVE												
1-SI-090	11715-CBM-096B	4 OF 4	C3	CHECK VALVE	3.000	1	AC	CIV	CV	C	43		
										O	43		
									LT	C			
	HIGH HEAD SI FROM CHARGING PUMPS TO RCS HOT LEGS, INSIDE CONT ISOLATION CHECK VALVE												
1-SI-095	11715-CBM-096B	4 OF 4	D8	CHECK VALVE	6.000	1	C		CV	C	43		
										O	43		
	"B" RCS HOT LEG SI ADMISSION CHECK VALVE												
1-SI-099	11715-CBM-096B	4 OF 4	C8	CHECK VALVE	6.000	1	C		CV	C	43		
										O	43		
	"A" RCS HOT LEG SI ADMISSION CHECK VALVE												
1-SI-103	11715-CBM-096B	4 OF 4	B8	CHECK VALVE	6.000	1	C		CV	C	43		
										O	43		
	"C" RCS HOT LEG SI ADMISSION CHECK VALVE												
1-SI-106	11715-CBM-096B	1 OF 4	F4	CHECK VALVE	1.000	2	AC	CIV	CV	C	40		
									LT	C			

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
	NITROGEN SUPPLY TO ACCUMULATORS, INSIDE CONTAINMENT ISOLATION CHECK VALVE												
1-SI-110	11715-CBM-096B	1 OF 4	D4	CHECK VALVE	1.000	2	AC	CIV	CV	C	40		
									LT	C			
	ACCUMULATOR MAKE UP LINE, INSIDE CONTAINMENT ISOLATION CHECK VALVE												
1-SI-125	11715-CBM-096B	1 OF 4	B7	CHECK VALVE	12.000	1	C		CV	O	42		
	"A" ACCUMULATOR DISCHARGE CHECK VALVE												
1-SI-127	11715-CBM-096B	1 OF 4	B8	CHECK VALVE	12.000	1	C		CV	C	42		
										O	42		
	"A" ACCUMULATOR COLD LEG ADMISSION CHECK VALVE												
1-SI-142	11715-CBM-096B	2 OF 4	B5	CHECK VALVE	12.000	1	C		CV	O	42		
	"B" ACCUMULATOR DISCHARGE CHECK VALVE												
1-SI-144	11715-CBM-096B	2 OF 4	B7	CHECK VALVE	12.000	1	C		CV	C	42		
										O	42		
	"B" ACCUMULATOR COLD LEG ADMISSION CHECK VALVE												
1-SI-159	11715-CBM-096B	3 OF 4	B5	CHECK VALVE	12.000	1	C		CV	O	42		
	"C" ACCUMULATOR DISCHARGE CHECK VALVE												
1-SI-161	11715-CBM-096B	3 OF 4	B7	CHECK VALVE	12.000	1	C		CV	C	42		
										O	42		
	"C" ACCUMULATOR COLD LEG ADMISSION CHECK VALVE												
1-SI-185	11715-CBM-096B	4 OF 4	F3	CHECK VALVE	3.000	2	AC	CIV	CV	C	43		
										O	43		
									LT	C			
	HIGH HEAD SI FROM CHARGING PUMPS TO RCS COLD LEGS, INSIDE CONT ISOLATION CHECK VALVE												
1-SI-190	11715-CBM-096B	4 OF 4	F7	CHECK VALVE	2.000	1	C		CV	C	44		
										O	44		
	HIGH HEAD SI TO "A" RCS COLD LEG, INSIDE MISSILE BARRIER CHECK VALVE												
1-SI-192	11715-CBM-096B	4 OF 4	E7	CHECK VALVE	2.000	1	C		CV	C	44		
										O	44		
	HIGH HEAD SI TO "B" RCS COLD LEG, INSIDE MISSILE BARRIER CHECK VALVE												
1-SI-194	11715-CBM-096B	4 OF 4	D7	CHECK VALVE	2.000	1	C		CV	C	44		
										O	44		

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
	HIGH HEAD SI TO "C" RCS COLD LEG, INSIDE MISSILE BARRIER CHECK VALVE												
1-SI-195	11715-CBM-096B	4 OF 4	F6	CHECK VALVE	6.000	1	AC	C&P	CV	C	41		
										O	41		
									LT	C			
	LOW HEAD SI TO "A" RCS COLD LEG, INSIDE CONTAINMENT ISOLATION CHECK VALVE												
1-SI-197	11715-CBM-096B	4 OF 4	E6	CHECK VALVE	6.000	1	AC	C&P	CV	C	41		
										O	41		
									LT	C			
	LOW HEAD SI TO B RCS COLD LEG, INSIDE CONTAINMENT ISOLATION CHECK VALVE												
1-SI-199	11715-CBM-096B	4 OF 4	D6	CHECK VALVE	6.000	1	AC	C&P	CV	C	41		
										O	41		
									LT	C			
	LOW HEAD SI TO "C" RCS COLD LEG, INSIDE CONTAINMENT ISOLATION CHECK VALVE												
1-SI-201	11715-CBM-096B	4 OF 4	D3	CHECK VALVE	3.000	1	AC	CIV	CV	C	43		
										O	43		
									LT	C			
	HIGH HEAD SI FROM CHARGING PUMPS TO RCS HOT LEGS, INSIDE CONT ISOLATION CHECK VALVE												
1-SI-206	11715-CBM-096B	4 OF 4	B3	CHECK VALVE	6.000	2	AC	CIV	CV	C	43		
										O	43		
									LT	C			
	LOW HEAD SI FROM "A" LHSI PUMP TO RCS HOT LEGS, INSIDE CONT ISOLATION CHECK VALVE												
1-SI-207	11715-CBM-096B	4 OF 4	B3	CHECK VALVE	6.000	2	AC	CIV	CV	C	43		
										O	43		
									LT	C			
	LOW HEAD SI FROM "B" LHSI PUMP TO RCS HOT LEGS, INSIDE CONT ISOLATION CHECK VALVE												
1-SI-209	11715-CBM-096B	4 OF 4	C7	CHECK VALVE	6.000	1	C		CV	C	43		
										O	43		
	LOW HEAD SAFETY INJECTION SUPPLY CHECK VALVE TO "A" RCS HOT LEG												
1-SI-211	11715-CBM-096B	4 OF 4	C7	CHECK VALVE	6.000	1	C		CV	C	43		
										O	43		
	LOW HEAD SAFETY INJECTION SUPPLY CHECK VALVE TO "B" RCS HOT LEG												
1-SI-213	11715-CBM-096B	4 OF 4	B7	CHECK VALVE	6.000	1	C		CV	C	43		
										O	43		
	LOW HEAD SAFETY INJECTION SUPPLY CHECK VALVE TO "C" RCS HOT LEG												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
1-SI-HCV-1936	11715-CBM-096B	1 OF 4	E5	AO GATE	1.000	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C			
									VP	OC			
	WASTE GAS FROM ACCUMULATORS TO CHARCOAL FILTERS												
1-SI-MOV-1836	11715-CBM-096A	3 OF 3	C8	MO GATE	3.000	2	A	CIV	EV	C		23	
										O		23	
									LT	C			
									ST	C		23	
										O		23	
									VP	OC			
	HIGH HEAD SI FROM CHARGING HEADER TO RCS COLD LEGS, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-SI-MOV-1860A	11715-CBM-096A	1 OF 3	B7	MO GATE	12.000	2	B		EV	C			
										O			
									ST	C			
										O			
									VP	OC			
	"A" LOW HEAD SI PUMP SUCTION ISOLATION FROM CONTAINMENT SUMP												
1-SI-MOV-1860B	11715-CBM-096A	1 OF 3	B5	MO GATE	12.000	2	B		EV	C			
										O			
									ST	C			
										O			
									VP	OC			
	"B" LOW HEAD SI PUMP SUCTION ISOLATION FROM CONTAINMENT SUMP												
1-SI-MOV-1862A	11715-CBM-096A	1 OF 3	A3	MO GATE	12.000	2	B		EV	C			
									ST	C			
									VP	OC			
	"A" LOW HEAD SI PUMP SUCTION FROM RWST												
1-SI-MOV-1862B	11715-CBM-096A	1 OF 3	B3	MO GATE	12.000	2	B		EV	C			
									ST	C			
									VP	OC			
	"B" LOW HEAD SI PUMP SUCTION FROM RWST												
1-SI-MOV-1863A	11715-CBM-096A	2 OF 3	C5	MO GATE	8.000	2	B		EV	C			
										O			
									ST	C			
										O			
									VP	OC			
	"A" LOW HEAD SAFETY INJECTION PUMP SUPPLY ISOLATION TO CHARGING PUMPS												
1-SI-MOV-1863B	11715-CBM-095B	2 OF 2	B8	MO GATE	8.000	2	B		EV	C			
										O			
									ST	C			
										O			

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
1-SI-MOV-1863B	11715-CBM-095B	2 OF 2	B8	MO GATE	8.000	2	B		VP	OC			
	"B" LOW HEAD SAFETY INJECTION PUMP SUPPLY ISOLATION TO CHARGING PUMPS												
1-SI-MOV-1864A	11715-CBM-096A	2 OF 3	C7	MO GATE	10.000	2	B		EV	C			
										O			
									ST	C			
										O			
									VP	OC			
	"A" LOW HEAD SI PUMP COLD LEG DISCHARGE STOP VALVE												
1-SI-MOV-1864B	11715-CBM-096A	2 OF 3	C6	MO GATE	10.000	2	B		EV	C			
										O			
									ST	C			
										O			
									VP	OC			
	"B" LOW HEAD SI PUMP COLD LEG DISCHARGE STOP VALVE												
1-SI-MOV-1865A	11715-CBM-096B	1 OF 4	C7	MO GATE	12.000	2	B		EV	C		24	
										O		24	
									ST	C		24	
										O		24	
									VP	OC			
	"A" ACCUMULATOR DISCHARGE ISOLATION VALVE TO RCS COLD LEG												
1-SI-MOV-1865B	11715-CBM-096B	2 OF 4	C5	MO GATE	12.000	2	B		EV	C		24	
										O		24	
									ST	C		24	
										O		24	
									VP	OC			
	"B" ACCUMULATOR DISCHARGE ISOLATION VALVE TO RCS COLD LEG												
1-SI-MOV-1865C	11715-CBM-096B	3 OF 4	C5	MO GATE	12.000	2	B		EV	C		24	
										O		24	
									ST	C		24	
										O		24	
									VP	OC			
	"C" ACCUMULATOR DISCHARGE ISOLATION VALVE TO RCS COLD LEG												
1-SI-MOV-1867A	11715-CBM-096A	3 OF 3	D4	MO GATE	3.000	2	B		EV	C			
										O			
									ST	C			
										O			
									VP	OC			
	BORON INJECTION TANK HIGH HEAD SI INLET VALVE												
1-SI-MOV-1867B	11715-CBM-096A	3 OF 3	D4	MO GATE	3.000	2	B		EV	C			
										O			
									ST	C			
										O			
									VP	OC			

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
	BORON INJECTION TANK HIGH HEAD SI INLET VALVE												
1-SI-MOV-1867C	11715-CBM-096A	3 OF 3	E7	MO GATE	3.000	2	A	CIV	EV	C			
										O			
									LT	C	59		
									ST	C			
										O			
									VP	OC			
	BORON INJECTION TANK OUTLET TO RCS COLD LEG, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-SI-MOV-1867D	11715-CBM-096A	3 OF 3	D7	MO GATE	3.000	2	A	CIV	EV	C			
										O			
									LT	C	59		
									ST	C			
										O			
									VP	OC			
	BORON INJECTION TANK OUTLET TO RCS COLD LEG, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-SI-MOV-1869A	11715-CBM-096A	3 OF 3	C8	MO GATE	3.000	2	A	CIV	EV	C		23	
										O		23	
									LT	C			
									ST	C		23	
										O		23	
									VP	OC			
	HIGH HEAD SI FROM CHARGING HEADER TO RCS HOT LEGS, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-SI-MOV-1869B	11715-CBM-096A	3 OF 3	B8	MO GATE	3.000	2	A	CIV	EV	C		23	
										O		23	
									LT	C			
									ST	C		23	
										O		23	
									VP	OC			
	HIGH HEAD SI FROM CHARGING HEADER TO RCS HOT LEGS, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-SI-MOV-1885A	11715-CBM-096A	2 OF 3	C3	MO GLOBE	2.000	2	A		EV	C			
									LT	C			
									ST	C			
									VP	OC			
	"A" LOW HEAD SI PUMP MINIMUM FLOW/TEST LINE ISOLATION												
1-SI-MOV-1885B	11715-CBM-096A	2 OF 3	B3	MO GLOBE	2.000	2	A		EV	C			
									LT	C			
									ST	C			
									VP	OC			
	"B" LOW HEAD SI PUMP MINIMUM FLOW/TEST LINE ISOLATION												
1-SI-MOV-1885C	11715-CBM-096A	2 OF 3	D3	MO GLOBE	2.000	2	A		EV	C			
									LT	C			
									ST	C			
									VP	OC			

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
	"A" LOW HEAD SI PUMP MINIMUM FLOW/TEST LINE ISOLATION												
1-SI-MOV-1885D	11715-CBM-096A	2 OF 3	B3	MO GLOBE	2.000	2	A		EV	C			
									LT	C			
									ST	C			
									VP	OC			
	"B" LOW HEAD SI PUMP MINIMUM FLOW/TEST LINE ISOLATION												
1-SI-MOV-1890A	11715-CBM-096A	2 OF 3	D7	MO GATE	10.000	2	A	CIV	EV	C		23	
										O		23	
									LT	C			
									ST	C		23	
										O		23	
									VP	OC			
	"A" LOW HEAD SI PUMP HOT LEG DISCHARGE STOP VALVE, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-SI-MOV-1890B	11715-CBM-096A	2 OF 3	D7	MO GATE	10.000	2	A	CIV	EV	C		23	
										O		23	
									LT	C			
									ST	C		23	
										O		23	
									VP	OC			
	"B" LOW HEAD SI PUMP HOT LEG DISCHARGE STOP VALVE, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-SI-MOV-1890C	11715-CBM-096A	2 OF 3	C6	MO GATE	10.000	2	A	CIV	EV	C			
										O			
									LT	C	59		
									ST	C			
										O			
									VP	OC			
	LOW HEAD SI PUMPS COLD LEG DISCHARGE STOP VALVE, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-SI-MOV-1890D	11715-CBM-096A	2 OF 3	C7	MO GATE	10.000	2	A	CIV	EV	C			
										O			
									LT	C	59		
									ST	C			
										O			
									VP	OC			
	LOW HEAD SI PUMPS COLD LEG DISCHARGE STOP VALVE, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-SI-RV-1845A	11715-CBM-096A	2 OF 3	D6	RELIEF VALVE	.750	2	C		SP	O			
	"A" LOW HEAD SI PUMP DISCHARGE RELIEF VALVE, RV DISCHARGE TO SAFEGUARDS AREA SUMP												
1-SI-RV-1845B	11715-CBM-096A	2 OF 3	C7	RELIEF VALVE	.750	2	C		SP	O			
	LOW HEAD SI HEADER TO COLD LEG RELIEF VALVE, RV DISCHARGE TO SAFEGUARDS AREA SUMP												
1-SI-RV-1845C	11715-CBM-096A	2 OF 3	C6	RELIEF VALVE	.750	2	C		SP	O			

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
	"B" LOW HEAD SI PUMP DISCHARGE RELIEF VALVE, RV DISCHARGE TO SAFEGUARDS AREA SUMP												
1-SI-TV-100	11715-CBM-096B	1 OF 4	F3	AO GLOBE	1.000	2	A	CIV	EV FS LT ST VP	C C C C OC			
	NITROGEN SUPPLY TO ACCUMULATORS, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-SI-TV-101	11715-CBM-096B	1 OF 4	E4	AO GLOBE	1.000	2	A	CIV	EV FS LT ST VP	C C C C OC	 54 		
	ACCUMULATORS TO WASTE GAS CHARCOAL FILTERS, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-SI-TV-1842	11715-CBM-096B	1 OF 4	D4	AO GLOBE	.750	2	A	CIV	EV FS LT ST VP	C C C C OC	 54 		
	ACCUMULATOR TEST LINE, INSIDE CONTAINMENT ISOLATION VALVE												
1-SI-TV-1859	11715-CBM-096A	2 OF 3	F7	AO GLOBE	.750	2	A	CIV	EV FS LT ST VP	C C C C OC			
	ACCUMULATOR TEST LINE, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-SI-TV-1884A	11715-CBM-096A	3 OF 3	E4	AO GLOBE	1.000	2	B		EV FS ST VP	C C C OC	 54 		
	BORON INJECTION TANK RETURN ISOLATION TO BORIC ACID STORAGE TANK												
1-SI-TV-1884B	11715-CBM-096A	3 OF 3	E4	AO GLOBE	1.000	2	B		EV FS ST VP	C C C OC	 54 		
	BORON INJECTION TANK RETURN ISOLATION TO BORIC ACID STORAGE TANK												
1-SI-TV-1884C	11715-CBM-096A	3 OF 3	D4	AO GLOBE	1.000	3	B		EV FS ST VP	C C C OC	 54 		
	BORON INJECTION TANK SUPPLY ISOLATION FROM BORIC ACID TRANSFER PUMPS												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
1-SS-TV-100A	11715-CBM-089D	1 OF 1	F6	AO GLOBE	.375	1	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C	54		
									VP	OC			
	PRESSURIZER LIQUID SPACE SAMPLE LINE, INSIDE CONTAINMENT ISOLATION VALVE												
1-SS-TV-100B	11715-CBM-089D	1 OF 1	F5	AO GLOBE	.375	1	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C			
									VP	OC			
	PRESSURIZER LIQUID SPACE SAMPLE LINE, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-SS-TV-101A	11715-CBM-089D	1 OF 1	E6	AO GLOBE	.375	1	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C	54		
									VP	OC			
	PRESSURIZER VAPOR SPACE SAMPLE LINE, INSIDE CONTAINMENT ISOLATION VALVE												
1-SS-TV-101B	11715-CBM-089D	1 OF 1	E5	AO GLOBE	.375	1	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C			
									VP	OC			
	PRESSURIZER VAPOR SPACE SAMPLE LINE, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-SS-TV-102A	11715-CBM-089D	1 OF 1	D6	SO GLOBE	.375	1	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C	54		
									VP	OC			
	REACTOR COOLANT COLD LEGS SAMPLE HEADER, INSIDE CONTAINMENT ISOLATION VALVE												
1-SS-TV-102B	11715-CBM-089D	1 OF 1	D5	SO GLOBE	.375	1	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C	54		
									VP	OC			
	REACTOR COOLANT COLD LEGS SAMPLE HEADER, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-SS-TV-103A	11715-CBM-089D	1 OF 1	F6	SO GLOBE	.375	2	AE	CIV	LT	C			
									VP	OC			
	RHR SAMPLE HEADER, INSIDE CONTAINMENT ISOLATION VALVE												
1-SS-TV-103B	11715-CBM-089D	1 OF 1	F5	SO GLOBE	.375	2	AE	CIV	LT	C			
									VP	OC			

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
	RHR SAMPLE HEADER, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-SS-TV-104A	11715-CBM-089D	1 OF 1	C6	AO GLOBE	.375	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C	54		
									VP	OC			
	PRESSURIZER RELIEF TANK GAS SPACE SAMPLE LINE, INSIDE CONTAINMENT ISOLATION VALVE												
1-SS-TV-104B	11715-CBM-089D	1 OF 1	C5	AO GLOBE	.375	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C			
									VP	OC			
	PRESSURIZER RELIEF TANK GAS SPACE SAMPLE LINE, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-SS-TV-106A	11715-CBM-089D	1 OF 1	E6	SO GLOBE	.375	1	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C	54		
									VP	OC			
	REACTOR COOLANT HOT LEGS SAMPLE HEADER, INSIDE [illegible]TAINMENT ISOLATION VALVE												
1-SS-TV-106B	11715-CBM-[illegible]	[illegible] OF 1	E5	SO GLOBE	.375	1	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C	54		
									VP	OC			
	REACTOR COOLANT HOT LEGS SAMPLE HEADER, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-SS-TV-112A	11715-CBM-089B	3 OF 4	D3	AO GLOBE	.375	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C	54		
									VP	OC			
	STEAM GENERATORS SAMPLE HEADER, INSIDE CONTAINENT ISOLATION VALVE												
1-SS-TV-112B	11715-CBM-089B	3 OF 4	C3	AO GLOBE	.375	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C			
									VP	OC			
	STEAM GENERATORS SAMPLE HEADER, OUTSIDE CONTAINMENT ISOLATION VALVE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
1-SV-TV-102-1	11715-CBM-072A	2 OF 3	C3	AO GLOBE	6.000	2	B		EV	C			
									FS	C			
									ST	C			
									VP	OC			
	CONDENSER AIR REMOVAL DISCHARG TO CONTAIN-MENT, OUTSIDE CONTAIN ISOLATION VALVE												
1-SV-TV-103	11715-CBM-072A	2 OF 3	D3	AO GLOBE	6.000	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C			
									VP	OC			
	CONDENSER AIR REMOVAL DISCHARGE TO CONTAIN-MENT, OUTSIDE CONTAINMENT ISOLATION VALVE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
1-SW-003	11715-CBM-078A	3 OF 4	D6	CHECK VALVE	20.000	3	C		CV	C	63		
										O	63		
	UNIT 1 "A" SERVICE WATER PUMP DISCHARGE CHECK VALVE												
1-SW-010	11715-CBM-078A	3 OF 4	D6	CHECK VALVE	20.000	3	C		CV	C	63		
										O	63		
	UNIT 1 "B" SERVICE WATER PUMP DISCHARGE CHECK VALVE												
1-SW-022	11715-CBM-078A	1 OF 4	C3	CHECK VALVE	24.000	3	C		CV	C			
										O	73		
	UNIT 1 AUXILIARY SERVICE WATER PUMP DISCHARGE CHECK VALVE												
1-SW-114	11715-CBM-078B	1 OF 4	F8	CHECK VALVE	24.000	3	C		CV	O	45		
	"A" SERVICE WATR HEADER SUPPLY CHECK VALVE TO RECIRC SPRAY HX UPSTREAM OF CROSS CONNECT												
1-SW-116	11715-CBM-078B	1 OF 4	F8	CHECK VALVE	24.000	3	C		CV	O	45		
	"B" SERVICE WATR HEADER SUPPLY CHECK VALVE TO RECIRC SPRAY HX UPSTREAM OF CROSS CONNECT												
1-SW-120	11715-CBM-078B	1 OF 4	E3	CHECK VALVE	16.000	2	C		CV	O	45		
	"A" RECIRC SPRAY HEAT EXCHANGER SERVICE WATER SUPPLY CHECK VALVE												
1-SW-130	11715-CBM-078B	1 OF 4	E4	CHECK VALVE	16.000	2	C		CV	O	45		
	"B" RECIRC SPRAY HEAT EXCHANGER SERVICE WATER SUPPLY CHECK VALVE												
1-SW-140	11715-CBM-078B	1 OF 4	E6	CHECK VALVE	16.000	2	C		CV	O	45		
	"C" RECIRC SPRAY HEAT EXCHANGER SERVICE WATER SUPPLY CHECK VALVE												
1-SW-150	11715-CBM-078B	1 OF 4	E7	CHECK VALVE	16.000	2	C		CV	O	45		
	"D" RECIRC SPRAY HEAT EXCHANGER SERVICE WATER SUPPLY CHECK VALVE												
1-SW-251	11715-CBM-078C	2 OF 2	B8	MANUAL GATE	4.000	3	B		EV	C			
	SERVICE WATER SUPPLY MAUNAL ISOLATION VALVE												
1-SW-252	11715-CBM-078C	2 OF 2	B8	CHECK VALVE	4.000	3	C		CV	O		39	
	SERVICE WATER SUPPLY CHECK VALVE												
1-SW-254	11715-CBM-078C	2 OF 2	B8	MANUAL GATE	4.000	3	B		EV	C			
	SERVICE WATER SUPPLY MAUNAL ISOLATION VALVE												
1-SW-255	11715-CBM-078C	2 OF 2	B8	CHECK VALVE	4.000	3	C		CV	O		39	

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
	SERVICE WATER SUPPLY CHECK VALVE												
1-SW-285	11715-CBM-078C	2 OF 2	B8	MANUAL GATE	4.000	3	B		EV	C			
	SERVICE WATER RETURN MAUNAL ISOLATION VALVE												
1-SW-286	11715-CBM-078C	2 OF 2	B8	MANUAL GATE	4.000	3	B		EV	C			
	SERVICE WATER RETURN MAUNAL ISOLATION VALVE												
1-SW-364	11715-CBB-040D	1 OF 3	E7	CHECK VALVE	4.000	NC	C		CV	O			
	SERVICE WATER SUPPLY TO CONTROL ROOM CONDENSER WATER PUMPS												
1-SW-386	11715-CBB-040D	1 OF 3	C7	CHECK VALVE	4.000	NC	C		CV	O			
	SERVICE WATER SUPPLY TO CONTROL ROOM CONDENSER WATER PUMPS												
1-SW-420	11715-CBB-040D	1 OF 3	A7	CHECK VALVE	4.000	NC	C		CV	O			
	SERVICE WATER SUPPLY TO CONTROL ROOM CONDENSER WATER PUMPS												
1-SW-630	11715-CBM-078G	1 OF 2	E8	CHECK VALVE	2.000	3	C		CV	O		35	
	SERVICE WATER SUPPLY TO CHARGING PUMP LUBE OIL COOLER CHECK VALVE												
1-SW-631	11715-CBM-078G	1 OF 2	E7	CHECK VALVE	2.000	3	C		CV	O		35	
	SERVICE WATER SUPPLY TO CHARGING PUMP LUBE OIL COOLER CHECK VALVE												
1-SW-641	11715-CBM-078G	1 OF 2	E6	CHECK VALVE	2.000	3	C		CV	O		35	
	SERVICE WATER SUPPLY TO CHARGING PUMP SEAL COOLER CHECK VALVE												
1-SW-644	11715-CBM-078G	1 OF 2	E7	CHECK VALVE	2.000	3	C		CV	O		35	
	SERVICE WATER SUPPLY TO CHARGING PUMP SEAL COOLER CHECK VALVE												
1-SW-647	11715-CBM-078G	1 OF 2	E6	CHECK VALVE	2.000	3	C		CV	O		35	
	SERVICE WATER SUPPLY TO CHARGING PUMP LUBE OIL COOLER CHECK VALVE												
1-SW-648	11715-CBM-078G	1 OF 2	E6	CHECK VALVE	2.000	3	C		CV	O		35	
	SERVICE WATER SUPPLY TO CHARGING PUMP LUBE OIL COOLER CHECK VALVE												
1-SW-658	11715-CBM-078G	1 OF 2	E5	CHECK VALVE	2.000	3	C		CV	O		35	
	SERVICE WATER SUPPLY TO CHARGING PUMP SEAL COOLER CHECK VALVE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
1-SW-661	11715-CBM-078G	1 OF 2	E5	CHECK VALVE	2.000	3	C		CV	O		35	
	SERVICE WATER SUPPLY TO CHARGING PUMP SEAL COOLER CHECK VALVE												
1-SW-664	11715-CBM-078G	1 OF 2	E4	CHECK VALVE	2.000	3	C		CV	O		35	
	SERVICE WATER SUPPLY TO CHARGING PUMP LUBE OIL COOLER CHECK VALVE												
1-SW-665	11715-CBM-078G	1 OF 2	E4	CHECK VALVE	2.000	3	C		CV	O		35	
	SERVICE WATER SUPPLY TO CHARGING PUMP LUBE OIL COOLER CHECK VALVE												
1-SW-678	11715-CBM-078G	1 OF 2	A3	MANUAL GATE	4.000	3	B		EV	C			
	SERVICE WATER RETURN MAUNAL ISOLATION VALVE												
1-SW-679	11715-CBM-078G	1 OF 2	B3	MANUAL GATE	4.000	3	B		EV	C			
	SERVICE WATER RETURN MAUNAL ISOLATION VALVE												
1-SW-681	11715-CBM-078G	1 OF 2	F3	MANUAL GATE	4.000	3	B		EV	C			
	SERVICE WATER SUPPLY MAUNAL ISOLATION VALVE												
1-SW-686	11715-CBM-078G	1 OF 2	E3	CHECK VALVE	2.000	3	C		CV	O		35	
	SERVICE WATER SUPPLY TO CHARGING PUMP SEAL COOLER CHECK VALVE												
1-SW-689	11715-CBM-078G	1 OF 2	E3	CHECK VALVE	2.000	3	C		CV	O		35	
	SERVICE WATER SUPPLY TO CHARGING PUMP SEAL COOLER CHECK VALVE												
1-SW-694	11715-CBM-078G	1 OF 2	F3	MANUAL GATE	4.000	3	B		EV	C			
	SERVICE WATER SUPPLY MAUNAL ISOLATION VALVE												
1-SW-MOV-101A	11715-CBM-078A	4 OF 4	B3	MO BFLY	24.000	3	B		EV ST VP	O O OC		34 34	
	"A" SERVICE WATER HEADER SUPPLY ISOLATION TO RECIRC SPRAY HEAT EXCHANGERS												
1-SW-MOV-101B	11715-CBM-078A	4 OF 4	B3	MO BFLY	24.000	3	B		EV ST VP	O O OC		34 34	
	"A" SERVICE WATER HEADER SUPPLY ISOLATION TO RECIRC SPRAY HEAT EXCHANGERS												
1-SW-MOV-101C	11715-CBM-078A	4 OF 4	B3	MO BFLY	24.000	3	B		EV ST VP	O O OC		34 34	

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
	"B" SERVICE WATER HEADER SUPPLY ISOLATION TO RECIRC SPRAY HEAT EXCHANGERS												
1-SW-MOV-101D	11715-CBM-078A	4 OF 4	C3	MO BFLY	24.000	3	B		EV	O		34	
									ST	O		34	
									VP	OC			
	"B" SERVICE WATER HEADER SUPPLY ISOLATION TO RECIRC SPRAY HEAT EXCHANGERS												
1-SW-MOV-102A	11715-CBM-078B	1 OF 4	F8	MO BFLY	24.000	3	E		VP	OC			
	SERVICE WATER SUPPLY CROSS CONNECTS TO RECIRC SPRAY HEAT EXCHANGERS												
1-SW-MOV-102B	11715-CBM-078B	1 OF 4	F8	MO BFLY	24.000	3	E		VP	OC			
	SERVICE WATER SUPPLY CROSS CONNECTS TO RECIRC SPRAY HEAT EXCHANGERS												
1-SW-MOV-103A	11715-CBM-078B	1 OF 4	E3	MO BFLY	16.000	2	A	CIV	EV	C			
										O			
									LT	C			
									ST	C			
										O			
									VP	OC			
	SERVICE WATER SUPPLY TO "A" RECIRC SPRAY HEAT EXCHANGER, OUTSIDE CONT ISOLATION VALVE												
1-SW-MOV-103B	11715-CBM-078B	1 OF 4	E4	MO BFLY	16.000	2	A	CIV	EV	C			
										O			
									LT	C			
									ST	C			
										O			
									VP	OC			
	SERVICE WATER SUPPLY TO "B" RECIRC SPRAY HEAT EXCHANGER, OUTSIDE CONT ISOLATION VALVE												
1-SW-MOV-103C	11715-CBM-078B	1 OF 4	E6	MO BFLY	16.000	2	A	CIV	EV	C			
										O			
									LT	C			
									ST	C			
										O			
									VP	OC			
	SERVICE WATER SUPPLY TO "C" RECIRC SPRAY HEAT EXCHANGER, OUTSIDE CONT ISOLATION VALVE												
1-SW-MOV-103D	11715-CBM-078B	1 OF 4	E7	MO BFLY	16.000	2	A	CIV	EV	C			
										O			
									LT	C			
									ST	C			
										O			
									VP	OC			
	SERVICE WATER SUPPLY TO "D" RECIRC SPRAY HEAT EXCHANGER, OUTSIDE CONT ISOLATION VALVE												
1-SW-MOV-104A	11715-CBM-078B	1 OF 4	C3	MO BFLY	16.000	2	A	CIV	EV	C			
										O			
									LT	C			

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
1-SW-MOV-104A	11715-CBM-078B	1 OF 4	C3	MO BFLY	16.000	2	A	CIV	ST	C			
										O			
									VP	OC			
	SERVICE WATER RETURN FROM "A" RECIRC SPRAY HEAT EXCHANGER, OUTSIDE CONT ISOLATION VALVE												
1-SW-MOV-104B	11715-CBM-078B	1 OF 4	C5	MO BFLY	16.000	2	A	CIV	EV	C			
										O			
									LT	C			
									ST	C			
										O			
									VP	OC			
	SERVICE WATER RETURN FROM "B" RECIRC SPRAY HEAT EXCHANGER, OUTSIDE CONT ISOLATION VALVE												
1-SW-MOV-104C	11715-CBM-078B	1 OF 4	C6	MO BFLY	16.000	2	A	CIV	EV	C			
										O			
									LT	C			
									ST	C			
										O			
									VP	OC			
	SERVICE WATER RETURN FROM "C" RECIRC SPRAY HEAT EXCHANGER, OUTSIDE CONT ISOLATION VALVE												
1-SW-MOV-104D	11715-CBM-078B	1 OF 4	C7	MO BFLY	16.000	2	A	CIV	EV	C			
										O			
									LT	C			
									ST	C			
										O			
									VP	OC			
	SERVICE WATER RETURN FROM "D" RECIRC SPRAY HEAT EXCHANGER, OUTSIDE CONT ISOLATION VALVE												
1-SW-MOV-105A	11715-CBM-078A	4 OF 4	C3	MO BFLY	24.000	3	B		EV	O		34	
									ST	O		34	
									VP	OC			
	"B" SERVICE WATER HEADER RETURN ISOLATION FROM RECIRC SPRAY HEAT EXCHANGERS												
1-SW-MOV-105B	11715-CBM-078A	4 OF 4	C3	MO BFLY	24.000	3	B		EV	O		34	
									ST	O		34	
									VP	OC			
	"B" SERVICE WATER HEADER RETURN ISOLATION FROM RECIRC SPRAY HEAT EXCHANGERS												
1-SW-MOV-105C	11715-CBM-078A	4 OF 4	C3	MO BFLY	24.000	3	B		EV	O		34	
									ST	O		34	
									VP	OC			
	"A" SERVICE WATER HEADER RETURN ISOLATION FROM RECIRC SPRAY HEAT EXCHANGERS												
1-SW-MOV-105D	11715-CBM-078A	4 OF 4	C3	MO BFLY	24.000	3	B		EV	O		34	
									ST	O		34	
									VP	OC			

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
	"A" SERVICE WATER HEADER RETURN ISOLATION FROM RECIRC SPRAY HEAT EXCHANGERS												
1-SW-MOV-106A	11715-CBM-078B	1 OF 4	B8	MO BFLY	24.000	3	E		VP	OC			
	SERVICE WATER RETURN CROSS CONNECTS FROM RECIRC SPRAY HEAT EXCHANGERS												
1-SW-MOV-106B	11715-CBM-078B	1 OF 4	A8	MO BFLY	24.000	3	E		VP	OC			
	SERVICE WATER RETURN CROSS CONNECTS FROM RECIRC SPRAY HEAT EXCHANGERS												
1-SW-MOV-108A	11715-CBM-078C	1 OF 2	B3	MO BFLY	24.000	3	B		EV	C			
										O			
									ST	C			
										O			
									VP	OC			
	"A" SERVICE WATER HEADER SUPPLY ISOLATION TO COMPONENT COOLING HEAT EXCHANGERS												
1-SW-MOV-108B	11715-CBM-078C	1 OF 2	B3	MO BFLY	24.000	3	B		EV	C			
										O			
									ST	C			
										O			
									VP	OC			
	"A" SERVICE WATER HEADER SUPPLY ISOLATION TO COMPONENT COOLING HEAT EXCHANGERS												
1-SW-MOV-110A	11715-CBM-078A	4 OF 4	C4	MO BFLY	8.000	3	E		VP	OC			
	SERVICE WATER HEADER SUPPLY TO RECIRCULATION AIR COOLERS												
1-SW-MOV-110B	11715-CBM-078A	4 OF 4	C4	MO BFLY	8.000	3	E		VP	OC			
	SERVICE WATER HEADER SUPPLY TO RECIRCULATION AIR COOLERS												
1-SW-MOV-113A	11715-CBM-078A	4 OF 4	B7	MO BFLY	10.000	3	E		VP	OC			
	SERVICE WATER RETURN ISOLATION FROM FUEL PIT COOLERS												
1-SW-MOV-113B	11715-CBM-078A	4 OF 4	B5	MO BFLY	10.000	3	E		VP	OC			
	SERVICE WATER SUPPLY ISOLATION TO FUEL PIT COOLERS												
1-SW-MOV-114A	11715-CBM-078A	4 OF 4	C4	MO BFLY	8.000	3	E		VP	OC			
	SERVICE WATER HEADER RETURN FROM RECIRCULATION AIR COOLERS												
1-SW-MOV-114B	11715-CBM-078A	4 OF 4	C4	MO BFLY	8.000	3	E		VP	OC			
	SERVICE WATER HEADER RETURN FROM RECIRCULATION AIR COOLERS												
1-SW-MOV-115A	11715-CBM-078A	1 OF 4	E7	MO BFLY	24.000	3	B		EV	O			
									ST	O			

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
1-SW-MOV-115A	11715-CBM-078A	1 OF 4	E7	MO BFLY	24.000	3	B		VP	OC			
	SERVICE WATER HEADER SUPPLY ISOLATION VALVE FROM AUXILIARY SERVICE WATER PUMPS												
1-SW-MOV-117	11715-CBM-078A	1 OF 4	C3	MO BFLY	24.000	3	B		EV ST VP	O O OC			
	UNIT 1 AUXILIARY SERVICE WATER PUMP DISCHARGE ISOLATION VALVE												
1-SW-MOV-118	11715-CBM-078A	1 OF 4	D4	MO BFLY	24.000	3	E		VP	OC			
	AUXILIARY SERVICE WATER SUPPLY HEADER CROSS CONNECT VALVE												
1-SW-MOV-119	11715-CBM-078A	1 OF 4	D4	MO BFLY	8.000	3	B		EV ST VP	C C OC			
	MAKEUP PUMP SUPPLY VALVE												
1-SW-MOV-120A	11715-CBM-078A	4 OF 4	F3	MO BFLY	10.000	NC	E		VP	OC			
	AUXILIARY SERVICE WATER RETURN HEADER VALVE												
1-SW-MOV-120B	11715-CBM-078A	4 OF 4	F3	MO BFLY	10.000	NC	E		VP	OC			
	AUXILIARY SERVICE WATER RETURN HEADER VALVE												
1-SW-MOV-121A	11715-CBM-078H	1 OF 1	B5	MO BFLY	18.000	3	B		EV ST VP	O O OC			
	SERVICE WATER TO SPRAY ARRAYS STOP VALVE												
1-SW-MOV-121B	11715-CBM-078H	1 OF 1	B7	MO BFLY	18.000	3	B		EV ST VP	O O OC			
	SERVICE WATER TO SPRAY ARRAYS STOP VALVE												
1-SW-MOV-122A	11715-CBM-078H	1 OF 1	C5	MO BFLY	18.000	3	B		EV ST VP	O O OC			
	SERVICE WATER TO SPRAY ARRAYS STOP VALVE												
1-SW-MOV-122B	11715-CBM-078H	1 OF 1	C6	MO BFLY	18.000	3	B		EV ST VP	O O OC			
	SERVICE WATER TO SPRAY ARRAYS STOP VALVE												
1-SW-MOV-123A	11715-CBM-078H	1 OF 1	E4	MO BFLY	24.000	3	B		EV ST	C C			

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
1-SW-MOV-123A	11715-CBM-078H	1 OF 1	E4	MO BFLY	24.000	3	B		VP	OC			
	SERVICE WATER BYPASS VALVE												
1-SW-MOV-123B	11715-CBM-078H	1 OF 1	E8	MO BFLY	24.000	3	B		EV ST VP	C C OC			
	SERVICE WATER BYPASS VALVE												
1-SW-RV-100A	11715-CBM-078B	1 OF 4	E3	RELIEF VALVE	.750	2	C		SP	O			
	"A" RECIRC SPRAY HEAT EXCHANG SERVICE WATER RELIEF VALVE. RV DISCHARGE TO CONT SUMP												
1-SW-RV-100B	11715-CBM-078B	1 OF 4	E4	RELIEF VALVE	.750	2	C		SP	O			
	"B" RECIRC SPRAY HEAT EXCHANG SERVICE WATER RELIEF VALVE, RV DISCHARGE TO CONT SUMP												
1-SW-RV-100C	11715-CBM-078B	1 OF 4	E6	RELIEF VALVE	.750	2	C		SP	O			
	"C" RECIRC SPRAY HEAT EXCHANG SERVICE WATER RELIEF VALVE, RV DISCHARGE TO CONT SUMP												
1-SW-RV-100D	11715-CBM-078B	1 OF 4	E7	RELIEF VALVE	.750	2	C		SP	O			
	"D" RECIRC SPRAY HEAT EXCHANG SERVICE WATER RELIEF VALVE, RV DISCHARGE TO CONT SUMP												
1-SW-TCV-102A	11715-CBM-078G	1 OF 2	C4	AO GATE	2.000	3	B		EV FS ST	O O O			
	SERVICE WATER FROM CHARGING PUMP LUBE OIL COOLER TEMP CONTROL VALVE												
1-SW-TCV-102B	11715-CBM-078G	1 OF 2	C6	AO GATE	2.000	3	B		EV FS ST	O O O			
	SERVICE WATER FROM CHARGING PUMP LUBE OIL COOLER TEMP CONTROL VALVE												
1-SW-TCV-102C	11715-CBM-078G	1 OF 2	C8	AO GATE	2.000	3	B		EV FS ST	O O O			
	SERVICE WATER FROM CHARGING PUMP LUBE OIL COOLER TEMP CONTROL VALVE												
2-SW-MOV-215B	11715-CBM-078A	1 OF 4	E6	MO BFLY	24.000	3	B		EV ST VP	O O OC			
	SERVICE WATER HEADER SUPPLY ISOLATION VALVE FROM AUXILIARY SERVICE WATER PUMPS												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
1-VG-TV-100A	11715-CBM-090C	1 OF 3	F3	AO GLOBE	1.500	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C	54		
									VP	OC			
	VENT LINE ISOL FROM PRIMARY DRAINS TRANSFER TANK TO GAS STRIPPERS, OUTSIDE CONT ISOL												
1-VG-TV-100B	11715-CBM-090C	1 OF 3	D3	AO GLOBE	1.500	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C			
									VP	OC			
	VENT LINE ISOL FROM PRIMARY DRAINS TRANSFER TANK TO GAS STRIPPERS, INSIDE CONT ISOL VLV												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
1-VP-012	11715-CBM-072A	2 OF 3	E3	CHECK VALVE	6.000	2	AC	CIV	CV	C	46		
									LT	C			

CONDENSER AIR REMOVAL DISCHARG TO CONTAINMENT
INSIDE CONTAIN ISOLATION CHECK VALVE

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
1-WT-038	11715-CBM-102A	2 OF 2	F7	CHECK VALVE	.750	2	C		CV	C			
	"A" STEAM GENERATOR CHEMICAL FEED SUPPLY CHECK VALVE												
1-WT-050	11715-CBM-102A	2 OF 2	E7	CHECK VALVE	.750	2	C		CV	C			
	"B" STEAM GENERATOR CHEMICAL FEED SUPPLY CHECK VALVE												
1-WT-066	11715-CBM-102A	2 OF 2	D7	CHECK VALVE	.750	2	C		CV	C			
	"C" STEAM GENERATOR CHEMICAL FEED SUPPLY CHECK VALVE												
1-WT-465	13075-CBM-102C	1 OF 1	E6	MANUAL GATE	3.000	2	AE	CIV	LT	C			
	WET LAY UP RETURN FROM "A" STEAM GENERATOR, INSIDE CONTAINMENT ISOLATION VALVE												
1-WT-468	13075-CBM-102C	1 OF 1	E5	MANUAL GATE	3.000	2	AE	CIV	LT	C			
	WET LAY UP RETURN FROM "A" STEAM GENERATOR, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-WT-488	13075-CBM-102C	1 OF 1	D6	MANUAL GATE	3.000	2	AE	CIV	LT	C			
	WET LAY UP RETURN FROM "B" STEAM GENERATOR, INSIDE CONTAINMENT ISOLATION VALVE												
1-WT-491	13075-CBM-102C	1 OF 1	D5	MANUAL GATE	3.000	2	AE	CIV	LT	C			
	WET LAY UP RETURN FROM "B" STEAM GENERATOR, OUTSIDE CONTAINMENT ISOLATION VALVE												
1-WT-511	13075-CBM-102C	1 OF 1	B6	MANUAL GATE	3.000	2	AE	CIV	LT	C			
	WET LAY UP RETURN FROM "C" STEAM GENERATOR, INSIDE CONTAINMENT ISOLATION VALVE												
1-WT-514	13075-CBM-102C	1 OF 1	B5	MANUAL GATE	3.000	2	AE	CIV	LT	C			
	WET LAY UP RETURN FROM "C" STEAM GENERATOR, OUTSIDE CONTAINMENT ISOLATION VALVE												

2.3.5 VALVE INSERVICE TESTING PROGRAM RELIEF REQUESTS

Relief requests identify those Section XI Code requirements considered to be impractical. The basis for the relief request and the alternate testing to be performed is given.

RELIEF REQUEST V-1

Relief Request withdrawn.

RELIEF REQUEST V-2

Replaced by Cold Shutdown Justification CSV-1

RELIEF REQUEST V-3

I. IDENTIFICATION OF COMPONENTS

System : Component Cooling

Valve(s): 1-CC-84
1-CC-119
1-CC-154

Class : 2

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valves every three months

III. BASIS FOR RELIEF

These check valves must seat upon reversal of flow in order to fulfill their safety functions. The only exercise method to verify this actuation is to perform a leak rate test/back pressure test. Since the valves are located inside containment and their systems are required during power operation, they cannot be tested every three months. The valves will be exercised only during refueling outages because the small increase in safety gained by testing during cold shutdown does not justify the burden of draining lines and performing leak rate tests.

IV. ALTERNATE TESTING

Exercise for operability each refueling (not to exceed 24 months)

RELIEF REQUEST V-4

Replaced by Cold Shutdown Justification CSV-5

RELIEF REQUEST V-5

Replaced by Cold Shutdown Justification CSV-6

RELIEF REQUEST V-6

Replaced by Cold Shutdown Justification CSV-7

RELIEF REQUEST V-7

Replaced by Cold Shutdown Justification CSV-4

RELIEF REQUEST V-8

Replaced by Cold Shutdown Justification CSV-8

RELIEF REQUEST V-9

I. IDENTIFICATION OF COMPONENTS

System : Chemical & Volume Control

Valve(s): 1-CH-MOV-1380
1-CH-MOV-1381

Class : 2

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valves every three months

III. BASIS FOR RELIEF

Charging flow to the reactor coolant pump seals is required at all times while the pumps are in operation. Failure of one of these valves in the closed position could result in damage to the reactor coolant pump seal, thus placing the plant in an unsafe condition. Also, the valve controllers do not allow for a part-stroke exercise test. The reactor coolant pumps must be secured and reactor coolant pressure must be above 100 psig to perform the exercise tests.

IV. ALTERNATE TESTING

Exercise every cold shutdown when the reactor coolant pumps are secured and reactor coolant pressure is above 100 psig.

RELIEF REQUEST V-10

I. IDENTIFICATION OF COMPONENTS

System : Chemical & Volume Control

Valve(s):	1-CH-322	1-CH-336	1-CH-380
	1-CH-330	1-CH-358	1-CH-402

Class : 1 for 1-CH-330, 336, 358 and 380
2 for 1-CH-322 and 402

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valves every three months

III. BASIS FOR RELIEF

These check valves must seat upon reversal of flow in order to fulfill their safety functions. The only method to verify this actuation is to perform a leak rate/back pressure test. Since the valves are located inside containment and their systems are required during power operation, they cannot be tested every three months. 1-CH-322 is in the normal charging line to the RCS. These lines cannot be drained during short cold shutdowns because charging flow is often maintained. 1-CH-336, 358, and 380 are in the RCP seal water supply lines, and 1-CH-402 is in the RCP seal water return line. Seal flow is used during cold shutdown to reduce RCS leakage and to float the RCP seals. 1-CH-330 is the charging supply to loop fill header, inside containment isolation valve. A local backseat/leak test inside containment is required to verify closure for valve 1-CH-330.

The valves will be exercised only during refueling outages because the small increase in safety gained by testing during cold shutdown does not justify the burden of draining lines and performing leak rate tests.

IV. ALTERNATE TESTING

Exercise for operability every refueling (not to exceed 24 months)

RELIEF REQUEST V-11

Replaced by Cold Shutdown Justification CSV-10

RELIEF REQUEST V-12

Relief Request withdrawn, valve removed from IST Program.

RELIEF REQUEST V-13

Relief Request withdrawn.

RELIEF REQUEST V-14

Relief Request withdrawn.

RELIEF REQUEST V-15

Relief Request withdrawn.

RELIEF REQUEST V-16

I. IDENTIFICATION OF COMPONENTS

System : Fire Protection

Valve(s): 1-FP-272

Class : 2

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valve every three months

III. BASIS FOR RELIEF

This check valve must seat upon reversal of flow in order to fulfill its safety function. The only method to verify this actuation is to perform a leak rate/back pressure test. Since the valve is located inside containment, it cannot be tested every three months. 1-FP-272 is in the containment fire protection system. Testing this valve will render the fire protection system inoperable. It will be exercised only during refueling outages because the small increase in safety gained by testing during cold shutdown does not justify the burden of draining the lines and performing a leak rate test.

IV. ALTERNATE TESTING

Exercise for operability every refueling (not to exceed 24 months)

RELIEF REQUEST V-17

Replaced by Cold Shutdown Justification CSV-11

RELIEF REQUEST V-18

Replaced by Cold Shutdown Justification CSV-12

RELIEF REQUEST V-19

Relief Request withdrawn.

RELIEF REQUEST V-20

I. IDENTIFICATION OF COMPONENTS

System : Post Accident Hydrogen Removal

Valve(s): 1-HC-14
1-HC-18

Class : 2

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valves every three months

III. BASIS FOR RELIEF

These check valves must seat to provide containment isolation and open to sample hydrogen to fulfill their safety functions. The only method to verify closure is to perform a local leak rate test. Since the valves are located inside containment, they cannot be tested every three months. They will be verified closed only during refueling outages because the small increase in safety gained by testing during cold shutdown does not justify the burden of performing leak rate tests.

To test these valves either partially or full open requires either a locally installed rotameter (inside containment) or significant manipulation of the hydrogen recombiner system. In addition, should a containment pressurization event occur while operating the hydrogen recombiners, there is a possibility of exceeding the design pressure of the recombiner system, which is a low pressure system intended for use after the containment depressuizes.

They will be verified open at least once every 18 months during the testing of the hydrogen recombiner system because the small increase in safety gained by testing during normal operation or cold shutdown does not justify potential risk of overpressurizing the hydrogen recombiner system, or the added burden of disrupting normal plant operation to manipulate the recombiner system or of installing the rotameter and performing the test on the more frequent basis.

IV. ALTERNATE TESTING

Exercise to the closed position every refueling (not to exceed 24 months). Exercise to the full open position at least once every 18 months.

RELIEF REQUEST V-21

I. IDENTIFICATION OF COMPONENTS

System : Instrument Air

Valve(s): 1-IA-55
1-IA-149

Class : 2

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valves every three months

III. BASIS FOR RELIEF

These check valves must seat upon reversal of flow in order to fulfill their safety functions. The only method to verify this actuation is to perform a leak rate test. Since the valves are located inside containment, they cannot be tested every three months. Valve 1-IA-55 is in the instrument air supply line to containment. Testing this valve renders the instruments and components supplied by instrument air inside containment inoperable.

They will be exercised only during refueling outages because the small increase in safety gained by testing during cold shutdown does not justify the burden of performing leak rate tests.

IV. ALTERNATE TESTING

Exercise for operability each refueling (not to exceed 24 months)

RELIEF REQUEST V-22

Replaced by Cold Shutdown Justification CSV-13

RELIEF REQUEST V-23

Replaced by Cold Shutdown Justification CSV-14

RELIEF REQUEST V-24

Replaced by Cold Shutdown Justification CSV-15

RELIEF REQUEST V-25

Relief Request Withdrawn

RELIEF REQUEST V-26

Replaced by Cold Shutdown Justification CSV-17

RELIEF REQUEST V-27

Replaced by Cold Shutdown Justification CSV-42

RELIEF REQUEST V-28

I. IDENTIFICATION OF COMPONENTS

System : Reactor Coolant

Valve(s): 1-RC-149

Class : 2

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valve every three months

III. BASIS FOR RELIEF

This check valve must seat upon reversal of flow in order to fulfill its safety function. The only method to verify this actuation is to perform a leak rate test. Since the valve is located inside containment, it cannot be tested every three months. 1-RC-149 is in the primary grade water to pressurizer relief tank and the #2 seal stand pipes. This line cannot be drained during short cold shutdowns because the PRT is required during normal cold shutdowns. Standpipe level must be maintained when the RCS is pressurized to control leakage. The valve will be exercised only during refueling outages because the small increase in safety gained by testing during cold shutdown does not justify the burden of draining lines and performing a leak rate test.

IV. ALTERNATE TESTING

Exercise for operability each refueling (not to exceed 24 months)

RELIEF REQUEST V-29

Replaced by Cold Shutdown Justification CSV-18

RELIEF REQUEST V-30

Replaced by Cold Shutdown Justification CSV-19

RELIEF REQUEST V-31

Replaced by Cold Shutdown Justification CSV-20

RELIEF REQUEST V-32

Replaced by Cold Shutdown Justification CSV-21

RELIEF REQUEST V-33

I. IDENTIFICATION OF COMPONENTS

System : Recirculation Spray

Valve(s): 1-RS-123
1-RS-138

Class : 2

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valves every three months

III. BASIS FOR RELIEF

These check valves must open in order to perform their safety functions. Due to system design, they are not in the Casing Cooling Pump test flowpath. Partial or full stroke exercising these valves with flow would flood the containment sump.

IV. ALTERNATE TESTING

These valves will be grouped together and one valve from this group will be disassembled and inspected every reactor refueling. A different valve will be disassembled every reactor refueling.

RELIEF REQUEST V-34

Replaced by Cold Shutdown Justification CSV-22

RELIEF REQUEST V-35

Replaced by Cold Shutdown Justification CSV-23

RELIEF REQUEST V-36

Replaced by Cold Shutdown Justification CSV-24

RELIEF REQUEST V-37

I. IDENTIFICATION OF COMPONENTS

System : Safety Injection

Valve(s): 1-SI-1
1-SI-16

Class : 2

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valves every three months

III. BASIS FOR RELIEF

To partial or full flow test these check valves requires taking suction from the reactor containment sump which is normally empty. Water would have to be added to the sump. However, the water would pick up contaminants from the sump. This untreated water should not be introduced into the system.

IV. ALTERNATE TESTING

These valves will be grouped together and one valve from this group will be disassembled and inspected every reactor refueling. A different valve will be disassembled every reactor refueling.

RELIEF REQUEST V-38

I. IDENTIFICATION OF COMPONENTS

System : Safety Injection

Valve(s): 1-SI-9
1-SI-18
1-SI-26

Class : 2

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valves every three months

III. BASIS FOR RELIEF

Due to system design, check valves 1-SI-9 and 26 are not in the Low Head Safety Injection Pump test flowpaths. They cannot be full or part-stroke tested during power operation because the LHSI pumps cannot overcome reactor coolant system pressure. Valve 1-SI-18 can only be partial stroked every quarter because the quarterly test loop is a mini-flow loop.

During cold shutdown, the reactor coolant system pressure still prevents full flow testing of the check valves. Partial stroke exercising the valves with flow could cause an overpressurization condition during cold shutdowns.

To verify closure of Valves 1-SI-9 and 26 using back flow, the low head safety injection pumps must be tested at design conditions, which can only be done at reactor refueling. By achieving design conditions, adequate seat tightness is verified on the discharge valve to the non-running pump.

IV. ALTERNATE TESTING

Valves 1-SI-9 and 26 will be exercised to the full open and closed position every reactor refueling (not to exceed 24 months). Valve 1-SI-18 will be partial stroke tested every quarter and full flow tested every reactor refueling.

RELIEF REQUEST V-39

I. IDENTIFICATION OF COMPONENTS

System : Safety Injection

Valve(s): 1-SI-47

Class : 2

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valve every three months

III. BASIS FOR RELIEF

Full or part-stroke exercising this valve during power operation would require charging pump suctions be aligned with the Refueling Water Storage Tank. This alignment would cause a sudden increase in Reactor Coolant System boron inventory. Full flow for the charging system can only be established during reactor refueling when the RCS is depressurized.

To verify valve closure, the refueling water storage tank must be isolated which is a violation of Technical Specification 3.1.2.1.b during normal operation.

The only method to verify closure other than disassembly and inspection is to perform a leak rate/back pressure test. This valve is also subject to leak testing, which is performed every reactor refueling. Verification of closure will be performed during the leak test every reactor refueling instead of every cold shutdown because the small increase in safety gained by testing during cold shutdown does not justify the burden of draining the lines and performing a leak rate test.

IV. ALTERNATE TESTING

Exercise to the partially open position during cold shutdown, exercise to the full open and closed positions every reactor refueling.

RELIEF REQUEST V-40

I. IDENTIFICATION OF COMPONENTS

System : Safety Injection

Valve(s): 1-SI-106
1-SI-110

Class : 2

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valve every three months

III. BASIS FOR RELIEF

These check valves must seat upon reversal of flow in order to fulfill their safety functions. The only method to verify closure is to perform a leak rate/back pressure test. Since the valves are located inside containment, they cannot be tested every three months. These valves will be exercised only during refueling outages because the small increase in safety gained by testing during cold shutdown does not justify the burden of performing a leak rate test.

IV. ALTERNATE TESTING

Exercise for operability every refueling (not to exceed 24 months)

RELIEF REQUEST V-41

I. IDENTIFICATION OF COMPONENTS

System : Safety Injection

Valve(s):	1-SI-83	1-SI-195
	1-SI-86	1-SI-197
	1-SI-89	1-SI-199

Class : 1

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valves every three months

III. BASIS FOR RELIEF

These Safety Injection check valves must open and close to fulfill their safety functions. They cannot be full or part-stroke exercised to the open position during power operation because this would thermally shock the injection system and cause unnecessary plant transients. Flow cannot be established in the low head injection lines during normal plant operation.

During cold shutdown, the Reactor Coolant System pressure still prevents full design flow. Also, a partial or full stroke test could cause an overpressurization of the Reactor Coolant System and force a safety system to function.

These valves can only be tested to the closed position by draining the lines and performing a back seat leak test.

IV. ALTERNATE TESTING

Exercise to the open position using flow every reactor refueling. Exercise to the closed position every reactor refueling per Technical Specification 4.4.6.2.2.

RELIEF REQUEST V-42

I. IDENTIFICATION OF COMPONENTS

System : Safety Injection

Valve(s):	1-SI-125	1-SI-144
	1-SI-127	1-SI-159
	1-SI-142	1-SI-161

Class : 1

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valves for operability every three months

III. BASIS FOR RELIEF

These valves cannot be partial or full flow tested during normal operation because the accumulator pressure (600 to 650 psig) is below Reactor Coolant System pressure and the injection of borated water would upset the reactor coolant chemistry.

During cold shutdown, the RCS pressure may still prevent full flow testing. Also, discharging the accumulators would challenge the Low Temperature Overpressure Protection System.

A partial flow test is not practical during cold shutdowns. The flow from the accumulator is dependent on the pressure differential between the accumulator and the RCS. The pressure differential cannot be controlled to the fine degree necessary to preclude dumping too much water into the pressurizer, thus making it difficult to control pressurizer level while pressure is being reduced during cooldown. Also, the RCS temperature is high during short cold shutdowns. Dumping cold accumulator water into the RCS could thermally shock the system.

The accumulators must be isolated to verify closure using back flow for valves 1-SI-127, 144 and 161. The small increase in safety gained by performing the back seat check valve tests every cold shutdown versus every reactor refueling does not justify the added burden of the increased test frequency.

The use of non-intrusive monitoring techniques are being evaluated for confirming full disk movement. If non-intrusive techniques can provide a "positive means" for verifying obturator movement, a sampling program will be used as described below due to the burden of applying these techniques in the field.

IV. ALTERNATE TESTING

During the first refueling outage where non-intrusive techniques are used, all valves in the group will be tested to verify that the techniques verify valve obturator movement. During subsequent refueling outages, flow testing will be performed on all valves in the group, but the non-intrusive techniques need be applied only to one valve in each group, on a rotating basis, unless indications of problems are identified. In this case, all valves in the group will be subjected to the non-intrusive techniques. Valve 1-SI-125, 127, 142 and 159 will be in one group, and valves 1-SI-144 and 161 will be in the other group. Because valves 1-SI-144 and 161 are downstream from where RHR connects to the SI line, they experience different service conditions than the other valves. The test frequency is in accordance with Generic Letter 89-04, Position 2.

The flow test will consist of discharging the accumulator from an initial pressure that is less than 600 psig. Discharging the accumulator at a lower initial pressure reduces the severity of the transient and the risk of adverse effects on the reactor coolant system. The low pressure test should provide enough flow to force the disk to the full open position.

If full disk movement cannot be confirmed using non-intrusive monitoring, these valves will be placed into two groups and one valve from each group will be disassembled and inspected every other reactor refueling. The justification for the extended disassembly and inspection schedule is available at the station.

Valves 1-SI-127, 144 and 161 will be confirmed closed every reactor refueling.

RELIEF REQUEST V-43

I. IDENTIFICATION OF COMPONENTS

System : Safety Injection

Valve(s):			
	1-SI-79	1-SI-185	1-SI-211
	1-SI-90	1-SI-201	1-SI-213
	1-SI-95	1-SI-206	
	1-SI-99	1-SI-207	
	1-SI-103	1-SI-209	

Class : 1 for 1-SI-90, 95, 99, 103, 201, 209, 211 and 213
2 for 1-SI-79, 185, 206, 207

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valves every three months

III. BASIS FOR RELIEF

These Safety Injection check valves must open and close to fulfill their safety function. They cannot be full or part-stroke exercised to the open position during power operation because this would cause safety injection flow into the Reactor Coolant System which would thermally shock the injection system and cause unnecessary plant transients. Flow cannot be established in the low head injection lines during normal plant operation.

During cold shutdown, the Reactor Coolant System pressure still prevents full design flow. Also, a partial or full stroke test could cause an overpressurization of the Reactor Coolant System and force a safety system to function.

These valves can only be tested to the closed position by a back seat leak test, which requires the draining of the lines.

IV. ALTERNATE TESTING

Exercise to the open position using flow every reactor refueling. Confirm valve closure by leakage testing every reactor refueling.

RELIEF REQUEST V-44

I. IDENTIFICATION OF COMPONENTS

System : Safety Injection

Valve(s): 1-SI-190
1-SI-192
1-SI-194

Class : 1

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valves every three months

III. BASIS FOR RELIEF

These Safety Injection check valves must open and close to fulfill their safety function. They cannot be full or part-stroke exercised to the open position during power operation because this would thermally shock the injection system and cause unnecessary plant transients.

During cold shutdown, the Reactor Coolant System pressure still prevents full design flow. Also, a partial or full stroke test could cause an overpressurization of the Reactor Coolant System and force a safety system to function.

The only test methods to individually back seat these valves are to perform leak tests or to use downstream pressure provided by the low head safety injection pump tests. Either test can only be performed during reactor refueling.

IV. ALTERNATE TESTING

Exercise to the open position using flow and to the closed position every reactor refueling.

RELIEF REQUEST V-45

I. IDENTIFICATION OF COMPONENTS

System : Service Water

Valve(s):	1-SW-114	1-SW-140
	1-SW-116	1-SW-150
	1-SW-120	
	1-SW-130	

Class : 2 for 1-SW-120, 130, 140, 150
3 for 1-SW-114, 116

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valves every three months

III. BASIS FOR RELIEF

Full or part-stroke exercising these valves would flow Service Water into the Recirculation Spray Heat Exchangers. Per FSAR Section 6.2.2.2.5, in order to ensure long term reliability of the heat exchangers, following each periodic test the heat exchangers are drained, purged with air and maintained in dry layup. The logistics of this procedure make testing at cold shutdown impractical considering the small increase in system safety gained from exercising.

IV. ALTERNATE TESTING

Exercise for operability every refueling (not to exceed 24 four months)

RELIEF REQUEST V-46

I. IDENTIFICATION OF COMPONENTS

System : Vacuum Priming

Valve(s): 1-VP-12

Class : 2

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valve every three months

III. BASIS FOR RELIEF

This check valve must seat upon reversal of flow in order to fulfill its safety function. The only method to verify this actuation is to perform a leak rate test. Since the valve is located inside containment, it cannot be tested every three months. The valve will be exercised during refueling outages because the small increase in safety gained by testing during cold shutdown does not justify performing a leak rate test.

IV. ALTERNATE TESTING

Exercise for operability each refueling (not to exceed 24 months)

RELIEF REQUEST V-47

I. IDENTIFICATION OF COMPONENTS

System : CH

Valve(s): 1-CH-254
1-CH-267
1-CH-279

Class : 2

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valve every three months

III. BASIS FOR RELIEF

With present plant design, these valves can only be partial stroke exercised during power operation because the charging pumps cannot achieve design accident flow when pumping into the reactor coolant system at operating pressure. The only available flow path to test these valves is into the reactor coolant system. During cold shutdown, exercising these valves could result in overpressurization of the reactor coolant system and could force a safety system to function.

IV. ALTERNATE TESTING

Exercise closed every three months and exercise full open every reactor refueling. Valves are partial exercised open during normal operation when the charging train is in service.

RELIEF REQUEST V-48

Relief Request Withdrawn

RELIEF REQUEST V-49

Relief Request Withdrawn

RELIEF REQUEST V-50

I. IDENTIFICATION OF COMPONENTS

System : Containment Atmosphere Cleanup

Valve(s): 1-HC-5

Class : NC

II. IMPRACTICAL CODE REQUIREMENTS

Full-stroke exercise valve for operability

III. BASIS FOR RELIEF

This check valve cannot be full flow tested because instrumentation is not installed to measure flow or differential pressure.

IV. ALTERNATE TESTING

This valve will be disassembled and inspected every reactor refueling and partial flow tested every three months.

RELIEF REQUEST V-51

Relief Request Withdrawn

RELIEF REQUEST V-52

Relief Request Withdrawn

RELIEF REQUEST V-53

I. IDENTIFICATION OF COMPONENTS

System : SI

Valve(s): 1-SI-4
1-SI-21

Class : 2

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valves to the closed position every three months

III. BASIS FOR RELIEF

Due to the plant configuration, these valves cannot be verified closed using system flow. The only method to verify closure other than disassembly and inspection is to perform a back pressure test using a primary grade water supply as the pressure source. To perform the back pressure test on these 3/4" check valves, each LHSI pump must be removed from service for approximately two hours. With one ECCS train out of service, the plant must enter the Technical Specification Action Statement per Paragraph 3.5.2.a and proceed to hot shutdown within 72 hours.

Including the preparation for the test which consists of connecting primary grade water to the test volume using supply hoses, the entire test for each valve takes several hours to perform. Also, the seal water line, which may contain contaminated water, must be drained and vented. Considering that one train of ECCS must be removed from service for an extended period of time which degrades the safety of the plant, and the difficulty in performing the back pressure test, testing these 3/4" check valves to the closed position every three months is not practical.

These valves are also subject to leak testing, which is performed every reactor refueling. A leak test provides more information concerning the condition of the valve seats then just a back pressure test. When compared to the Code requirements for a backseat test performed every cold shutdown, the performance of a leak test every refueling outage is an alternative that provides an acceptable level of quality and safety.

IV. ALTERNATE TESTING

Exercise to the closed position every reactor refueling.

RELIEF REQUEST V-54

I. IDENTIFICATION OF COMPONENTS

System : Various

Valve(s): Valves affected by this request are identified in the Valve Table

Class :

II. IMPRACTICAL CODE REQUIREMENTS

Section XI, IWV-3417(a) "Corrective Action"

III. BASIS FOR RELIEF

These valves have normal stroke times of less than 2 seconds; therefore, they can be considered rapid acting valves.

IV. ALTERNATE TESTING

Whenever the stroke time of these valves exceeds 2 seconds, IWV-3417(a) will be applied.

Notes: The list of affected valves in the Valve Table may change due to maintenance activities which affect valve performance. An updated list of rapid acting valves is maintained by the site ISI personnel.

RELIEF REQUEST V-55

Replaced by Non-Code Alternative Testing Description VNC-4

RELIEF REQUEST V-56

Relief Request Withdrawn

RELIEF REQUEST V-57

I. IDENTIFICATION OF COMPONENTS

System : Reactor Coolant

Valve(s): 1-RC-SOV-101A-1
1-RC-SOV-101A-2
1-RC-SOV-101B-1
1-RC-SOV-101B-2

Class : 1

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valves every three months

III. BASIS FOR RELIEF

These valves are the Reactor Vessel Head Vent Valves. Full or part-stroke exercising these valves at power could release reactor coolant into the reactor vessel refueling cavity. Stroking of these valves has been performed while the Reactor Coolant System was pressurized. This test revealed that when the upstream valve was stroked, the downstream valve tended to lift due to the motive force of the steam. As long as these valves remain closed under RCS pressure, they are an effective isolation boundary. However, these valves should not be stroked while the Reactor Coolant System is pressurized. These valves will be exercised during each cold shutdown when the Reactor Coolant System is depressurized.

IV. ALTERNATE TESTING

Exercise for operability during cold shutdown when the Reactor Coolant System is depressurized (but not more frequently than once per three months).

RELIEF REQUEST V-58

Relief Request Withdrawn

RELIEF REQUEST V-59

I. IDENTIFICATION OF COMPONENTS

System : Various

Valve(s): Valves affected by this request are identified by Table B

Class :

II. IMPRACTICAL CODE REQUIREMENTS

Leakage rate measurements shall be compared with previous measurements and with the permissible leakage rates specified by the plant owner for a specific valve.

III. BASIS FOR RELIEF

The piping configurations for some containment penetrations do not allow for the individual leakage testing of the containment isolation valves.

IV. ALTERNATE TESTING

In cases where containment isolation valves cannot be individually leakage tested, the containment isolation valves are grouped based on the configuration restraints and the groups are assigned permissible leakages. The groups are subject to the acceptance criteria described in IWV-3427(a).

RELIEF REQUEST V-59 (Cont.)
TABLE B

VALVES LEAK TESTED IN GROUPS

Valve	Class	System
1-SI-MOV-1867C 1-SI-MOV-1867D	2	Safety Injection
1-CH-402 1-CH-MOV-1380	2	Chemical and Volume Control
1-SI-MOV-1890C 1-SI-MOV-1890D	2	Safety Injection
1-HV-MOV-100B 1-HV-MOV-102	2	Containment Purge
1-HV-MOV-100D 1-HV-MOV-101	2	Containment Purge

RELIEF REQUEST V-60

I. IDENTIFICATION OF COMPONENTS

System : Various

Valve(s): All Valves Subject to Leakage Testing (Category A Valves)

Class :

II. IMPRACTICAL CODE REQUIREMENTS

IWV-3427(b) - Specifies corrective actions in addition to IWV-3427(a) which include increased frequencies for valve sizes of six inches and larger, and repairs or replacements.

III. BASIS FOR RELIEF

Most valves that are leak rate tested are tested in the "as found" condition, subject to maintenance and retested in the "as left" condition. The valve maintenance is performed on a routine basis and it effectively resets the leakage to a small amount. Therefore, basing corrective actions on previous test results or projections serves no useful function.

IV. ALTERNATE TESTING

None. The requirements of IWV-3427(b) will not be implemented.

RELIEF REQUEST V-61

Relief Request Withdrawn

RELIEF REQUEST V-62

I. IDENTIFICATION OF COMPONENTS

System : Component Cooling

Valve(s): 1-CC-546
1-CC-559
1-CC-572

Class : 2

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valves every three months

III. BASIS FOR RELIEF

These check valves must seat upon reversal of flow in order to fulfill their safety functions. The only exercise method to verify this actuation is to perform a leak rate test/back pressure test which would involve isolating the containment air cooling coils. The containment recirculation air cooling coils are required for normal operation to maintain containment temperature below technical specification limits. Therefore, these valves cannot be tested every three months. They will be exercised only during refueling outages because the small increase in safety gained by testing during cold shutdown does not justify the burden of draining the lines and performing a leak rate test.

IV. ALTERNATE TESTING

Exercise for operability every reactor refueling (not to exceed 24 months)

RELIEF REQUEST V-୰3

I. IDENTIFICATION OF COMPONENTS

System : Service Water

Valve(s): 1-SW-3
1-SW-10

Class : 3

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valves every three months.

III. BASIS FOR RELIEF

These check valves cannot be full flow tested during normal operation or cold shutdown because the Recirculation Spray Heat Exchangers must be included in the flow path in order for full flow conditions to be established. As described in Relief Request V-45, introduction of service water to the Recirculation Spray Heat Exchangers is prohibited without subsequently draining the heat exchangers. This requirement makes testing during normal operation or cold shutdowns impractical.

Monitoring the discharge pressure gauge of the non-running pump would reveal gross failure of the check valve. However, this test may not detect leakage past the valve due to a partially stuck open disk. The service water pumps are deep draft pumps with enough tolerance between the impellers and the pump casing to pass significant flow without pressurizing the discharge piping to a detectable degree.

The verification of full disk closure using back flow can only be performed when design flow is achieved during the service water pump tests. Verification of design flow for the running pump demonstrates adequate back seating for the discharge check valves of the non-running pumps. However, the observation of the non-running pump discharge gauge to detect gross failure can and should be performed every three months.

IV. ALTERNATE TESTING

These valves will be partial flow tested every three months, and full flow and closure tested every reactor refueling. The non-running pump discharge gauge will be observed once every three months to detect gross failure of the disk to seat.

RELIEF REQUEST V-64

Replaced by Non-Code Alternative Test Description VNC-2

RELIEF REQUEST V-65

I. IDENTIFICATION OF COMPONENTS

System : Component Cooling

Valve(s): 1-CC-111
1-CC-146
1-CC-181

Class : 3

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valves every three months.

III. BASIS FOR RELIEF

These check valves must be locally back pressure tested to verify closure. Since the valves are located inside containment, they cannot be back pressure tested during normal operation. The valves will be tested every refueling outage because the small increase in safety gained by testing during cold shutdown does not justify the burden of performing a back pressure test.

IV. ALTERNATE TESTING

Exercise to the close position every reactor refueling.

RELIEF REQUEST V-66

I. IDENTIFICATION OF COMPONENTS

System : Various

Valve(s): All power operated valves

Class :

II. IMPRACTICAL CODE REQUIREMENTS

IWV-3417(a) - specifies corrective action based on "alert" criteria established from the previous test time.

III. BASIS FOR RELIEF

Testing of power operated valves will be performed to the guidelines presented in ASME/ANSI OM (Part 10) Sections 4.2.1.8 and 4.2.1.9 as approved for use by Section XI, Article IWV-1000, 1986 Edition with Addenda through 1988. These guidelines represent current industry practices when using stroke times as a means for determining valve degradation and provide improved methods for determining acceptance criteria.

IV. ALTERNATE TESTING

Determine stroke time acceptance criteria per ASME/ANSI OM (Part 10), Section 4.2.1.8 and implement corrective action per Section 4.2.1.9.

RELIEF REQUEST V-67

I. IDENTIFICATION OF COMPONENTS

System : Recirculation Spray

Valve(s):	1-RS-18	1-QS-11
	1-RS-27	1-QS-19

Class : 2

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valves every three months.

III. BASIS FOR RELIEF

These valves must seat to maintain containment integrity and open to allow flow to the containment spray headers. Partial or full flow testing these valves would flow water to the spray arrays and saturate containment. These valves can be mechanically exercised to the open and closed positions. However, the valves are located inside containment and require the construction of scaffolding before they can be exercised. The small increase in safety gained by exercising the valves during cold shutdown does not justify the burden of constructing the scaffolding. These valves are containment isolation valves and are leak tested every reactor refueling.

IV. ALTERNATE TESTING

These valves will be exercised to the open and closed positions every reactor refueling.

RELIEF REQUEST V-68

Relief Request Withdrawn

RELIEF REQUEST V-69

I. IDENTIFICATION OF COMPONENTS

System : Various

Valve(s): All Containment Isolation Valves Subject to Appendix J Testing - These valves are identified by the abbreviation "CIV" under the Isolation Valve Type Column in the Valve Table.

Class:

II. IMPRACTICAL CODE REQUIREMENTS

IWV-3427(a) - Valves with leakage rates exceeding the permissible values shall be replaced or repaired.

III. BASIS FOR RELIEF

Permissible valve leakage rates are based on each valve's possible contribution to the total leakage rate for the containment system. The total containment leakage rate must be less than 0.6La as defined in Technical Specification 3.6.1.2. Exceeding an individual valve's permissible leakage rate may have no affect on the containment's ability to maintain an overall leakage rate less than 0.6La.

Also, there may be plant conditions, or schedule constraints, that preclude repair or replacement of a valve when the individual leakage limit is exceeded, but the overall leakage limit for the Type C-tested valves is met. In these cases, imposing the Code requirements of repair or replacement would create an undue burden with no compensating benefit to quality and safety when the bases for leakage limits is met for the overall limit necessary to ensure containment integrity.

IV. ALTERNATE TESTING

In addition to repair or replacement as corrective actions, an evaluation can be performed which demonstrates that even if a valve has exceeded its permissible leakage rate, the overall containment leakage rate will be maintained below 0.6La until the next Type C tests. No repair or replacement is

necessary if the evaluation is performed. However, when the plant conditions are not such that a repair or replacement would adversely impact plant startup and/or continued operations, an evaluation is not appropriate.

RELIEF REQUEST V-70

I. IDENTIFICATION OF COMPONENTS

System : Component Cooling

Valve(s): 1-CC-193
1-CC-198

Class : 2

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valves open and closed every three months

III. BASIS FOR RELIEF

Valves 1-CC-193 and 1-CC-198 are check valves in the component cooling lines to the RHR heat exchangers and must close for isolation and open to allow RHR flow. The only exercise method to verify closure is to perform a leak rate test/back pressure test. These lines cannot be drained for back seat testing because the RHR system is needed during cold shutdown to control the RCS temperature.

To establish full flow through Valves 1-CC-193 and 198 for testing to the full open position, increased component cooling flow must be directed through the RHR heat exchangers. During cold shutdown and reactor refueling when fuel is in the vessel, increased flow to the RHR heat exchangers reduces the volume of the RCS inventory by reducing the RCS temperature. This reduction in volume can be large enough as to cause excessive makeup demands to the RCS. Therefore, the full flow test should be performed during reactor refueling when the vessel is defueled. The vessel is defueled every refueling outage.

IV. ALTERNATE TESTING

Exercise for closure and full open every reactor refueling (not to exceed 24 months). Partial stroke open every quarter.

RELIEF REQUEST V-71

Relief Request Withdrawn

RELIEF REQUEST V-72

I. IDENTIFICATION OF COMPONENTS

System : Chemical & Volume Control System

Valve(s): 1-CH-215

Class : 2

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valve closed every three months

III. BASIS FOR RELIEF

Due to the plant configuration, this valve cannot be verified closed using flow. The only method to verify closure other than disassembly and inspection is to perform a leak rate/back pressure test.

During normal operation, this valve cannot be isolated to perform a back pressure test because normal letdown and charging flow would be interrupted. Also, if the valve was isolated during normal operation, the charging pumps would have to be secured.

This valve is also subject to leak testing, which is performed every reactor refueling. Verification of closure will be performed during the leak test every reactor refueling instead of every cold shutdown because the small increase in safety gained by testing during cold shutdown does not justify the burden of performing a leak rate test.

IV. ALTERNATE TESTING

Exercise to the closed position every reactor refueling.

RELIEF REQUEST V-73

I. IDENTIFICATION OF COMPONENTS

System : Service Water

Valve(s): 1-SW-22

Class : 3

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valve open every three months

III. BASIS FOR RELIEF

Full accident flow cannot be established through this auxiliary service water pump discharge check valve using the normal system lineup because the accident heat loads and corresponding demand on the service water system cannot be duplicated. The accident flow can be established using a lake-to-lake configuration. However, the lake-to-lake lineup could contaminate Lake Anna with chemicals used in treating the service water system. Therefore, the lake-to-lake lineup is never used.

IV. ALTERNATE TESTING

This valve will be disassembled and inspected on a reactor refueling test frequency and partial flow tested every three months.

RELIEF REQUEST V-74

I. IDENTIFICATION OF COMPONENTS

System : Residual Heat Removal

Valve(s): 1-RH-7
1-RH-15

Class : 2

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valve open every three months

III. BASIS FOR RELIEF

These RHR pump discharge check valves can only be partial or full stroke exercised to the open position and verified closed during the testing of RHR pumps 1-RH-P-1A and 1-RH-P-1B. The low pressure pumps take suction from and discharge to the reactor coolant system which operates at 2235 psig. This pressure is well above the operating pressure of the pumps, therefore, testing during normal operation is not possible.

During cold shutdowns of short duration or if the reactor coolant pumps are left running during the cold shutdown, both trains of RHR may be required for decay heat removal and to maintain RCS temperature. Taking one train of RHR out of service for testing purposes even for a short period could allow the RCS temperature to increase to the point that the pressurizer power operated relief valve would be challenged. Therefore, these pumps and the discharge check valves should only be tested during reactor refuelings.

IV. ALTERNATE TESTING

Exercise to the open and closed positions every reactor refueling.

2.3.6 VALVE INSERVICE TESTING PROGRAM COLD SHUTDOWN JUSTIFICATIONS

Section XI, Paragraphs IWV-3410 and IWV-3520 allow for the full-stroke exercising of valves during Cold Shutdown (but not more frequently than every three months) if the valves cannot be exercised during normal operation. Therefore, no request for relief from testing every three months is necessary.

However, the code does require that these valves be specifically identified by the owner. The cold shutdown justifications identify and provide the technical basis for valves exercised during cold shutdown but not during normal operation.

COLD SHUTDOWN JUSTIFICATION CSV-1

I. IDENTIFICATION OF COMPONENTS

System : Component Cooling

Valve(s): 1-CC-TV-101A, B
1-CC-TV-102A, B, C, D, E, F
1-CC-TV-104A, B, C

Class : 2

II. COLD SHUTDOWN JUSTIFICATION

Failure of these valves in the closed position would result in a loss of component cooling flow to the Reactor Coolant Pumps thermal barriers, lube oil, stator and/or shroud coolers. The increased level of safety gained from exercising these valves during power operation does not justify the operational consequences should they fail in the closed position. The valve controllers do not allow for a part-stroke exercise test.

COLD SHUTDOWN JUSTIFICATION CSV-2

Replaced by Relief Request V-62

COLD SHUTDOWN JUSTIFICATION CSV-3

I. IDENTIFICATION OF COMPONENTS

System : CH

Valve(s): 1-CH-84
1-CH-102

Class : 3

II. COLD SHUTDOWN JUSTIFICATION

To achieve full flow through these check valves, a flow path must be established to the reactor coolant system. This test would allow the injection of boric acid into the reactor coolant system which would upset the boron concentration in the primary plant water.

These valves will be partial stroke exercised every quarter.

COLD SHUTDOWN JUSTIFICATION CSV-4

I. IDENTIFICATION OF COMPONENTS

System : Chemical & Volume Control System

Valve(s): 1-CH-MOV-1350
1-CH-238
1-CH-240
1-CH-241
1-CH-242

Class : 2

II. COLD SHUTDOWN JUSTIFICATION

Full or part-stroke exercising these valves during power operation would cause a sudden increase in reactor coolant system boron inventory by providing flow from the emergency and alternate boration paths to charging pump suctions. Also, the valve controller for 1-CH-MOV-1350 does not allow for a part-stroke exercise test. The increased level of safety gained from full or part-stroke exercising these valves during power operation does not justify the operational consequences associated with reactivity transients.

Manual valve 1-CH-241 will be stroked open when the alternate boration path is established every cold shutdown. The increased level of safety gained by exercising this valve every quarter does not justify the added burden of performing a separate test just for the manual valve.

COLD SHUTDOWN JUSTIFICATION CSV-5

I. IDENTIFICATION OF COMPONENTS

System : Chemical & Volume Control System

Valve(s):	1-CH-TV-1204A	1-CH-LCV-1460A
	1-CH-TV-1204B	1-CH-LCV-1460B

Class : 2

II. COLD SHUTDOWN JUSTIFICATION

Exercising these valves during power operation interrupts letdown flow from the reactor coolant system (RCS) to the volume control tank. If the valves should fail closed, reactor coolant inventory control would be lost.

The pressurizer level control program controls reactor coolant inventory by regulating the operation of the charging flow control valve so that the charging input flow to the RCS and reactor coolant pump seal injection flow into the RCS matches letdown flow.

Also, exercising these valves during normal operation will interrupt letdown flow through the regenerative heat exchanger. This flow interruption would allow a slug of relatively cool charging water to thermal shock the nozzle connecting the 3" charging line to the 27" loop 2 cold leg injection line.

The valve controllers do not allow for a part stroke exercise test.

COLD SHUTDOWN JUSTIFICATION CSV-6

I. IDENTIFICATION OF COMPONENTS

System : Chemical & Volume Control System

Valve(s): 1-CH-MOV-1115B, C, D, E

Class : 2

II. COLD SHUTDOWN JUSTIFICATION

Full or part-stroke exercising these valves during power operation would require that charging pump suction be aligned with the Refueling Water Storage Tank. That alignment would cause a sudden increase in reactor coolant system boron inventory. The increased level of safety gained from full or part-stroke exercising these valves during power operation does not justify the operational consequences of reactivity transients.

COLD SHUTDOWN JUSTIFICATION CSV-7

I. IDENTIFICATION OF COMPONENTS

System : Chemical & Volume Control System

Valve(s): 1-CH-MOV-1289A, B

Class : 2

II. COLD SHUTDOWN JUSTIFICATION

Varying letdown flow through the Regenerative Heat Exchanger will cause variations in charging flow temperatures. This is not desirable since decreased charging temperatures result in reactivity increases and thermal stress on the piping and heat exchanger.

Full or part-stroke exercising these valves during power operation would isolate the normal charging flow path from the charging pumps to the Reactor Coolant System. Also, the valve controllers do not allow for a part-stroke exercise test. The small increase in safety gained by exercising these valves every three months does not justify the operational consequences of providing an alternate charging flow path during power operation.

COLD SHUTDOWN JUSTIFICATION CSV-8

Cold Shutdown Justification Withdrawn

COLD SHUTDOWN JUSTIFICATION CSV-9

Replaced by Relief Request V-9

COLD SHUTDOWN JUSTIFICATION CSV-10

Cold Shutdown Justification Withdrawn

COLD SHUTDOWN JUSTIFICATION CSV-11

I. IDENTIFICATION OF COMPONENTS

System : Feedwater

Valve(s): 1-FW-FCV-1478, 1-FW-FCV-1479, 1-FW-FCV-1488, 1-FW-FCV-1489, 1-FW-FCV-1498, 1-FW-FCV-1499, 1-FW-MOV-154A, 1-FW-MOV-154B, 1-FW-MOV-154C

Class : NC

II. COLD SHUTDOWN JUSTIFICATION

These valves are in positions required to sustain power operation. Full stroke exercising the valves would result in a reactor trip.

The main feedwater regulating valves 1-FW-FCV-1478, 1488 and 1498 will be partial stroke exercised every three months.

The bypass valves 1-FW-FCV-1479, 1489 and 1499 are used only during plant startup. During this startup period, their safety function is to close. During normal operation, these valves remain closed and, thus are passive in the closed position. Therefore, the bypass valves do not need to be partial stroke tested every three months.

The valve controllers for the motor operated valves 1-FW-MOV-154A, B and C do not allow for a part stroke exercise test.

COLD SHUTDOWN JUSTIFICATION CSV-12

I. IDENTIFICATION OF COMPONENTS

System : Feedwater

Valve(s): 1-FW-47
1-FW-79
1-FW-111

Class : 2

II. COLD SHUTDOWN JUSTIFICATION

These check valves must seat upon reversal of flow to fulfill their safety functions. The only method to verify this actuation is to perform a back pressure test. Since the valves must be open to sustain power operation, they cannot be tested every three months.

COLD SHUTDOWN JUSTIFICATION CSV-13

I. IDENTIFICATION OF COMPONENTS

System : Main Steam

Valve(s): 1-MS-NRV-101A, B, C

Class : 2

II. COLD SHUTDOWN JUSTIFICATION

Valve Description

The main steam non-return valves (NRVs) at North Anna Power Station are located in the main steam valve house and are a globe type stop check design. The valves measure approximately 16 feet from the bottom of the valve body to the top of the hand wheel and weigh almost 24,000 lbs. The disk is welded to a hollow piston and the whole assembly is free to move about 25 vertical inches within the valve body cylinder. The disk measures 25.5 inches across and the disk and piston assembly weighs approximately 1,200 lbs. When the main steam system is not inservice, a motor operator is used to run the valve stem down onto the disk to secure the main steam line.

The valves open to allow steam to the turbine. For accident conditions, the non-return valves in conjunction with the main steam trip valves prevent the blowdown of more than one steam generator for any break location, even if one valve fails to close. For example, for a break upstream of the trip valve in one line, the closure of either the non-return valve in that line or the trip valves in the other lines prevents the blowdown of the other steam generators.

Method of Testing

The piping downstream of each non-return valve leads to a common distribution manifold and cannot be isolated. Therefore, performing a back seat test using flow is not practical. Also, valve disassembly and inspection are not practical alternatives due to the size of the valve and the weight of the disk.

However, an alternative exists to verify that the disk moved to the valve seat during reactor coolant system (RCS) cooldown. When the RCS temperature is between 350 °F and 195 °F during the cooldown process, the main steam trip valves are closed. Then the main steam non-return valves close in response to the loss of steam flow.

After the main steam trip valve is closed, the Valve Operation Test and Evaluation System (VOTES) can be used to determine the position of the disk of the NRV. After the main steam flow is stopped, the non-return valve stem is run down onto the disk after the disk returns to the seat. A change in the running force within the normal travel of the stem indicates a resistance to stem movement (i.e., a stuck disk). Verifying that the stem travels to the seated disk with nominal changes in the running force indicates that the disk is on the seat. The test requires that the cooldown process be delayed between one to two hours to setup the instrumentation and to perform the test on each of three valves. Virginia Power owns the VOTES equipment and has personnel trained to use the equipment and interpret the results.

The VOTES consists of a force sensor mounted on the valve, valve switch current probes and a motor current probe. The force sensor detects the strain experienced by the yoke as the valve stem moves. Strain is converted to force. The valve switch probes determine the status of the torque and limit switches, and the open and closed bypass switches in the motor operator control circuit over the course of stem travel. To attach the switch and motor current probes, the power to the valve must be interrupted.

<u>Testing Frequency Discussion</u>

Full stroke or part stroke exercising of these valves during power operation would result in a turbine and reactor trip.

Plant cooldown procedures require that the NRV stem be run down onto the disk to isolate the main steam system after main steam flow is stopped. The VOTES testing must be performed when the NRVs are initially closed during the cooldown to accurately assess the piston-disk assembly's as-found position. As indicated above,

the VOTES test will delay the cooldown process from between one to two hours. Some cold shutdown outages are forced outages that result from exceeding a Technical Specification limit such as unidentified RCS leakage. The emphasis in a forced outage cooldown is to reach cold shutdown as rapidly as possible and to mitigate the cause of the forced outage. Stopping this process to perform the VOTES test would complicate the operators task to secure the plant and may reduce plant safety. However, during planned cold shutdowns where there are no mitigating circumstances, there is adequate time to notify the test personnel, carry the equipment into the field and perform the test.

There is no evidence in the valve history that a valve has stuck in the partial open position. The piston-disk assembly is not attached to any other internal part, the 1,200 lb piston-disk assembly is maintained parallel within the valve body cylinder and the main steam system is very clean. Consequently, there no mechanism to prevent the disk from dropping from the full open position to the valve seat.

The VOTES test described above will be performed on each main steam non-return valve during the cooldown process going into each planned cold shutdown. This test will not be performed more often then once every three months.

COLD SHUTDOWN JUSTIFICATION CSV-14

I. IDENTIFICATION OF COMPONENTS

System : Main Steam

Valve(s): 1-MS-TV-109

Class : 2

II. COLD SHUTDOWN JUSTIFICATION

Full or part-stroke exercising this valve during power operation would cause undesirable pressure transients in the High Pressure Secondary Drains System. Also, the valve controller does not allow for a part-stroke exercise test. The increased level of safety gained from exercising this valve during power operation does not justify the operational consequences of these pressure variations.

COLD SHUTDOWN JUSTIFICATION CSV-15

Cold Shutdown Justification withdrawn

COLD SHUTDOWN JUSTIFICATION CSV-16

I. IDENTIFICATION OF COMPONENTS

System : Main Steam

Valve(s): 1-MS-TV-101A, B, C

Class : 2

II. COLD SHUTDOWN JUSTIFICATION

These valves are in positions required to sustain power operation. Full or part-stroke exercising these valves during normal operation would result in a reactor trip and safety injection. Also, the valve controllers do not allow for a part-stroke exercise test. These valves are tested during cold shutdown (heatup or cooldown).

COLD SHUTDOWN JUSTIFICATION CSV-17

Replaced by Relief Request V-67

COLD SHUTDOWN JUSTIFICATION CSV-18

I. IDENTIFICATION OF COMPONENTS

System : Residual Heat Removal

Valve(s): 1-RH-MOV-1700
1-RH-MOV-1701
1-RH-MOV-1720A, B

Class : 1

II. COLD SHUTDOWN JUSTIFICATION

These valves isolate the Residual Heat Removal System, which is a 600 lb class system, from the Reactor Coolant System during power operation. These valves are normally closed and cannot be opened when Reactor Coolant System pressure is above 418 psig due to system interlocks. Therefore, the valves cannot be full or part-stroke exercised during power operation. Also, the valve controllers do not allow for a part-stroke exercise test.

COLD SHUTDOWN JUSTIFICATION CSV-19

Replaced by Relief Request V-74

COLD SHUTDOWN JUSTIFICATION CSV-20

I. IDENTIFICATION OF COMPONENTS

System : Residual Heat Removal

Valve(s): 1-RH-FCV-1605
1-RH-HCV-1758

Class : 2

II. COLD SHUTDOWN JUSTIFICATION

The position of these valves is determined by demand controllers and must be observed locally to verify proper valve operation. These valves are located inside containment, therefore, they cannot be full or part-stroke exercised every three months.

COLD SHUTDOWN JUSTIFICATION CSV-21

Replaced by Relief Request V-67

COLD SHUTDOWN JUSTIFICATION CSV-22

Cold Shutdown Justification Withdrawn

COLD SHUTDOWN JUSTIFICATION CSV-23

I. IDENTIFICATION OF COMPONENTS

System : Safety Injection

Valve(s): 1-SI-MOV-1836
1-SI-MOV-1869A, B
1-SI-MOV-1890A, B

Class : 2

II. COLD SHUTDOWN JUSTIFICATION

These valves provide isolation for alternate safety injection paths to the Reactor Coolant System. As required by Technical Specifications 3/4.5.2.a, they are closed with power removed from the valve actuators during Modes 1, 2, and 3. Full or part-stroke exercising these valves during power operation would be in violation of Technical Specifications. Also, the valve controllers do not allow for a part-stroke exercise test.

COLD SHUTDOWN JUSTIFICATION CSV-24

I. IDENTIFICATION OF COMPONENTS

System : Safety Injection

Valve(s): 1-SI-MOV-1865A, B, C

Class : 2

II. COLD SHUTDOWN JUSTIFICATION

The Accumulator Discharge Isolation Valves are in their safety positions with power removed from the valve actuators during Modes 1, 2, and 3, and when the pressurizer pressure is greater than 1000 psig as specified in Technical Specifications 3/4.5.1. These valves could be called upon to open in Mode 3 when the pressurizer is less than 1000 psig. Full or part-stroke exercising during power operation would be in violation of Technical Specifications and decrease plant safety. Also, the valve controllers do not allow for a part-stroke exercise test.

COLD SHUTDOWN JUSTIFICATION CSV-25

Cold Shutdown Justification Withdrawn

COLD SHUTDOWN JUSTIFICATION CSV-26

Cold Shutdown Justification Withdrawn

COLD SHUTDOWN JUSTIFICATION CSV-27

Cold Shutdown Justification Withdrawn

COLD SHUTDOWN JUSTIFICATION CSV-28

Replaced by Relief Request V-70

COLD SHUTDOWN JUSTIFICATION CSV-29

I. IDENTIFICATION OF COMPONENTS

System : Auxiliary Feedwater

Valve(s):	1-FW-61	1-FW-95
	1-FW-63	1-FW-125

Class : 3

II. COLD SHUTDOWN JUSTIFICATION

These valves cannot be partial or full flow tested during normal operation because the dedicated auxiliary feedwater flow paths would have to be isolated. These dedicated flow paths are required by the Technical Specifications for normal operation.

COLD SHUTDOWN JUSTIFICATION CSV-30

I. IDENTIFICATION OF COMPONENTS

System : Instrument Air

Valve(s):	1-IA-944	1-IA-963
	1-IA-948	1-IA-967
	1-IA-952	1-IA-971
	1-IA-959	1-IA-975

Class : NC

II. COLD SHUTDOWN JUSTIFICATION

Check valves 1-IA-944, 948 and 952 isolate the normal instrument air supply from the backup bottled air supply for the main steam pressure control valves 1-MS-PCV-101A, B and C. Valves 1-IA-959, 963 and 971 isolate the normal instrument air supply to the auxiliary feedwater valves 1-FW-HCV-100A, B and C. Valves 1-IA-967 and 975 isolate the normal instrument air supply to the auxiliary feedwater valves 1-FW-PCV-159A and B.

To back seat test check valves 1-IA-944, 948 and 952, the instrument air system must be isolated to all three main steam pressure control valves and the lines vented. To back seat test check valves 1-IA-959, 963, 967, 971 and 975, the instrument air system must be isolated to all five auxiliary feedwater valves and the lines vented. Isolating this many valves that are important to safety during normal operation would degrade the safety of the plant and be disruptive to plant operation.

COLD SHUTDOWN JUSTIFICATION CSV-31

I. IDENTIFICATION OF COMPONENTS

System : Auxiliary Feedwater

Valve(s): 1-FW-HCV-100A
1-FW-HCV-100B
1-FW-HCV-100C

Class : 3

II. COLD SHUTDOWN JUSTIFICATION

Stroke time is dependent on how quickly the operator can turn the knob to the potentiometer which controls valve position. Several turns of the knob are necessary to full stroke the valve. Isolating instrument air and electrical power to the valve during the performance of the fail safe test is the only valid method for full stroke exercising and stroke timing these valves. The fail safe test cannot be performed during normal operation because these valves must be available in the event of a reactor trip.

COLD SHUTDOWN JUSTIFICATION CSV-32

I. IDENTIFICATION OF COMPONENTS

System : Auxiliary Feedwater

Valve(s): 1-FW-PCV-159A
1-FW-PCV-159B

Class : 3

II. COLD SHUTDOWN JUSTIFICATION

During normal operation, these valves control auxiliary feedwater header pressure and cannot be full stroked. Isolating instrument air and electrical power to the valve during the performance of the fail safe test is the only valid method for full stroke exercising and stroke timing these valves. The fail safe test cannot be performed during normal operation because these valves must be in service.

COLD SHUTDOWN JUSTIFICATION CSV-33

I. IDENTIFICATION OF COMPONENTS

System : Main Steam

Valve(s): 1-MS-TV-113A
1-MS-TV-113B
1-MS-TV-113C

Class : 2

II. COLD SHUTDOWN JUSTIFICATION

During normal operation, steam condenses in the bypass lines because these valves are normally closed. Exercising these valves during normal operation would introduce a water slug to the turbine.

COLD SHUTDOWN JUSTIFICATION CSV-34

I. IDENTIFICATION OF COMPONENTS

System : Service Water

Valve(s):	1-SW-MOV-101A	1-SW-MOV-105A
	1-SW-MOV-101B	1-SW-MOV-105B
	1-SW-MOV-101C	1-SW-MOV-105C
	1-SW-MOV-101D	1-SW-MOV-105D

Class : 3

II. COLD SHUTDOWN JUSTIFICATION

Dur ormal operation, the lines between the Service Wat ply and return header isolation valves given above and the recirculation heat exchanger isolation valves (1-SW-MOV-103A, B, C and D, and 1-SW-MOV-104A, B, C and D) are maintained dry to ensure that no service water enters the heat exchangers. Stroking the header isolation valves described above would introduce service water into the lines. These lines would have to be drained after each test.

COLD SHUTDOWN JUSTIFICATION CSV-35

I. IDENTIFICATION OF COMPONENTS

System : Service Water

Valve(s): 1-SW-630, 631
1-SW-641, 644
1-SW-647, 648
1-SW-658, 661
1-SW-664, 665
1-SW-686, 689

Class : 3

II. COLD SHUTDOWN JUSTIFICATION

These check valves must open to allow service water to the charging pump lube oil coolers, seal coolers and gear box coolers. Flow through these valves can be detected by differential pressure instrumentation across the coolers. However, full flow conditions would have to be measured by using temporary ultrasonic flow instrumentation. The ultrasonic flow transducers and their mounting carriages must be installed and the transducers referenced to a no flow condition before each test. After each test, the equipment must be removed from the field and decontaminated if necessary. This process must be performed six times for the 12 valves listed above. Therefore, use of the ultrasonic flow instrumentation is very labor intensive and not practical for quarterly testing. These valves will be partial stroke exercised every quarter.

COLD SHUTDOWN JUSTIFICATION CSV-36

Cold Shutdown Justification Withdrawn

COLD SHUTDOWN JUSTIFICATION CSV-37

Cold Shutdown Justification Withdrawn

COLD SHUTDOWN JUSTIFICATION CSV-38

I. IDENTIFICATION OF COMPONENTS

System : Chemical and Volume Control

Valve(s): 1-CH-252
1-CH-264
1-CH-277

Class : 2

II. COLD SHUTDOWN JUSTIFICATION

These check valves must open to allow charging pump recirculation. There is no permanently mounted instrumentation to measure full flow on the recirculation line. Therefore, full flow conditions will have to be measured by using temporary ultrasonic flow instrumentation. The ultrasonic flow transducers and their mounting carriages must be installed and the transducers referenced to a no flow condition before each test. After each test, the equipment must be removed from the field and decontaminated if necessary. This process must be performed three times for the three valves listed above. Therefore, use of the ultrasonic flow instrumentation is very labor intensive and not practical for quarterly testing.

Test experience has shown that the discharge pressure drop is undetectable when flow through the recirculation line is established in conjunction with normal charging. Therefore, quarterly partial flow testing is not verifiable.

COLD SHUTDOWN JUSTIFICATION CSV-39

I. IDENTIFICATION OF COMPONENTS

System : Service Water

Valve(s): 1-SW-252
1-SW-255

Class : 3

II. COLD SHUTDOWN JUSTIFICATION

These check valves must open to allow service water to the charging pump coolers. Downstream instrumentation can be used to verify the presence of flow in the valves. However, individually full flow testing each check valve requires securing the parallel service water supply header to the charging pump seal coolers. To ensure an uninterrupted redundant service water supply to the charging pump seal water coolers, these check valves will be full flow tested during cold shutdown but not more frequently then once every three months. The valves will be partial flow tested every three months.

COLD SHUTDOWN JUSTIFICATION CSV-40

I. IDENTIFICATION OF COMPONENTS

System : Auxiliary Feedwater

Valve(s):	1-FW-062	1-FW-149
	1-FW-064	1-FW-155
	1-FW-094	1-FW-166
	1-FW-096	1-FW-172
	1-FW-126	1-FW-184
	1-FW-128	1-FW-190

Class : 3

II. COLD SHUTDOWN JUSTIFICATION

Each auxiliary feedwater pump is required by Technical Specification 3.7.1.2 to be aligned to an individual steam generator in modes 1, 2 or 3. The manual valves listed above are positioned to provide these dedicated flow paths. During a main feed line break or steam line break, no credit is taken for operator action during the first 30 minutes. When manual operator action is taken the faulted steam generator is isolated and manual flow control is required. The auxiliary feedwater pumps are realigned using the manual valves. Therefore, the manual valves must be known to be operable.

However, exercising the valves during normal operation would violate the technical specifications and reduce plant safety without a corresponding increase in component reliability. These valves remain in their aligned positions during normal operation and are not subject to wear. Exercising the valves during each cold shutdown is adequate to demonstrate that these valves can be manipulated in case the auxiliary feedwater paths need to be changed.

COLD SHUTDOWN JUSTIFICATION CSV-41

I. IDENTIFICATION OF COMPONENTS

System : Auxiliary Feedwater

Valve(s): 1-FW-145 1-FW-180
1-FW-162 1-FW-227

Class : 3

II. COLD SHUTDOWN JUSTIFICATION

These normally locked closed manual valves are opened as required by the abnormal operating procedures to provide service water to the auxiliary feedwater pumps in the event of an accident where all normal auxiliary feedwater pump supplies have been exhausted. Opening these valves every three months to fulfill quarterly testing requirements would accelerate the buildup of sludge in the supply lines from the service water system. The supply lines are flushed once every 18 months to reduce the buildup of sludge and to identify if there is any accumulation of asiatic clams or shell debris in the lines. Because these manual valves remain in the closed position during normal operation and are not subject to wear, exercising these valves on a cold shutdown test frequency (but not more frequently then once every three months), is adequate to demonstrate that the valves can be opened in the case where service water is required as a supply for the auxiliary feedwater pumps.

COLD SHUTDOWN JUSTIFICATION CSV-42

I. IDENTIFICATION OF COMPONENTS

System : Reactor Coolant

Valve(s): 1-RC-PCV-1455C
1-RC-PCV-1456

Class : 1

II. COLD SHUTDOWN JUSTIFICATION

Full or part-stroke exercising these valves during power operations would cause high differential pressur across the PCV Block Valves. Although these valves are designed to accommodate this differential pressure, cycling would eventually degrade the block valves seating capability, thus decreasing plant safety. Also, the valve controllers do not allow for a part-stroke exercise test. These valves will be full-stroke exercised during cold shutdowns.

2.3.7 ALTERNATIVE TESTING FOR NON-CODE VALVES

According to the minutes of public meeting on Generic Letter 89-04, "Paragraph (g) of 10CFR 50.55a requires the use of Section XI of the ASME Code for inservice testing of components covered by the Code. For other components important to safety, the licensee also has the burden of demonstrating their continued operability." The minutes go on to state that, "The Code-required IST program is a reasonable vehicle to provide a periodic demonstration of the operability of pumps and valves not covered by the Code. If non-Code components are included in the ASME Code IST program (or some other licensee-developed inservice testing program) and certain Code provisions cannot be met, the Commission regulations (10 CFR 50.55a) do not require a 'request for relief' to be submitted to the staff. Nevertheless, documentation that provides assurance of the continued operability of the non-Code components through the performed tests should be available at the plant site." Non-Code components are components that are important to safety but are not in systems or portions of systems that are classified ASME Class 1, 2 or 3.

North Anna Power Station has elected to include certain non-Code components in the ASME IST program. Where the Code provisions cannot be met for non-Code components, alternative testing is performed that is adequate to ensure continued operability. The alternate testing is described in this section. There may be other deviations from Code provisions that are not described in this section. For these cases, documentation is available at the plant site.

As indicated in the minutes of public meeting on Generic Letter 89-04, a 'request for relief' need not be submitted for non-Code components. Therefore, the alternative tests described in this section are not 'requests for relief' but are provided for information.

NON-CODE ALTERNATIVE TESTING VNC-1

I. IDENTIFICATION OF COMPONENTS

System : Service Air

Valve(s):	1-GN-225	1-IA-2152
	1-GN-451	1-IA-2153
		1-IA-2154
		1-IA-2155

Class : NC

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valves to the closed position every three months

Exercise each valve individually

III. BASIS FOR ALTERNATE TESTING

Due to the plant configuration, these valves cannot be verified closed using flow.

The only method to verify closure other than disassembly and inspection is to perform a local leak rate/back pressure test. To perform the leak rate/back pressure test, the normal instrument air and nitrogen supplies to the PORVs must be isolated. The PORVs are required to be operable during normal operation. Also, these valves are located inside containment and are inaccessible during normal operation.

These valves are also subject to leak testing, which is performed every reactor refueling. Verification of closure will be performed during the leak test every reactor refueling instead of every cold shutdown because the small increase in safety gained by testing during cold shutdown does not justify the burden of performing a back pressure test.

Valves 1-IA-2152 and 2153 are in series and valves 1-IA-2154 and 2155 are in series. There are no vents in between the two sets of valves; therefore, these valves cannot be individually back pressure tested or leak tested.

IV. ALTERNATE TESTING

Exercise to the closed position every reactor refueling.

Valves 1-IA-2152 and 2153, and valves 1-IA-2154 and 2155 will be back pressure/leak tested in groups. If the group of valves fails the test, both valves in the group will be subject to repair or replacement.

The leak test for valves 1-IA-2152, 2153, 2154 and 2155, and 1-GN-225 and 451 will consist of recording the nitrogen bottle pressure, waiting a given period of time and then recording the bottle pressure again. The results will be compared to appropriate acceptance criteria.

NON-CODE ALTERNATIVE TESTING VNC-2

I. IDENTIFICATION OF COMPONENTS

System : Instrument Air

Valve(s): 1-IA-925
1-IA-926
1-IA-934
1-IA-935

Class : NC

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valves every three months.

Back seat test each valve individually.

III. BASIS FOR ALTERNATE TESTING

Back seating these valves requires that the lines upstream of the valves be vented. The 1-IA-925 and 926 valves are in series with no vent valves in between, as are 1-IA-934 and 935. Therefore, there is no way to individually leak test or back seat these valves.

IV. ALTERNATE TESTING

These valves will be leak/back seat tested in groups. The leak test will consist of pressurizing the volume upstream of the two valves in series and venting downstream of the valves. Then the upstream test volume will be isolated. If a given differential pressure across the two valves in series can be maintained for a predetermined period of time, the test will be satisfactory. The actual leak rate will not be measured. If the group fails the leak/back seat tests, both valves in the group will be disassembled, inspected and repaired if necessary.

NON-CODE ALTERNATIVE TESTING VNC-3

I. IDENTIFICATION OF COMPONENTS

System : Instrument Air

Valve(s):	1-IA-944	1-IA-963
	1-IA-948	1-IA-967
	1-IA-952	1-IA-971
	1-IA-959	1-IA-975

Class : NC

II. IMPRACTICAL CODE REQUIREMENTS

Determine leakage for Category A valves

III. BASIS FOR ALTERNATE TESTING

Check valves 1-IA-944, 948 and 952 isolate the normal instrument air supply from the backup bottled air supply for the main steam pressure control valves 1-MS-PCV-101A, B and C. Valves 1-IA-959, 963 and 971 isolate the normal instrument air supply to the auxiliary feedwater valves 1-FW-HCV-100A, B and C. Valves 1-IA-967 and 975 isolate the normal instrument air supply to the auxiliary feedwater valves 1-FW-PCV-159A and B.

The purpose of the bottled air supplies is to ensure that the main steam PCVs and the auxiliary feedwater valves can be remotely operated following an accident. The bottled air supplies must be able to cycle the main valves a specified number of times over a predetermined period in order to meet their design requirements. In lieu of a leakage test for the isolation check valves given above, the main valves will be cycled the required number of times over the required period with the normal air supply isolated and vented. This test provides verification that the isolation check valves are leak tight enough to allow the main valves to perform their safety functions.

IV. ALTERNATE TESTING

In lieu of a leakage test for the isolation check valves given above, the main valves will be cycled the required number of times over the required period as defined by their design requirements with the normal air supply isolated and vented.

NON-CODE ALTERNATIVE TESTING VNC-4

I. IDENTIFICATION OF COMPONENTS

System : Emergency Diesel Air Services

Valve(s):	1-EG-SOV-600HA	1-EG-SOV-600JA	1-EB-15
	1-EG-SOV-601HA	1-EG-SOV-607JA	1-EB-34
	1-EG-SOV-600HB	1-EG-SOV-600JB	1-EB-65
			1-EB-84

Class : NC

II. IMPRACTICAL CODE REQUIREMENTS

Section XI, IWV-3410 "Valve Exercising Test"

III. BASIS FOR ALTERNATE TESTING

The solenoid valves have actuation times considerably under a second and there is no visual reference on the solenoid valve to determine when it has stroked. Therefore, the stroke time cannot be measured. The solenoid valves are activated every month to start the diesels. Both air banks are discharged when performing the monthly test. After the test, the air bank pressure is recorded to verify a decrease in pressure, which confirms that the air banks discharged properly.

Flow through check valves 1-EB-15, 34, 65 and 84 cannot be measured because instrumentation is not installed. However, failure of these valves to promptly stroke to their proper positions will affect the starting time of the diesel when the diesel is started from just one air bank. A diesel alarm will activate if the starting time exceeds start failure requirements. Verification that the diesel starts without an alarm constitutes a full stroke test for the check valves. The test to start the diesels on one air bank is performed on a rotating basis once every six months. Based on this rotation, each check valve will be full flow tested once every 18 months.

IV. ALTERNATE TESTING

The solenoid valve will be full stroke exercised and check valves will be partial stroke exercised monthly by observing that the valves perform their intended function (if the diesel starts, the air bank pressures decrease and the air supply manifold maintains its integrity, then the solenoid and check valves were stroked successfully).

Every 18 months, the check valves will be full stroke tested by discharging only one air bank to start the diesel. The failure of either the solenoid or check valves to open will promptly give a diesel alarm. Further investigation would identify problems with the operability of these valves. The diesel start time will be recorded and compared to a maximum allowable start time during this test.

2.4 REPORTING OF INSERVICE TEST RESULTS

2.4.1 PUMP INSERVICE PROGRAM

Records of Pump Inservice Test Results will be maintained in accordance with the intent of Article IWP-6000. Files will be established for each pump and will include:

1) Pump identification by equipment number and manufacturer.

2) The record of test will include:

   a. date of test,

   b. measured and observed quantities,

   c. comparison of allowable ranges of test values and analysis of deviations,

   d. requirements of corrective actions and,

   e. signature of person or persons responsible for conducting and analyzing the test.

3) The inservice test plans are contained in the applicable surveillance test procedure.

4) Summaries of corrective action will be indexed by maintenance report number, etc.

The Pump Inservice Test Program, associated surveillance test procedures and results will be kept at North Anna Power Station. They will be available for audit by Authorized Nuclear Inspectors and the NRC.

2.4.2 VALVE INSERVICE PROGRAM

Records of Valve Inservice Test Results will be maintained in accordance with the intent of Article IWV-6000. Files will be established for each valve and will include:

1) Valve identification by equipment number, size, valve type, actuator type, ASME class, IWV category, drawing number and coordinate, testing requirements and frequencies.

2) The record of test will include:

a. date of test,

b. measured and observe quantities where applicable,

c. comparisons with allowable ranges of test values and analysis of deviations,

d. requirements for corrective action and,

e. signature of the person or persons responsible for conducting and analyzing the test.

The Valve Inservice Test Program, associated surveillance test procedures and results will be kept at North Anna Power Station. They will be available for audit by the Authorized Nuclear Inspectors and the NRC.

2.5 QUALITY ASSURANCE PROGRAM

The Pump and Valve Inservice Test Program activities will be conducted in accordance with the Nuclear Operations Department Standards Manual and Technical Specifications for North Anna Power Station.

VIRGINIA ELECTRIC AND
POWER COMPANY
NORTH ANNA UNIT 2
INSERVICE TESTING PROGRAM PLAN
SECOND INSPECTION INTERVAL
DEC. 14, 1990 - DEC. 14, 2000
REVISION 7

SUMMARY OF CHANGES TO NORTH ANNA UNIT 2
IST PROGRAM, REVISION 7

The following summary describes the changes from Revision 6 to Revision 7 of the North Anna Unit 2 Inservice Testing (IST) Program Plan. In addition to describing the changes to the program, the summary indicates the approval mechanism for each relief request given in Sections 2.2.6 and 2.3.5. The changes in the IST Program result from a review of the scope of the program and from the NRC Safety Evaluation Report (SER) for Revision 6, dated September 17, 1993.

2.2.5 PUMP INSERVICE TESTING TABLE

UNIT 2 PUMP NUMBER	COMMENT/PROGRAM CHANGE
2-CC-P-1A 2-CC-P-1B 2-CH-P-1A 2-CH-P-1B 2-CH-P-1C	Program change: Added Relief Request P-16.
1-CH-P-2C 1-CH-P-2D	Relief Request P-13, which deals with instrument accuracy, no longer applies to these pumps. Program change: Deleted reference to Relief Request P-13. Added Relief Request P-16.
2-EG-P-2HA 2-EG-P-2HB 2-EG-P-2JA 2-EG-P-2JB	These non-Code diesel fuel oil transfer pumps are positive displacement pumps. The ASME OM Code-1987, Part 6, with Addenda to OMa-1988, Table 2, requires that only discharge pressure need be measured for positive displacement pumps. Per the requirements of OM Part 6, discharge pressure instead of inlet and differential pressure will be measured. Non-Code Alternative Testing description PNC-1 was added to document this fact. Relief Request P-4 is being withdrawn and the contents of P-4 moved to PNC-1. Program change: Non-Code Alternative Testing description PNC-1 was added and Relief Request P-4 is being withdrawn.

SUMMARY OF CHANGES TO NORTH ANNA UNIT 2
IST PROGRAM, REVISION 7

2-FW-P-2 2-FW-P-3A 2-FW-P-3B	Relief Request P-13, which deals with instrument accuracy, no longer applies to these pumps. Also, a full flow test loop was installed that allows these pumps to be tested to the requirements of Section XI on a quarterly basis. Program change: Deleted reference to Relief Request P-13 and deleted Relief Request P-14. Added Relief Request P-16.
2-QS-P-1A 2-QS-P-1B 2-RH-P-1A 2-RH-P-1B	Relief Request P-13, which deals with instrument accuracy, no longer applies to these pumps. Program change: Deleted reference to Relief Request P-13. Added Relief Request P-16.
2-RS-P-1A 2-RS-P-1B	Withdrew Relief Request P-6.
2-RS-P-2A 2-RS-P-2B	Withdrew Relief Request P-7.
2-RS-P-3A 2-RS-P-3B	The system resistance description was changed from FIXED to VAR. Relief Request P-13 no longer applies to these pumps. Program change: Deleted reference to Relief Request P-13 and replaced FIXED with VAR. Added Relief Request P-16.
2-SI-P-1A 2-SI-P-1B	The lube oil description was changed from N/A to Q. Relief Request P-13 no longer applies to these pumps. Program change: Deleted reference to Relief Request P-13 and added lube oil check.
2-SW-P-1A 2-SW-P-1B 2-SW-P-4	Relief Request P-13 for flow instrumentation no longer applies to these pumps. Program change: Deleted reference to flow instrumentation in Relief Request P-13.

SUMMARY OF CHANGES TO NORTH ANNA UNIT 2
IST PROGRAM, REVISION 7

2-HV-P-20A 2-HV-P-20B 2-HV-P-20C 2-HV-P-22A 2-HV-P-22B 2-HV-P-22C	The ASME classification was upgraded from non-Class to Class 3. Program change: Replaced non-Class with Class 3. Added Relief Request P-16.

SUMMARY OF CHANGES TO NORTH ANNA UNIT 2
IST PROGRAM, REVISION 7

2.2.6 PUMP INSERVICE TESTING PROGRAM RELIEF REQUESTS

The following summarizes the changes to relief requests since Revision 6. It also contains a description of the approval mechanism for each relief request. That is, the summary indicates whether the approval is:

1) through a position in Generic Letter 89-04,

2) through a previously issued NRC SER or

3) obtained using a relief request that will need approval by the NRC. Relief requests requiring NRC approval are marked with an asterisk *.

UNIT 2 RELIEF REQUEST	COMMENT/STATUS
P-1	No change. This relief request was approved by the NRC in the SER for Revision 6 dated September 17, 1993.
P-2 and 3	These relief request numbers are no longer active.
P-4	This relief request is being withdrawn. The basis for relief was moved to Alternative Testing description PNC-1 and revised to enhance clarity.
P-5*	The test frequency was changed from cold shutdown to reactor refueling. Also, the basis for relief was expanded to describe the conditions where the residual heat removal system is needed during cold shutdowns. The Revision 6 version of P-5 was approved by the NRC in the SER for Revision 6 dated September 17, 1993.
P-6	This relief request is being withdrawn. According to the SER for Revision 6 dated September 17, 1993, the testing described for the inside recirculation spray pumps in Revision 6 is in accordance with the requirements of OM Part 6. Therefore, relief is not necessary as long as all related requirements in OM Part 6 are met.

SUMMARY OF CHANGES TO NORTH ANNA UNIT 2
IST PROGRAM, REVISION 7

P-7 This relief request is being withdrawn. According to the SER for Revision 6 dated September 17, the testing described for the outside recirculation spray pumps in Revision 6 is in accordance with the requirements of OM Part 6. Therefore, relief is not necessary as long as all related requirements in OM Part 6 are met.

P-8 This relief request number is no longer active.

P-9* The discussion dealing with static inlet pressure was expanded to explain why just using the discharge pressure for these deep draft pumps is a more conservative application of the Section XI acceptance criteria then using differential pressure and to describe the burden associated with recording the static suction pressure. This revision is in response to concerns raised by the NRC in their SER dated September 17, 1993.

P-10* The discussion dealing with static inlet pressure was expanded to explain why just using the discharge pressure for these deep draft pumps is a more conservative application of the Section XI acceptance criteria then using differential pressure and to describe the burden associated with recording the static suction pressure. This revision is in response to concerns raised by the NRC in their SER dated September 17, 1993.

P-11 This relief request number is no longer active.

P-12 Reference to the third degree polynomial was deleted from the alternate testing section. Also, reference to establishing the pump curve using a minimum of six points was replaced by reference to using a minimum of five points. The use of five points to describe the pump curve was taken from guidance provided by the NRC in their SER for the Surry Units 1 and 2 IST Programs which was received in March of 1993. The Revision 6 version of P-12 was approved by the NRC in their SER dated September 17, 1993. The approval was granted as long as the calculated curve bounds the operational band in which the pump operates.

P-13* Reference to the accuracy for the calculated differential pressure was deleted and the number of instruments that exceed the Section XI accuracy requirements was reduced. Also, the flow accuracy for the charging pumps (2-CH-P-1A, B and C) was changed from 2.5% to 2.34%, and the discharge pressure accuracies for the service water pumps (2-SW-P-1A, 1B and 4) were changed from 2.69% to 3.18% for pumps 1A and 1B, and to 2.61% for pump 4. The Revision 6 version of P-13 was approved by the NRC in their SER dated September 17, 1993.

P-14 <u>This relief request is being withdrawn.</u> Full flow test loops were installed for the auxiliary feedwater pumps. Therefore, this relief request is no longer necessary.

P-15* Reference to running the boric acid transfer pumps on the recirculation flow path for three minutes was deleted. This relief request was submitted to the NRC by letter dated October 17, 1990. Except for the duration of the run period prior to measuring the test quantities, the alternate testing complies with Generic Letter 89-04, Attachment 1, Position 9. The Revision 6 version of P-15 was approved by the NRC in their SER dated September 17, 1993.

P-16* This relief request is being submitted to address the situation of having to measure the static inlet pressure for a pump that is in operation prior to the test.

2.2.7 ALTERNATIVE TESTING FOR NON-CODE PUMPS

Starting with Revision 7 to the IST Program, non-Code pumps that are included in the IST Program but are not tested to the provisions of the Code will be discussed in this new section. Although a request for relief is not required for non-Code components, the reasons for why the Code provisions are not met and the alternative testing description should be documented with the IST Program.

NON-CODE ALTERNATIVE TESTING DESCRIPTION	COMMENT
PNC-1	The diesel fuel oil transfer pumps are positive displacement pumps. One characteristic of positive displacement pumps is that the discharge pressure is independent of inlet pressure. Therefore, to determine pump degradation, only discharge pressure need be measured. Also, the basis from Relief Request P-4 was moved into PNC-1. This basis deals with the Code required five minute run time before the test quantities are measured.

SUMMARY OF CHANGES TO NORTH ANNA UNIT 2
IST PROGRAM, REVISION 7

2.3.4 VALVE INSERVICE TESTING TABLE

Valves marked with an * are being added to the IST Program.

UNIT 1 VALVE NUMBER	COMMENT/PROGRAM CHANGE
2-AS-FCV-200A 2-AS-FCV-200B	These normally open valves are on the auxiliary steam supply line to the condenser air ejectors. They automatically close in the event of a containment isolation signal. Although they have an automatic trip function, closing of these valves has no specific function with respect to accident recovery or mitigation. Program change: The valves were removed from the IST Program.
2-CA-026	This non-Code control room bottled air supply discharge check valve is adequately tested as part of the control room bottled air supply test. Because the valve is non-Code and adequately tested outside the IST Program, this valve is being removed from the IST Program. Program change: The valve was removed from the IST Program.
2-CC-008 2-CC-025	These valves open to provide flowpaths for constant vents from the CC pump casings to the surge tank to ensure the pumps are maintained full of water. Venting of these pumps is not considered to be critical to their performance. Backflow through this line to an idle pump is insignificant due to the small size of the line. Program change: The valves were removed from the IST Program.

SUMMARY OF CHANGES TO NORTH ANNA UNIT 2
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2-CC-RV-202	This valve protects the non-regenerative heat exchangers from over-pressure in the event an isolated heat exchanger is subjected to heating. Since this valve is a thermal relief valve and performs no specific safety function, testing is not required. Program change: The valve was removed from the IST Program.
2-CC-RV-203	This valve protects the seal water heat exchangers from over-pressure in the event an isolated heat exchanger is subjected to heating. Since this valve is a thermal relief valve and performs no specific safety function, testing is not required. Program change: The valve was removed from the IST Program.
2-CC-RV-226	This relief valve protects the excess letdown heat exchanger (shell side) from over-pressure as a result of thermal expansion when the heat exchanger is isolated. It is unlikely that CC to the heat exchanger would be isolated and even if it were, damage to this non-safety-related heat exchanger would be inconsequential. Note that protection of the header is provided by 2-CC-RV-228A and B. Program change: The valve was removed from the IST Program.
2-CH-153	During normal operation this check valve opens to provide flow from the VCT's to the charging pump suction headers. Under accident conditions when the upstream motor-operated valves are closed, it provides recirculation pathways from the charging pump minimum flow lines to the charging pump suction headers. This valve must close to prevent contaminated water from entering the VCT after recirculation mode transfer.

Program change: The valve was added to the IST Program to be tested to the full open position every three months and closure and leak tested every reactor refueling. Refer to Relief Request V-73.

2-CH-140

This primary grade water supply to make-up blender manual valve is outside the ISI class boundaries and performs no safety function. Credit for isolation of this line during emergency boration is attributed to the downstream air-operated valve.

Program change: The valve was removed from the IST Program.

2-CH-176
2-CH-191
2-CH-206

These charging pump discharge recirculation line check valves open to provide flowpaths from the charging pumps' discharge to the seal water return lines in order to protect the charging pumps from overheating during low or minimal flow operations. Since the pump suction headers are common and recirculation is not secured except when in recirculation cooling when the individual pump recirculation valves are closed, backflow through an idle pump via these lines has no safety consequence. Thus, no closure test is required for these valves.

Program change: The closure test was deleted.

2-CH-FCV-2114A*

This normally-closed (fail closed) valve opens as required to supply water to the VCT or charging pump suctions in order to control the reactor coolant system boric acid concentration during normal boration (dilution) and plant shutdown. During manual emergency boration it must be closed to prevent diversion of boric acid into the primary water system.

Program change: The valve was added to the

IST Program to be tested to the closed position every three months and to have its remote position indicator verified every 24 months.

2-CH-FCV-2160

This normally-closed (administratively controlled) valve remains closed during plant operation and accident recovery to ensure safety injection flow from the charging pumps is directed to the safety injection headers and to provide containment isolation. Thus it is categorized as passive and no exercising is required.

Program change: A remote position indication verification test was added to be performed every 24 months and the closure test was deleted.

2-CH-HCV-2303A
2-CH-HCV-2303B
2-CH-HCV-2303C

These normally open valves may be closed at operator discretion during an accident to isolate an individual reactor coolant pump in the event of a pump seal failure. The abnormal operating procedure requires closure within 5 minutes of discovering a seal leak. Under accident conditions this function is redundant with that of containment isolation valves 2-CH-MOV-2380 and 2381 which isolate all three seals. Thus, these valves are not required to be in the Program.

Program change: The valves were removed from the IST Program.

2-CH-LCV-2460A*
2-CH-LCV-2460B*

These normally open letdown isolation valves are closed in the event of an accident where continued letdown flow is undesirable and automatically close on low pressurizer level to retain reactor water inventory. This would be important in the case of a small-break LOCA where containment isolation does not occur. Also, in the event of an incident that results in a containment isolation signal, these valves must close to isolate

downstream low-pressure piping and to prevent lifting of downstream relief valve 2-CH-RV-2203. They fail closed on loss of electric power or air header pressure.

Program change: The valves were added to the IST Program to be tested to the closed position every cold shutdown and to have their remote position indicators verified every 24 months. Refer to Cold Shutdown Justification CSV-5.

2-CH-MOV-2115B 2-CH-MOV-2115D	After recirculation mode transfer, there exists a path for contaminated sump water through the piping from the suction of the charging pumps to the RWST. These valves isolate this piping and should be leak tested. Program change: Leakage testing was added.
2-CH-MOV-2267A* 2-CH-MOV-2269A* 2-CH-MOV-2270A*	These normally-open valves remain open following an accident to provide flowpaths from the RWST and LHSI Train "B" to each of the charging pumps during an accident and for post-accident recirculation. Thus, they are considered to be passive. Program change: The valves were added to the IST Program to have their remote position indicators verified every 24 months.
2-CH-MOV-2267B* 2-CH-MOV-2269B* 2-CH-MOV-2270B*	These normally-open valves would remain open following an accident to provide flowpaths from the "A" LHSI Pumps to each of the charging pumps during post-accident recirculation. Thus, they are considered to be passive. Program change: The valves were added to the IST Program to have their remote position indicators verified every 24 months.

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2-CH-MOV-2373

This valve is normally open to provide a flowpath from the charging pumps common discharge to the seal water return line in order to protect the charging pumps from overheating during low or minimal flow operations. It may be closed by the operator to maximize flow to the RCS during safety injection; however, this action is not desirable since it affects all three pumps and the individual pump minimum flow isolation valves (2-MOV-2275A-C) provide adequate means of isolation. Since the valve need not be repositioned during an accident it is considered to be passive.

Program change: The exercise test was deleted.

2-CH-RV-2209

This valve provides over-pressure protection for the low-pressure letdown piping and components downstream of the non-regenerative heat exchangers but does not have any specific function with respect to plant shutdown or accident mitigation.

Program change: The valve was removed from the IST Program.

2-CH-RV-2257

This valve protects the volume control tanks and associated components from over-pressure. It performs no specific safety function related to accident mitigation. During and following an accident, the VCT is typically isolated from the charging pump suction headers. Therefore, this valve need not be included in the test program.

Program change: The valve was removed from the IST Program.

2-CH-RV-2382A

This valve protects the seal water leakoff piping from over-pressure during an accident when the associated piping segment is isolated and may be subjected to heating or

seal failure. The portion of piping being protected is not critical. Thus, testing of this valve per the IST Program is not required.

Program change: The valve was removed from the IST Program.

2-CV-08*
2-CV-15*

These valves must open to allow the removal of hydrogen from the containment atmosphere following an accident.

Program change: The valves were added to the IST Program to be tested to the open position every three months.

2-CV-TV-200

This valve is a normally closed (administratively controlled) air-operated valve opened only during operation of the containment hogger at plant startup. Thus it is considered to be passive.

Program change: The exercise test was deleted.

2-EB-015
2-EB-034
2-EB-061
2-EB-078
2-EG-SOV-700HA
2-EG-SOV-701HA
2-EG-SOV-700HB
2-EG-SOV-700JA
2-EG-SOV-707JA
2-EG-SOV-700JB

Program change: Relief Request V-56 is being withdrawn and replaced by Non-Code Alternative Testing Description VNC-4.

2-EB-041
2-EB-051
2-EB-068
2-EB-085

These non-Code valves open to provide flowpaths from the air dryers to the EDG starting air receivers and close to prevent blowdown of the receivers through the compressors when they shut down. Since receiver pressures are monitored and alarmed such that at "time zero" in the accident it can be assumed they are charged to the

	required minimum pressure at the onset of an accident and the capacity of the tanks allows for the minimum of three engine starts required, compressor operation is not required. Thus, exercising these valves to the open position is likewise not required (Air compressors are not safety-related). However, these valves must close and remain leak tight to preserve the air inventory in the receivers. Therefore, each of these valves should be leak tested to verify its capability to perform its safety function.
	Program change: Leakage testing was added to be performed very reactor refueling.
2-EG-260 2-EG-272 2-EG-284 2-EG-289	Flow instrumentation has been installed on the diesel fuel oil transfer pump discharge piping. Therefore, these valves can be full flow tested every three months.
	Program change: Relief Request V-50 is being withdrawn. Also, the valve number prefix was changed from "1" to "2".
2-EG-RV-204A 2-EG-RV-204B 2-EG RV-206A 2-EG-RV-206B	Program change: The valve numbers were changed from Unit 1 numbers to Unit 2 numbers.
2-EG-SOV-701HA 2-EG-SOV-707JA	These non-Code valves are normally open to ensure the air start header (and engine cylinders) remain de-pressurized during idle periods. They close during the starting sequence and reopen to protect the air supply line. Each line has an orifice which permits pressurizing of the starting air header even if the SOV failed to close. Therefore, no closure testing is required. However, these valves should be tested open.
	Program change: The closure test was replaced by an open test.

2-FP-79	This valve is designated as a containment isolation valve and is leak tested per 10CFR50, Appendix J. Program change: Leakage testing was added.
2-FP-82	This valve is no longer subject to Type C leakage testing. Program change: The valve was removed from the IST Program.
2-FW-064* 2-FW-066* 2-FW-096* 2-FW-098* 2-FW-128* 2-FW-130*	These valves are manipulated as required by the abnormal operating procedures to align each of the motor-driven pump headers to the steam generators via the desired control valve (MOV or HCV). Program change: The valves were added to the IST Program to be exercised to the open and closed positions every cold shutdown. Refer to Cold Shutdown Justification CSV-40.
2-FW-070 2-FW-102 2-FW-134	These valves open on initiation of auxiliary feedwater flow to provide flowpaths from the AFW pumps to the steam generators. They close in the event of a rupture (passive failure) of the upstream AFW piping . Since this evaluation does not postulate passive failure of ISI-classed components, testing of the closure function is not required. Therefore, Relief Request V-62, which deals with closure testing, is being withdrawn. Program change: The closure test was deleted.
2-FW-147* 2-FW-164* 2-FW-182*	These normally locked-closed manual valves are opened as required by the abnormal operating procedures in the event of an accident where all of the normal sources of steam generator makeup water have been exhausted (or are otherwise unavailable).

The emergency condensate storage tanks are only sized to provide sufficient makeup to allow the AFW system to satisfy its safety function for hot shutdown. The next safety-related backup water supply is the service water system. Thus, these valves should be exercised in the open direction.

Program change: The valves were added to the IST Program to be exercised to the open position every cold shutdown. Refer to Cold Shutdown Justification CSV-41.

2-FW-156 2-FW-172 2-FW-192	These valves open to provide flowpaths from their respective AFW pumps to the designated steam generator. Since each pump is aligned to a single steam generator, reverse flow through an idle pump is of no concern. Therefore, Cold Shutdown Justification CSV-25, which deals with closure testing, is being withdrawn. Program change: The closure test was deleted.
2-FW-157* 2-FW-173* 2-FW-174* 2-FW-193* 2-FW-194* 2-FW-317*	These manual valves are manipulated as required by the abnormal operating procedures to align each AFW pumps to a desired header (MOV or HCV) and to isolate the unused line. Program change: The valves were added to the IST Program to be exercised to the open and closed positions every cold shutdown. Refer to Cold Shutdown Justification CSV-40.
2-FW-150 2-FW-167 2-FW-185	These check valves open to ensure minimum recirculation flow through the auxiliary feedwater pumps to prevent pump damage in the event of isolation of an AFW discharge line. Since flow through these lines is limited by inline orifices and the head on these lines is merely that of the emergency condensate tank, there is no adverse operational consequence if these valves failed to prevent

reverse flow. Therefore, Cold Shutdown Justification CSV-25, which deals with closure testing, is being withdrawn.

Program change: The closure test was deleted.

2-FW-202*	This normally locked-closed manual valve is opened in the event of an accident where all of the normal sources of steam generator makeup water have been exhausted (or are otherwise unavailable). The emergency condensate storage tanks are only sized to provide sufficient makeup to allow the AFW system to satisfy its safety function for hot shutdown. The next safety-related backup water supply is the service water system. Thus, this valve should be exercised in the open direction. Program change: The valve was added to the IST Program to be exercised to the open position every cold shutdown. Refer to Cold Shutdown Justification CSV-41.
2-FW-609 2-FW-610 2-FW-611	These valves open to ensure flow through the AFW pumps and to provide cooling water flow to the respective bearing oil cooler. The potential for reverse flow through a cooler is of no consequence to the safety functions of the AFW pumps. Therefore, Cold Shutdown Justification CSV-25, which deals with closure testing, is being withdrawn. Program change: The closure test was deleted.
2-FW-FCV-2479 2-FW-FCV-2489 2-FW-FCV-2499	These feedwater bypass regulating valves do not have remote position indication. Also, these valves do not need to be partial stroke exercised as explained in Cold Shutdown Justification CSV-11. Program change: The remote position

indicator verification test was deleted.

2-FW-MOV-200A 2-FW-MOV-200C	Valves 2-FW-MOV-200A and C are normally closed during plant operation. During the course of an accident, the operator may manually position these valves as required to modulate flow to the steam generators, or to isolate the affected steam generator in the case of a tube rupture or steam leak. Thus these valves should be exercised in both directions. Program change: The closure test was added to be performed every three months.
2-FW-RV-201	This valve was installed to protect the emergency condensate storage tanks from over-pressure in the event of operator error or regulator failure while pressurizing from the plant nitrogen system. The piping from the plant nitrogen system has been removed and the associated tank penetration permanently opened for a vent. Therefore, pressurization is not possible. Program change: The valve was removed from the IST Program.
2-GN-RV-208A-1* 2-GN-RV-208A-2* 2-GN-RV-208A-3* 2-GN-RV-208B-1* 2-GN-RV-208B-2* 2-GN-RV-208B-3*	These relief valves protect the PORV air and nitrogen supply piping from over-pressure in the event that a pressure control valve should malfunction. An over-pressure condition could also result from a temperature transient in containment. Program change: The valves were added to the IST Program to be setpoint tested per OM-1.
2-GN-101* 2-GN-102*	These non-Code valves open to provide flowpaths for nitrogen from the safety injection nitrogen header to the nitrogen reserve tanks and the PORVs. Since the reserve tanks are normally maintained in a

charged condition, there is no requirement for these valves to open upon accident initiation. They close to maintain the nitrogen pressure in the reserve tanks in the event of a loss of pressure in the nitrogen supply piping.

Program change: The valves were added to the IST Program to be tested to the closed position and leak tested every reactor refueling. Refer to Non-Code Alternative Testing description VNC-1.

2-HC-015 2-HC-020	These valves are opened periodically following an accident to sample and process hydrogen from the containment atmosphere and; thus, are considered to be active in the open and closed direction. Program change: The open test was added to the program to be performed once every 18 months. Refer to Relief Request V-20.
2-HC-70 2-HC-TV-209A 2-HC-TV-209B	These non-Code valves open to provide return pathways from the High Radiation Sampling Subsystem (HRSS) panels and the HRSS waste tank to the return header leading to the containment. They close to prevent recirculation through the idle sample panel should a discharge valve be open. The HRSS function is not considered critical for accident recovery or mitigation. Program change: The valves were removed from the IST Program.
2-HC-TV-208A 2-HC-TV-208B	These valves open to provide return pathways from the High Radiation Sampling Subsystem (HRSS) panels and the HRSS waste tank to the return header leading to the containment. The HRSS function is not considered critical for accident recovery or mitigation. Program change: The open test was deleted.

2-HV-MOV-211A 2-HV-MOV-211B 2-HV-MOV-211C 2-HV-MOV-213A 2-HV-MOV-213B 2-HV-MOV-213C 2-HV-PCV-2235A1 2-HV-PCV-2235A2 2-HV-PCV-2235B1 2-HV-PCV-2235B2 2-HV-PCV-2235C1 2-HV-PCV-2235C2 2-HV-RV-2200 2-HV-RV-2201 2-HV-RV-2202A 2-HV-RV-2202B 2-HV-RV-2202C 2-HV-RV-2205A 2-HV-RV-2205B 2-HV-RV-2205C 2-HV-SOV-2200A 2-HV-SOV-2200B 2-HV-SOV-2200C	Program change: The ASME Class was upgraded from non-Class to Class 3.
2-HV-MOV-211B 2-HV-MOV-211C 2-HV-MOV-213B 2-HV-MOV-213C	These valves have no remote position indication. Also, the ASME Class was upgraded from non-Class to Class 3. Program change: The remote position indication verification tested was deleted and the ASME Class changed to Class 3.
2-HV-MOV-215-1 2-HV-MOV-215-2 2-HV-MOV-216-1 2-HV-MOV-216-2	These valves are normally closed and may be cycled occasionally to clear a fouled strainer. However, if necessary the strainers could be cleared manually. Program change: The valves were removed from the IST Program.
2-HV-TV-2306A 2-HV-TV-2306B	These trip valves provide flowpaths from the control room bottled air supply tanks to the control room via the ventilation system.

These non-Code valves are adequately tested during the control room bottled air system tests and need not be included in the IST Program.

Program change: The valves were removed from the IST Program.

2-IA-396 2-IA-397 2-IA-405 2-IA-406	These valves open to provide flowpaths for air from the normal instrument air supply header to the main valve operators and controllers of dampers 2-HV-2301A and B. Since the normal air supply is not relied upon to operate the dampers, no exercising in the open direction is required. In the event of a loss of pressure in the respective air supply header they close to prevent blowdown of the reserve air volume tank into the depressurized header. Note that following the loss of pressure in the main header, back-leakage through these valves must be limited to that amount that will ensure the air bottle supply will be available to operate the main valves for a specified period during the accident scenario. Thus, these valves should be verified to be leak tight. Relief Request V-65 is being withdrawn and replaced by Non-Code Alternative Testing description VNC-2 for these non-Code valves. Also, the leak test method to be used for these valves is included in VNC-2. Program change: The IWV category was changed from C to AC and a leak test was added to be performed every reactor refueling.
2-IA-497* 2-IA-499*	These non-Code valves open to provide flowpaths for air from the normal instrument air supply header to the Units 1 and 2 hydrogen recombiner system isolation valves. Since the normal air supply is not relied upon to operate the valves, no exercising in the open direction is required. In the event

of a loss of pressure in the respective air supply header they close to prevent blowdown of the reserve air volume tank into the depressurized header. Testing of the main isolation valves, in itself, will not verify that these valves have adequate leak tightness to protect the inventory in the reserve tank.

Program change: The valves were added to the IST Program to be tested closed every three months and leakage tested every reactor refueling.

2-IA-504
2-IA-510
2-IA-516

These valves open to provide a flowpath for air from the normal instrument air supply header to the main valve operators. Since the normal air supply is not relied upon to operate the main valves, no exercising in the open direction is required. In the event of a loss of pressure in the respective air supply header, they close to prevent blowdown of the reserve air bottle into the depressurized header. Note that following the loss of pressure in the main header, back-leakage through these valves must be limited to that amount that will ensure the air bottle supply will be available to operate the main valves for a specified period of time during the accident scenario. Thus, these valves should be verified to be leak tight.

In lieu of a leakage test for the isolation check valves, the main valves will be cycled the required number of times over the required period as defined by their design requirements with the normal air supply isolated and vented.

Program change: The IWV category was changed from C to AC and a leak test was added to be performed every reactor refueling. Non-Code Alternative Testing description VNC-3 documents the alternative leak testing.

2-IA-525 2-IA-531 2-IA-537	These valves open to provide flowpaths for air from the normal instrument air supply header to the main valve operators and controllers of 2-FW-HCV-200A-C. Since the normal air supply is not relied upon to operate the main valves, no exercising in the open direction is required. In the event of a loss of pressure in the respective air supply header, they close to prevent blowdown of the reserve air volume tank into the depressurized header. Note that following the loss of pressure in the main header, back-leakage through these valves must be limited to that amount that will ensure the air bottle supply will be available to operate the main valves for a specified period during the accident scenario. Thus, these valves should be verified to be leak tight. In lieu of a leakage test for the isolation check valves, the main valves will be cycled the required number of times over the required period as defined by their design requirements with the normal air supply isolated and vented. Program change: The IWV category was changed from C to AC and a leak test was added to be performed every reactor refueling. Non-Code Alternative Testing Description VNC-3 documents the alternative leak testing.
2-IA-543 2-IA-549	These valves open to provide flowpaths for air from the normal instrument air supply header to the main valve operators and controllers of 2-FW-PCV-259A and B. Since the normal air supply is not relied upon to operate the main valves, no exercising in the open direction is required. In the event of a loss of pressure in the respective air supply header, they close to prevent blowdown of the reserve air bottles into the depressurized header. Note that following the loss of pressure in the main header,

back-leakage through these valves must be limited to that amount that will ensure the air bottle supply will be available to operate the main valves for a specified time period during the accident scenario. Thus, these valves should be verified to be leak tight.

In lieu of a leakage test for the isolation check valves, the main valves will be cycled the required number of times over the required period as defined by their design requirements with the normal air supply isolated and vented.

Program change: The IWV category was changed from C to AC and a leak test was added to be performed every reactor refueling. Non-Code Alternative Testing Description VNC-3 documents the alternative leak testing.

2-IA-2130* 2-IA-2131* 2-IA-2132* 2-IA-2133*	These valves open to provide a flowpath for air from the normal containment air supply header to the PORV operators. Since the normal air supply is not relied upon to operate the main valves, no exercising in the open direction is required. In the event of a loss of pressure in the respective air supply header, they close to prevent blowdown of the air bottle into the depressurized header. Note that following the loss of pressure in the main header back-leakage through these valves must be limited to that amount that will ensure the air bottle supply will be available to operate the main valves during the accident scenario. Thus, these valves should be leak tested as well as exercised. Program change: These valves were added to the IST Program to be back seat tested and leakage tested every reactor refueling. Refer to Non-Code Alternative Testing Description VNC-1.

2-MS-117 2-MS-119 2-MS-121	These valves can be back seat tested every three months. Therefore, Relief Request V-53 is being withdrawn. Program change: Valves will be closure tested every three months instead of every reactor refueling.
2-MS-NRV-201A 2-MS-NRV-201B 2-MS-NRV-201C	Program change: The test method was changed to use the Valve Operation Test and Evaluation System (VOTES) to verify disk position. Refer to Cold Shutdown Justification CSV-13.
2-MS-NRV-203A 2-MS-NRV-203B 2-MS-NRV-203C	These motor-operated stop-check valves are opened only during plant startup to provide flowpaths for steam from each of the steam generators to equalize pressure across the main line non-return valves. They remain closed during normal operation. The upstream trip valve 2-MS-TV-213A, B and C will isolate the line if necessary. Therefore, the stop-check valves are passive. Program change: The valves were removed from the IST Program.
2-MS-PCV-201A 2-MS-PCV-201B 2-MS-PCV-201C	These valves provide a means of rejecting reactor core heat when the main condenser heat sink is unavailable. In the event of a small break LOCA these valves would be opened to remove heat and reduce reactor coolant system pressure until RHR system operational limits are achieved. The valves are required to close, if open, to limit release of fission products in the event of a steam generator tube rupture. Although it is unlikely that a tube rupture incident would occur simultaneously with a plant condition where opening of these valves is required, the emergency operating procedure (EOP) identifies the need for closure in such an event and, for that reason, is considered prudent to include a requirement for

	exercising in the closed direction. Since there are several cases where the EOP's depend on these valves to operate under accident conditions to effect a safe and orderly plant shutdown, it is prudent to include them in the test program. These valves open with air and close on loss of air pressure or electric power. Program change: The open test was added to be performed every three months and their remote position indicators will be verified every 24 months. The closure test frequency was changed from every cold shutdown to every three months.
2-MS-TV-213A 2-MS-TV-213B 2-MS-TV-213C	Program change: A fail safe test was added.
2-MS-TV-215*	This normally open (passive) valve provides a flowpath for steam from the steam generators to the steam-driven AFW Pumps. The valve closes to shutdown the AFW pump turbine in the event of turbine overspeed - not a safety function. Program change: The valve was added to the IST Program to have its remote position indicator verified every 24 months.
2-QS-MOV-200A 2-QS-MOV-200B	These valves are normally-open to provide flowpaths from the RWST's to the quench spray pumps. Since they are not normally closed, except for maintenance, they are considered to be passive and no exercising is required. Program change: The exercise test was deleted.

2-RC-HCV-2556A* 2-RC-HCV-2556B* 2-RC-HCV-2556C*	Since these valves are normally closed (administratively controlled) and remain closed whenever the RCS is pressurized, they are determined to be passive and exercising is not required. However, their remote position indicators need to be verified. Program change: These valves were added to the IST Program to have their remote position indicators verified every 24 months.
2-RC-PCV-2455C 2-RC-PCV-2456	The test frequency was changed from during cold shutdowns when the RCS is depressurized to every cold shutdown and Relief Request V-27 was withdrawn and replaced with Cold Shutdown Justification CSV-42. Program change: Test frequency was changed to every cold shutdown.
2-RC-SOV-202A-1 2-RC-SOV-202A-2 2-RC-SOV-202B-1 2-RC-SOV-202B-2	These valves are opened as needed to vent non-condensible gases trapped in the pressurizer. This is considered to be a backup function to that of the PORV's and thus are not relied upon in an accident. Program change: These valves were removed from the IST Program.
2-RH-7 2-RH-15	These RHR pump discharge check valves can only be tested during the RHR pump tests. The pump test frequency has been changed from cold shutdown to reactor refueling. Program change: The test frequency was changed from cold shutdown to reactor refueling. Refer to Relief Request V-75.
2-RH-MOV-2700 2-RH-MOV-2701	These valves are opened to provide flowpaths for reactor coolant from the RCS to the suctions of the RHR pumps to effect shutdown cooling recirculation from the RCS to the RHR heat exchangers. They are closed and remain

so during plant operation to isolate the low pressure portions of the RHR System from the high pressure of the RCS. Therefore, these valves have no requirement to change position to perform their closed function. Thus, testing in the closed direction is not required.

Program change: The closure test was deleted.

2-RH-MOV-2720A
2-RH-MOV-2720B

These valves are opened to provide flowpaths for reactor coolant from the discharge of the RHR heat exchangers to the RCS to effect shutdown cooling recirculation from the RHR heat exchangers back to the RCS. They are normally closed and remain so during plant operation to isolate the low pressure portions of the RHR System from the high pressure of the RCS. There is no requirement for the valves to change position to perform their closed function, thus they are passive in the closed position.

Program change: The closure test was deleted.

2-RM-TV-200D

This valve is no longer subject to Type C leakage testing per Appendix J.

Program change: The leakage testing was deleted.

2-RS-103
2-RS-118

These valves open to provide flowpaths from the casing cooling pumps to the suctions of the outside recirculation spray pumps. They close to prevent backflow through an idle pump. However, if a pump is idle the casing cooling discharge valve (2-MOV-RS-201A and B) will automatically close to isolate the line due to the action of the associated casing cooling flow switch.

Program change: The closure test was

deleted.

2-RS-MOV-255A
2-RS-MOV-255B

These valves are normally-open (automatically open if closed) to provide flowpaths from the containment sump and the casing cooling pumps to the outside recirculation spray pumps (passive function). They are considered to be active in the closed direction since they are designated as containment isolation valves (non-leak tested). They also would be closed if a leak were to develop in the outside recirculation spray system. In the course of an accident there could be intermittent operation of the recirculation spray system that would require closing and opening these valves.

Program change: The closure test was added to be performed every three months.

2-SI-006
2-SI-029

These valves open to provide flowpaths from the RWST's to the LHSI pump seal. The RWST head provides sealing pressure during idle periods to prevent seal leakage when a pump is not in operation. When the related LHSI pump is running, the seal pressure is supplied from the pump discharge and these valves must close to prevent recirculation to the respective RWST. This function is primarily related to operations while in the recirculation mode. Seal leakage from an idle pump is not considered a critical function. Thus, exercising in the open direction is not required.

After recirculation mode transfer, these valves isolate the RWST from contaminated sump water. Therefore, they should be leak tested.

Program change: The open test was deleted and the leak test was added.

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2-SI-012 2-SI-035	These valves open to provide flowpaths for the LHSI pump minimum flow to ensure adequate pump cooling during low-flow conditions. They have no function to close that is related to accident recovery or mitigation. Program change: The closure test was deleted
2-SI-18	After recirculation mode transfer, there exists a path for contaminated sump water through the piping from the suction of the charging pumps to the RWST. This valve isolates the piping and should be leak tested. Program change: Leakage testing was added and the closure test frequency was changed from cold shutdown to reactor refueling. Refer to Relief Request 7-40.
2-SI-151 2-SI-168 2-SI-185	These valves are normally closed and upon depressurization of the RCS during a LOCA open to provide flowpaths from each of the SI Accumulators to the RCS cold legs. There is no specific safety function for these valves to close following discharge from the associated accumulator. Thus, they need not be tested in the closed direction. Program change: The closure test was deleted.
2-SI-HCV-2853A 2-SI-HCV-2853B 2-SI-HCV-2853C	These valves are normally closed (fail closed) and are only required to open from time to time to adjust the pressure within the respective accumulators to assure compliance with the Technical Specification requirements for SI accumulator pressure and level. Following an accident where gross blowdown of the RCS does not occur and there is insufficient inventory of water in the containment sump for recirculation, the accumulator discharge motor-operated valves (2-SI-MOV-2865A, B and C) will be closed

prior to depressurization to preclude injecting large quantities of nitrogen into the RCS that could ultimately cause the RHR pumps to become air bound. The alternate method of preventing nitrogen injection into the RCS requires using these valves to vent the accumulators; however, since these vent valves require instrument air to open, it is assumed that this option is unavailable. Thus, during emergency cooldown operations, no credit is taken for venting the accumulators since the air supply to the operators is not considered to be reliable and the outlet motor-operated valves would be closed. During post-accident conditions, these valves will remain closed until plant conditions are stable and long-term recovery valve lineups are established.

Program change: These valves were removed from the IST Program.

2-SI-HCV-2936

This valve is normally closed (fail closed) and is only required to be opened infrequently to reduce the pressure (vent) within the accumulators. Since the valve is opened intermittently during operation and receive a Phase A signal to close, it is considered an active valve and should be tested in the closed direction. During emergency cooldown operations no credit is taken for venting the accumulators and this valve will remain closed until plant conditions are stable and long-term recovery valve lineups are established.

Program change: The open test was deleted.

2-SI-MOV-2863A
2-SI-MOV-2863B

These normally-closed valves automatically open when SI is initiated and the respective RWST reaches its Low-Low level setpoint to provide a pathway from the LHSI pumps to the HHSI pumps while in the recirculation mode. As an alternative, they may be closed to direct LHSI pump recirculation flow directly

to the RCS instead of the HHSI pumps.

Program change: The closure test was added.

2-SI-MOV-2865A
2-SI-MOV-2865B
2-SI-MOV-2865C

During plant operation at power these valves remain open with the power to their motor controller removed; however, during startup they could be closed at RCS pressures of 1000 psig or less per Technical Specification Section 3.5.1 thus they are considered to be active in the open direction. Following an accident where gross blowdown of the RCS does not occur and there is insufficient inventory of water in the containment sump for recirculation, these valves will be closed prior to depressurization to preclude injecting large quantities of nitrogen into the RCS that could ultimately cause the RHR pumps to become air bound. There is no case where these valves would be reopened after closure during an accident. The alternate method of preventing nitrogen injection into the RCS requires venting of the accumulators; however, since the valves associated with the venting process require instrument air to open, it is assumed that this option is unavailable.

Program change: The closure test was added.

2-SI-MOV-2885A
2-SI-MOV-2885B
2-SI-MOV-2885C
2-SI-MOV-2885D

After recirculation mode transfer, there exists a path for contaminated sump water through the piping from the discharge of the low head safety injection pumps to the RWST. These valves isolate the piping and should be leak tested.

Program change: Leakage testing was added.

2-SI-RV-2857B

These valves protect the high head safety injection line downstream of the boron injection tank from over-pressure. This is primarily a thermal relief to protect from pressure developed by the heat tracing in the

	isolated portion of the piping and BIT. Therefore, they do not require testing per the IST Program. Program change: The valve was removed from the IST Program.
2-SI-RV-2858A 2-SI-RV-2858B 2-SI-RV-2858C	These valves protect the SI accumulators and associated piping and components from overpressure. Since the accumulator system is a passive system and not subject to operational pressure transients, the only potential source of over-pressure of an accumulator is overfilling with nitrogen. Specifically, in-leakage from the RCS does not present a significant potential for over-pressurization since the volume in the tanks allows sufficient time for operator action by draining or isolating the affected tank(s) to prevent exceeding design limits should significant in-leakage develop during plant operation. If in-leakage were so great as to preclude operator action, then the plant would be shutdown as required to satisfy the requirements of Technical Specification 3.4.6.2. Program change: The valves were removed from the IST Program.
2-SI-TV-201	This valve is normally closed. It is opened infrequently to reduce the pressure in the SI accumulators. During emergency cooldown operations no credit is taken for venting the accumulators. Therefore, this valve need not be tested in the open direction. Program change: The open test was deleted.
2-SS-TV-203A 2-SS-TV-203B	These valves are opened to draw samples from the RHR system when in operation. Since the RHR system would only be operating at or near cold shutdown, it is not likely that they would be opened during an accident resulting

in containment isolation. Therefore, they are considered to be passive valves for their function of containment isolation.

Program change: The exercise test was deleted.

2-SV-TV-202-1

This normally closed valve is opened following a steam generator tube leak or rupture or on receipt of a high radiation signal from the vent stack monitoring instrumentation when it is desirable to have the main condenser air ejectors lined up to discharge into containment. Although this is identified as a step in the emergency procedure, such action is considered to be precautionary and preferable but not mandatory for accident mitigation.

Program change: The open test was deleted.

2-SV-TV-202-2

This normally open valve is closed following a steam generator tube leak or rupture or on receipt of a high radiation signal from the vent stack monitoring instrumentation when it is desirable to have the main condenser air ejectors lined up to discharge into containment and receive a Phase A signal to close. Although this is identified as a step in the emergency procedure, closure of this valve is precautionary and not required to meet 10CFR100 limits during prescribed accidents.

Program change: The valve was removed from the IST Program.

2-SV-TV-203

This normally closed valve is opened following a steam generator tube leak or rupture when it is desirable to have the main condenser air ejectors lined up to discharge into containment. Although this is identified as a step in the emergency procedure, such action is considered to be

	precautionary and preferable but not mandatory for accident mitigation. Program change: The open test was deleted.
2-SW-3 2-SW-10	Observation of the non-running pump's discharge pressure gauge every three months was added to Relief Request V-64 to enhance the verification of check valve closure. Program change: Added quarterly closure test.
2-SW-24	Program change: The valve was moved from Relief Request V-64 to V-74.
2-SW-MOV-202A 2-SW-MOV-202B	During normal plant operation these valves are normally open and they would be closed to isolate a ruptured header. Since passive failure is not considered for this evaluation and operationally they can be in any position, no exercising of these valves is required. Program change: The exercise test was deleted.
2-SW-MOV-206A 2-SW-MOV-206B	During normal plant operation these valves are open. They would be closed to isolate a ruptured header. Since passive failure is not considered for this evaluation and operationally they can be in any position, no exercising of these valves is required. Program change: The exercise test was deleted.
2-SW-MOV-210A* 2-SW-MOV-210B*	During plant operation these valves are normally closed with their breakers locked open. If open when a CDA signal is received, they will automatically close for containment isolation and service water conservation.

Since they are normally closed they are considered to be passive and no exercising is required.

Program change: These valves were added to the IST Program to have their remote position indicators verified every 24 months.

2-SW-MOV-213A
2-SW-MOV-213B

During plant operation these valves are normally locked closed and are only opened as a emergency backup supply of cooling water to the fuel pit coolers. Since component cooling is a safety grade system and considered to be highly reliable, this backup capability is considered to be a convenient operational backup and not required for accident mitigation. Therefore, exercising of these valves is not required. If open when a CDA signal is received, they would be closed for service water conservation and to minimize non-essential heat loads. Since they are normally closed they are considered to be passive and no exercising is required.

Program change: The exercise test was deleted.

2-SW-MOV-214A*
2-SW-MOV-214B*

During plant operation these valves are normally closed with their breakers locked open. If open when a CDA signal is received, they will automatically close for containment isolation and service water conservation. Since they are normally closed they are considered to be passive and no exercising is required.

Program change: These valves were added to the IST Program to have their remote position indicators verified every 24 months.

2-SW-MOV-219*

This valve opens to provide a flowpath for makeup to the reservoirs via the screen wash pumps. Since this mode of makeup is not relied upon during an accident, exercising in

the open direction is not required. In the event an accident occurs while this valve is open, it would be closed to isolate the non-classed portions of the system from the safety-related portions.

Program change: This valve was added to the IST Program to be tested to the closed position every three months and to have its remote position indicator verified every 24 months.

2-SW-MOV-220A*
2-SW-MOV-220B*

During plant operation these valves are normally closed except when in the lake-to-lake cooling mode. Since the plant is seldom, if ever, in this mode, these valves are passive in the closed position. Since each line must remain closed to retain the water in the service water reservoir, it is prudent to verify the accuracy of the remote position indication of these valves.

Program change: These valves were added to the IST Program to have their remote position indicators verified every 24 months.

2-SW-RV-
2-SW-RV-2

These valves open to provide over-pressure protection for an isolated heat exchanger. Since the only time a heat exchanger would be isolated is when it is out of service and unavailable, protection of the heat exchanger is not significant. Therefore, testing of these valves is not required.

Program change: The valves were removed from the IST Program.

SUMMARY OF CHANGES TO NORTH ANNA UNIT 2
IST PROGRAM, REVISION 7

2.3.5 VALVE INSERVICE TESTING PROGRAM RELIEF REQUESTS

The following summarizes the changes to relief requests since Revision 6. It also contains a description of the approval mechanism for each relief request. That is, the summary indicates whether the approval is:

1) through a position in Generic Letter 89-04,

2) through a previously issued NRC SER or

3) obtained using a relief request that will need approval by the NRC. Relief requests requiring NRC approval are marked with an asterisk *.

UNIT 2 RELIEF REQUEST	COMMENT/STATUS
V-1 and V-2	These relief request numbers are no longer active.
V-3	The basis for going from a cold shutdown test frequency to a reactor refueling frequency was expanded. Also, reference to a partial stroke test was deleted. The only safety function for valves 2-CC-78, 115 and 152 is to close. An open test is not required in conjunction with a closed test for valves that only need to close. The Revision 6 version of V-3 was approved by the NRC in their SER dated September 17, 1993. The minor changes made to V-3 should not affect the conclusion reached by the NRC in their SER.
V-4 to V-8	These relief request numbers are no longer active.
V-9	No change. This relief request was approved by the NRC in the SER for Revision 6 dated September 17, 1993.
V-10	The basis was expanded for valve 2-CH-332. Also, reference to a partial stroke test was deleted. The only safety function for valves 2-CH-260, 284, 308, 331, 332 and 435 is to close. An open test is not required in conjunction with a closed test

	for valves that only need to close. The Revision 6 version of V-10 was approved by the NRC in their SER dated September 17, 1993. The minor changes made to V-10 should not affect the conclusion reached by the NRC in their SER.
V-11 to V-13	These relief request numbers are no longer active.
V-14	This relief request is being withdrawn. It was determined that valve 2-CV-TV-200 is a passive valve and is not subject to an exercise test. Therefore, Relief Request V-14, which dealt with the exercise test, is not necessary.
V-15	This relief request number is no longer active.
V-16	Reference to a partial stroke test was deleted. The only safety function for the normally closed valve 2-FP-79 is to close. An open test is not required in conjunction with a closed test for valves that only need to close. The Revision 6 version of V-16 was approved by the NRC in their SER dated September 17, 1993. The minor change made to V-16 should not affect the conclusion reached by the NRC in their SER.
V-17 to V-19	These relief request numbers are no longer active.
V-20*	This relief request was revised to addressed the open test for valves 2-HC-15 and 20. The open test was added in Revision 7 to the IST Program. The alternative testing methods meet the requirements of Generic Letter 89-04, Attachment 1, Positions 1 and 3. The test frequency for the new open test needs approval from the NRC. The Revision 6 version of V-20 was approved by the NRC in their SER dated September 17, 1993.
V-21	Reference to a partial stroke test was deleted. The only safety function for these normally closed instrument air valves is to close. An open test is not required in conjunction with a closed test for valves that only need to close. The Revision 6 version of V-21 was approved by the NRC in their SER dated September 17, 1993. The minor change

	made to V-21 should not affect the conclusion reached by the NRC in their SER.
V-22 to V-26	These relief request numbers are no longer active.
V-27	<u>This relief request is being withdrawn.</u> This relief request is being replaced by Cold Shutdown Justification CSV-42 and the test frequency for the PORV's 2-RC-PCV-2455C and 2456 changed to every cold shutdown. This change is in response to NRC concerns described in their SER dated September 17, 1993.
V-28	Reference to a partial stroke test was deleted. The only safety function for the normally closed valve 2-RC-162 is to close. An open test is not required in conjunction with a closed test for valves that only need to close. The Revision 6 version of V-28 was approved by the NRC in their SER dated September 17, 1993. The minor change made to V-28 should not affect the conclusion reached by the NRC in their SER.
V-29 to V-32	These relief request numbers are no longer active.
V-33	Reference to back seat testing valves 2-RS-103 and 138 was deleted. The Revision 6 version of V-33 was approved by the NRC in their SER dated September 17, 1993. The minor change made to V-33 should not affect the conclusion reached by the NRC in their SER. The alternative testing conforms to NRC Generic Letter 89-04, Attachment 1, Position 2.
V-34	This relief request number is no longer active.
V-35	No change. This relief request was approved by the NRC in the SER for Revision 6 dated September 17, 1993.
V-36	This relief request number is no longer active.
V-37	No change. This relief request was approved by the NRC in the SER for Revision 6 dated September 17, 1993.

V-38	No change. This relief request was approved by the NRC in the SER for Revision 6 dated September 17, 1993.
V-39	No change. This relief request was approved by the NRC in the SER for Revision 6 dated September 17, 1993.
V-40*	Reference to leakage testing was added for valve 2-SI-18. Also, the frequency for closure testing was changed from every cold shutdown to every reactor refueling to coincide with the leakage test frequency. The test frequency for the closure test needs approval from the NRC. The Revision 6 version of V-40 was approved by the NRC in their SER dated September 17, 1993.
V-41	Reference to a partial stroke test was deleted. The only safety function for valves 2-SI-132 and 136 is to close. An open test is not required in conjunction with a closed test for valves that only need to close. The Revision 6 version of V-41 was approved by the NRC in their SER dated September 17, 1993. The minor change made to V-41 should not affect the conclusion reached by the NRC in their SER.
V-42	No change. This relief request was approved by the NRC in the SER for Revision 6 dated September 17, 1993.
V-43	Reference to using a sampling program for non-intrusive testing for the SI accumulator discharge check valves was added. The sampling program is similar to the one given in Generic Letter 89-04, Attachment 1, Position 2 for check valve disassembly and inspection. This change is in response to NRC qualifications for approval of the relief request that are described in their SER dated September 17, 1993. Also, reference to closure testing for valves 2-SI-151, 168 and 185 was deleted because the closure test for these valves was deleted from the program. The minor change of deleting the closure tests should not affect the conclusion reached by the NRC in their SER.

V-44	No change. This relief request was approved by the NRC in the SER for Revision 6 dated September 17, 1993.
V-45	No change. This relief request was approved by the NRC in the SER for Revision 6 dated September 17, 1993.
V-46	Reference to FSAR Section 6.2.2.2.5 was added in Revision 7. The Revision 6 version of V-46 was approved by the NRC in their SER dated September 17, 1993. The minor change made to V-46 should not affect the conclusion reached by the NRC in their SER.
V-47	Reference to a partial stroke test was deleted. The only safety function for valve 2-VP-24 is to close. An open test is not required in conjunction with a closed test for valves that only need to close. The Revision 6 version of V-47 was approved by the NRC in their SER dated September 17, 1993. The minor change made to V-47 should not affect the conclusion reached by the NRC in their SER.
V-48	No change. This relief request was approved by the NRC in the SER for Revision 6 dated September 17, 1993.
V-49	This relief request number is no longer active.
V-50	This relief request is being withdrawn. Flow instrumentation has been installed. Therefore, the diesel fuel oil pump discharge check valves can be full flow tested every three months.
V-51	No change. This relief request was approved by the NRC in the SER for Revision 6 dated September 17, 1993.
V-52	This relief request number is no longer active.
V-53	This relief request is being withdrawn. The mainsteam to the turbine driven auxiliary feedwater pump check valves (2-MS-117, 119 and 121) can be exercised closed every three months.

SUMMARY OF CHANGES TO NORTH ANNA UNIT 2 IST PROGRAM, REVISION 7

V-54*	The method of closure testing was changed from disassembly and inspection to back seat/leak testing for valves 2-SI-6 and 29 every reactor refueling. Also, the basis was expanded to justify the reactor refueling test frequency. The Revision 6 version of V-54 was approved by the NRC in their SER dated September 17, 1993.
V-55	The list of rapid acting valves was deleted. This list is maintained by the site ISI engineer. The Revision 6 version of V-55 was approved by the NRC in their SER dated September 17, 1993. The minor change made to V-55 should not affect the conclusion reached by the NRC in their SER.
V-56	<u>The relief request is being withdrawn</u> and replaced by Non-Code Alternative Testing Description VNC-4. The basis for relief was revised slightly to enhance clarity. Because the diesel air start valves are non-Code components, approval is not required from the NRC to deviate from Code provisions.
V-57	This relief request number is no longer active.
V-58*	The basis was expanded to describe the risks associated with stroking the vessel head vent valves while the RCS is pressurized. This change is in response to NRC concerns described in their SER dated September 17, 1993. Also, valves 2-RC-SOV-202A-1, 202A-2, 202B-1 and 202B-2 were deleted from the IST Program and are being deleted from this relief request.
V-59	Valves 2-HV-MOV-200A and C were deleted from the relief request. The Revision 6 version of V-59 was approved by the NRC in their SER dated September 17, 1993. The minor change made to V-59 should not affect the conclusion reached by the NRC in their SER.
V-60	This relief request number is no longer active.
V-61	No change. This relief request was approved by the NRC in the SER for Revision 6 dated September 17, 1993.

V-62 <u>The relief request is being withdrawn.</u> The closure test was deleted for valves 2-FW-70, 102 and 134. Therefore, the request for relief is no longer necessary.

V-63 No change. This relief request was approved by the NRC in the SER for Revision 6 dated September 17, 1993.

V-64 The alternative testing was expanded to include observation of the discharge pressure gauge on the non-running pump every three months. This test was added in response to NRC concerns described in their SER dated September 17, 1993. Even without this change, the NRC approved the relief request in their SER for Revision 6 dated September 17, 1993. Valve 2-SW-24 was deleted from this relief request and put into Relief request V-74. This minor change should not affect the conclusion reached by the NRC in their SER.

V-65 <u>The relief request is being withdrawn</u> and replaced by Non-Code Alternative Testing Description VNC-2. Reference to back seat/leak testing the non-Code instrument air valves 2-IA-396, 397, 405 and 406 every reactor refueling was added. Also, the method for performing the leak test was added.

V-66 No change. This relief request was approved by the NRC in the SER for Revision 6 dated September 17, 1993.

V-67 No change. This relief request was approved by the NRC in the SER for Revision 6 dated September 17, 1993.

V-68 No change. This relief request was approved by the NRC in the SER for Revision 6 dated September 17, 1993.

V-69 This relief request number is no longer active.

V-70 This relief request deals with using an evaluation instead of repair as corrective action for Appendix J valves that exceed their maximum leakage but do not allow the overall leakage to exceed 0.6La. V-70 was originally submitted on

June 14, 1990. Following a meeting with the NRC held on September 6, 1990, V-70 was withdrawn per guidance from the NRC. The SER dated September 17, 1993, approved the original version of V-70 with certain restrictions. V-70 is being resubmitted with the restrictions included and is considered approved for use by the SER.

V-71 The basis was expanded to indicate that the vessel is defueled every reactor refueling. This change is in response to NRC concerns described in their SER dated September 17, 1993. With the clarification included, V-71 is considered approved for use by the SER.

V-72 The relief request is being withdrawn. Valves 2-CA-26, 2-HV-TV-2306A and 2-HV-TV-2306B were deleted from the IST Program. Therefore, Relief Request V-72 is no longer necessary.

V-73* This relief request is being added to the program. Due to the plant configuration, the VCT discharge check valve 2-CH-153 cannot be verified closed using flow. The only method to verify closure other than disassembly and inspection is to perform a leak rate/back pressure test.

During normal operation, this valve cannot be isolated to perform a back pressure test because normal letdown and reactor coolant flow would be interrupted.

This valve is also subject to leak testing, which is performed every reactor refueling. Verification of closure will be performed during the leak test every reactor refueling instead of every cold shutdown because the small increase in safety gained by testing during cold shutdown does not justify draining the lines and performing a leak rate test.

V-74 This relief request is being added to the program. Full accident flow cannot be established through the auxiliary service water pump discharge check valve 2-SW-24 using the normal system lineup because the accident heat loads and corresponding demand on the service water system cannot be

duplicated. The accident flow can be established using a lake-to-lake configuration. However, the lake-to-lake lineup could contaminate Lake Anna with chemicals used in treating the service water system. Therefore, the lake-to-lake lineup is never used.

This check valve can be disassembled while the plant is operating. To allow for flexibility in planning for refueling outages and still meet the intent of Generic Letter 89-04, Attachment 1, Position 2, the valve will be disassembled on a reactor refueling frequency but not necessarily during refueling outages. Because V-74 meets the requirements of Generic Letter 89-04, Attachment 1, Position 2, no approval by the NRC is necessary prior to implementation.

V-75* This relief request replaces Cold Shutdown Justification CSV-19 for valves 2-RHR-7 and 15. These RHR pump discharge check valves can only be tested during the RHR pump tests. During cold shutdowns of short duration or if the reactor coolant pumps are left running during the cold shutdown, both trains of RHR may be required for decay heat removal and to maintain RCS temperature. Taking one train of RHR out of service for testing purposes even for a short period could allow the RCS temperature to increase to the point that the pressurizer power operated relief valve would be challenged. Therefore, these pumps and the discharge check valves should only be tested during reactor refuelings.

2.3.6 VALVE INSERVICE TESTING PROGRAM COLD SHUTDOWN JUSTIFICATIONS

UNIT 2 COLD SHUTDOWN JUSTIFICATION	COMMENT/STATUS
CSV-1	No change.
CSV-2	This CSV number is no longer active.
CSV-3	No change.
CSV-4	Reference to valve 2-CH-140 was deleted.
CSV-5	Valves 2-CH-TV-2204A and B were added. Also, more technical bases were added to the justification.
CSV-6 and 7	No change.
CSV-8	Justification is being withdrawn because the exercise test for valve 2-CH-MOV-2373 was deleted from the IST program.
CSV-9	This CSV number is no longer active.
CSV-10	Justification is being withdrawn because the exercise test for valve 2-CH-FCV-2160 was deleted.
CSV-11	The justification was expanded to say that the feedwater bypass valves 2-FW-FCV-2479, 2489 and 2499 do not have to be partial stroke exercised every three months and the motor operated valves 2-FW-MOV-254A, B and C cannot be partial stroke exercised.
CSV-12	Reference to a partial stroke test was deleted. The only safety function for valves 2-FW-62, 92 and 126 is to close. An open test is not required in conjunction with a closed test for valves that only need to close.
CSV-13	The justification was revised to describe the use of VOTES to determine the position of the disk on the main steam non-return valves.

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IST PROGRAM, REVISION 7

CSV-14	No change.
CSV-15	This CSV number is no longer active.
CSV-16	No change.
CSV-17	This CSV number is no longer active.
CSV-18	No change.
CSV-19	Replaced by Relief Request V-75.
CSV-20	No change.
CSV-21 to 23	These CSV numbers are no longer active.
CSV-24	No change.
CSV-25	Justification is being withdrawn because the closure test for the auxiliary feedwater check valves was deleted.
CSV-26	This CSV number is no longer active.
CSV-27	Justification is being withdrawn because the main steam PCVs 2-MS-PCV-201A, B and C can be isolated and tested every three months.
CSV-28 and 29	These CSV numbers are no longer active.
CSV-30	No change.
CSV-31	The technical basis was expanded.
CSV-32 and 33	No change.
CSV-34	References to valves 2-MS-NRV-203A, B, C and D were deleted because these valves were deleted from the IST Program.
CSV-35 to 36	No change.
CSV-37	Justification is being withdrawn because valves 2-CH-HCV-2303A, B and C were deleted from the IST Program.

CSV-38	Justification is being withdrawn because valves 2-CC-8 and 25 were deleted from the IST Program.
CSV-39	The cold shutdown justification was revised to delete the partial flow testing requirement for the charging recirculation check valves 2-CH-176, 191 and 206.
CSV-40	This cold shutdown justification was added to the program to describe why the auxiliary feedwater manual lineup valves should not be exercised during normal operation.
CSV-41	This cold shutdown justification was added to the program. The normally locked closed auxiliary feedwater manual valves discussed in this relief request are opened as required by the abnormal operating procedures to provide service water to the auxiliary feedwater pumps in the event of an accident where all normal auxiliary feedwater pump supplies have been exhausted. Opening these valves every three months to fulfill quarterly testing requirements would accelerate the buildup of sludge in the supply lines from the service water system. The supply lines are flushed once every 18 months to reduce the buildup of sludge and to identify if there is any accumulation of asiatic clams or shell debris in the lines. Because these manual valves remain in the closed position during normal operation and are not subject to wear, exercising these valves on a cold shutdown test frequency is adequate to demonstrate that the valves can be opened in the case where service water is required as a supply for the auxiliary feedwater pumps.
CSV-42	This cold shutdown justification for the power operated relief valves 2-RC-PCV-2455C and 2456 is being added to replace Relief request V-27.

2.3.7 ALTERNATIVE TESTING FOR NON-CODE VALVES

Starting with Revision 7 to the IST Program, non-Code valves that are included in the IST Program but are not tested to the provisions of the Code will be discussed in this new section. Although a request for relief is not required for non-Code components, the reasons for why the Code provisions are not met and the alternative testing description should be documented with the IST Program.

NON-CODE ALTERNATIVE TESTING DESCRIPTION	COMMENT
VNC-1	Due to the plant configuration, the PORV service air valves cannot be verified closed using flow. The only method to verify closure other than disassembly and inspection is to perform a local leak rate/back pressure test. To perform the leak rate/back pressure test, the normal instrument air and nitrogen supplies to the PORVs must be isolated. The PORVs are required to be operable during normal operation. Also, these valves are located inside containment and are inaccessible during normal operation. These valves are also subject to leak testing, which is performed every reactor refueling. Verification of closure will be performed during the leak test every reactor refueling instead of every cold shutdown because the small increase in safety gained by testing during cold shutdown does not justify the burden of performing a back pressure test. Valves 2-IA-2130 and 2131 are in series and valves 2-IA-2132 and 2133 are in series. There are no vents in between the two sets of valves; therefore, these valves cannot be individually back pressure tested or leak tested.
VNC-2	Relief Request V-65 was replaced by this non-Code alternative testing description because the valves in V-65 (2-IA-396, 397, 405 and 406) are non-Code.

Also, the following leak test method description was added. The leak test will consist of pressurizing the volume upstream of the two valves in series and venting downstream of the valves. Then the upstream test volume will be isolated. If a given differential pressure across the two valves in series can be maintained for a predetermined period of time, the test will be satisfactory. The actual leak rate will not be measured.

VNC-3 In lieu of a leakage test for the non-Code isolation check valves 2-IA-504, 510, 516, 525, 531, 537, 543, and 549, the main valves will be cycled the required number of times over the required period as defined by their design requirements with the normal air supply isolated and vented.

VNC-4 Relief Request V-56 was replaced by this non-Code alternative testing description because the diesel air start system valves in V-56 are non-Code.

VNC-5 Non-Code check valves 2-IA-497 and 499 close in the event of a loss of pressure in the respective instrument air supply header to prevent blowdown of the nitrogen reserve volume tank which supplies the hydrogen recombiner system isolation valves. Testing the check valves to the closed position requires that the instrument air supply be isolated to both Units 1 and 2 hydrogen recombiner isolation valves, the high radiation sampling subsystem, and various liquid waste and boron recovery system components. Isolating the instrument air supply to these systems every three months to perform the back pressure test would be disruptive to normal plant operation. Therefore, these valves should not be closure tested every three months.

The check valves are also subject to leak testing at least once every 24 months. These check valves will be closure tested at least once every 24 months during the leak test because the small increase in safety gained by performing the back pressure test every cold shutdown does not justify the disruption of normal operating activities of

the opposite unit or the added burden of performing the back pressure test on the more frequent schedule.

VIRGINIA ELECTRIC AND POWER COMPANY

NORTH ANNA POWER STATION UNIT 2

INSERVICE TESTING PROGRAM PLAN

FOR PUMPS AND VALVES

SECOND INSPECTION INTERVAL

DECEMBER 14, 1990 - DECEMBER 14, 2000

REVISION 7

ABSTRACT
VIRGINIA ELECTRIC AND POWER COMPANY
NORTH ANNA POWER STATION UNIT 2
INSERVICE TESTING PROGRAM PLAN
FOR ~~PUMPS~~ AND VALVES
SECOND INSPECTION INTERVAL
DECEMBER 14, 1990 TO DECEMBER 14, 2000

The interval for which the North Anna Unit 2 Inservice Testing Program (IST) program is applicable commenced on December 14, 1990, and will end on December 14, 2000.

The Inservice Testing Program was developed employing 10CFR50 which references ASME Section XI, 1986 Edition, and Reg. Guide 1.26. Quality Groups A, B, and C are the same as ASME Classes 1, 2, and 3 respectively.

Section 1: Introduces the Inservice Testing Program.

Section 2: Describes the Class 1, 2, and 3 pump and valve Inservice Testing Program developed in accordance with Subsections IWP and IWV of ASME Section XI. Certain pumps and valves within the boundaries defined by the ISI Classification Boundary Drawings are subject to testing except where relief from examination is noted in Section 2. A Component listing is also provided in Section 2.

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NORTH ANNA POWER STATION

UNIT 2

INSERVICE TESTING PROGRAM PLAN

FOR PUMPS AND VALVES

SECOND INSPECTION INTERVAL

DECEMBER 14, 1990 - DECEMBER 14, 2000

REVISION 7

1.0 INTRODUCTION

1.1 GENERAL INFORMATION

North Anna Power Station Unit 2 is a Pressurized Water Reactor located on Lake Anna in Louisa County, Virginia. The plant employs a Westinghouse Electric Corp. Nuclear Steam System.

The Inservice Testing (IST) Program Plan for Pumps and Valves for North Anna Station Unit 2 was developed in compliance with the rules and regulations of 10CFR50.55a and Section XI of the ASME Boiler and Pressure Vessel Code, 1986 Edition. Where these rules are determined to be impractical, specific relief is requested in writing.

The Inservice Testing Program for Class 1, 2, and 3 and certain non-Code class pumps and valves is applicable for the second ten year interval beginning December 14, 1990 and ending December 14, 2000.

1.2 SYSTEM CLASSIFICATION

The construction permit for North Anna Unit 2 was issued on February 19, 1971. At that time, the ASME Boiler and Pressure Vessel Code covered only pressure vessels. Pumps and valves were built primarily to the rules of USAS B31.7. Essentially, North Anna Power Station was designed and constructed prior to the origination of the ASME Code classifications named Class 1, 2, and 3. Therefore, the system classifications used as a basis for the Inservice Testing Program are based on the requirements set forth in 10CFR50 and Regulatory Guide 1.26. Pursuant to 10CFR50.55a paragraph (g)(1), inservice testing requirements of Section XI of the ASME Code are then assigned to these components, within the constraints of existing plant design.

Classification Boundary Drawings (CBD's) documenting the system classifications and defining the scope of the ISI and IST Programs, were developed to aid in the review and implementation of the subject programs.

VIRGINIA ELECTRIC AND POWER COMPANY

NORTH ANNA POWER STATION

UNIT 2

INSERVICE TESTING PROGRAM PLAN
FOR PUMPS AND VALVES
SECOND INSPECTION INTERVAL

SECTION 2
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IMAGE EVALUATION TEST TARGET (MT-3)

150mm

6"

1

IMAGE EVALUATION TEST TARGET (MT-3)

150mm

6"

1

IMAGE EVALUATION TEST TARGET (MT-3)

150mm

6"

1

IMAGE EVALUATION TEST TARGET (MT-3)

150mm

6"

2.0 INSERVICE TESTING PROGRAM PLAN FOR PUMPS AND VALVES

2.1 INTRODUCTION

This program plan has been prepared as the controlling document governing Pump and Valve Inservice Testing for North Anna Power Station Unit 2. The requirements for the Pump and Valve Ins_rvice Testing Program comes from three inter-related sources: 10CFR50, Section XI of the ASME Boiler and Pressure Vessel Code, and North Anna Unit 2 Technical Specifications.

This program plan supersedes the plan that was submitted to the Nuclear Regulatory Commission by letter dated June 14, 1990. An upda'e to Revision 6 was issued by letter dated October 17, 1990. The NRC is- -d a Safety Evaluation Report (SER) for Revision 6 dated September 17, 1993. IST Program changes that resulted from the SER are incorporated in to Revision 7. This program meets the requirements of Generic Letter 89-04, except where noted in relief requests.

This program plan is composed of two independent subprograms - the Pump Inservice Testing Program and the Valve Inservice Testing Program. The development, implementation, and administration of these two programs are detailed in the following subsections.

This program will govern testing for the Unit 2 second interval which ends December 14, 2000. The program will be updated as required by the addition of new pumps and valves, relief requests, etc. Prior to the end of the second inspection interval, the program will be reviewed and upgraded to assure continued compliance with 10CFR50.55a(g)(4) for the third inspection interval.

2.2 PUMP INSERVICE TESTING PROGRAM DESCRIPTION

2.2.1 PROGRAM DEVELOPMENT PHILOSOPHY

The North Anna ~~Unit~~ 2-Pump Inservice Testing Program has been developed to meet the requirements of 10CFR50, Section XI of the ASME Boiler and Pressure Vessel Code, Subsection IWP, and Technical Specifications. This Program has been designed to detect and evaluate significant hydraulic or mechanical changes in the operating parameters of vital pumps and to initiate corrective action when necessary.

North Anna Unit 2 Technical Specification 4.0.5 requires "Inservice testing of ASME Code Class 1, 2, and 3 pumps shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable addenda as required by 10CFR50, Section 50.55a(g), except where specific written relief has been granted by the Commission pursuant to 10CFR50, Section 50.55a(g)(6)(i)."

10CFR50, Section 50.55a(g)(4)(iv) states that, inservice examinations of components, tests of pumps and valves, and system pressure tests, may meet the requirements set forth in subsequent editions and addenda of ASME Section XI that have been approved by the NRC, subject to Commission approval. North Anna Unit 2 will test those pumps that fall under the scope of ASME Section XI using Subsection IWP of the 1986 Edition. The scope of the program includes ASME Section XI Class 1, 2 and 3, and certain non-Code class pumps that are required to perform a specific function in shutting down the reactor or in mitigating the consequences of an accident.

A review has identified those pumps whose function is safety, (Section 2.2.4, Pump Testing List). These pumps will be tested in accordance with the 1986 Edition of ASME Section XI to the extent practical. It must be recognized that due to design differences among plants, some code testing requirements are impractical. Where such impracticalities exist, relief has been requested and alternate testing requirements have been proposed when warranted.

2.2.2 PROGRAM IMPLEMENTATION

The Pump Inservice Testing Program will be executed as part of the normal plant surveillance program which is implemented by periodic tests.

Reference values were established using original surveillance test data or data from later tests when the pump was operating acceptably in accordance with IWP-3110. Acceptance criteria for the periodic tests are based on the reference values and the allowable ranges specified in IWP-3210 or technical specifications, whichever is more restrictive. Following pump corrective maintenance, the previous reference values will be reconfirmed or a new set of reference values will be determined in accordance with IWP-3111. This post maintenance testing will be performed in accordance with the applicable pump periodic test.

2.2.3 PROGRAM ADMINISTRATION

The Engineering staff at North Anna is responsible for the administration of the Pump Inservice Testing Program. The Operations staff is responsible for performing the periodic tests as required by this program. The Pump Inservice Test Program is implemented by Station ISI Administrative Procedure 2.0 "ASME Section XI Pump Program" and Periodic Test Procedures.

2.2.4 PUMP TESTING LIST

This list gives a brief description of each pump identified in the Pump Inservice Test Program.

2-CC-P-1A Component Cooling Water Pumps
2-CC-P-1B Drawing: 11715-CBM-79A, Sh 2 of 3

Function: Supply cooling water to transfer heat from heat exchangers containing reactor coolant or other radioactive fluids.

2-CH-P-1A High Head Safety Injection/Charging Pumps
2-CH-P-1B Drawing: 12050-CBM-95B, Sh 2 of 2
2-CH-P-1C

Function: Supp~~ly high~~ pressure borated water to the Reactor Coolant System following a Safety Injection Signal, and to provide normal charging to the Reactor Coolant System.

1-CH-P-2C Boric Acid Transfer Pumps
1-CH-P-2D Drawing: 11715-CBM-95A, Sh 1 of 4

Function: Supply boric acid to the suction of the charging pumps for emergency boration. Recirculate the contents of the Boron Injection Tank.

2-EG-P-2HA Emergency Diesel Generator Fuel Oil
2-EG-P-2HB Transfer Pumps
2-EG-P-2JA Drawing: 11715-CBB-35A, Sh 2 of 2
2-EG-P-2JB

Function: Supply fuel oil to the Emergency Diesel Generator Fuel Oil Day Tank which directly supplies the Emergency Diesel Generator.

2-FW-P-2 Auxiliary Feedwater Pumps
2-FW-P-3A Drawing: 12050-CBM-74A, Sh 3 of 3
2-FW-P-3B

Function: Supply feedwater to the steam generators following a loss of normal feedwater flow.

2-QS-P-1A Quench Spray Pumps
2-QS-P-1B Drawing: 12050-CBM-91A, Sh 2 of 4

Function: Supply a borated, chemically treated spray to cool, remove iodine from, and depressurize the containment atmosphere following a Containment Depressurization Actuation signal.

2-RH-P-1A Residual Heat Removal Pumps
2-RH-P-1B Drawing: 12050-CBM-94A, Sh 1 of 2

Function: Remove decay heat from the reactor core and the Reactor Coolant System during plant cooldown.

2-RS-P-1A Inside Recirculation Spray Pumps
2-RS-P-1B Drawing: 12050-CBM-91A, Sh 3 of 4

Function: Supply a borated spray to cool and depressurize the containment atmosphere following a Containment Depressurization Actuation signal and maintain containment subatmospheric following an accident.

2-RS-P-2A Outside Recirculation Spray Pumps
2-RS-P-2B Drawing: 12050-CBM-91A, Sh 4 of 4

Function: Supply borated spray to cool and depressurize the containment atmosphere following a Containment Depressurization Actuation signal and maintain containment subatmospheric following an accident.

2-RS-P-3A Casing Cooling Pumps
2-RS-P-3B Drawing: 12050-CBM-91B, Sh 1 of 1

Function: Supply cool borated water to the outside Recirculation Spray Pumps to increase the net positive suction head of these pumps.

2-SI-P-1A Low Head Safety Injection Pumps
2-SI-P-1B Drawing: 12050-CBM-96A, Sh 1 of 3

Function: Supply low pressure borated water to the Reactor Coolant System following a Safety Injection signal.

2-SW-P-1A Service Water Pumps
2-SW-P-1B Drawing: 11715-CBM-78A, Sh 3 of 4

Function: Supply cooling water to the Component Cooling and Recirculation Spray heat exchangers as well as other safety related components.

2-SW-P-4 Auxiliary Service Water Pump
Drawing: 11715-CBM-78A, Sh 1 of 4

Function: Provide make up to the Service Water Reservoir and ~~can be~~ used as the normal supply to the Service Water system.

2-HV-P-20A Control and Relay Room Chilled Water
2-HV-P-20B Pumps
2-HV-P-20C Drawing: 11715-CBB-40C, Sh 2 of 3

Function: Circulate chilled water for the Control and Relay Room Cooling Coils.

2-HV-P-22A Control and Relay Room Condenser
2-HV-P-22B Water Pumps
2-HV-P-22C Drawing: 11715-CBB-40D, Sh 2 of 3

Function: Supply service water to the Control and Relay Room air conditioning condenser water system.

2.2.5 PUMP INSERVICE TESTING TABLE

The Pump Inservice Testing Table identifies the pumps to be tested in accordance with ASME Section XI. The following information is provided for each pump; ASME Code Class, test quantities to be measured, test frequency, and relief requests if required. The following is a brief explanation of the abbreviations used in the Pump Inservice Test Table.

NC - Non-class

Var. - Variable Resistance System

Fixed - Fixed Resistance System

Q - Quarterly Test Frequency

CS - Cold Shutdown Test Frequency (not more frequently than quarterly)

RR - Reactor Refueling (nominally 18 months, not to exceed 24 months)

2Y - 24 Months

N/A - Not applicable or impractical, relief requests will explain in detail

Under Speed, N/A applies to constant speed pumps which do not require the measurement of speed. Therefore, no relief is necessary.

Under Lube Oil, ~~N/A~~ applies to pumps that have a lubrication system with no level or pressure indication. Therefore, no relief is necessary.

PUMP INSERVICE TESTING TABLE

Pump Ident	ASME Class	System Resist	(1) Speed	Inlet Pressure	Differential Pressure	Flow Rate	Vibration	Lube Oil	Bear Temp.	Relief Request (P-)
2-CC-P-1A	3	VAR.	N/A	Q	Q	Q	Q	Q	N/A	1,12,13,16
2-CC-P-1B	3	VAR.	N/A	Q	Q	Q	Q	Q	N/A	1,12,13,16
2-CH-P-1A	2	VAR.	N/A	Q	Q	Q	Q	Q	N/A	1,13,16
2-CH-P-1B	2	VAR.	N/A	Q	Q	Q	Q	Q	N/A	1,13,16
2-CH-P-1C	2	VAR.	N/A	Q	Q	Q	Q	Q	N/A	1,13,16
1-CH-P-2C	3	FIXED	N/A[2]	Q	Q	RR	Q	Q	N/A	1,15,16
1-CH-P-2D	3	FIXED	N/A[2]	Q	Q	RR	Q	Q	N/A	1,15,16
2-EG-P-2HA	NC	VAR.	N/A	N/A	N/A	Q	Q	N/A	N/A	1,PCN-1
2-EG-P-2HB	NC	VAR.	N/A	N/A	N/A	Q	Q	N/A	N/A	1,PCN-1
2-EG-P-2JA	NC	VAR.	N/A	N/A	N/A	Q	Q	N/A	N/A	1,PCN-1
2-EG-P-2JB	NC	VAR.	N/A	N/A	N/A	Q	Q	N/A	N/A	1,PCN-1

PUMP INSERVICE TESTING TABLE

Pump Ident	ASME Class	System Resist	(1) Speed	Inlet Pressure	Differential Pressure	Flow Rate	Vibration	Lube Oil	Bear Temp.	Relief Request (P-)
2-FW-P-2	3	VAR.	Q	Q	Q	Q	Q	Q	N/A	1,16
2-FW-P-3A	3	VAR.	N/A	Q	Q	Q	Q	Q	N/A	1,16
2-FW-P-3B	3	VAR.	N/A	Q	Q	Q	Q	Q	N/A	1,16
2-QS-P-1A	2	FIXED	N/A	Q	Q	Q	Q	Q	N/A	1,16
2-QS-P-1B	2	FIXED	N/A	Q	Q	Q	Q	Q	N/A	1,16
2-RH-P-1A	2	VAR.	N/A	RR	RR	RR	RR	RR	N/A	1,5,16
2-RH-P-1B	2	VAR.	N/A	RR	RR	RR	RR	RR	N/A	1,5,16
2-RS-P-1A	2	VAR.	N/A	RR	RR	RR	RR	N/A	N/A	1
2-RS-P-1B	2	VAR.	N/A	RR	RR	RR	RR	N/A	N/A	1
2-RS-P-2A	2	VAR.	N/A	2Y	2Y	2Y	2Y	N/A	N/A	1
2-RS-P-2B	2	VAR.	N/A	2Y	2Y	2Y	2Y	N/A	N/A	1
2-RS-P-3A	3	VAR.	N/A	Q	Q	Q	Q	Q	N/A	1,16
2-RS-P-3B	3	VAR.	N/A	Q	Q	Q	Q	Q	N/A	1,16

PUMP INSERVICE TESTING TABLE

Pump Ident	ASME Class	System Resist	(1) Speed	Inlet Pressure	Differential Pressure	Flow Rate	Vibration	Lube Oil	Bear Temp.	Relief Request (P-)
2-SI-P-1A	2	FIXED	N/A	Q	Q	Q	Q	Q	N/A	1
2-SI-P-1B	2	FIXED	N/A	Q	Q	Q	Q	Q	N/A	1
2-SW-P-1A	3	VAR.	N/A	N/A	N/A	Q	Q	Q	N/A	1,9,12
2-SW-P-1B	3	VAR.	N/A	N/A	N/A	Q	Q	Q	N/A	1,9,12
2-SW-P-4		VAR.	N/A	N/A	N/A	Q	Q	Q	N/A	1,10,12
2-HV-P-20A	3	VAR.	N/A	Q	Q	Q	Q	N/A	N/A	1,16
2-HV-P-20B	3	VAR.	N/A	Q	Q	Q	Q	N/A	N/A	1,16
2-HV-P-20C	3	VAR.	N/A	Q	Q	Q	Q	N/A	N/A	1,16

PUMP INSERVICE TESTING TABLE

Pump Ident	ASME Class	System Resist	(1) Speed	Inlet Pressure	Differential Pressure	Flow Rate	Vibration	Lube Oil	Bear Temp.	Relief Request (P-)
2-HV-P-22A	3	VAR.	N/A	Q	Q	Q	Q	N/A	N/A	1,16
2-HV-P-22B	3	VAR.	N/A	Q	Q	Q	Q	N/A	N/A	1,16
2-HV-P-22C	3	VAR.	N/A	Q	Q	Q	Q	N/A	N/A	1,16

(1) Speed is measured for variable speed pumps. 2-ɪW-P-2 is the only variable speed pump in this program.

(2) Pumps 1-CH-P-2C and D have two speeds; however, they are tested at the high speed and are considered constant speed pumps per this program.

2.2.6 PUMP INSERVICE TESTING PROGRAM RELIEF REQUESTS

Relief requests identify those ASME Section XI Code requirements considered to be impractical. The basis for the relief request and the alternate testing to be performed is given.

RELIEF REQUEST P-1

I. IDENTIFICATION OF COMPONENTS

Systems: Various

Pump(s): IWP Program Pumps
See PUMP INSERVICE TEST TABLE.

Class :

II. IMPRACTICAL CODE REQUIREMENTS

Measure pump bearing temperatures and vibration in mils.

III. BASIS FOR RELIEF

Pump vibration and bearing temperature measurements are used to detect changes in the mechanical characteristics of a pump. Regular testing should detect developing problems, thus repairs can be initiated prior to a pump becoming inoperable. The ASME Section XI minimum standards require measurements of the vibration amplitude (displacement) in mils every three months and bearing temperatures once per year.

Our proposed program is based on vibration readings in velocity units rather than vibration amplitude in mils displacement. This technique is an industry accepted method which is more sensitive to small changes that are indicative of developing mechanical problems and hence more meaningful. Velocity measurements detect not only high amplitude vibrations that indicate a major mechanical problem, but also the equally harmful low amplitude high frequency vibrations due to misalignment in balance, or bearing wear that usually go undetected by simple displacement measurements.

In addition, these readings go far beyond the capabilities of a bearing temperature monitoring program. A bearing will be seriously degraded prior to the detection of increased heat at the bearing housing. Quarterly vibration velocity readings should achieve a much higher probability

of detecting developing problems than the once per year reading of bearing temperatures. Bearing temperature tests present ~~problems~~ which include the following:

1. Certain systems have no recirculation test loops and a limited source of water. An enforced thirty minute run time would deplete the source.

2. The lubrication fluid for some pumps is taken from the process water, which can change temperature depending on ambient conditions. Data trending for these cases is not meaningful.

The small probability of detection of a bearing failure by temperature measurement does not justify the additional pump operating time required to obtain the measurements. In addition, it is impractical to measure bearing temperatures on many pumps. Therefore, the detection of possible bearing failure by a yearly temperature measurement is extremely unlikely.

IV. ALTERNATE TESTING

Pump vibration measurements will be taken in vibration velocity (in/sec). The evaluation of the readings will be per the attached table. The ranges of test parameters given in the attached table were taken from ANSI/ASME OM (Part 6), An American National Standard In-Service Testing of Pumps.

RELIEF REQUEST P-1 (cont.)

RANGES OF TEST PARAMETERS (1)

PUMP TYPE	PUMP SPEED	TEST PARAMETER	ACCEPTABLE RANGE	ALERT RANGE	REQUIRED ACTION RANGE
Centrifugal, Vertical Line Shaft and positive displacement screw pumps[3]	@600 rpm[2]	V_v	$\leq 2.5\ V_r$[4]	$>2.5\ V_r$ to $6V_r$ but not >0.325 in/sec	$\geq 6\ V_r$ but not >0.70 in/sec

Note: (1) V_r is the vibration reference value in the selected units
V_v is vibration velocity measured peak, unfiltered

(2) There are no pumps in this program that operate below 600 rpm

(3) OM-6 does not address positive displacement screw pumps. The Emergency Diesel Generator Fuel Oil pumps are of this type and will be subject to the OM-6 Criteria.

(4) Small values for V_r will produce small acceptable ranges for pump operation. Based on a small acceptance range, an adequately and smoothly running pump could be subject to corrective action. To avoid this situation, a minimum value for V_r of 0.05 in/sec has been established for velocity measurements. Pumps with a measured reference value below 0.05 in/sec shall have subsequent test results compared to an acceptable range based on 0.05 in/sec.

RELIEF REQUEST P-2

Relief Request Withdrawn

RELIEF REQUEST P-3

Relief Request withdrawn.

RELIEF REQUEST P-4

Relief Request withdrawn.

RELIEF REQUEST P-5

I. IDENTIFICATION OF COMPONENTS

System : Residual Heat Removal

Pump(s): 2-RH-P-1A
2-RH-P-1B

Class : 2

II. IMPRACTICAL CODE REQUIREMENTS

Frequency of Pump Test.

III. BASIS FOR RELIEF

The low pressure pumps take suction from and discharge to the Reactor Coolant System (RCS)which operates at 2235 psig. This pressure is well above the operating pressure of the pumps; therefore, testing during normal operation is not possible.

During cold shutdowns of short duration or if the reactor coolant pumps are left running during the cold shutdown, both trains of RHR may be required for decay heat removal and to maintain RCS temperature. Taking one train of RHR out of service for testing purposes even for a short period could allow the RCS temperature to increase to the point that the pressurizer power operated relief valve would be challenged. Therefore, these pumps should only be tested during reactor refuelings.

IV. ALTERNATE TESTING

These pumps will be tested every reactor refueling.

RELIEF REQUEST P-6

Relief Request Withdrawn

RELIEF REQUEST P-7

Relief Request Withdrawn

RELIEF REQUEST P-8

Relief Request withdrawn.

RELIEF REQUEST P-9

I. IDENTIFICATION OF COMPONENTS

System : Service Water

Pump(s): 2-SW-P-1A
2-SW-P-1B

Class : 3

II. IMPRACTICAL CODE REQUIREMENTS

Measure inlet pressure and differential pressure.

III. BASIS FOR RELIEF

These pumps take suction from the Service Water Reservoir. No inlet pressure instrumentation is installed. The service water reservoir level indicator is located outside and several feet away from the observation point. Also, the measuring stick tends to collect residue from the surface of the reservoir, thus obscuring the markers. Therefore, measuring the reservoir level can be difficult during periods of inclement weather or low light conditions.

However, the reservoir level fluctuates very little and can be considered to be constant. The Service Water Reservoir has a minimum level of 313 feet elevation as required by Technical Specifications and a maximum recorded level during past testing of 314.9 feet. Therefore, the expected maximum variation in reservoir level is less than 2 feet, which is less than 1 psi. The discharge pressure gauge has a full scale reading of 100 psig and typical discharge pressures range from 50 to 65 psig. Even the maximum variation, which in all probability will not occur between successive tests, is a small percentage of the total head developed by the pump. Therefore, the repeatability of the tests and the ability to detect degradation will not be significantly affected if only discharge pressure is measured.

Applying the Code acceptance criteria to discharge pressure instead of differential pressure is a conservative application of the acceptance criteria for deep draft pumps. For these pumps, the total developed head is calculated by adding the measured discharge pressure to the height from the discharge pressure

gauge to the pump impeller, and subtracting the height from the reservoir surface to the pump impeller.

Therefore, the measured discharge pressure will always be a smaller number than the actual total head developed by the pump. Applying the Section XI acceptance criteria to just the discharge pressure instead of the total developed head for a deep draft pump is a conservative application of the acceptance criteria because the operability band is smaller.

IV. ALTERNATE TESTING

Discharge pressure will be measured in place of differential pressure.

RELIEF REQUEST P-10

I. IDENTIFICATION OF COMPONENTS

System : Service Water

Pump(s): 2-SW-P-4

Class : 3

II. IMPRACTICAL CODE REQUIREMENTS

Measure inlet pressure and differential pressure.

III. BASIS FOR RELIEF

This pump takes suction from Lake Anna. No inlet pressure instrumentation is installed. The North Anna lake level indicator is located outside and several feet away from the observation point. Also, the measuring stick tends to collect residue from the surface of the lake, thus obscuring the markers. Therefore, measuring the lake level can be difficult during periods of inclement weather or low light conditions.

However, the lake level fluctuates very little from test to test and can be considered to be constant. The lake has a minimum level of 244 feet elevation as required by Technical Specifications, and maximum and minimum recorded levels during past testing of 250.24 feet and 248.16 feet, respectively. Therefore, the expected maximum variation in lake level is about 2 feet, which is less than 1 psi. The discharge pressure gauge has a full scale reading of 100 psig and the discharge pressures range from 50 to 65 psig. Even the maximum variation, which in all probability will not occur between successive tests, is a small percentage of the total head developed by the pump. Therefore, the repeatability of the tests and the ability to detect degradation will not be significantly affected if only discharge pressure is measured.

Applying the Code acceptance criteria to discharge pressure instead of differential pressure is a conservative application of the acceptance criteria for the deep draft pump. For this pump, the total developed head is calculated by adding the measured discharge pressure to the height from the discharge pressure gauge to the pump impeller, and subtracting

the height from the lake surface to the pump impeller.

Therefore, the measured discharge pressure will always be a smaller number than the actual total head developed by the pump. Applying the Section XI acceptance criteria to just the discharge pressure instead of the total developed head for a deep draft pump is a conservative application of the acceptance criteria because the operability band is smaller.

IV. ALTERNATE TESTING

Discharge pressure will be measured in place of differential pressure.

RELIEF REQUEST P-11

Relief Request withdrawn.

RELIEF REQUEST P-12

I. IDENTIFICATION OF COMPONENTS

System : Component Cooling and Service Water

Pump(s):	2-CC-P-1A	2-SW-P-1A
	2-CC-P-1B	2-SW-P-1B
		2-SW-P-4

Class : 3

II. IMPRACTICAL CODE REQUIREMENTS

ASME XI, Subarticle IWP-3110 requires reference values to be one or more fixed set of measured values. All subsequent test results shall be compared to these reference values.

III. BASIS FOR RELIEF

Plant conditions may not be the same as when the reference values were established. Many reference points must be established to anticipate future plant conditions. In the Component Cooling and Service Water Systems, reproducing one of these reference flow points is difficult with the large butterfly valves installed and it may not be desirable to alter cooling because of other plant operating parameters.

Past vibration data for the subject pumps has been reviewed and it has been determined that pump vibration does not vary significantly with flow rate over the range of the test flow rates.

IV. ALTERNATE TESTING

All subsequent test results will be compared to calculated reference values which are determined using the following method. A set of at least five pressure/flow points will be recorded. From these points an equation for the line will be calculated by a computer using polynomial regression. The resulting polynomial equation describes the reference curve.

Flow points will be taken between the limits of the original data points. The resulting pressure is then compared to the ~~ASME XI~~, Table IWP-3100-2 limits. Pumps may then be tested during normal operation without any valve throttling. An example of acceptance criteria based on a reference curve is shown in Figure 1.

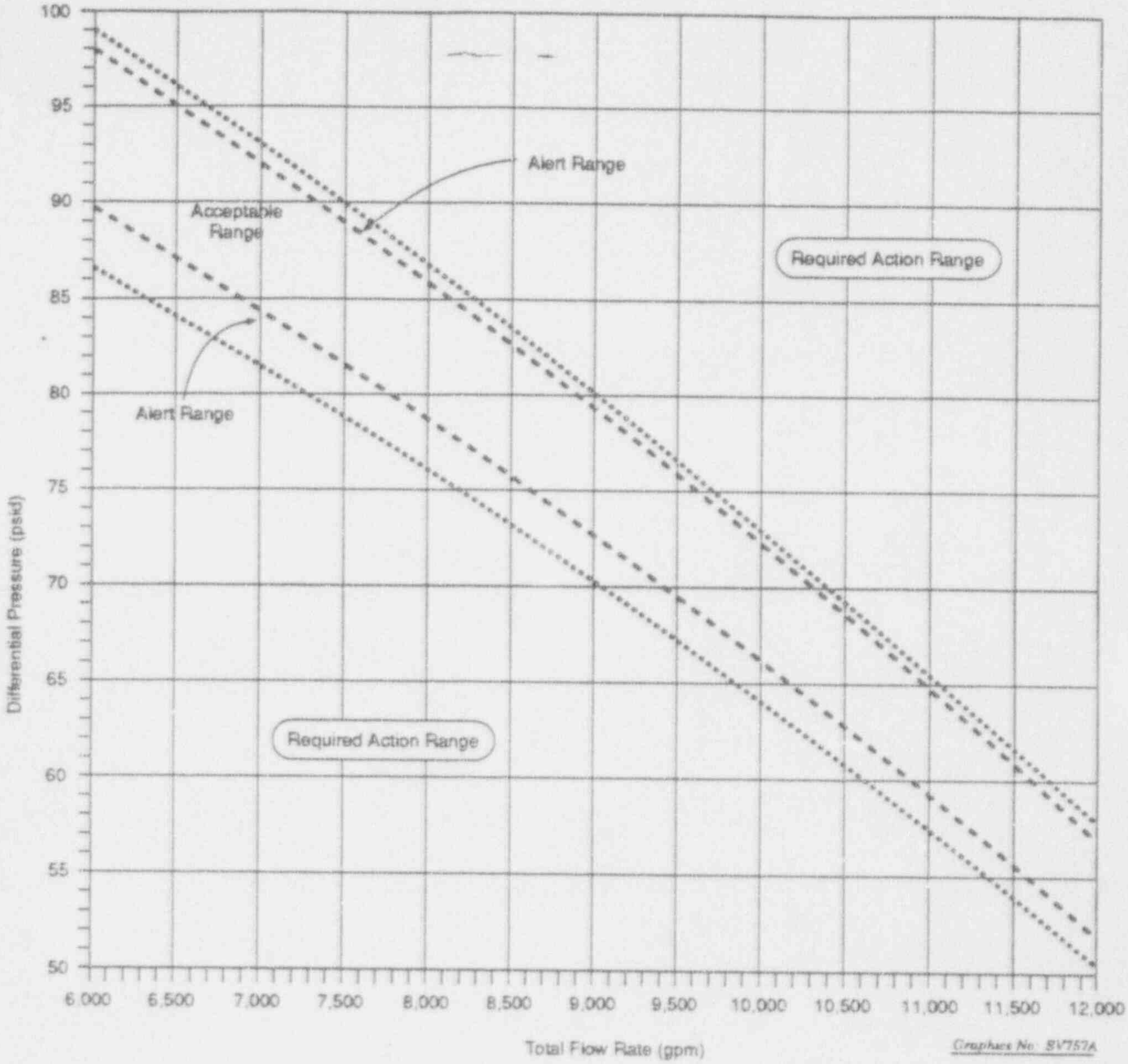

Figure 1. Pump Acceptance Criteria Based on a Reference Curve

RELIEF REQUEST P-13

I. IDENTIFICATION OF COMPONENTS

System : Component Cooling
Chemical and Volume Control

Pump(s):			
	2-CH-P-1A	2-CC-P-1A	2-SW-P-1A
	2-CH-P-1B	2-CC-P-1B	2-SW-P-1B
	2-CH-P-1C		2-SW-P-4

Class : Class 2 for CH and Class 3 for CC and SW

II. IMPRACTICAL CODE REQUIREMENTS

Instrument Error

III. BASIS FOR REQUEST

Instruments used to measure certain pump parameters receive their signal at the equipment, which is transmitted to a process rack and then to a control room indicator. The sensor and rack accuracy can be affected by drift, temperature, and calibration accuracy. The indicator has a limit of accuracy. The total loop accuracy is found by the root sum of the squares. The only variables in this formula are the sensor calibration accuracy and the indicator accuracy. Installing new sensors and indicators to reduce the accuracy by one percent is not warranted by the increase in safety obtained.

The following instrument loops exceed the ±2% tolerance listed in Table IWP 4110-1.

Instrument	Component	Parameter	Accuracy
FI-2122	2-CH-P-1A,B,C	Flow	2.34%
FI-CC-200A	2-CC-P-1A	Flow	2.69%
FI-CC-200B	2-CC-P-1B	Flow	2.69%
PI-SW-201A	2-SW-P-1A	Discharge Pressure	3.18%
PI-SW-201B	2-SW-P-1B	Discharge Pressure	3.18%
PI-SW-210	2-SW-P-4	Discharge Pressure	2.61%

IV. ALTERNATE TESTING

None

RELIEF REQUEST P-14

Relief Request withdrawn.

RELIEF REQUEST P-15

I. IDENTIFICATION OF COMPONENTS

System : Boric Acid Transfer

Pump(s): 1-CH-P-2C
1-CH-P-2D

Class : 3

II. IMPRACTICAL CODE REQUIREMENTS

Frequency of pump testing.

III. BASIS FOR RELIEF

Permanent flow instrumentation is not installed on the recirculation piping, which is the only test loop available for quarterly testing. To measure flow, flow must be established to the emergency and alternate boration paths and then to the charging pump suctions. This flow would increase the reactor coolant system (RCS) boron inventory and cause a reactivity transient during normal operation.

During cold shutdown, the emergency and alternate boration path valves are tested with flow. However, this test is short in duration to minimize the amount of boric acid injected into the RCS. The pump test requires an extended period of boric acid injection, which would upset the RCS boron balance and possibly impact the ability of the plant to restart. Therefore, this test should only be performed during cold shutdowns on the way to reactor refueling while the RCS is being borated or during reactor refuelings.

During RCS boration or during reactor refuelings, extended periods of pump operation on high speed can either interfere with the boration process or adversely affect the boron balance in the RCS. Therefore, to limit the amount of boric acid injected into the RCS during the pump tests, the pumps will be run for two minutes with flow to the RCS before the test quantities are measured.

IV. ALTERNATE TESTING

These pumps will be tested every quarter on the recirculation loop. Inlet pressure, differential pressure and vibration will be measured. Every reactor refueling, inlet pressure, differential pressure, flow and vibration will be measured after the pumps have been run for two minutes with flow to the RCS.

RELIEF REQUEST P-16

I. IDENTIFICATION OF COMPONENTS

System : Various

Pump(s): IWP Program Pumps
See PUMP INSERVICE TEST TABLE.

Class :

II. IMPRACTICAL CODE REQUIREMENTS

Pump inlet pressure shall be measured before starting a pump and during the test (Table IWP-3100-1)

III. BASIS FOR REQUEST

If the pump being tested is in operation as a result of normal plant or system needs, it is unreasonable to reconfigure system lineups just to provide for the measurement of static inlet pressure. Inlet pressure prior to pump startup is not a significant parameter needed for evaluating pump performance or condition.

IV. ALTERNATE TESTING

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

2.2.7 ALTERNATIVE TESTING FOR NON-CODE PUMPS

According to the Minutes of the Public Meeting on Generic Letter 89-04, "Paragraph (g) of 10CFR 50.55a requires the use of Section XI of the ASME Code for inservice testing of components covered by the Code. For other components important to safety, the licensee also has the burden of demonstrating their continued operability." The minutes go on to state that, "The Code-required IST program is a reasonable vehicle to provide a periodic demonstration of the operability of pumps and valves not covered by the Code. If non-Code components are included in the ASME Code IST program (or some other licensee-developed inservice testing program) and certain Code provisions cannot be met, the Commission regulations (10 CFR 50.55a) do not require a 'request for relief' to be submitted to the staff. Nevertheless, documentation that provides assurance of the continued operability of the non-Code components through the performed tests should be available at the plant site." Non-Code components are components that are important to safety, but are not in systems or portions of systems that are classified ASME Class 1, 2 or 3.

North Anna Power Station has elected to include certain non-Code components in the ASME IST program. Where the Code provisions cannot be met for non-Code components, alternative testing is performed that is adequate to ensure continued operability. The alternate testing is described in this section. There may be other deviations from Code provisions that are not described in this section. For these cases, documentation is available at the plant site.

As indicated in the Minutes of the Public Meeting on Generic Letter 89-04, a 'request for relief' need not be submitted for non-Code components. Therefore, the alternative tests described in this section are not 'requests for relief' but are provided for information.

I. IDENTIFICATION OF COMPONENTS

System : Fuel Oil

Pump(s):	2-EG-P-2[illegible]A	2-EG-P-2JA
	2-EG-P-2HB	2-EG-P-2JB

Class : NC

II. IMPRACTICAL CODE REQUIREMENTS

Measure test quantities after the pump has been running for five minutes.

Measure pump bearing temperatures and vibration in mils.

Measure Inlet and differential pressure.

III. BASIS FOR ALTERNATIVE TESTING

The pump operating time is limited due to operational restraints. These pumps start automatically when fuel oil level in the day tank reaches the low level switch, and stop when the level reaches the high level switch. If the pumps are allowed to run for five minutes prior to measuring the test quantities, the day tank may fill past the high level switch and cause the pump to stop. Therefore, the day tank will fill and the pump will stop prior to the gathering of all of the required Section XI test data.

The basis for alternative testing for vibration and temperature is described in Relief Request P-1.

The diesel fuel oil transfer pumps are positive displacement pumps. One characteristic of positive displacement pumps is that the discharge pressure is independent of inlet pressure. Therefore, to determine pump degradation, only discharge pressure need be measured. The ASME OM Part 6, Code-1987, with Addenda to OMa-1988, Table 2, which is replacing Section XI, Subsection IWP, requires that only discharge pressure need be measured for positive displacement pumps.

IV. ALTERNATE TESTING

The measurement of Section XI quantities will begin when the flow indication stabilizes after the pump is started (i.e., less than five minutes after the pump is started).

The alternative testing for vibration and temperature is described in Relief Request P-1.

Inlet pressure will not be measured. Discharge pressure, flow and vibration will be measured at least once every three months in accordance with Section XI requirements. The acceptance criteria for flow and discharge pressure will be based on the criteria given in ASME OM Part 6, Code-1987, with Addenda to OMa-1988, Table 2. The acceptance criteria for vibration is addressed in Relief Request P-1.

2.3 VALVE INSERVICE TESTING PROGRAM DESCRIPTION

2.3.1 PROGRAM DEVELOPMENT PHILOSOPHY

The North Anna Unit 2 Valve Inservice Testing (IST) Program has been established to meet the requirements of the 10CFR50, Section XI of the ASME Boiler and Pressure Vessel Code, Subsection IWV and Technical Specifications.

North Anna Unit 2 Technical Specification 4.0.5 states that Inservice Testing of ASME Code Class 1, 2 and 3 valves shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable addenda as required by 10CFR50, Section 50.55a(g), except where specific written relief has been granted by the Commission pursuant to 10CFR50, Section 50.55a(g)(6)(i).

10CFR50, Section 50.55a(g)(4)(iv) states that inservice examinations of components, test of pumps and valves, and system pressure tests, may meet the requirements set forth in subsequent editions and addenda of ASME Section XI that have been approved by the NRC, subject to Commission approval. North Anna Unit 2 will test those valves that fall under the scope of ASME Section XI using Subsection IWV of the 1986 Edition of ASME Section XI. The scope of the program includes ASME Section XI Class 1, 2 and 3, and certain non-Code class valves that are required to perform a specific function in shutting down the reactor or in mitigating the consequences of an accident.

Subsection IWV of ASME Section XI defines the rules and requirements of inservice testing of Code Class 1 ,2, and 3 valves and states that each specific valve to be tested by the rules of this subsection shall be identified by the owner and listed in the plant records.

The purpose of the IST program is to identify the valves that are considered by Virginia Electric and Power Company as having a safety function and are therefore subject to the testing requirements of Section XI, Subsection IWV. The intent of the Code is to assess operational readiness and detect potentially adverse changes in the mechanical condition of these valves. The relief requests for the Valve Inservice Test Program identify Code requirements considered to be impractical, provide technical basis for the request and propose alternate testing when warranted.

One reason for requesting relief from the ASME Section XI testing requirements for exercising check valves to the closed position is that the small increase in safety gained by performing these tests does not justify the complications arising from performing such tests. In some cases, to verify a check valve closes, a leak rate test must be performed. To perform a leak rate test, systems must be removed from service. Many systems are still required during cold shutdowns and cannot be removed from service. Lines must also be drained or vented. The contents of the lines are often radioactive and require processing prior to release. Draining and venting lines significantly increases the amount of radioactive waste produced by the plant.

An extended containment entry is required to perform leak rate tests. During short cold shutdowns, the concentrations of radioactive isotopes (Iodine-131, Xenon-133, etc.) are high because the isotopes do not have sufficient time to decay. Entering containment under these conditions requires respirators or air packs to be worn. Working under these conditions is difficult and significantly increases the chances of internal contamination.

For the above reasons, all check valves inside containment with the exception of those check valves listed in T.S. 4.4.6.2.2 shall be exercised to the closed position each refueling shutdown.

Leak rate testing for containment isolation valves is performed in accordance with 10CFR50, Appendix J, which imposes specific requirements, and in accordance with IWV-3426 and 3427. Appendix J satisfies the testing requirements of Section XI, Paragraphs IWV-3421 to 3425.

2.3.2 PROGRAM IMPLEMENTATION

The Valve Inservice Testing Program will be executed as part of the normal plant surveillance program which is implemented by periodic tests.

The Operability Tests will verify:

1) The valve responds to control commands.

2) The valve stroke time is within specific limits.

3) Remote valve position indication accurately reflects the valve position.

Failsafe valves will be tested by observing valve operation upon loss of actuating power. In most cases, this can be accomplished using normal control circuits.

Safety and relief valve setpoints are tested in accordance with ANSI/ASME OM-1-1981 as directed by IWV-3510.

Valve exercising during cold shutdown shall commence within 48 hours of achieving cold shutdown, and continue until all testing is complete or the plant is ready to return to power. For extended outages, testing need not be commenced in 48 hours provided all valves required to be tested during cold shutdown will be tested prior to startup.

Certain valves cannot be full stroke exercised during normal operation following maintenance. These valves are described in the relief requests and cold shutdown justifications. If maintenance cannot be deferred to a shutdown condition, then an engineering evaluation must be performed prior to the maintenance to determine the effect of the maintenance on valve operability. If the evaluation shows that operability will not be affected, then no post maintenance testing will be required. A partial stroke test will be performed if possible.

2.3.3 PROGRAM ADMINISTRATION

The Engineering staff at North Anna is responsible for the administration of the Valve Inservice Testing Program. The Operations staff is responsible for performing the periodic tests as required by this program. The Valve Inservice Testing Program is implemented by Station ISI Administrative Procedure 2.1 "ASME Section XI Valve Program" and Periodic Test Procedures.

2.3.4 VALVE INSERVICE TESTING TABLE

The Valve Inservice Testing Table provides a list of North Anna Unit 2 ASME Section XI valves and their testing requirements. The following is a brief explanation of the table headings and abbreviations.

<u>Valve Number</u> - Each valve has a unique identification number.

<u>Drawing Number</u> - Classification Boundary Drawing Number.

<u>Sheet Number</u> - Classification Boundary Drawing Sheet Number.

<u>Dwg Coor</u> - Drawing Coordinate of valve.

<u>Valve Type</u> - The type of valve. Some abbreviations are used for valve type which are explained below.

AO - air operated
SO - solenoid operated
DIA - diaphragm
MO - motor operated
MAN - manual
BFLY - butterfly

<u>Valve Size</u> - Valve size.

<u>Valve Function</u> - A brief description of the function of the valve.

<u>ASME Class</u> - ASME Code Class of each valve.

Note: NC is for non-class valves.

<u>ASME XI IWV Category</u> - Categories as defined by ASME Section XI. Categories determine test requirements. Valves marked with an "E" are passive valves.

<u>Test Position</u> - The following abbreviations are used to describe normal valve positions to which the valves are tested (including the valve safety position):

O - open
C - closed
OC - open and closed

<u>Isolation Valve Type</u> - Valves that are assigned a maximum leakage. The following abbreviations are used to describe the isolation valve types:

CIV - Containment Isolation Valve subject to Appendix J leakage testing

PIV - Pressure Isolation Valve which protects low pressure safety related piping from RCS pressure

C&P - Valves that serve both CIV and PIV functions

<u>Test Required</u> - Testing requirements identified for the valves are identified here.

ST - Stroke times shall be measured per Section XI, Subsubarticle IWV-3410 or as modified by a specific relief request.

EV - Exercise Valve for operability at least once every 3 months per Section XI, Subsubarticle IWV-3410 or as modified by a specific relief request or cold shutdown justification.

LT - Leak Test shall be performed per Section XI, Subsubarticle IWV-3420 or as modified by specific relief request.

CV - Check Valves shall be exercised at least once every 3 months per Section XI, Subsubarticle IWV-3520 or as modified by a specific relief request or cold shutdown justification.

VP - Valve Position Indication Verification shall be verified per Section XI, Subsubarticle IWV-3300 or as modified by a specific relief request.

SP - Set points of safety and relief valves shall be tested per Section XI, Subsubarticle IWV-3510 or as modified by a specific relief request.

FS - Valves with fail-safe actuators shall be tested by observing the operation of the valves upon loss of the actuator power at least once every 3 months per Section XI, Subsubarticle IWV-3415 or as modified by a specific relief request or cold shutdown justification.

Relief Request - The relief requests corresponding to the numbers in the table are in Section 2.3.5.

Cold Shutdown Justification - The cold shutdown justifications corresponding to the numbers in the table are in Section 2.3.6.

Non-Code Alternative Testing Description - The non-Code alternative testing descriptions corresponding to the numbers in the table are in Section 2.3.7.

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
2-BD-TV-200A	12050-CBM-098A	2 OF 5	C6	AO GLOBE	3.000	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C			
									VP	OC			
	"A" STEAM GENERATOR BLOWDOWN, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-BD-TV-200B	12050-CBM-098A	2 OF 5	C5	AO GLOBE	3.000	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C			
									VP	OC			
	"A" STEAM GENERATOR BLOWDOWN, INSIDE CONTAINMENT ISOLATION VALVE												
2-BD-TV-200C	12050-CBM-098A	3 OF 5	C6	AO GLOBE	3.000	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C			
									VP	OC			
	"B" STEAM GENERATOR BLOWDOWN, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-BD-TV-200D	12050-CBM-098A	3 OF 5	C5	AO GLOBE	3.000	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C			
									VP	OC			
	"B" STEAM GENERATOR BLOWDOWN, INSIDE CONTAINMENT ISOLATION VALVE												
2-BD-TV-200E	12050-CBM-098A	4 OF 5	C6	AO GLOBE	3.000	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C			
									VP	OC			
	"C" STEAM GENERATOR BLOWDOWN, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-BD-TV-200F	12050-CBM-098A	4 OF 5	C5	AO GLOBE	3.000	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C			
									VP	OC			
	"C" STEAM GENERATOR BLOWDOWN, INSIDE CONTAINMENT ISOLATION VALVE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
2-CC-010	11715-CBM-079A	2 OF 3	E6	CHECK VALVE	18.000	3	C		CV	C			
										O			
	"A" COMPONENT COOLING PUMP DISCHARGE CHECK VALVE												
2-CC-027	11715-CBM-079A	2 OF 3	D6	CHECK VALVE	18.000	3	C		CV	C			
										O			
	"B" COMPONENT COOLING PUMP DISCHARGE CHECK VALVE												
2-CC-078	12050-CBM-079A	2 OF 5	F7	CHECK VALVE	6.000	2	AC	CIV	CV	C	3		
									LT	C			
	CC SUPPLY TO "A" RC PUMP LO, STATOR SHROUD & THERM BARRIER COOLERS, IN CONT ISOL CHECK VLV												
2-CC-107	12050-CBM-079A	2 OF 5	C7	CHECK VALVE	3.000	3	C		CV	C	66		
	CC SUPPLY TO "A" RC PUMP THERMAL BARRIER COOLER CHECK VALVE												
2-CC-115	12050-CBM-079A	3 OF 5	F7	CHECK VALVE	6.000	2	AC	CIV	CV	C	3		
									LT	C			
	CC SUPPLY TO "B" RC PUMP LO, STATOR SHROUD & THERM BARRIER COOLERS, IN CONT ISOL CHECK VLV												
2-CC-144	12050-CBM-079A	3 OF 5	C7	CHECK VALVE	3.000	3	C		CV	C	66		
	CC SUPPLY TO "B" RC PUMP THERMAL BARRIER COOLER CHECK VALVE												
2-CC-152	12050-CBM-079A	4 OF 5	F7	CHECK VALVE	6.000	2	AC	CIV	CV	C	3		
									LT	C			
	CC SUPPLY TO "C" RC PUMP LO, STATOR SHROUD & THERM BARRIER COOLERS, IN CONT ISOL CHECK VLV												
2-CC-181	12050-CBM-079A	4 OF 5	C7	CHECK VALVE	3.000	3	C		CV	C	66		
	CC SUPPLY TO "C" RC PUMP THERMAL BARRIER COOLER CHECK VALVE												
2-CC-194	12050-CBM-079A	1 OF 5	F7	CHECK VALVE	18.000	2	AC	CIV	CV	C	71		
										O	71		
									LT	C			
	CC SUPPLY TO "A" RHR HEAT EXCHANGER												
2-CC-199	12050-CBM-079A	1 OF 5	F7	CHECK VALVE	18.000	2	AC	CIV	CV	C	71		
										O	71		
									LT	C			
	CC SUPPLY TO "B" RHR HEAT EXCHANGER												
2-CC-276	12050-CBM-079B	3 OF 3	E8	CHECK VALVE	6.000	2	AC	CIV	CV	C	63		
									LT	C			

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
	CC SUPPLY TO "A" RECIRC AIR COOLING COILS, OUTSIDE CONTAINMENT ISOLATION CHECK VALVE												
2-CC-289	12050-CBM-079B	3 OF 3	D8	CHECK VALVE	6.000	2	AC	CIV	CV LT	C C	63		
	CC SUPPLY TO "B" RECIRC AIR COOLING COILS, OUTSIDE CONTAINMENT ISOLATION CHECK VALVE												
2-CC-302	12050-CBM-079B	3 OF 3	C8	CHECK VALVE	6.000	2	AC	CIV	CV LT	C C	63		
	CC SUPPLY TO "C" RECIRC AIR COOLING COILS, OUTSIDE CONTAINMENT ISOLATION CHECK VALVE												
2-CC-MOV-200A	12050-CBM-079A	1 OF 5	A3	MO BFLY	18.000	3	B		EV ST VP	O O OC			
	COMPONENT COOLING WATER RETURN THROTTLING VALVE FROM "A" RHR HEAT EXCHANGER												
2-CC-MOV-200B	12050-CBM-079A	1 OF 5	B3	MO BFLY	18.000	3	B		EV ST VP	O O OC			
	COMPONENT COOLING WATER RETURN THROTTLING VALVE FROM "B" RHR HEAT EXCHANGER												
2-CC-RV-224A	12050-CBM-079A	2 OF 5	F6	RELIEF VALVE	3.000	3	C		SP	O			
	COMPONENT COOLING WATER TO REACTOR SHROUD HEAT EXCHANGER RELIEF VALVE												
2-CC-RV-224B	12050-CBM-079A	3 OF 5	F6	RELIEF VALVE	3.000	3	C		SP	O			
	COMPONENT COOLING WATER TO REACTOR SHROUD HEAT EXCHANGER RELIEF VALVE												
2-CC-RV-224C	12050-CBM-079A	4 OF 5	F6	RELIEF VALVE	3.000	3	C		SP	O			
	COMPONENT COOLING WATER TO REACTOR SHROUD HEAT EXCHANGER RELIEF VALVE												
2-CC-RV-225A	12050-CBM-079A	2 OF 5	C6	RELIEF VALVE	.750	3	C		SP	O			
	CC SUPPLY TO "A" RC PUMP THERMAL BARRIER RELIEF VALVE												
2-CC-RV-225B	12050-CBM-079A	3 OF 5	C6	RELIEF VALVE	.750	3	C		SP	O			
	CC SUPPLY TO "B" RC PUMP THERMAL BARRIER RELIEF VALVE												
2-CC-RV-225C	12050-CBM-079A	4 OF 5	C6	RELIEF VALVE	.750	3	C		SP	O			
	CC SUPPLY TO "C" RC PUMP THERMAL BARRIER RELIEF VALVE												
2-CC-RV-226A	12050-CBM-079A	1 OF 5	E3	RELIEF VALVE	.750	3	C		SP	O			

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
	"A" RHR HEAT EXCHANGER COMPONENT COOLING RELIEF VALVE												
2-CC-RV-228B	12050-CBM-079A	1 OF 5	D3	RELIEF VALVE	.750	3	C		SP	O			
	"B" RHR HEAT EXCHANGER COMPONENT COOLING RELIEF VALVE												
2-CC-TV-200A	12050-CBM-079B	3 OF 3	E3	AO BFLY	6.000	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C			
									VP	OC			
	CC RETURN FROM "A" RECIRC AIR COOLING COILS, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-CC-TV-200B	12050-CBM-079B	3 OF 3	D3	AO BFLY	6.000	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C			
									VP	OC			
	CC RETURN FROM "B" RECIRC AIR COOLING COILS, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-CC-TV-200C	12050-CBM-079B	3 OF 3	C3	AO BFLY	6.000	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C			
									VP	OC			
	CC RETURN FROM "C" RECIRC AIR COOLING COILS, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-CC-TV-201A	12050-CBM-079A	1 OF 5	D7	AO GLOBE	4.000	2	A	CIV	EV	C		1	
									FS	C		1	
									LT	C			
									ST	C		1	
									VP	OC			
	CC RETURN FROM REACTOR COOLANT PUMP THERMAL BARRIERS, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-CC-TV-201B	12050-CBM-079A	1 OF 5	D6	AO GLOBE	4.000	2	A	CIV	EV	C		1	
									FS	C		1	
									LT	C			
									ST	C		1	
									VP	OC			
	CC RETURN FROM REACTOR COOLANT PUMP THERMAL BARRIERS, INSIDE CONTAINMENT ISOLATION VALVE												
2-CC-TV-202A	12050-CBM-079A	4 OF 5	A5	AO BFLY	8.000	2	A	CIV	EV	C		1	
									FS	C		1	
									LT	C			
									ST	C		1	
									VP	OC			
	CC RETURN FROM "C" RC PUMP LO,STATOR & SHROUD COOLERS, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-CC-TV-202B	12050-CBM-079A	4 OF 5	A3	AO BFLY	8.000	2	A	CIV	EV	C		1	

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
2-CC-TV-202B	12050-CBM-079A	4 OF 5	A3	AO BFLY	8.000	2	A	CIV	FS	C		1	
									LT	C			
									ST	C		1	
									VP	OC			
	CC RETURN FROM "C" RC PUMP LO,STATOR & SHROUD COOLERS, INSIDE CONTAINMENT ISOLATION VALVE												
2-CC-TV-202C	12050-CBM-079A	3 OF 5	A5	AO BFLY	8.000	2	A	CIV	EV	C		1	
									FS	C		1	
									LT	C			
									ST	C		1	
									VP	OC			
	CC RETURN FROM "B" RC PUMP LO,STATOR & SHROUD COOLERS, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-CC-TV-202D	12050-CBM-079A	3 OF 5	A3	AO BFLY	8.000	2	A	CIV	EV	C		1	
									FS	C		1	
									LT	C			
									ST	C		1	
									VP	OC			
	CC RETURN FROM "B" RC PUMP LO,STATOR & SHROUD COOLERS, INSIDE CONTAINMENT ISOLATION VALVE												
2-CC-TV-202E	12050-CBM-079A	2 OF 5	A5	AO BFLY	8.000	2	A	CIV	EV	C		1	
									FS	C		1	
									LT	C			
									ST	C		1	
									VP	OC			
	CC RETURN FROM "A" RC PUMP LO,STATOR & SHROUD COOLERS, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-CC-TV-202F	12050-CBM-079A	2 OF 5	A3	AO BFLY	8.000	2	A	CIV	EV	C		1	
									FS	C		1	
									LT	C			
									ST	C		1	
									VP	OC			
	CC RETURN FROM "A" RC PUMP LO,STATOR & SHROUD COOLERS, INSIDE CONTAINMENT ISOLATION VALVE												
2-CC-TV-203A	12050-CBM-079A	1 OF 5	A7	AO BFLY	18.000	2	A	CIV	EV	C			
										O			
									FS	C			
									LT	C			
									ST	C			
										O			
									VP	OC			
	CC RETURN FROM "A" RHR HEAT EXCHANGER, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-CC-TV-203B	12050-CBM-079A	1 OF 5	B7	AO BFLY	18.000	2	A	CIV	EV	C			
										O			
									FS	C			
									LT	C			
									ST	C			
										O			
									VP	OC			

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
	CC RETURN FROM "B" RHR HEAT EXCHANGER, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-CC-TV-204A	12050-CBM-079A	2 OF 5	E8	AO BFLY	8.000	2	A	CIV	EV	C		1	
									FS	C		1	
									LT	C			
									ST	C		1	
									VP	OC			
	CC SUPPLY TO "A" RC PUMP LO, STATOR, SHROUD & THERM BARRIER COOLERS, OUTSIDE CONT ISOL VLV												
2-CC-TV-204B	12050-CBM-079A	3 OF 5	E8	AO BFLY	8.000	2	A	CIV	EV	C		1	
									FS	C		1	
									LT	C			
									ST	C		1	
									VP	OC			
	CC SUPPLY TO "B" RC PUMP LO, STATOR, SHROUD & THERM BARRIER COOLERS, OUTSIDE CONT ISOL VLV												
2-CC-TV-204C	12050-CBM-079A	4 OF 5	E8	AO BFLY	8.000	2	A	CIV	EV	C		1	
									FS	C		1	
									LT	C			
									ST	C		1	
									VP	OC			
	CC SUPPLY TO "C" RC PUMP LO, STATOR, SHROUD & THERM BARRIER COOLERS, OUTSIDE CONT ISOL VLV												
2-CC-TV-205A	12050-CBM-079B	3 OF 3	E4	AO BFLY	6.000	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C			
									VP	OC			
	CC RETURN FROM "A" RECIRC AIR COOLING COILS, INSIDE CONTAINMENT ISOLATION VALVE												
2-CC-TV-205B	12050-CBM-079B	3 OF 3	D4	AO BFLY	6.000	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C			
									VP	OC			
	CC RETURN FROM "B" RECIRC AIR COOLING COILS, INSIDE CONTAINMENT ISOLATION VALVE												
2-CC-TV-205C	12050-CBM-079B	3 OF 3	B4	AO BFLY	6.000	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C			
									VP	OC			
	CC RETURN FROM "C" RECIRC AIR COOLING COILS, INSIDE CONTAINMENT ISOLATION VALVE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
2-CD-163	11715-CBB-040C	2 OF 3	E6	CHECK VALVE	3.000	NC	C		CV	O			
	CONTROL ROOM CHILLED WATER SYSTEM PUMP DISCHARGE CHECK VALVE												
2-CD-187	11715-CBB-040C	2 OF 3	D6	CHECK VALVE	3.000	NC	C		CV	O			
	CONTROL ROOM CHILLED WATER SYSTEM PUMP DISCHARGE CHECK VALVE												
2-CD-211	11715-CBB-040C	2 OF 3	C4	CHECK VALVE	3.000	NC	C		CV	O			
	CONTROL ROOM CHILLED WATER SYSTEM PUMP DISCHARGE CHECK VALVE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
2-CD-163	11715-CBB-040C	2 OF 3	E6	CHECK VALVE	3.000	3	C		CV	O			
	CONTROL ROOM CHILLED WATER SYSTEM PUMP DISCHARGE CHECK VALVE												
2-CD-187	11715-CBB-040C	2 OF 3	D6	CHECK VALVE	3.000	3	C		CV	O			
	CONTROL ROOM CHILLED WATER SYSTEM PUMP DISCHARGE CHECK VALVE												
2-CD-211	11715-CBB-040C	2 OF 3	C4	CHECK VALVE	3.000	3	C		CV	O			
	CONTROL ROOM CHILLED WATER SYSTEM PUMP DISCHARGE CHECK VALVE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
1-CH-118	11715-CBM-095A	1 OF 4	C6	CHECK VALVE	2.000	3	C		CV	O		3	
	"C" BORIC ACID TRANSFER PUMP DISCHARGE CHECK VALVE												
1-CH-133	11715-CBM-095A	1 OF 4	C7	CHECK VALVE	2.000	3	C		CV	O		3	
	"D" BORIC ACID TRANSFER PUMP DISCHARGE CHECK VALVE												
2-CH-153	12050-CBM-095B	1 OF 2	B6	CHECK VALVE	4.000	2	AC		CV	C	73		
										O			
									LT	C			
	CHARGING PUMP SUPPLY FROM VOLUME CONTROL TANK ISOLATION VALVE												
2-CH-155	12050-CBM-095B	1 OF 2	C3	CHECK VALVE	1.000	3	C		CV	O		4	
	ALTERNATE EMERGENCY BORATION LINE CHECK VALVE												
2-CH-156	12050-CBM-095B	1 OF 2	B4	MANUAL GATE	1.000	3	B		EV	O		4	
	ALTERNATE EMERGENCY BORATION LINE MANUAL VALVE												
2-CH-157	12050-CBM-095B	1 OF 2	B4	CHECK VALVE	1.000	2	C		CV	O		4	
	ALTERNATE EMERGENCY BORATION LINE TO CHARGING PUMP SUCTION CHECK VALVE												
2-CH-159	12050-CBM-095B	1 OF 2	B5	CHECK VALVE	2.000	2	C		CV	O		4	
	MAIN EMERGENCY BORATION LINE TO CHARGING PUMP SUCTION CHECK VALVE												
2-CH-176	12050-CBM-095B	2 OF 2	D4	CHECK VALVE	3.000	2	C		CV	O		39	
	"A" CHARGING PUMP DISCHARGE RECIRC LINE CHECK VALVE												
2-CH-178	12050-CBM-095B	2 OF 2	D4	CHECK VALVE	3.000	2	C		CV	C	48		
										O	48		
	"A" CHARGING PUMP DISCHARGE CHECK VALVE												
2-CH-191	12050-CBM-095B	2 OF 2	D6	CHECK VALVE	3.000	2	C		CV	O		39	
	"B" CHARGING PUMP DISCHARGE RECIRC LINE CHECK VALVE												
2-CH-193	12050-CBM-095B	2 OF 2	D6	CHECK VALVE	3.000	2	C		CV	C	48		
										O	48		
	"B" CHARGING PUMP DISCHARGE CHECK VALVE												
2-CH-206	12050-CBM-095B	2 OF 2	D7	CHECK VALVE	3.000	2	C		CV	O		39	
	"C" CHARGING PUMP DISCHARGE RECIRC LINE CHECK VALVE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
2-CH-208	12050-CBM-095B	2 OF 2	D7	CHECK VALVE	3.000	2	C		CV	C	48		
										O	48		
	"C" CHARGING PUMP DISCHARGE CHECK VALVE												
2-CH-260	12050-CBM-095C	2 OF 2	B8	CHECK VALVE	2.000	1	C		CV	C	10		
	"A" RC PUMP SEAL WATER SUPPLY, INSIDE CONTAINMENT ISOLATION CHECK VALVE												
2-CH-284	12050-CBM-095C	2 OF 2	B7	CHECK VALVE	2.000	1	C		CV	C	10		
	"B" RC PUMP SEAL WATER SUPPLY, INSIDE CONTAINMENT ˜SOLATION CHECK VALVE												
2-CH-308	12050-CBM-095C	2 OF 2	B5	CHECK VALVE	2.000	1	C		CV	C	10		
	"C" RC PUMP SEAL WATER SUPPLY, INSIDE CONTAINMENT ISOLATION CHECK VALVE												
2-CH-331	12050-CBM-095C	2 OF 2	F4	CHECK VALVE	.750	2	AC	CIV	CV	C	10		
									LT	C	59		
	RC PUMP SEAL WATER RETURN, INSIDE CONTAINMENT ISOLATION CHECK VALVE												
2-CH-332	12050-CBM-095C	1 OF 2	A5	CHECK VALVE	2.000	1	AC	CIV	CV	C	10		
									LT	C			
	CHARGING SUPPLY TO LOOP FILL HEADER, INSIDE CONTAINMENT ISOLATION CHECK VALVE												
2-CH-335	12050-CBM-095C	1 OF 2	D4	CHECK VALVE	3.000	2	AC	CIV	CV	C	10		
									LT	C			
	MAIN CHARGING SUPPLY HEADER, INSIDE CONTAINMENT ISOLATION CHECK VALVE												
2-CH-FCV-2113A	12050-CBM-095B	1 OF 2	C3	AO GATE	1.000	3	B		EV	O			
									FS	O			
									ST	O			
									VP	OC			
	ALTERNATE EMERGENCY BORATION LINE FLOW CONTROL VALVE												
2-CH-FCV-2114A	12050-CBM-095B	1 OF 2	D4	AO GLOBE	1.000	3	B		EV	C			
									FS	C			
									ST	C			
									VP	OC			
	PRIMARY GRADE WATER FLOW CONTROL VALVE												
2-CH-FCV-2160	12050-CBM-095C	1 OF 2	A4	AO GLOBE	2.000	2	AE	CIV	LT	C			
									VP	OC			
	CHARGING FLOW CONTROL TO LOOP FILL HEADER, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-CH-LCV-2460A	12050-CBM-095C	1 OF 2	F7	AO GLOBE	2.000	1	B		EV	C		5	
									FS	C		5	
									ST	C		5	

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
2-CH-LCV-2460A	12050-CBM-095C	1 OF 2	F7	AO GLOBE	2.000	1	B		VP	OC			
	LETDOWN ISOLATION VALVE												
2-CH-LCV-2460B	12050-CBM-095C	1 OF 2	F7	AO GLOBE	2.000	1	B		EV	C		5	
									FS	C		5	
									ST	C		5	
									VP	OC			
	LETDOWN ISOLATION VALVE												
2-CH-MOV-2115B	12050-CBM-095B	2 OF 2	B8	MO GATE	8.000	2	A		EV	C		6	
										O		6	
									LT	C			
									ST	C		6	
										O		6	
									VP	OC			
	CHARGING PUMP SUPPLY ISOLATION VALVE FROM REFUELING WATER STORAGE TANK												
2-CH-MOV-2115C	12050-CBM-095B	1 OF 2	C6	MO GATE	4.000	2	B		EV	C		6	
									ST	C		6	
									VP	OC			
	CHARGING PUMP SUPPLY ISOLATION FROM VOLUME CONTROL TANK												
2-CH-MOV-2115D	12050-CBM-095B	2 OF 2	B8	MO GATE	8.000	2	A		EV	C		6	
										O		6	
									LT	C			
									ST	C		6	
										O		6	
									VP	OC			
	CHARGING PUMP SUPPLY ISOLATION VALVE FROM REFUELING WATER STORAGE TANK												
2-CH-MOV-2115E	12050-CBM-095B	1 OF 2	C6	MO GATE	4.000	2	B		EV	C		6	
									ST	C		6	
									VP	OC			
	CHARGING PUMP SUPPLY ISOLATION VALVE FROM VOLUME CONTROL TANK												
2-CH-MOV-2267A	12050-CBM-095B	2 OF 2	C3	MO GATE	6.000	2	E		VP	OC			
	"A" CHARGING PUMP SUCTION ISOLATION FROM RWST AND VCT												
2-CH-MOV-2267B	12050-CBM-095B	2 OF 2	C3	MO GATE	6.000	2	E		VP	OC			
	"A" CHARGING PUMP SUCTION ISOLATION FROM LHSI												
2-CH-MOV-2269A	12050-CBM-095B	2 OF 2	C5	MO GATE	6.000	2	E		VP	OC			
	"B" CHARGING PUMP SUCTION ISOLATION FROM RWST AND VCT												
2-CH-MOV-2269B	12050-CBM-095B	2 OF 2	C5	MO GATE	6.000	2	E		VP	OC			

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
	"B" CHARGING PUMP SUCTION ISOLATION FROM LHSI												
2-CH-MOV-2270A	12050-CBM-095B	2 OF 2	C7	MO GATE	6.000	2	E		VP	OC			
	"C" CHARGING PUMP SUCTION ISOLATION FROM RWST AND VCT												
2-CH-MOV-2270B	12050-CBM-095B	2 OF 2	C7	MO GATE	6.000	2	E		VP	OC			
	"C" CHARGING PUMP SUCTION ISOLATION FROM LHSI												
2-CH-MOV-2275A	12050-CBM-095B	2 OF 2	D4	MO GATE	2.000	2	B		EV	C O			
									ST	C O			
									VP	OC			
	"A" CHARGING PUMP MINIMUM RECIRCULATION ISOLATION VALVE												
2-CH-MOV-2275B	12050-CBM-095B	2 OF 2	D5	MO GATE	2.000	2	B		EV	C O			
									ST	C O			
									VP	OC			
	"B" CHARGING PUMP MINIMUM RECIRCULATION ISOLATION VALVE												
2-CH-MOV-2275C	12050-CBM-095B	2 OF 2	D7	MO GATE	2.000	2	B		EV	C O			
									ST	C O			
									VP	OC			
	"C" CHARGING PUMP MINIMUM RECIRCULATION ISOLATION VALVE												
2-CH-MOV-2286A	12050-CBM-095B	2 OF 2	E4	MO GATE	3.000	2	B		EV	C O			
									ST	C O			
									VP	OC			
	"A" CHARGING PUMP MAIN DISCHARGE ISOLATION VALVE												
2-CH-MOV-2286B	12050-CBM-095B	2 OF 2	E6	MO GATE	3.000	2	B		EV	C O			
									ST	C O			
									VP	OC			
	"B" CHARGING PUMP MAIN DISCHARGE ISOLATION VALVE												
2-CH-MOV-2286C	12050-CBM-095B	2 OF 2	E7	MO GATE	3.000	2	B		EV	C O			
									ST	C O			
									VP	OC			

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
	"C" CHARGING PUMP MAIN DISCHARGE ISOLATION VALVE												
2-CH-MOV-2287A	12050-CBM-095B	2 OF 2	D4	MO GATE	3.000	2	B		EV	C			
										O			
									ST	C			
										O			
									VP	OC			
	"A" CHARGING PUMP ALTERNATE AND LOOP FILL DISCHARGE ISOLATION VALVE												
2-CH-MOV-2287B	12050-CBM-095B	2 OF 2	D6	MO GATE	3.000	2	B		EV	C			
										O			
									ST	C			
										O			
									VP	OC			
	"B" CHARGING PUMP ALTERNATE AND LOOP FILL DISCHARGE ISOLATION VALVE												
2-CH-MOV-2287C	12050-CBM-095B	2 OF 2	D7	MO GATE	3.000	2	B		EV	C			
										O			
									ST	C			
										O			
									VP	OC			
	"C" CHARGING PUMP ALTERNATE AND LOOP FILL DISCHARGE ISOLATION VALVE												
2-CH-MOV-2289A	12050-CBM-095C	1 OF 2	D4	MO GATE	3.000	2	A	CIV	EV	C		7	
									LT	C			
									ST	C		7	
									VP	OC			
	MAIN CHARGING HEADER ISOLATION VALVE, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-CH-MOV-2289B	12050-CBM-095C	1 OF 2	B3	MO GATE	3.000	2	B		EV	C		7	
									ST	C		7	
									VP	OC			
	MAIN CHARGING HEADER ISOLATION VALVE, OUTSIDE CONTAINMENT												
2-CH-MOV-2350	12050-CBM-095B	1 OF 2	B5	MO GATE	2.000	2	B		EV	O		4	
									ST	O		4	
									VP	OC			
	EMERGENCY BORATION TO CHARGING PUMP SUCTION												
2-CH-MOV-2373	12050-CBM-095B	1 OF 2	A8	MO GATE	3.000	2	E		VP	OC			
	CHARGING PUMP RECIRCULATION HEADER ISOLATION VALVE												
2-CH-MOV-2380	12050-CBM-095C	2 OF 2	F4	MO GATE	3.000	2	A	CIV	EV	C	9		
									LT	C	59		
									ST	C	9		
									VP	OC			

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
	REACTOR COOLANT PUMP SEAL WATER RETURN, INSIDE CONTAINMENT ISOLATION VALVE												
2-CH-MOV-2381	12050-CBM-095B	1 OF 2	C8	MO GATE	3.000	2	A	CIV	EV	C	9		
									LT	C			
									ST	C	9		
									VP	OC			
	REACTOR COOLANT PUMP SEAL WATER RETURN, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-CH-RV-2203	12050-CBM-095C	1 OF 2	F3	RELIEF VALVE	2.000	2	C		SP	O			
	LETDOWN RELIEF VLV DOWNSTREAM OF REGEN HX, RV DISCHARGE TO PRESSURIZER RELIEF TANK												
2-CH-RV-2382B	12050-CBM-095B	1 OF 2	C7	RELIEF VALVE	2.000	2	C		SP	O			
	SEAL WATER HEAT EXCHANGER RELIEF VALVE, RV DISCHARGE TO VOLUME CONTROL TANK												
2-CH-TV-2204A	12050-CBM-095C	1 OF 2	E3	AO GLOBE	2.000	2	A	CIV	EV	C		5	
									FS	C		5	
									LT	C			
									ST	C		5	
									VP	OC			
	LETDOWN CONTROL FROM REGEN HX, INSIDE CONTAINMENT ISOLATION VALVE												
2-CH-TV-2204B	12050-CBM-095A	2 OF 2	C3	AO GLOBE	3.000	2	A	CIV	EV	C		5	
									FS	C		5	
									LT	C			
									ST	C		5	
									VP	OC			
	LETDOWN CONTROL FROM REGEN HX, OUTSIDE CONTAINMENT ISOLATION VALVE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
2-CV-004	12050-CBM-092A	2 OF 2	A5	MANUAL GATE	8.000	2	AE	CIV	LT	C			
	CONTAINMENT VACUUM EJECTOR SUPPLY, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-CV-08	12050-CBM-092A	2 OF 2	B3	CHECK VALVE	2.000	2	C		CV	O			
	CONTAINMENT VACUUM SYSTEM ISOLATION CHECK VALVE												
2-CV-15	12050-CBM-092A	2 OF 2	C3	CHECK VALVE	2.000	2	C		CV	O			
	CONTAINMENT VACUUM SYSTEM ISOLATION CHECK VALVE												
2-CV-TV-200	12050-CBM-092A	2 OF 2	A3	AO BFLY	8.000	2	AE	CIV	LT	C			
									VP	OC			
	CONTAIKMENT VACUUM EJECTOR, INSIDE CONTAIN-MENT ISOLATION VALVE												
2-CV-TV-250A	12050-CBM-092A	2 OF 2	B4	AO GLOBE	2.000	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C	55		
									VP	OC			
	"A" CONTAINMENT VACUUM PUMP SUCTION ISOLATION VALVE, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-CV-TV-250B	12050-CBM-092A	2 OF 2	B5	AO GLOBE	2 000	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C	55		
									VP	OC			
	"A" CONTAINMENT VACUUM PUMP SUCTION ISOLATION VALVE, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-CV-TV-250C	12050-CBM-092A	2 OF 2	C4	AO GLOBE	2.000	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C	55		
									VP	OC			
	"B" CONTAINMENT VACUUM PUMP SUCTION ISOLATION VALVE, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-CV-TV-250D	12050-CBM-092A	2 OF 2	C5	AO GLOBE	2.000	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C	55		
									VP	OC			
	"B" CONTAINMENT VACUUM PUMP SUCTION ISOLATION VALVE, OUTSIDE CONTAINMENT ISOLATION VALVE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
2-DA-007	12050-CBM-090A	3 OF 3	D3	MAN DIAPHRAM	2.000	2	AE	CIV	LT	C			
	VENT LINE FROM PRIMARY VENT POT, INSIDE CONTAINMENT ISOLATION VALVE												
2-DA-009	12050-CBM-090A	3 OF 3	E3	MAN DIAPHRAM	2.000	2	AE	CIV	LT	C			
	VENT LINE FROM PRIMARY VENT POT, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-DA-TV-200A	12050-CBM-090B	1 OF 1	E7	AO GLOBE	2.000	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C	55		
									VP	OC			
	REACTOR CONTAINMENT SUMP PUMPS DISCHARGE, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-DA-TV-200B	12050-CBM-090A	3 OF 3	C3	AO GLOBE	2.000	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C			
									VP	OC			
	REACTOR CONTAINMENT SUMP PUMPS DISCHARGE, INSIDE CONTAINMENT ISOLATION VALVE												
2-DA-TV-203A	12050-CBM-090A	3 OF 3	B7	AO GLOBE	2.0[illegible]	[illegible]	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C	55		
									VP	OC			
	POST ACCIDENT SAMPLE SYSTEM RETURN, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-DA-TV-203B	12050-CBM-090[illegible]	3 OF 3	B8	AO GLOBE	2.000	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C	55		
									VP	OC			
	POST ACCIDENT SAMPLE SYSTEM RETURN, OUTSIDE CONTAINMENT TRIP VALVE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCW-
2-DG-TV-200A	12050-CBM-090A	1 OF 3	B8	AO GLOBE	2.000	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C			
									VP	OC			
	PRIMARY DRAIN TRANSFER PUMPS DISCHARGE, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-DG-TV-200B	12050-CBM-090A	1 OF 3	B7	AO GLOBE	2.000	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C			
									VP	OC			
	PRIMARY DRAIN TRANSFER PUMPS DISCHARGE, INSIDE CONTAINMENT ISOLATION VALVE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
2-EB-015	12050-FM -107A	1 OF 4	E6	CHECK VALVE	1.500	NC	C		CV	O			4
	2H DIESEL "HA" AIR RECEIVER TANK DISCHARGE VALVE												
2-EB-034	12050-FM -107A	3 OF 4	E6	CHECK VALVE	1.500	NC	C		CV	O			4
	2J DIESEL "JA" AIR RECEIVER TANK DISCHARGE VALVE												
2-EB-041	12050-FM -107A	1 OF 4	D6	CHECK VALVE	.750	NC	AC		CV LT	C C			
	2H DIESEL "HA" AIR RECEIVER TANK ISOLATION VALVE												
2-EB-051	12050-FM -107A	3 OF 4	D6	CHECK VALVE	.750	NC	AC		CV LT	C C			
	2J DIESEL "JA" AIR RECEIVER TANK ISOLATION VALVE												
2-EB-061	12050-FM -107A	2 OF 4	E6	CHECK VALVE	1.500	NC	C		CV	O			4
	2H DIESEL "HB" AIR RECEIVER TANK DISCHARGE VALVE												
2-EB-068	12050-FM -107A	2 OF 4	D6	CHECK VALVE	.750	NC	AC		CV LT	C C			
	2H DIESEL "HB" AIR RECEIVER TANK ISOLATION VALVE												
2-EB-078	12050-FM -107A	4 OF 4	E6	CHECK VALVE	1.500	NC	C		CV	O			4
	2J DIESEL "JB" AIR RECEIVER TANK DISCHARGE VALVE												
2-EB-085	12050-FM -107A	4 OF 4	D6	CHECK VALVE	.750	NC	AC		CV LT	C C			
	2J DIESEL "JB" AIR RECEIVER TANK ISOLATION VALVE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
2-EG-260	11715-FB -035A	2 OF 2	C7	CHECK VALVE	1.500	NC	C		CV	O			
	2H DIESEL "A" EMERGENCY GENERATOR PUMP DISCHARGE CHECK VALVE												
2-EG-272	11715-FB -035A	2 OF 2	F7	CHECK VALVE	1.500	NC	C		CV	O			
	2J DIESEL "A" EMERGENCY GENERATOR PUMP DISCHARGE CHECK VALVE												
2-EG-284	11715-FB -035A	2 OF 2	F6	CHECK VALVE	1.500	NC	C		CV	O			
	2J DIESEL "B" EM GENCY GENERATOR PUMP DISCHARGE CHECK V .VE												
2-EG-289	11715-FB -035A	2 OF 2	C6	CHECK VALVE	1.500	NC	C		CV	O			
	2H DIESEL "B" EMERGENCY GENERATOR PUMP DISCHARGE CHECK VALVE												
2-EG-RV-204A	11715-FB -035A	2 OF 2	C7	RELIEF VALVE	1.000	NC	C		SP	O			
	2H DIESEL "A" EMER GENERATOR PUMP DISCHARGE RELIEF VALVE, RV DISCHARGE TO PUMP SUCTION												
2-EG-RV-204B	11715-FB -035A	2 OF 2	C6	RELIEF VALVE	1.000	NC	C		SP	O			
	2H DIESEL "B" EMER GENERATOR PUMP DISCHARGE RELIEF VALVE, RV DISCHARGE TO PUMP SUCTION												
2-EG-RV-206A	11715-FB -035A	2 OF 2	F7	RELIEF VALVE	1.000	NC	C		SP	O			
	2J DIESEL "A" EMER GENERATOR PUMP DISCHARGE RELIEF VALVE, RV DISCHARGE TO PUMP SUCTION												
2-EG-RV-206B	11715-FB -035A	2 OF 2	F6	RELIEF VALVE	1.000	NC	C		SP	O			
	2J DIESEL "B" EMER GENERATOR PUMP DISCHARGE RELIEF VALVE, RV DISCHARGE TO PUMP SUCTION												
2-EG-RV-702HA	12050-FM -107A	1 OF 4	E4	RELIEF VALVE	2.000	NC	C		SP	O			
	2H DIESEL "A" AIR RECEIVER TANK RELIEF VALVE, RV DISCHARGE TO ATMOSPHERE												
2-EG-RV-702HB	12050-FM -107A	2 OF 4	E4	RELIEF VALVE	2.000	NC	C		SP	O			
	2H DIESEL "B" AIR RECEIVER TANK RELIEF VALVE, RV DISCHARGE TO ATMOSPHERE												
2-EG-RV-702JA	12050-FM -107A	3 OF 4	E4	RELIEF VALVE	2.000	NC	C		SP	O			
	2J DIESEL "A" AIR RECEIVER TANK RELIEF VALVE, RV DISCHARGE TO ATMOSPHERE												
2-EG-RV-702JB	12050-FM -107A	4 OF 4	E4	RELIEF VALVE	2.000	NC	C		SP	O			
	2J DIESEL "B" AIR RECEIVER TANK RELIEF VALVE, RV DISCHARGE TO ATMOSPHERE												
2-EG-SOV-700HA	12050-FM -107A	1 OF 4	E6	SO GATE	1.500	NC	B		EV	O			
									ST	O			

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VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
2-EG-260	11715-FB -035A	2 OF 2	C7	CHECK VALVE	1.500	NC	C		CV	O			
	2H DIESEL "A" EMERGENCY GENERATOR PUMP DISCHARGE CHECK VALVE												
2-EG-272	11715-FB -035A	2 OF 2	F7	CHECK VALVE	1.500	NC	C		CV	O			
	2J DIESEL "A" EMERGENCY GENERATOR PUMP DISCHARGE CHECK VALVE												
2-EG-284	11715-FB -035A	2 OF 2	F6	CHECK VALVE	1.500	NC	C		CV	O			
	2J DIESEL "B" EMERGENCY GENERATOR PUMP DISCHARGE CHECK VALVE												
2-EG-289	11715-FB -035A	2 OF 2	C6	CHECK VALVE	1.500	NC	C		CV	O			
	2H DIESEL "B" EMERGENCY GENERATOR PUMP DISCHARGE CHECK VALVE												
2-EG-RV-204A	11715-FB -035A	2 OF 2	C7	RELIEF VALVE	1.000	NC	C		SP	O			
	2H DIESEL "A" EMER GENERATOR PUMP DISCHARGE RELIEF VALVE, RV DISCHARGE TO PUMP SUCTION												
2-EG-RV-204B	11715-FB -035A	2 OF 2	C6	RELIEF VALVE	1.000	NC	C		SP	O			
	2H DIESEL "B" EMER GENERATOR PUMP DISCHARGE RELIEF VALVE, RV DISCHARGE TO PUMP SUCTION												
2-EG-RV-206A	11715-FB -035A	2 OF 2	F7	RELIEF VALVE	1.000	NC	C		SP	O			
	2J DIESEL "A" EMER GENERATOR PUMP DISCHARGE RELIEF VALVE, RV DISCHARGE TO PUMP SUCTION												
2-EG-RV-206B	11715-FB -035A	2 OF 2	F6	RELIEF VALVE	1.000	NC	C		SP	O			
	2J DIESEL "B" EMER GENERATOR PUMP DISCHARGE RELIEF VALVE, RV DISCHARGE TO PUMP SUCTION												
2-EG-RV-702HA	12050-FM -107A	1 OF 4	E4	RELIEF VALVE	2.000	NC	C		SP	O			
	2H DIESEL "A" AIR RECEIVER TANK RELIEF VALVE, RV DISCHARGE TO ATMOSPHERE												
2-EG-RV-702HB	12050-FM -107A	2 OF 4	E4	RELIEF VALVE	2.000	NC	C		SP	O			
	2H DIESEL "B" AIR RECEIVER TANK RELIEF VALVE, RV DISCHARGE TO ATMOSPHERE												
2-EG-RV-702JA	12050-FM -107A	3 OF 4	E4	RELIEF VALVE	2.000	NC	C		SP	O			
	2J DIESEL "A" AIR RECEIVER TANK RELIEF VALVE, RV DISCHARGE TO ATMOSPHERE												
2-EG-RV-702JB	12050-FM -107A	4 OF 4	E4	RELIEF VALVE	2.000	NC	C		SP	O			
	2J DIESEL "B" AIR RECEIVER TANK RELIEF VALVE, RV DISCHARGE TO ATMOSPHERE												
2-EG-SOV-700HA	12050-FM -107A	1 OF 4	E6	SO GATE	1.500	NC	B		EV	O			
									ST	O			4

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
	DIESEL AIR START SOLENOID VALVE												
2-EG-SOV-700HB	12050-FM -107A	2 OF 4	E6	SO GATE	1.500	NC	B		EV	O			
									ST	O			4
	DIESEL AIR START SOLENOID VALVE												
2-EG-SOV-700JA	12050-FM -107A	3 OF 4	E6	SO GATE	1.500	NC	B		EV	O			
									ST	O			4
	DIESEL AIR START SOLENOID VALVE												
2-EG-SOV-700JB	12050-FM -107A	4 OF 4	E6	SO GATE	1.500	NC	B		EV	O			
									ST	O			4
	DIESEL AIR START SOLENOID VALVE												
2-EG-SOV-701HA	12050-FM -107A	1 OF 4	E6	SO GATE	1.500	NC	B		EV	O			
									ST	O			4
	DIESEL AIR START SOLENOID VALVE												
2-EG-SOV-707JA	12050-FM -107A	3 OF 4	E6	SO GATE	1.500	NC	B		EV	O			
									ST	O			4
	DIESEL AIR START SOLENOID VALVE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
2-FP-079	12050-CBB-104A	1 OF 1	A7	CHECK VALVE	4.000	2	AC	CIV	CV	C	16		
									LT	C			
	FIRE PROTECTION SUPPLY TO CONTAINMENT, INSIDE CONTAINMENT ISOLATION CHECK VALVE												
2-FP-081	12050-CBB-104A	1 OF 1	A6	MANUAL GATE	4.000	2	AE	CIV	LT	C			
	FIRE PROTECTION SUPPLY TO CONTAINMENT, OUTSIDE CONTAINMENT ISOLATION VALVE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
2-FW-062	12050-CBM-074A	1 OF 4	E6	CHECK VALVE	16.000	2	C		CV	C		12	
	"A" MAIN FEEDWATER SUPPLY, CONTAINMENT PENETRATION CHECK VALVE												
2-FW-063	12050-CBM-074A	1 OF 4	B5	CHECK VALVE	3.000	3	C		CV	O		30	
	STANDBY "A" AUXILIARY FEEDWATER HEADER CHECK VALVE, OUTSIDE OF CONTAINMENT												
2-FW-064	12050-CBM-074A	1 OF 4	B5	MANUAL GATE	3.000	3	B		EV	C O		40 40	
	AUXILIARY FEEDWATER HEADER MANUAL ISOLATION VALVE FROM MOTOR-DRIVEN PUMP HEADERS												
2-FW-065	12050-CBM-074A	1 OF 4	B6	CHECK VALVE	3.000	3	C		CV	O		30	
	STANDBY "A" AUXILIARY FEEDWATER HEADER CHECK VALVE, OUTSIDE OF CONTAINMENT												
2-FW-066	12050-CBM-074A	1 OF 4	B6	MANUAL GATE	3.000	3	B		EV	C O		40 40	
	AUXILIARY FEEDWATER HEADER MANUAL ISOLATION VALVE FROM MOTOR-DRIVEN PUMP HEADERS												
2-FW-070	12050-CBM-074A	1 OF 4	D6	CHECK VALVE	3.000	2	C		CV	O			
	"A" AUXILIARY FEEDWATER HEADERCHECK VALVE AT MAIN FEEDWATER HEADER												
2-FW-094	12050-CBM-074A	1 OF 4	D6	CHECK VALVE	16.000	2	C		CV	C		12	
	"B" MAIN FEEDWATER HEADER SUPPLY, CONTAINMENT PENETRATION CHECK VALVE												
2-FW-095	12050-CBM-074A	1 OF 4	B6	CHECK VALVE	3.000	3	C		CV	O			
	"B" AUXILIARY FEEDWATER HEADER CHECK VALVE, OUTSIDE OF CONTAINMENT												
2-FW-096	12050-CBM-074A	1 OF 4	B6	MANUAL GATE	3.000	3	B		EV	C O		40 40	
	AUXILIARY FEEDWATER HEADER MANUAL ISOLATION VALVE FROM MOTOR-DRIVEN PUMP HEADERS												
2-FW-097	12050-CBM-074A	1 OF 4	C6	CHECK VALVE	3.000	2	C		CV	O		30	
	"B" AUXILIARY FEEDWATER HEADER CHECK VALVE AT MAIN FEEDWATER HEADER												
2-FW-098	12050-CBM-074A	1 OF 4	B6	MANUAL GATE	3.000	3	B		EV	C O		40 40	
	AUXILIARY FEEDWATER HEADER MANUAL ISOLATION VALVE FROM MOTOR-DRIVEN PUMP HEADERS												
2-FW-102	12050-CBM-074A	1 OF 4	C6	CHECK VALVE			C		CV	O			
	"B" AUXILARY FEEDWATER HEADER CHECK VALVE AT MAIN FEEDWATER HEADER												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
2-FW-126	12050-CBM-074A	1 OF 4	B6	CHECK VALVE	16.000	2	C		CV	C		12	
	"C" MAIN FEEDWATER SUPPLY, CONTAINMENT PENETRATION CHECK VALVE												
2-FW-127	12050-CBM-074A	1 OF 4	B7	CHECK VALVE	3.000	3	C		CV	O		30	
	STANDBY "C" AUXILIARY FEEDWATER HEADER CHECK VALVE, OUTSIDE OF CONTAINMENT												
2-FW-128	12050-CBM-074A	1 OF 4	B7	MANUAL GATE	3.000	3	B		EV	C		40	
										O		40	
	AUXILIARY FEEDWATER HEADER MANUAL ISOLATION VALVE FROM MOTOR-DRIVEN PUMP HEADERS												
2-FW-129	12050-CBM-074A	1 OF 4	B7	CHECK VALVE	3.000	3	C		CV	O			
	"C" AUXILIARY FEEDWATER HEADER CHECK VALVE, OUTSIDE OF CONTAINMENT												
2-FW-130	12050-CBM-074A	1 OF 4	B7	MANUAL GATE	3.000	3	B		EV	C		40	
										O		40	
	AUXILIARY FEEDWATER HEADER MANUAL ISOLATION VALVE FROM MOTOR-DRIVEN PUMP HEADERS												
2-FW-134	12050-CBM-074A	1 OF 4	B7	CHECK VALVE	3.000	2	C		CV	O			
	"C" AUXILIARY FEEDWATER HEADER CHECK VALVE AT MAIN FEEDWATER HEADER												
2-FW-147	12050-CBM-074A	3 OF 4	B7	MANUAL GATE	6.000	3	B		EV	O		41	
	ALTERNATE WATER SUPPLY TO AFW PUMP SUCTIONS												
2-FW-150	12050-CBM-074A	3 OF 4	D7	CHECK VALVE	1.000	3	C		CV	O			
	TURBINE DRIVEN AUXILIARY FEEDWATER PUMP RECIRC LINE CHECK VALVE												
2-FW-156	12050-CBM-074A	3 OF 4	D8	CHECK VALVE	6.000	3	C		CV	O			
	TURBINE DRIVEN AUXILIARY FEEDWATER PUMP DISCHARGE CHECK VALVE												
2-FW-157	12050-CBM-074A	3 OF 4	E7	MANUAL GATE	6.000	3	B		EV	C		40	
										O		40	
	AFW PUMP DISCHARGE HEADER ALIGNMENT/CROSS CONNECT VALVE												
2-FW-164	12050-CBM-074A	3 OF 4	B6	MANUAL GATE	6.000	3	B		EV	O		41	
	ALTERNATE WATER SUPPLY TO AFW PUMP SUCTIONS												
2-FW-167	12050-CBM-074A	3 OF 4	D6	CHECK VALVE	1.000	3	C		CV	O			
	"A" MOTOR DRIVEN AUXILIARY FEEDWATER PUMP RECIRC LINE CHECK VALVE												
2-FW-172	12050-CBM-074A	3 OF 4	D6	CHECK VALVE	4.000	3	C		CV	O			

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
	"A" MOTOR DRIVEN AUXILIARY FEEDWATER PUMP DISCHARGE CHECK VALVE												
2-FW-173	12050-CBM-074A	3 OF 4	E6	MANUAL GATE	6.000	3	B		EV	C O		40 40	
	AFW PUMP DISCHARGE HEADER ALIGNMENT/CROSS CONNECT VALVE												
2-FW-174	12050-CBM-074A	3 OF 4	E6	MANUAL GATE	6.000	3	B		EV	C O		40 40	
	AFW PUMP DISCHARGE HEADER ALIGNMENT/CROSS CONNECT VALVE												
2-FW-182	12050-CBM-074A	3 OF 4	B5	MANUAL GATE	6.000	3	B		EV	O		41	
	ALTERNATE WATER SUPPLY TO AFW PUMP SUCTIONS												
2-FW-185	12050-CBM-074A	3 OF 4	D5	CHECK VALVE	1.000	3	C		CV	O			
	"B" MOTOR DRIVEN AUXILIARY FEEDWATER PUMP RECIRC LINE CHECK VALVE												
2-FW-192	12050-CBM-074A	3 OF 4	D5	CHECK VALVE	4.000	3	C		CV	O			
	"B" MOTOR DRIVEN AUXILIARY FEEDWATER PUMP DISCHARGE CHECK VALVE												
2-FW-193	12050-CBM-074A	3 OF 4	E5	MANUAL GATE	6.000	3	B		EV	C O		40 40	
	AFW PUMP DISCHARGE HEADER ALIGNMENT/CROSS CONNECT VALVE												
2-FW-194	12050-CBM-074A	3 OF 4	E5	MANUAL GATE	6.000	3	B		EV	C O		40 40	
	AFW PUMP DISCHARGE HEADER ALIGNMENT/CROSS CONNECT VALVE												
2-FW-202	12050-CBM-074A	3 OF 4	A7	MANUAL GATE	6.000	3	B		EV	O		41	
	SERVICE WATER SUPPLY TO AFW PUMP SUCTIONS												
2-FW-279	12050-CBM-074A	3 OF 4	D8	CHECK VALVE	4.000	3	C		CV	O			
	"A" AUXILIARY FEEDWATER HEADER CHECK VALVE, OUTSIDE OF CONTAINMENT												
2-FW-317	12050-CBM-074A	3 OF 4	E8	MANUAL GATE	6.000	3	B		EV	C O		40 40	
	AFW PUMP DISCHARGE HEADER ALIGNMENT/CROSS CONNECT VALVE												
2-FW-609	12050-CBM-074A	3 OF 4		CHECK VALVE	1.000	3	C		CV	O			
	PUMP LUBE OIL COOLER CHECK VALVE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
2-FW-610	12050-CBM-074A	3 OF 4		CHECK VALVE	1.000	3	C		CV	O			
	PUMP LUBE OIL COOLER CHECK VALVE												
2-FW-611	12050-CBM-074A	3 OF 4		CHECK VALVE	1.000	3	C		CV	O			
	PUMP LUBE OIL COOLER CHECK VALVE												
2-FW-FCV-2478	12050-CBM-074A	1 OF 4	E4	AO GLOBE	16.000	NC	B		EV	C		11	
									FS	C		11	
									ST	C		11	
									VP	OC			
	"A" MAIN FEEDWATER REG VALVE												
2-FW-FCV-2479	12050-CBM-074A	1 OF 4	F4	AO GLOBE	6.000	NC	B		EV	C		11	
									FS	C		11	
									ST	C		11	
	"A" BYPASS FEEDWATER REG VALVE												
2-FW-FCV-2488	12050-CBM-074A	1 OF 4	D4	AO GLOBE	16.000	NC	B		EV	C		11	
									FS	C		11	
									ST	C		11	
									VP	OC			
	"B" MAIN FEEDWATER REG VALVE												
2-FW-FCV-2489	12050-CBM-074A	1 OF 4	D4	AO GLOBE	6.000	NC	B		EV	C		11	
									FS	C		11	
									ST	C		11	
	"B" BYPASS FEEDWATER REG VALVE												
2-FW-FCV-2498	12050-CBM-074A	1 OF 4	B4	AO GLOBE	16.000	NC	B		EV	C		11	
									FS	C		11	
									ST	C		11	
									VP	OC			
	"C" MAIN FEEDWATER REG VALVE												
2-FW-FCV-2499	12050-CBM-074A	1 OF 4	C4	AO GLOBE	6.000	NC	B		EV	C		11	
									FS	C		11	
									ST	C		11	
	"C" BYPASS FEEDWATER REG VALVE												
2-FW-HCV-200A	12050-CBM-074A	1 OF 4	A5	AO GLOBE	3.000	3	B		EV	O		32	
									FS	O		32	
									ST	O		32	
									VP	OC			
	STANDBY AUXILIARY FEEDWATER SUPPLY TO "A" STEAM GENERATOR												
2-FW-HCV-200B	12050-CBM-074A	1 OF 4	A6	AO GLOBE	3.000	3	B		EV	O		32	

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
2-FW-HCV-200B	12050-CBM-074A	1 OF 4	A6	AO GLOBE	3.000	3	B		FS	O		32	
									ST	O		32	
									VP	OC			
	STANDBY AUXILIARY FEEDWATER SUPPLY TO "B" STEAM GENERATOR												
2-FW-HCV-200C	12050-CBM-074A	1 OF 4	A7	AO GLOBE	3.000	3	B		EV	O		32	
									FS	O		32	
									ST	O		32	
									VP	OC			
	NORMAL AUXILIARY FEEDWATER SUPPLY TO "C" STEAM GENERATOR												
2-FW-MOV-200A	12050-CBM-074A	1 OF 4	B5	MO GLOBE	3.000	3	B		EV	C			
										O			
									ST	C			
										O			
									VP	OC			
	STANDBY AUXILIARY FEEDWATER SUPPLY TO "A" STEAM GENERATOR												
2-FW-MOV-200B	12050-CBM-074A	1 OF 4	B6	MO GLOBE	3.000	3	B		EV	C			
										O			
									ST	C			
										O			
									VP	OC			
	NORMAL AUXILIARY FEEDWATER SUPPLY TO "B" STEAM GENERATOR												
2-FW-MOV-200C	12050-CBM-074A	1 OF 4	B7	MC GLOBE	3.000	3	B		EV	C			
										O			
									ST	C			
										O			
									VP	OC			
	STANDBY AUXILIARY FEEDWATER SUPPLY TO "C" STEAM GENERATOR												
2-FW-MOV-200D	12050-CBM-074A	3 OF 4	E8	MO GLOBE	3.000	3	B		EV	C			
										O			
									ST	C			
										O			
									VP	OC			
	NORMAL AUXILIARY FEEDWATER SUPPLY TO "A" STEAM GENERATOR												
2-FW-MOV-254A	12050-CBM-074A	1 OF 4	E3	MO GATE	16.000	NC	B		EV	C		11	
									ST	C		11	
									VP	OC			
	"A" MAIN FEEDWATER SUPPLY ISOLATION VALVE												
2-FW-MOV-254B	12050-CBM-074A	1 OF 4	D3	MO GATE	16.000	NC	B		EV	C		11	
									ST	C		11	
									VP	OC			

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
	"B" MAIN FEEDWATER SUPPLY ISOLATION VALVE												
2-FW-MOV-254C	12050-CBM-074A	1 OF 4	B3	MO GATE	16.000	NC	B		EV	C		11	
									ST	C		11	
									VP	OC			
	"C" MAIN FEEDWATER SUPPLY ISOLATION VALVE												
2-FW-PCV-259A	12050-CBM-074A	3 OF 4	F8	AO GLOBE	4.000	3	B		EV	O		33	
									FS	O		33	
									ST	O		33	
									VP	OC			
	AUXILIARY FEEDWATER PRESSURE CONTROL VALVE												
2-FW-PCV-259B	12050-CBM-074A	3 OF 4	E8	AO GLOBE	4.000	3	B		EV	O		33	
									FS	O		33	
									ST	O		33	
									VP	OC			
	AUXILIARY FEEDWATER PRESSURE CONTROL VALVE												
2-FW-RV-200	12050-CBM-074A	3 OF 4	D8	RELIEF VALVE	3.000	3	C		SP	O			
	TURBINE DRIVEN AUXILIARY FEED PUMP FEEDWATER DISCHARGE RELIEF VALVE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
2-GN-101	12050-FM -105A	1 OF 3	B6	CHECK VALVE	.750	NC	AC		CV LT	C C			1
	BOTTLED NITROGEN SUPPLY TO PORV ISOLATION CHECK VALVE												
2-GN-102	12050-FM -105A	1 OF 3	B4	CHECK VALVE	.750	NC	AC		CV LT	C C			1
	BOTTLED NITROGEN SUPPLY TO PORV ISOLATION CHECK VALVE												
2-GN-RV-208A-1	12050-FM -105A	1 OF 3	B4	RELIEF VALVE	.750	NC	C		SP	O			
	BOTTLED NITROGEN SUPPLY TO PORV RELIEF VALVE												
2-GN-RV-208A-2	12050-FM -105A	1 OF 3	C5	RELIEF VALVE	.750	NC	C		SP	O			
	BOTTLED NITROGEN SUPPLY TO PORV RELIEF VALVE												
2-GN-RV-208A-3	12050-FM -105A	1 OF 3	C5	RELIEF VALVE	.750	NC	C		SP	O			
	BOTTLED NITROGEN SUPPLY TO PORV RELIEF VALVE												
2-GN-RV-208B-1	12050-FM -105A	1 OF 3	B7	RELIEF VALVE	.750	NC	C		SP	O			
	BOTTLED NITROGEN SUPPLY TO PORV RELIEF VALVE												
2-GN-RV-208B-2	12050-FM -105A	1 OF 3	C6	RELIEF VALVE	.750	NC	C		SP	O			
	BOTTLED NITROGEN SUPPLY TO PORV RELIEF VALVE												
2-GN-RV-208B-3	12050-FM -105A	1 OF 3	C6	RELIEF VALVE	.750	NC	C		SP	O			
	BOTTLED NITROGEN SUPPLY TO PORV RELIEF VALVE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
2-HC-007	11715-CBM-106A	4 OF 4	B7	CHECK VALVE	2.000	NC	C		CV	O	51		
	CONTAINMENT ATMOSPHERE PURGE BLOWER DISCHARGE CHECK VALVE												
2-HC-015	11715-CBM-106A	1 OF 4	E3	CHECK VALVE	2.000	2	AC	CIV	CV	C	20		
										O			
									LT	C			
	UNIT 2 RETURN LINE FROM UNIT 1 HYDROGEN ANALYZERS & RECOMB, INSIDE CONT ISOL CHECK VALVE												
2-HC-020	11715-CBM-106A	2 OF 4	E4	CHECK VALVE	2.000	2	AC	CIV	CV	C	20		
										O			
									LT	C			
	UNIT 2 RETURN LINE FROM UNIT 2 HYDROGEN ANALYZERS & RECOMB, INSIDE CONT ISOL CHECK VALVE												
2-HC-068	11715-CBM-106A	2 OF 4	C5	CHECK VALVE	.375	NC	C		CV	O			
	HYDROGEN ANALYZER DISCHARGE CHECK VALVE												
2-HC-069	11715-CBM-106A	2 OF 4	C4	CHECK VALVE	.375	NC	C		CV	O			
	HYDROGEN ANALYZER DISCHARGE CHECK VALVE												
2-HC-TV-200A	11715-CBM-106A	1 OF 4	E3	SO GLOBE	.375	2	A	CIV	EV	C			
										O			
									FS	C			
									LT	C			
									ST	C	55		
										O	55		
									VP	OC			
	UNIT 2 SAMPLE LINE TO UNIT 1 HYDROGEN ANALYZERS, INSIDE CONTAINMENT ISOLATION VALVE												
2-HC-TV-200B	11715-CBM-106A	1 OF 4	E4	SO GLOBE	.375	2	A	CIV	EV	C			
										O			
									FS	C			
									LT	C			
									ST	C	55		
										O	55		
									VP	OC			
	UNIT 2 SAMPLE LINE TO UNIT 1 HYDROGEN ANALYZERS, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-HC-TV-201A	11715-CBM-106A	1 OF 4	D4	SO GLOBE	.375	2	A	CIV	EV	C			
										O			
									FS	C			
									LT	C			
									ST	C	55		
										O	55		
									VP	OC			
	RETURN ISOLATION FROM UNIT 1 HYDROGEN ANALYZERS TO UNIT 2 CONT,OUTSIDE CONT ISOL VALVE												
2-HC-TV-201B	11715-CBM-106A	1 OF 4	D4	SO GLOBE	.375	2	A	CIV	EV	C			
										O			

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
2-HC-TV-201B	11715-CBM-106A	1 OF 4	D4	SO GLOBE	.375	2	A	CIV	FS	C			
									LT	C			
									ST	C	55		
										O	55		
									VP	OC			
	RETURN ISOLATION FROM UNIT 1 HYDROGEN ANA-LYZERS TO UNIT 2 CONT,OUTSIDE CONT ISOL VALVE												
2-HC-TV-202A	11715-CBM-106A	2 OF 4	E4	SC GLOBE	.375	2	A	CIV	EV	C			
										O			
									FS	C			
									LT	C			
									ST	C	55		
										O	55		
									VP	OC			
	UNIT 2 SAMPLE LINE TO UNIT 2 HYDROGEN ANA-LYZERS, INSIDE CONTAINMENT ISOLATION VALVE												
2-HC-TV-202B	11715-CBM-106A	2 OF 4	E4	SO GLOBE	.375	2	A	CIV	EV	C			
										O			
									FS	C			
									LT	C			
									ST	C	55		
										O	55		
									VP	OC			
	UNIT 2 SAMPLE LINE TO UNIT 2 HYDROGEN ANA-LYZERS, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-HC-TV-203A	11715-CBM-106A	2 OF 4	D3	SO GLOBE	.375	2	A	CIV	EV	C			
										O			
									FS	C			
									LT	C			
									ST	C	55		
										O	55		
									VP	OC			
	RETURN ISOLATION FROM UNIT 2 HYDROGEN ANA-LYZERS TO UNIT 2 CONT,OUTSIDE CONT ISOL VALVE												
2-HC-TV-203B	11715-CBM-106A	2 OF 4	D3	SO GLOBE	.375	2	A	CIV	EV	C			
										O			
									FS	C			
									LT	C			
									ST	C	55		
										O	55		
									VP	OC			
	RETURN ISOLATION FROM UNIT 2 HYDROGEN ANA-LYZERS TO UNIT 2 CONT,OUTSIDE CONT ISOL VALVE												
2-HC-TV-204A	11715-CBM-106A	4 OF 4	F4	AO GLOBE	2.500	2	A	CIV	EV	C			
										O			
									FS	C			
									LT	C			
									ST	C	55		
										O	55		
									VP	OC			
	SUPPLY ISOL FROM UNIT 1 CONT TO #1 HYDRO RE-COMB & #2 CONT BLOWER,OUTSIDE CONT ISOL VALVE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
2-HC-TV-204B	11715-CBM-106A	4 OF 4	F5	AO GLOBE	2.500	2	A	CIV	EV	C			
										O			
									FS	C			
									LT	C			
									ST	C	55		
										O	55		
									VP	OC			
	SUPPLY ISOL FROM UNIT 1 CONT TO N1 HYDRO RE-COMB & N2 CONT BLOWER,OUTSIDE CONT ISOL VALVE												
2-HC-TV-205A	11715-CBM-106A	1 OF 4	E4	AO GLOBE	2.500	2	A	CIV	EV	C			
										O			
									FS	C			
									LT	C			
									ST	C	55		
										O	55		
									VP	OC			
	RETURN ISOLATION FROM UNIT 1 HYDROGEN RECOMB & ANAL TO UNIT2 CONT, OUTSIDE CONT ISOL VALVE												
2-HC-TV-205B	11715-CBM-106A	1 OF 4	E5	AO GLOBE	2.500	2	A	CIV	EV	C			
										O			
									FS	C			
									LT	C			
									ST	C	55		
										O	55		
									VP	OC			
	RETURN ISOLATION FROM UNIT 1 HYDROGEN RECOMB & ANAL TO UNIT2 CONT, OUTSIDE CONT ISOL VALVE												
2-HC-TV-206A	11715-CBM-106A	4 OF 4	F3	AO GLOBE	2.500	2	A	CIV	EV	C			
										O			
									FS	C			
									LT	C			
									ST	C	55		
										O	55		
									VP	OC			
	UNIT 1 SUPPLY ISOLATION TO N1 CONT ATMO PURGE BLOW & N2 HYDRO RECOMB, OUTSIDE CONT ISOL VLV												
2-HC-TV-206B	11715-CBM-106A	4 OF 4	F3	AO GLOBE	2.500	2	A	CIV	EV	C			
										O			
									FS	C			
									LT	C			
									ST	C	55		
										O	55		
									VP	OC			
	UNIT 1 SUPPLY ISOLATION TO N1 CONT ATMO PURGE BLOW & N2 HYDRO RECOMB, OUTSIDE CONT ISOL VLV												
2-HC-TV-207A	11715-CBM-106A	2 OF 4	E3	AO GLOBE	2.500	2	A	CIV	EV	C			
										O			
									FS	C			
									LT	C			
									ST	C	55		
										O	55		
									VP	OC			

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
	RETURN ISOLATION FROM UNIT 2 HYDROGEN RECOMB & ANAL TO UNIT2 CONT, OUTSIDE CONT ISOL VALVE												
2-HC-TV-207B	11715-CBM-106A	2 OF 4	E3	AO GLOBE	2.500	2	A	CIV	EV	C			
										O			
									FS	C			
									LT	C			
									ST	C	55		
										O	55		
									VP	OC			
	RETURN ISOLATION FROM UNIT 2 HYDROGEN RECOMB & ANAL TO UNIT2 CONT, OUTSIDE CONT ISOL VALVE												
2-HC-TV-208A	11715-CBM-106A	3 OF 4	E3	SO GLOBE	.375	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C	55		
									VP	OC			
	UNIT 2 SAMPLE LINE TO AIR SAMPLE PANEL, INSIDE CONTAINMENT ISOLATION VALVE												
2-HC-TV-208B	11715-CBM-106A	3 OF 4	E4	SO GLOBE	.375	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C	55		
									VP	OC			
	UNIT 2 SAMPLE LINE TO AIR SAMPLE PANEL, OUTSIDE CONTAINMENT ISOLATION VALVE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
2-HV-MOV-200A	11715-CBB-006A	2 OF 3	D3	MO BFLY	36.000	2	AE	CIV	LT VP	C OC	59		
	CONTAINMENT PURGE SUPPLY, INSIDE CONTAINMENT ISOLATION VALVE												
2-HV-MOV-200B	11715-CBB-006A	2 OF 3	D3	MO BFLY	36.000	2	AE	CIV	LT VP	C OC	59		
	CONTAINMENT PURGE SUPPLY, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-HV-MOV-200C	11715-CBB-006A	2 OF 3	C3	MO BFLY	36.000	2	AE	CIV	LT VP	C OC	59		
	CONTAINMENT PURGE EXHAUST, INSIDE CONTAINMENT ISOLATION VALVE												
2-HV-MOV-200D	11715-CBB-006A	2 OF 3	C3	MO BFLY	36.000	2	AE	CIV	LT VP	C OC	59		
	CONTAINMENT PURGE EXHAUST, OUTSIDE CONTAIN-MENT ISOLATION VALVE												
2-HV-MOV-201	11715-CBB-006A	2 OF 3	C3	MO BFLY	8.000	2	AE	CIV	LT VP	C OC	59		
	CONTAINMENT PURGE BYPASS, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-HV-MOV-202	11715-CBB-006A	2 OF 3	D3	MO BFLY	18.000	2	AE	CIV	LT VP	C OC	59		
	CONTAINMENT PURGE ALTERNATE SUPPLY, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-HV-MOV-211A	11715-CBB-40C	2 OF 3	E8	MO GATE	4.000	3	B		EV ST VP	O O OC			
	CONTROL ROOM CHILLER ISOLATION VALVE												
2-HV-MOV-211B	11715-CBB-40C	2 OF 3	C6	MO GATE	4.000	3	B		EV ST	O O			
	CONTROL ROOM CHILLER ISOLATION VALVE												
2-HV-MOV-211C	11715-CBB-40C	2 OF 3	D8	MO GATE	4.000	3	B		EV ST	O O			
	CONTROL ROOM CHILLER ISOLATION VALVE												
2-HV-MOV-213A	11715-CBB-040D	2 OF 3	E3	MO GATE	4.000	3	B		EV ST VP	O O OC			
	CONTROL ROOM CONDENSER WATER SYSTEM ISOLATION VALVE												
2-HV-MOV-213B	11715-CBB-040D	2 OF 3	B3	MO GATE	4.000	3	B		EV ST	O O			

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
	CONTROL ROOM CONDENSER WATER SYSTEM ISOLATION VALVE												
2-HV-MOV-213C	11715-CBB-040D	2 OF 3	C3	MO GATE	4.000	3	B		EV	O			
									ST	O			
	CONTROL ROOM CONDENSER WATER SYSTEM ISOLATION VALVE												
2-HV-PCV-2235A1	11715-CBB-040D	2 OF 3	D6	AO GLOBE	3.000	3	B		EV	C			
									FS	C			
									ST	C			
	CONTROL ROOM CONDENSER WATER BYPASS LINE PRESSURE CONTROL VALVE												
2-HV-PCV-2235A2	11715-CBB-040D	2 OF 3	E3	AO GLOBE	3.000	3	B		EV	O			
									FS	O			
									ST	O			
	CONTROL ROOM CONDENSER WATER PRESSURE CONTROL VALVE												
2-HV-PCV-2235B1	11715-CBB-040D	2 OF 3	A6	AO GLOBE	3.000	3	B		EV	C			
									FS	C			
									ST	C			
	CONTROL ROOM CONDENSER WATER BYPASS LINE PRESSURE CONTROL VALVE												
2-HV-PCV-2235B2	11715-CBB-040D	2 OF 3	C3	AO GLOBE	3.000	3	B		EV	O			
									FS	O			
									ST	O			
	CONTROL ROOM CONDENSER WATER PRESSURE CONTROL VALVE												
2-HV-PCV-2235C1	11715-CBB-040D	2 OF 3	C6	AO GLOBE	3.000	3	B		EV	C			
									FS	C			
									ST	C			
	CONTROL ROOM CONDENSER WATER BYPASS LINE PRESSURE CONTROL VALVE												
2-HV-PCV-2235C2	11715-CBB-040D	2 OF 3	B3	AO GLOBE	3.000	3	B		EV	O			
									FS	O			
									ST	O			
	CONTROL ROOM CONDENSER WATER PRESSURE CONTROL VALVE												
2-HV-RV-2200	11715-CBB-40C	2 OF 3	D3	RELIEF VALVE		3	C		SP	O			
	CONTROL ROOM CHILLER SYSTEM RELIEF VALVE												
2-HV-RV-2201	11715-CBB-40C	2 OF 3	C3	RELIEF VALVE		3	C		SP	O			
	CONTROL ROOM CHILLER SYSTEM RELIEF VALVE												
2-HV-RV-2202A	11715-CBB-40C	2 OF 3	E8	RELIEF VALVE		3	C		SP	O			

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
	CONTROL ROOM CHILLER SYSTEM RELIEF VALVE												
2-HV-RV-2202B	11715-CBB-40C	2 OF 3	C6	RELIEF VALVE		3	C		SP	O			
	CONTROL ROOM CHILLER SYSTEM RELIEF VALVE												
2-HV-RV-2202C	11715-CBB-40C	2 OF 3	D8	RELIEF VALVE		3	C		SP	O			
	CONTROL ROOM CHILLER SYSTEM RELIEF VALVE												
2-HV-RV-2205A	11715-CBB-040D	2 OF 3	E3	RELIEF VALVE		3	C		SP	O			
	CONTROL ROOM CONDENSER WATER SYSTEM RELIEF VALVE												
2-HV-RV-2205B	11715-CBB-040D	2 OF 3	B3	RELIEF VALVE		3	C		SP	O			
	CONTROL ROOM CONDENSER WATER SYSTEM RELIEF VALVE												
2-HV-RV-2205C	11715-CBB-040D	2 OF 3	D3	RELIEF VALVE		3	C		SP	O			
	CONTROL ROOM CONDENSER WATER SYSTEM RELIEF VALVE												
2-HV-RV-2302A	12050-FM -082B	3 OF 3	D3	RELIEF VALVE	.750	NC	C		SP	O			
	SAFEGUARD AREA FANS AIR RECEIVER RELIEF VALVE												
2-HV-RV-2302B	12050-FM -082B	3 OF 3	D5	RELIEF VALVE	.750	NC	C		SP	O			
	SAFEGUARD AREA FANS AIR RECEIVER RELIEF VALVE												
2-HV-SOV-2200A	11715-CBB-040D	2 OF 3	F7	SO GATE	.500	3	B		EV ST	O O			
	CONTROL ROOM CONDENSER PUMP SEAL COOLING WATER LINE ISOLATION VALVE												
2-HV-SOV-2200B	11715-CBB-040D	2 OF 3	B7	SO GATE	.500	3	B		EV ST	O O			
	CONTROL ROOM CONDENSER PUMP SEAL COOLING WATER LINE ISOLATION VALVE												
2-HV-SOV-2200C	11715-CBB-040D	2 OF 3	D7	SO GATE	.500	3	B		EV ST	O O			
	CONTROL ROOM CONDENSER PUMP SEAL COOLING WATER LINE ISOLATION VALVE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
2-IA-2130	12050-FM -082A	2 OF 3	E7	CHECK VALVE	.750	NC	AC		CV	C			1
									LT	C			1
	BOTTLED NITROGEN SUPPLY TO PORV ISOLATION CHECK VALVE												
2-IA-2131	12050-FM -082A	2 OF 3	E8	CHECK VALVE	.750	NC	AC		CV	C			1
									LT	C			1
	BOTTLED NITROGEN SUPPLY TO PORV ISOLATION CHECK VALVE												
2-IA-2132	12050-FM -082A	2 OF 3	E7	CHECK VALVE	.750	NC	AC		CV	C			1
									LT	C			1
	BOTTLED NITROGEN SUPPLY TO PORV ISOLATION CHECK VALVE												
2-IA-2133	12050-FM -082A	2 OF 3	E8	CHECK VALVE	.750	NC	AC		CV	C			1
									LT	C			1
	BOTTLED NITROGEN SUPPLY TO PORV ISOLATION CHECK VALVE												
2-IA-250	12050-CBM-082A	1 OF 3	F3	CHECK VALVE	2.000	2	AC	CIV	CV	C	21		
									LT	C			
	INSTRUMENT AIR SUPPLY TO CONTAINMENT, INSIDE CONTAINMENT ISOLATION CHECK VALVE												
2-IA-396	12050-FM -082B	3 OF 3	B3	CHECK VALVE	.250	NC	AC		CV	C			
									LT	C			2
	SAFEGUARD AREA FANS AIR RECEIVER ISOLATION CHECK VALVE												
2-IA-397	12050-FM -082B	3 OF 3	B3	CHECK VALVE	.250	NC	AC		CV	C			
									LT	C			2
	SAFEGUARD AREA FANS AIR RECEIVER ISOLATION CHECK VALVE												
2-IA-405	12050-FM -082B	3 OF 3	B5	CHECK VALVE	.250	NC	AC		CV	C			
									LT	C			2
	SAFEGUARD AREA FANS AIR RECEIVER ISOLATION CHECK VALVE												
2-IA-406	12050-FM -082B	3 OF 3	B5	CHECK VALVE	.250	NC	AC		CV	C			
									LT	C			2
	SAFEGUARD AREA FANS AIR RECEIVER ISOLATION CHECK VALVE												
2-IA-428	12050-CBM-082B	2 OF 3	C7	CHECK VALVE	1.000	2	AC	CIV	CV	C	21		
									LT	C			
	RETURN TO CONTAINMENT FROM RADIATION MONITOR-ING CABINET, INSIDE CONT ISOL CHECK VALVE												
2-IA-497	11715-FM-082C	1 OF 1	C7	CHECK VALVE	.500	NC	AC		CV	C			5
									LT	C			

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
	BOTTLED AIR SUPPLY TO HYDROGEN RECOMBINER VALVES ISOLATION CHECK VALVE												
2-IA-499	11715-FM-082C	1 OF 1	C7	CHECK VALVE	.500	NC	AC		CV	C			5
									LT	C			
	BOTTLED AIR SUPPLY TO HYDROGEN RECOMBINER VALVES ISOLATION CHECK VALVE												
2-IA-504	12050-FM -082C	1 OF 2	E3	CHECK VALVE	.750	NC	AC		CV	C		31	
									LT	C			3
	MAIN STEAM PCV VALVE AIR ACCUMULATOR ISOLATION CHECK VALVE												
2-IA-510	12050-FM -082C	1 OF 2	E4	CHECK VALVE	.750	NC	AC		CV	C		31	
									LT	C			3
	MAIN STEAM PCV VALVE AIR ACCUMULATOR ISOLATION CHECK VALVE												
2-IA-516	12050-FM -082C	1 OF 2	E4	CHECK VALVE	.750	NC	AC		CV	C		31	
									LT	C			3
	MAIN STEAM PCV VALVE AIR ACCUMULATOR ISOLATION CHECK VALVE												
2-IA-525	12050-FM -082C	1 OF 2	E6	CHECK VALVE	.750	NC	AC		CV	C		31	
									LT	C			3
	AUXILIARY FEEDWATER VALVE AIR ACCUMULATOR ISOLATION CHECK VALVE												
2-IA-531	12050-FM -082C	1 OF 2	E5	CHECK VALVE	.750	NC	AC		CV	C		31	
									LT	C			3
	AUXILIARY FEEDWATER VALVE AIR ACCUMULATOR ISOLATION CHECK VALVE												
2-IA-537	12050-FM -082C	1 OF 2	E6	CHECK VALVE	.750	NC	AC		CV	C		31	
									LT	C			3
	AUXILIARY FEEDWATER VALVE AIR ACCUMULATOR ISOLATION CHECK VALVE												
2-IA-543	12050-FM -082C	1 OF 2	E7	CHECK VALVE	.750	NC	AC		CV	C		31	
									LT	C			3
	AUXILIARY FEEDWATER VALVE AIR ACCUMULATOR ISOLATION CHECK VALVE												
2-IA-549	12050-FM -082C	1 OF 2	E8	CHECK VALVE	.750	NC	AC		CV	C		31	
									LT	C			3
	AUXILIARY FEEDWATER VALVE AIR ACCUMULATOR ISOLATION CHECK VALVE												
2-IA-SV-205A	11715-FM -082M	1 OF 1	D3	RELIEF VALVE		NC	C		SP	O			
	MAIN STEAM PCV VALVE AIR ACCUMULATOR RELIEF VALVE												
2-IA-SV-205B	11715-FM -082M	1 OF 1	D4	RELIEF VALVE		NC	C		SP	O			

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
	MAIN STEAM PCV VALVE AIR ACCUMULATOR RELIEF VALVE												
2-IA-SV-205C	11715-FM -082M	1 OF 1	D4	RELIEF VALVE		NC	C		SP	O			
	MAIN STEAM PCV VALVE AIR ACCUMULATOR RELIEF VALVE												
2-IA-SV-205D	11715-FM -082M	1 OF 1	D5	RELIEF VALVE		NC	C		SP	O			
	AUXILIARY FEEDWATER VALVE AIR ACCUMULATOR RELIEF VALVE												
2-IA-SV-205E	11715-FM -082M	1 OF 1	D6	RELIEF VALVE		NC	C		SP	O			
	AUXILIARY FEEDWATER VALVE AIR ACCUMULATOR RELIEF VALVE												
2-IA-SV-205F	11715-FM -082M	1 OF 1	D7	RELIEF VALVE		NC	C		SP	O			
	AUXILIARY FEEDWATER VALVE AIR ACCUMULATOR RELIEF VALVE												
2-IA-SV-205G	11715-FM -082M	1 OF 1	D7	RELIEF VALVE		NC	C		SP	O			
	AUXILIARY FEEDWATER VALVE AIR ACCUMULATOR RELIEF VALVE												
2-IA-SV-205H	11715-FM -082M	1 OF 1	D8	RELIEF VALVE		NC	C		SP	O			
	AUXILIARY FEEDWATER VALVE AIR ACCUMULATOR RELIEF VALVE												
2-IA-TV-201A	12050-CBM-082C	2 OF 2	F7	AO GLOBE	3.000	2	AE	CIV	LT VP	C OC			
	INSTRUMENT AIR SUPPLY FROM CONTAINMENT, INSIDE CONTAINMENT ISOLATION VALVE												
2-IA-TV-201B	12050-CBM-082C	2 OF 2	F7	AO GLOBE	3.000	2	AE	CIV	LT VP	C OC			
	INSTRUMENT AIR SUPPLY FROM CONTAINMENT, INSIDE CONTAINMENT ISOLATION VALVE												
2-IA-TV-202A	12050-CBM-082B	1 OF 3	D7	AO GLOBE	3.000	2	A	CIV	EV FS LT ST VP	C C C C OC			
	INSTRUMENT AIR SUPPLY TO CONTAINMENT, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-IA-TV-202B	12050-CBM-082B	1 OF 3	D7	AO GLOBE	3.000	2	B		EV FS ST VP	C C C OC	 55 		
	INSTRUMENT AIR SUPPLY TO CONTAINMENT, OUTSIDE CONTAINMENT ISOLATION VALVE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
2-LM-TV-200A	12050-CBM-092A	1 OF 2	E7	AO GLOBE	.375	2	AE	CIV	LT VP	C OC			
	CONTAINMENT LEAKAGE MONITORING OPEN SYSTEM SUPPLY, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-LM-TV-200B	12050-CBM-092A	1 OF 2	E6	AO GLOBE	.375	2	AE	CIV	LT VP	C OC			
	CONTAINMENT LEAKAGE MONITORING OPEN SYSTEM SUPPLY, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-LM-TV-200C	12050-CBM-092A	1 OF 2	E7	AO GLOBE	.375	2	AE	CIV	LT VP	C OC			
	CONTAINMENT LEAKAGE MONITORING OPEN SYSTEM SUPPLY, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-LM-TV-200D	12050-CBM-092A	1 OF 2	E5	AO GLOBE	.375	2	AE	CIV	LT VP	C OC			
	CONTAINMENT LEAKAGE MONITORING OPEN SYSTEM SUPPLY, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-LM-TV-200E	12050-CBM-092A	1 OF 2	F6	AO GLOBE	.375	2	AE	CIV	LT VP	C OC			
	CONTAINMENT LEAKAGE MONITORING OPEN SYSTEM SUPPLY, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-LM-TV-200F	12050-CBM-092A	1 OF 2	F5	AO GLOBE	.375	2	AE	CIV	LT VP	C OC			
	CONTAINMENT LEAKAGE MONITORING OPEN SYSTEM SUPPLY, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-LM-TV-200G	12050-CBM-092A	1 OF 2	E7	AO GLOBE	.375	2	AE	CIV	LT VP	C OC			
	CONTAINMENT LEAKAGE MONITORING OPEN SYSTEM SUPPLY, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-LM-TV-200H	12050-CBM-092A	1 OF 2	E6	AO GLOBE	.375	2	AE	CIV	LT VP	C OC			
	CONTAINMENT LEAKAGE MONITORING OPEN SYSTEM SUPPLY, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-LM-TV-201A	12050-CBM-092A	1 OF 2	D5	AO GLOBE	.375	2	AE	CIV	LT VP	C OC			
	CONTAINMENT LEAKAGE MONITORING SEALED SYSTEM SUPPLY, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-LM-TV-201B	12050-CBM-092A	1 OF 2	D5	AO GLOBE	.375	2	AE	CIV	LT VP	C OC			
	CONTAINMENT LEAKAGE MONITORING SEALED SYSTEM SUPPLY, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-LM-TV-201C	12050-CBM-092A	1 OF 2	D5	AO GLOBE	.375	2	AE	CIV	LT VP	C OC			

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
	CONTAINMENT LEAKAGE MONITORING SEALED SYSTEM SUPPLY, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-LM-TV-201D	12050-CBM-092A	1 OF 2	D5	AO GLOBE	.375	2	AE	CIV	LT VP	C OC			
	CONTAINMENT LEAKAGE MONITORING SEALED SYSTEM SUPPLY, OUTSIDE CONTAINMENT ISOLATION VALVE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
2-MS-018	12050-CBM-070B	1 OF 3	B7	MANUAL GATE	3.000	2	B		EV	C			
	MAIN STEAM TO AUXILIARY FEEDWATER TURBINE LINE ISOLATION VALVE												
2-MS-019	12050-CBM-070B	1 OF 3	C5	MAN CHECK VLV	3.000	2	C		CV	C			
	"A" MAIN STEAM HEADER SUPPLY CHECK VALVE TO DECAY HEAT RELEASE												
2-MS-057	12050-CBM-070B	2 OF 3	B7	MANUAL GATE	3.000	2	B		EV	C			
	MAIN STEAM TO AUXILIARY FEEDWATER TURBINE LINE ISOLATION VALVE												
2-MS-058	12050-CBM-070B	2 OF 3	D5	MAN CHECK VLV	3.000	2	C		CV	C			
	"B" MAIN STEAM HEADER SUPPLY CHECK VALVE TO DECAY HEAT RELEASE												
2-MS-095	12050-CBM-070B	3 OF 3	B7	MANUAL GATE	3.000	2	B		EV	C			
	MAIN STEAM TO AUXILIARY FEEDWATER TURBINE LINE ISOLATION VALVE												
2-MS-096	12050-CBM-070B	3 OF 3	D5	MAN CHECK VLV	3.000	2	C		CV	C			
	"C" MAIN STEAM HEADER SUPPLY CHECK VALVE TO DECAY HEAT RELEASE												
2-MS-117	12050-CBM-070A	3 OF 3	F7	CHECK VALVE	3.000	2	C		CV	C O			
	"C" MAIN STEAM HEADER SUPPLY CHECK VALVE TO TURBINE DRIVEN AUXILIARY FEEDWATER PUMP												
2-MS-119	12050-CBM-070A	3 OF 3	F7	CHECK VALVE	3.000	2	C		CV	C O			
	"B" MAIN STEAM HEADER SUPPLY CHECK VALVE TO TURBINE DRIVEN AUXILIARY FEEDWATER PUMP												
2-MS-121	12050-CBM-070A	3 OF 3	E7	CHECK VALVE	3.000	2	C		CV	C O			
	"A" MAIN STEAM HEADER SUPPLY CHECK VALVE TO TURBINE DRIVEN AUXILIARY FEEDWATER PUMP												
2-MS-NRV-201A	12050-CBM-070B	1 OF 3	D3	CHECK VALVE	32.000	2	C		CV VP	C OC		13	
	"A" MAIN STEAM HEADER NON-RETURN VALVE												
2-MS-NRV-201B	12050-CBM-070B	2 OF 3	D3	CHECK VALVE	32.000	2	C		CV VP	C OC		13	
	"B" MAIN STEAM HEADER NON-RETURN VALVE												
2-MS-NRV-201C	12050-CBM-070B	3 OF 3	D3	CHECK VALVE	32.000	2	C		CV VP	C OC		13	

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
	"C" MAIN STEAM HEADER NON-RETURN VALVE												
2-MS-PCV-201A	12050-CBM-070B	1 OF 3	E5	AO ANGLE	6.000	2	B		EV	C			
										O			
									FS	C			
									ST	C			
										O			
									VP	OC			
	"A" MAIN STEAM HEADER DISCHARGE TO ATMOSPHERE PRESSURE CONTROL VALVE												
2-MS-PCV-201B	12050-CBM-070B	2 OF 3	E6	AO ANGLE	6.000	2	B		EV	C			
										O			
									FS	C			
									ST	C			
										O			
									VP	OC			
	"B" MAIN STEAM HEADER DISCHARGE TO ATMOSPHERE PRESSURE CONTROL VALVE												
2-MS-PCV-201C	12050-CBM-070B	3 OF 3	D5	AO ANGLE	6.000	2	B		EV	C			
										O			
									FS	C			
									ST	C			
										O			
									VP	OC			
	"C" MAIN STEAM HEADER DISCHARGE TO ATMOSPHERE PRESSURE CONTROL VALVE												
2-MS-SV-201A	12050-CBM-070B	1 OF 3	E6	SAFETY VALVE	6.000	2	C		SP	O			
	"A" MAIN STEAM HEADER SAFETY VALVE, SV DISCHARGE TO ATMOS												
2-MS-SV-201B	12050-CBM-070B	2 OF 3	D6	SAFETY VALVE	6.000	2	C		SP	O			
	"B" MAIN STEAM HEADER SAFETY VALVE, SV DISCHARGE TO ATMOS												
2-MS-SV-201C	12050-CBM-070B	3 OF 3	D6	SAFETY VALVE	6.000	2	C		SP	O			
	"C" MAIN STEAM HEADER SAFETY VALVE, SV DISCHARGE TO ATMOS												
2-MS-SV-202A	12050-CBM-070B	1 OF 3	E5	SAFETY VALVE	6.000	2	C		SP	O			
	"A" MAIN STEAM HEADER SAFETY VALVE, SV DISCHARGE TO ATMOS												
2-MS-SV-202B	12050-CBM-070B	2 OF 3	D5	SAFETY VALVE	6.000	2	C		SP	O			
	"B" MAIN STEAM HEADER SAFETY VALVE, SV DISCHARGE TO ATMOS												
2-MS-SV-202C	12050-CBM-070B	3 OF 3	D6	SAFETY VALVE	6.000	2	C		SP	O			
	"C" MAIN STEAM HEADER SAFETY VALVE, SV DISCHARGE TO ATMOS												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
2-MS-SV-203A	12050-CBM-070B	1 OF 3	E6	SAFETY VALVE	6.000	2	C		SP	O			
	"A" MAIN STEAM HEADER SAFETY VALVE, SV DISCHARGE TO ATMOS												
2-MS-SV-203B	12050-CBM-070B	2 OF 3	D5	SAFETY VALVE	6.000	2	C		SP	O			
	"B" MAIN STEAM HEADER SAFETY VALVE, SV DISCHARGE TO ATMOS												
2-MS-SV-203C	12050-CBM-070B	3 OF 3	D6	SAFETY VALVE	6.000	2	C		SP	O			
	"C" MAIN STEAM HEADER SAFETY VALVE, SV DISCHARGE TO ATMOS												
2-MS-SV-204A	12050-CBM-070B	1 OF 3	E6	SAFETY VALVE	6.000	2	C		SP	O			
	"A" MAIN STEAM HEADER SAFETY VALVE, SV DISCHARGE TO ATMOS												
2-MS-SV-204B	12050-CBM-070B	2 OF 3	D6	SAFETY VALVE	6.000	2	C		SP	O			
	"B" MAIN STEAM HEADER SAFETY VALVE, SV DISCHARGE TO ATMOS												
2-MS-SV-204C	12050-CBM-070B	3 OF 3	D6	SAFETY VALVE	6.000	2	C		SP	O			
	"C" MAIN STEAM HEADER SAFETY VALVE, SV DISCHARGE TO ATMOS												
2-MS-SV-205A	12050-CBM-070B	1 OF 3	E5	SAFETY VALVE	6.000	2	C		SP	O			
	"A" MAIN STEAM HEADER SAFETY VALVE, SV DISCHARGE TO ATMOS												
2-MS-SV-205B	12050-CBM-070B	2 OF 3	D5	SAFETY VALVE	6.000	2	C		SP	O			
	"B" MAIN STEAM HEADER SAFETY VALVE, SV DISCHARGE TO ATMOS												
2-MS-SV-205C	12050-CBM-070B	3 OF 3	D5	SAFETY VALVE	6.000	2	C		SP	O			
	"C" MAIN STEAM HEADER SAFETY VALVE, SV DISCHARGE TO ATMOS												
2-MS-TV-201A	12050-CBM-070B	1 OF 3	D4	AO DISC	32.000	2	B		EV	C		16	
									FS	C		16	
									ST	C		16	
									VP	OC			
	"A" MAIN STEAM HEADER TRIP VALVE												
2-MS-TV-201B	12050-CBM-070B	2 OF 3	C4	AO DISC	32.000	2	B		EV	C		16	
									FS	C		16	
									ST	C		16	
									VP	OC			
	"B" MAIN STEAM HEADER TRIP VALVE												
2-MS-TV-201C	12050-CBM-070B	3 OF 3	C4	AO DISC	32.000	2	B		EV	C		16	
									FS	C		16	
									ST	C		16	

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCR-
2-MS-TV-201C	12050-CBM-070B	3 OF 3	C4	AO DISC	32.000	2	B		VP	OC			
	"C" MAIN STEAM HEADER TRIP VALVE												
2-MS-TV-209	12050-CBM-070A	3 OF 3	D3	AO GLOBE	3.000	2	B		EV	C		14	
									FS	C		14	
									ST	C		14	
									VP	OC			
	MAIN STEAM HIGH PRESSURE DRAIN ISOLATION TO CONDENSER												
2-MS-TV-210	12050-CBM-070B	3 OF 3	A4	AO GLOBE	1.500	2	B		EV	C			
									FS	C			
									ST	C			
									VP	OC			
	MAIN STEAM HIGH PRESSURE DRAIN HEADER ISO-LATION TO STEAM GENERATOR BLOWDOWN SYSTEM												
2-MS-TV-211A	12050-CBM-070A	3 OF 3	E5	AO GLOBE	3.000	2	B		EV	C			
										O			
									FS	O			
									ST	C			
										O			
									VP	OC			
	MAIN STEAM SUPPLY TRIP VALVE TO TURBINE DRIVEN AUXILIARY FEEDWATER PUMP												
2-MS-TV-211B	12050-CBM-070A	3 OF 3	E4	AO GLOBE	3.000	2	B		EV	C			
										O			
									FS	O			
									ST	C			
										O			
									VP	OC			
	MAIN STEAM SUPPLY TRIP VALVE TO TURBINE DRIVEN AUXILIARY FEEDWATER PUMP												
2-MS-TV-213A	12050-CBM-070B	1 OF 3	D4	AO GLOBE	3.000	2	B		EV	C		34	
									FS	C		34	
									ST	C		34	
									VP	OC			
	"A" MAIN STEAM TRIP BYPASS VALVE												
2-MS-TV-213B	12050-CBM-070B	2 OF 3	D4	AO GLOBE	3.000	2	B		EV	C		34	
									FS	C		34	
									ST	C		34	
									VP	OC			
	"B" MAIN STEAM TRIP BYPASS VALVE												
2-MS-TV-213C	12050-CBM-070B	3 OF 3	D4	AO GLOBE	3.000	2	B		EV	C		34	
									FS	C		34	
									ST	C		34	
									VP	OC			

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
	"C" MAIN STEAM TRIP BYPASS VALVE												
2-MS-TV-215	12050-CBM-070A	3 OF 3	C4	MECH TRIP VLV	3.000	3	E		VP	OC			
	MAIN STEAM SUPPLY TRIP VALVE TO TURBINE DRIVEN AFW PUMP												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
2-QS-011	12050-CBM-091A	2 OF 4	D6	WL CHECK VLV	8.000	2	AC	CIV	CV	C	68		
										O	68		
									LT	C			
	"A" QUENCH SPRAY PUMP INSIDE CONTAINMENT ISOLATION CHECK VALVE												
2-QS-022	12050-CBM-091A	2 OF 4	E6	WL CHECK VLV	8.000	2	AC	CIV	CV	C	68		
										O	68		
									LT	C			
	"B" QUENCH SPRAY PUMP INSIDE CONTAINMENT ISOLATION CHECK VALVE												
2-QS-MOV-200A	12050-CBM-091A	2 OF 4	A3	MO GATE	10.000	2	E		VP	OC			
	"A" QUENCH SPRAY PUMP SUCTION ISOLATION VALVE FROM REFUELING WATER STORAGE TANK												
2-QS-MOV-200B	12050-CBM-091A	2 OF 4	A3	MO GATE	10.000	2	E		VP	OC			
	"B" QUENCH SPRAY PUMP SUCTION ISOLATION VALVE FROM REFUELING WATER STORAGE TANK												
2-QS-MOV-201A	12050-CBM-091A	2 OF 4	D5	MO GATE	8.000	2	A	CIV	EV	C			
										O			
									LT	C			
									ST	C			
										O			
									VP	OC			
	"A" QUENCH SPRAY PUMP DISCHARGE ISOLATION VALVE, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-QS-MOV-201B	12050-CBM-091A	2 OF 4	E5	MO GATE	8.000	2	A	CIV	EV	C			
										O			
									LT	C			
									ST	C			
										O			
									VP	OC			
	"B" QUENCH SPRAY PUMP DISCHARGE ISOLATION VALVE, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-QS-MOV-202A	12050-CBM-091A	1 OF 4	D5	MO GATE	6.000	2	B		EV	O			
									ST	O			
									VP	OC			
	CHEMICAL ADDITION TANK DISCHARGE ISOLATION VALVE												
2-QS-MOV-202B	12050-CBM-091A	1 OF 4	D6	MO GATE	6.000	2	B		EV	O			
									ST	O			
									VP	OC			
	CHEMICAL ADDITION TANK DISCHARGE ISOLATION VALVE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
2-RC-143	12050-CBM-093B	1 OF 3	A4	MANUAL NEEDLE	.125	1	AE	CIV	LT	C			
	PRESSURIZER PRESSURE DEAD WEIGHT TESTER ISOLATION, OUTSIDE CONT ISOLATION VALVE												
2-RC-145	12050-CBM-093B	1 OF 3	A3	MANUAL NEEDLE	.125	1	AE	CIV	LT	C			
	PRESSURIZER PRESSURE DEAD WEIGHT TESTER ISOLATION, OUTSIDE CONT ISOLATION VALVE												
2-RC-162	12050-CBM-093B	2 OF 3	D7	CHECK VALVE	3.000	2	AC	CIV	CV	C	28		
									LT	C			
	PRIMARY GRADE WATER SUPPLY TO PRT-#2 RCP SEAL STANDPIPES/FLUSH CONNECT, INSIDE CONT ISO VLV												
2-RC-HCV-2556A	12050-CBM-093A	1 OF 3	D7	AO GLOBE	2.000	1	E		VP	OC			
	RCS LOOP FILL BOUNDARY VALVE												
2-RC-HCV-2556B	12050-CBM-093A	2 OF 3	D8	AO GLOBE	2.000	1	E		VP	OC			
	RCS LOOP FILL BOUNDARY VALVE												
2-RC-HCV-2556C	12050-CBM-093A	3 OF 3	D3	AO GLOBE	2.000	1	E		VP	OC			
	RCS LOOP FILL BOUNDARY VALVE												
2-RC-MOV-2535	12050-CBM-093B	1 OF 3	E4	MO GATE	3.000	1	B		EV	C			
										O			
									ST	C			
										O			
									VP	OC			
	BLOCK VALVE FOR PRESSURIZER POWER OPERATED RELIEF VALVE												
2-RC-MOV-2536	12050-CBM-093B	1 OF 3	D4	MO GATE	3.000	1	B		EV	C			
										O			
									ST	C			
										O			
									VP	OC			
	BLOCK VALVE FOR PRESSURIZER POWER OPERATED RELIEF VALVE												
2-RC-PCV-2455C	12050-CBM-093B	1 OF 3	D3	AO GLOBE	3.000	1	BC		EV	C		42	
										O		42	
									FS	C		42	
									SP	O			
									ST	C		42	
										O		42	
									VP	OC			
	PRESSURIZER POWER OPERATED PRESSURE CONTROL VALVE DISCHARGE TO PRESSURIZER RELIEF TANK												
2-RC-PCV-2456	12050-CBM-093B	1 OF 3	E3	AO GLOBE	3.000	1	BC		EV	C		42	
										O		42	
									FS	C		42	
									SP	O			

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	WC ALT TEST VCN-
2-RC-PCV-2456	12050-CBM-093B	1 OF 3	E3	AO GLOBE	3.000	1	BC		ST	C		42	
										O		42	
									VP	OC			
	PRESSURIZER POWER OPERATED PRESSURE CONTROL VALVE DISCHARGE TO PRESSURIZER RELIEF TANK												
2-RC-SOV-201A-1	12050-CBM-093A	3 OF 3	B5	SO GLOBE	1.000	1	B		EV	C	58		
										O	58		
									FS	C	58		
									ST	C	58		
										O	58		
									VP	OC			
	REACTOR VESSEL VENT LINE ISOLATION VALVE TO REFUELING CAVITY												
2-RC-SOV-201A-2	12050-CBM-093A	3 OF 3	A5	SO GLOBE	1.000	1	B		EV	C	58		
										O	58		
									FS	C	58		
									ST	C	58		
										O	58		
									VP	OC			
	REACTOR VESSEL VENT LINE SOLATION VALVE TO REFUELING CAVITY												
2-RC-SOV-201B-1	12050-CBM-093A	3 OF 3	-5	SO GLOBE	1.000	1	B		EV	C	58		
										O	58		
									FS	C	58		
									ST	C	58		
										O	58		
									VP	OC			
	REACTOR VESSEL VENT LINE ISOLATION VALVE TO REFUELING CAVITY												
2-RC-SOV-201B-2	12050-CBM-093A	3 OF 3	A5	SO GLOBE	1.000	1	B		EV	C	58		
										O	58		
									FS	C	58		
									ST	C	58		
										O	58		
									VP	OC			
	REACTOR VESSEL VENT LINE ISOLATION VALVE TO REFUELING CAVITY												
2-RC-SV-2551A	12050-CBM-093B	1 OF 3	E5	SAFETY VALVE	6.000	1	C		SP	O			
	PRESSURIZER SAFETY JALVE, SV DISCHARGE TO PRESSURIZER RELIEF TANK												
2-RC-SV-2551B	12050-CBM-093B	1 OF 3	E5	SAFETY VALVE	6.000	1	C		SP	O			
	PRESSURIZER SAFETY VALVE, SV DISCHARGE TO PRESSURIZER RELIEF TANK												
2-RC-SV-2551C	12050-CBM-093B	1 OF 3	E6	SAFETY VALVE	6.000	1	C		SP	O			
	PRESSURIZER SAFETY VALVE, SV DISCHARGE TO PRESSURIZER RELIEF TANK												
2-RC-TV-2519A	12050-CBM-093B	2 OF 3	D8	AO GLOBE	3.000	2	A	CIV	EV	C			
									FS	C			

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
2-RC-TV-2519A	12050-CBM-093B	2 OF 3	D8	AO GLOBE	3.000	2	A	CIV	LT	C			
									ST	C			
									VP	OC			

PRIMARY GRADE WATER SUPPLY TO PRT-#2 RCP SEAL STANDPIPES & FLUSH CONNECT, OUT CONT ISO VLV

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
2-RH-007	12050-CBM-094A	1 OF 2	E7	CHECK VALVE	10.000	2	C		CV	C	75		
										O	75		
	"A" RHR PUMP DISCHARGE CHECK VALVE												
2-RH-015	12050-CBM-094A	1 OF 2	E5	CHECK VALVE	10.000	2	C		CV	C	75		
										O	75		
	"B" RHR PUMP DISCHARGE CHECK VALVE												
2-RH-037	12050-CBM-094A	2 OF 2	C4	MANUAL GATE	6.000	2	AE	CIV	LT	C			
	RHR SUPPLY ISOLATION TO REFUEL WATER STORAGE TANK, INSIDE CONTAINMENT ISOLATION VALVE												
2-RH-038	12050-CBM-094A	2 OF 2	D3	MANUAL GATE	6.000	2	AE	CIV	LT	C			
	RHR SUPPLY ISOLATION TO REFUEL WATER STORAGE TANK, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-RH-FCV-2605	12050-CBM-094A	2 OF 2	C7	AO BFLY	12.000	2	B		EV	C		20	
									FS	C		20	
									ST	C		20	
	RHR HEAT EXCHANGERS BYPASS FLOW CONTROL VALVE												
2-RH-HCV-2758	12050-CBM-094A	2 OF 2	C5	AO BFLY	12.000	2	B		EV	O		20	
									FS	O		20	
									ST	O		20	
	RHR HEAT EXCHANGERS DISCHARGE FLOW CONTROL VALVE												
2-RH-MOV-2700	12050-CBM-094A	1 OF 2	A5	MO GATE	14.000	1	A	PIV	EV	O		18	
									LT	C			
									ST	O		18	
									VP	OC			
	RHR PUMP SUPPLY ISOLATION FROM "A" HOT LEG, INSIDE MISSILE BARRIER												
2-RH-MOV-2701	12050-CBM-094A	1 OF 2	A4	MO GATE	14.000	1	A	PIV	EV	O		18	
									LT	C			
									ST	O		18	
									VP	OC			
	RHR PUMP SUPPLY ISOLATION FROM "A" HOT LEG, OUTSIDE MISSILE BARRIER												
2-RH-MOV-2720A	12050-CBM-094A	2 OF 2	C3	MO GATE	10.000	1	A	PIV	EV	O		18	
									LT	C			
									ST	O		18	
									VP	OC			
	RHR RETURN ISOLATION TO "B" ACCUMULATOR DISCHARGE LINE												
2-RH-MOV-2720B	12050-CBM-094A	2 OF 2	B3	MO GATE	10.000	1	A	PIV	EV	O		18	
									LT	C			
									ST	O		18	
									VP	OC			

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
	RHR RETURN ISOLATION TO "C" ACCUMULATOR DISCHARGE LINE												
2-RH-RV-2721A	12050-CBM-094A	1 OF 2	E6	RELIEF VALVE	3.000	2	C		SP	O			
	RHR SYSTEM RELIEF VALVE AT "A" RHR PUMP SUCTION, RV DISCHARGE TO PRESSURIZER RELIEF TANK												
2-RH-RV-2721B	12050-CBM-094A	1 OF 2	E4	RELIEF VALVE	3.000	2	C		SP	O			
	RHR SYSTEM RELIEF VALVE AT "B" RHR PUMP SUCTION, RV DISCHARGE TO PRESSURIZER RELIEF TANK												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
2-RM-TV-200A	12050-C[illegible] 082B	2 OF 3	C7	AO GLOBE	1.000	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C	55		
									VP	OC			
	RETURN ISOLATION FROM AIR RADIATION MONITOR TO CONTAINMENT, OUTSIDE CONT ISOLATION VALVE												
2-RM-TV-200B	12050-CBM-082B	2 OF 3	D7	AO GLOBE	1.000	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C	55		
									VP	OC			
	SUPPLY ISOL TO AIR RAD MONITOR FROM CONTAINMENT VENT DUCT, OUTSIDE CONT ISOLATION VALVE												
2-RM-TV-200C	12050-CBM-082B	2 OF 3	D8	AO GLOBE	1.000	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C	55		
									VP	OC			
	SUPPLY ISOL TO AIR RAD MONITOR FROM CONTAINMENT VENT DUCT, INSIDE CONT ISOLATION VALVE												
2-RM-TV-200D	12050-CBM-082B	2 OF 3	C7	AO GLOBE	1.000	2	B		EV	C			
									FS	C			
									ST	C	55		
									VP	OC			
	RETURN ISOL FROM AIR RADIATION MONITOR TO CONTAINMENT, OUTSIDE CONT ISOLATION VALVE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
1-RP-050	11715-CBM-088A	3 OF 4	C7	MANUAL DIA	6.000	2	AE	CIV	LT	C			
	REFUELING PURIFICATION FROM REACTOR CAVITY TO RP PUMPS, OUTSIDE CONT ISOLATION VALVE												
1-RP-084	11715-CBM-088A	3 OF 4	D7	MANUAL DIA	6.000	2	AE	CIV	LT	C			
	REFUELING PURIFICATION FROM RP PUMPS TO REACTOR CAVITY, OUTSIDE CONT ISOLATION VALVE												
2-RP-006	11715-CBM-088A	3 OF 4	C5	MANUAL DIA	6.000	2	AE	CIV	LT	C			
	REFUELING PURIFICATION FROM REACTOR CAVITY TO RP PUMPS, INSIDE CONT ISOLATION VALVE												
2-RP-007	11715-CBM-088A	3 OF 4	D5	MANUAL DIA	6.000	2	AE	CIV	LT	C			
	REFUELING PURIFICATION FROM RP PUMPS TO REACTOR CAVITY, INSIDE CONT ISOLATION VALVE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
2-RS-020	12050-CBM-091A	4 OF 4	D6	WL CHECK VLV	10.000	2	AC	CIV	CV	C	68		
										O	68		
									LT	C			
	"A" OUTSIDE RECIRC SPRAY PUMP INSIDE CONTAINMENT ISOLATION CHECK VALVE												
2-RS-030	12050-CBM-091A	4 OF 4	D6	WL CHECK VLV	10.000	2	AC	CIV	CV	C	68		
										O	68		
									LT	C			
	"B" OUTSIDE RECIRC SPRAY PUMP INSIDE CONTAINMENT ISOLATION CHECK VALVE												
2-RS-103	12050-CBM-091B	1 OF 1	E7	CHECK VALVE	8.000	2	C		CV	O	33		
	"A" CASING COOLING PUMP DISCHARGE CHECK VALVE TO "A" OUTSIDE RECIRC SPRAY PUMP SUCT												
2-RS-118	12050-CBM-091B	1 OF 1	F7	CHECK VALVE	8.000	2	C		CV	O	33		
	"B" CASING COOLING PUMP DISCHARGE CHECK VALVE TO "B" OUTSIDE RECIRC SPRAY PUMP SUCT												
2-RS-MOV-200A	12050-CBM-091B	1 OF 1	E7	MO GATE	8.000	2	A	CIV	EV	C			
										O			
									LT	C			
									ST	C			
										O			
									VP	OC			
	"A" CASING COOLING PUMP DISCHARGE ISOLATION TO "A" OUTSIDE RECIRC SPRAY PUMP SUCTION												
2-RS-MOV-200B	12050-CBM-091B	1 OF 1	F7	MO GATE	6.000	2	A	CIV	EV	C			
										O			
									LT	C			
									ST	C			
										O			
									VP	OC			
	"B" CASING COOLING PUMP DISCHARGE ISOLATION TO "B" OUTSIDE RECIRC SPRAY PUMP SUCTION												
2-RS-MOV-201A	12050-CBM-091B	1 OF 1	E7	MO GATE	6.000	3	A	CIV	EV	C			
										O			
									LT	C			
									ST	C			
										O			
									VP	OC			
	"A" CASING COOLING PUMP DISCHARGE ISOLATION TO "A" OUTSIDE RECIRC SPRAY PUMP SUCTION												
2-RS-MOV-201B	12050-CBM-091B	1 OF 1	F7	MO GATE	6.000	3	A	CIV	EV	C			
										O			
									LT	C			
									ST	C			
										O			
									VP	OC			
	"B" CASING COOLING PUMP DISCHARGE ISOLATION TO "B" OUTSIDE RECIRC SPRAY PUMP SUCTION												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
2-RS-MOV-255A	12050-CBM-091A	4 OF 4	B5	MO GATE	12.000	2	B		EV	C			
										O			
									ST	C			
										O			
									VP	OC			
	"A" OUTSIDE RECIRC SPRAY PUMP SUCTION ISOLAT VALVE FROM CONTAINMENT SUMP & CASING COOLING												
2-RS-MOV-255B	12050-CBM-091A	4 OF 4	A5	MO GATE	12.000	2	B		EV	C			
										O			
									ST	C			
										O			
									VP	OC			
	"B" OUTSIDE RECIRC SPRAY PUMP SUCTION ISOLAT VALVE FROM CONTAINMENT SUMP & CASING COOLING												
2-RS-MOV-256A	12050-CBM-091A	4 OF 4	D5	MO GATE	10.000	2	A	CIV	EV	C			
										O			
									LT	C			
									ST	C			
										O			
									VP	OC			
	"A" OUTSIDE RECIRC SPRAY PUMP DISCHARGE ISO-LATION, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-RS-MOV-256B	12050-CBM-091A	4 OF 4	D5	MO GATE	10.000	2	A	CIV	EV	C			
										O			
									LT	C			
									ST	C			
										O			
									VP	OC			
	"B" OUTSIDE RECIRC SPRAY PUMP DISCHARGE ISO-LATION, OUTSIDE CONTAINMENT ISOLATION VALVE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
2-SA-065	12050-CBM-082F	2 OF 2	B7	MANUAL GLOBE	2.000	2	AE	CIV	LT	C			
	SERVICE AIR SUPPLY TO UNIT 1 CONTAINMENT, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-SA-123	12050-CBM-082F	2 OF 2	D6	MANUAL GATE	2.000	2	AE	CIV	LT	C			
	SERVICE AIR SUPPLY TO UNIT 1 CONTAINMENT, INSIDE CONTAINMENT ISOLATION VALVE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
2-SI-001	12050-CBM-096A	1 OF 3	B6	CHECK VALVE	12.000	2	C		CV	O	38		
	"A" LOW HEAD SI PUMP SUCTION CHECK VALVE FROM CONTAINMENT SUMP												
2-SI-006	12050-CBM-096A	1 OF 3	C7	CHECK VALVE	.750	2	AC		CV LT	C C	54		
	"A" LOW HEAD SI PUMP SEAL WATER SUPPLY CHECK VALVE FROM RWST												
2-SI-009	12050-CBM-096A	2 OF 3	B6	CHECK VALVE	10.000	2	C		CV	C O	39 39		
	"A" LOW HEAD SI PUMP DISCHARGE CHECK VALVE												
2-SI-012	12050-CBM-096A	2 OF 3	B5	CHECK VALVE	2.000	2	C		CV	O			
	"A" LOW HEAD SI PUMP MINIMUM FLOW/TEST LINE DISCHARGE CHECK VALVE												
2-SI-018	12050-CBM-096A	1 OF 3	E5	CHECK VALVE	8.000	2	AC		CV LT	C O C	40 40		
	RWST SUPPLY CHECK VALVE TO CHARGING PUMP SUCTION HEADER												
2-SI-019	12050-CBM-096A	1 OF 3	B3	CHECK VALVE	12.000	2	C		CV	O	39		
	RWST SUPPLY CHECK VALVE TO "B" LOW HEAD SI PUMP SUCTION												
2-SI-021	12050-CBM-096A	1 OF 3	B5	CHECK VALVE	12.000	2	C		CV	O	38		
	"B" LOW HEAD SI PUMP SUCTION CHECK VALVE FROM CONTAINMENT SUMP												
2-SI-029	12050-CBM-096A	1 OF 3	C5	CHECK VALVE	.750	2	AC		CV LT	C C	54		
	"B" LOW HEAD SI PUMP SEAL WATER SUPPLY CHECK VALVE												
2-SI-032	12050-CBM-096A	2 OF 3	B4	CHECK VALVE	10.000	2	C		CV	C O	39 39		
	"B" LOW HEAD SI PUMP DISCHARGE CHECK VALVE												
2-SI-035	12050-CBM-096A	2 OF 3	B4	CHECK VALVE	2.000	2	C		CV	O			
	"B" LOW HEAD SI PUMP MINIMUM FLOW/TEST LINE DISCHARGE CHECK VALVE												
2-SI-047	12050-CBM-096A	1 OF 3	E7	MANUAL GLOBE	1.000	2	AE	CIV	LT	C			
	ACCUMULATOR MAKEUP LINE, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-SI-070	12050-CBM-096A	3 OF 3	D4	CHECK VALVE	1.000	2	C		CV	C			

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
	BORON INJECTION TANK SUPPLY CHECK VALVE FROM BORIC ACID TRANSFER PUMPS												
2-SI-083	12050-CBM-096A	3 OF 3	F7	MANUAL GLOBE	1.000	2	AE	CIV	LT	C			
	BORON INJECTION TANK BYPASS LINE ISOLATION VALVE - TO RCS COLD LEG												
2-SI-085	12050-CBM-096B	4 OF 4	F3	CHECK VALVE	3.000	2	AC	C&P	CV	C	42		
										O	42		
									LT	C			
	HIGH HEAD SI FROM CHARGING PUMPS TO RCS COLD LEGS, INSIDE CONT ISOLATION CHECK VALVE												
2-SI-090	12050-CBM-096B	4 OF 4	F7	CHECK VALVE	2.000	1	C		CV	C	45		
										O	45		
	HIGH HEAD SI TO "A" RCS COLD LEG, INSIDE MISSILE BARRIER CHECK VALVE												
2-SI-091	12050-CBM-096B	4 OF 4	F6	CHECK VALVE	6.000	1	AC	C&P	CV	C	42		
										O	42		
									LT	C			
	LOW HEAD SI TO "A" RCS COLD LEG, INSIDE CONTAINMENT ISOLATION CHECK VALVE												
2-SI-092	12050-CBM-096B	4 OF 4	F8	CHECK VALVE	6.000	1	C		CV	C	44		
										O	44		
	"A" RCS COLD LEG SI ADMISSION CHECK VALVE												
2-SI-093	12050-CBM-096B	4 OF 4	E3	CHECK VALVE	3.000	2	AC	C&P	CV	C	42		
										O	42		
									LT	C			
	HIGH HEAD SI FROM CHARGING PUMPS TO RCS COLD LEGS, INSIDE CONT ISOLATION CHECK VALVE												
2-SI-098	12050-CBM-096B	4 OF 4	E7	CHECK VALVE	2.000	1	C		CV	C	45		
										O	45		
	HIGH HEAD SI TO "B" RCS COLD LEG, INSIDE MISSILE BARRIER CHECK VALVE												
2-SI-099	12050-CBM-096B	4 OF 4	E6	CHECK VALVE	6.000	1	AC	C&P	CV	C	42		
										O	42		
									LT	C			
	LOW HEAD SI TO "B" RCS COLD LEG, INSIDE CONTAINMENT ISOLATION CHECK VALVE												
2-SI-100	12050-CBM-096B	4 OF 4	E8	CHECK VALVE	6.000	1	C		CV	C	44		
										O	44		

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
	"B" RCS COLD LEG SI ADMISSION CHECK VALVE												
2-SI-104	12050-CBM-096B	4 OF 4	D7	CHECK VALVE	2.000	1	C		CV	C	45		
										O	45		
	HIGH HEAD SI TO "C" RCS COLD LEG, INSIDE MISSILE BARRIER CHECK VALVE												
2-SI-105	12050-CBM-096B	4 OF 4	D6	CHECK VALVE	6.000	1	AC	C&P	CV	C	42		
										O	42		
									LT	C			
	LOW HEAD SI TO "C" RCS COLD LEG, INSIDE CONTAINMENT ISOLATION CHECK VALVE												
2-SI-106	12050-CBM-096B	4 OF 4	D8	CHECK VALVE	6.000	1	C		CV	C	44		
										O	44		
	"C" RCS COLD LEG SI ADMISSION CHECK VALVE												
2-SI-107	12050-CBM-096B	4 OF 4	D3	CHECK VALVE	3.000	1	AC	C&P	CV	C	42		
										O	42		
									LT	C			
	HIGH HEAD SI FROM CHARGING PUMPS TO RCS HOT LEGS, INSIDE CONT ISOLATION CHECK VALVE												
2-SI-112	12050-CBM-096B	4 OF 4	C7	CHECK VALVE	6.000	1	C		CV	C	45		
										O	45		
	LOW HEAD SAFETY INJECTION SUPPLY CHECK VALVE TO "C" RCS HOT LEG												
2-SI-113	12050-CBM-096B	4 OF 4	C8	CHECK VALVE	6.000	1	C		CV	C	45		
										O	45		
	"B" RCS HOT LEG SI ADMISSION CHECK VALVE												
2-SI-117	12050-CBM-096B	4 OF 4	C7	CHECK VALVE	6.000	1	C		CV	C	45		
										O	45		
	LOW HEAD SAFETY INJECTION SUPPLY CHECK VALVE TO "B" RCS HOT LEG												
2-SI-118	12050-CBM-096B	4 OF 4	B8	CHECK VALVE	6.000	1	C		CV	C	45		
										O	45		
	"A" RCS HOT LEG SI ADMISSION CHECK VALVE												
2-SI-119	12050-CBM-096B	4 OF 4	C3	CHECK VALVE	3.000	1	AC	C&P	CV	C	42		
										O	42		
									LT	C			
	HIGH HEAD SI FROM CHARGING PUMPS TO RCS HOT LEGS, INSIDE CONT ISOLATION CHECK VALVE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
2-SI-124	12050-CBM-096B	4 OF 4	B7	CHECK VALVE	6.000	1	C		CV	C	45		
										O	45		
	LOW HEAD SAFETY INJECTION SUPPLY CHECK VALVE TO "A" RCS HOT LEG												
2-SI-125	12050-CBM-096B	4 OF 4	D8	CHECK VALVE	6.000	1	C		CV	C	45		
										O	45		
	"C" RCS HOT LEG SI ADMISSION CHECK VALVE												
2-SI*126	12050-CBM-096B	4 OF 4	B3	CHECK VALVE	6.000	2	AC	C&P	CV	C	42		
										O	42		
									LT	C			
	LOW HEAD SI FROM "A" LHSI PUMP TO RCS HOT LEGS, INSIDE CONT ISOLATION CHECK VALVE												
2-SI-128	12050-CBM-096B	4 OF 4	B3	CHECK VALVE	6.000	2	AC	C&P	CV	C	42		
										O	42		
									LT	C			
	LOW HEAD SI FROM "B" LHSI PUMP TO RCS HOT LEGS, INSIDE CONT ISOLATION CHECK VALVE												
2-SI-132	12050-CBM-096B	1 OF 4	F4	CHECK VALVE	1.000	2	AC	CIV	CV	C	41		
									LT	C			
	NITROGEN SUPPLY TO ACCUMULATORS, INSIDE CONTAINMENT ISOLATION CHECK VALVE												
2-SI-136	12050-CBM-096B	1 OF 4	D4	CHECK VALVE	1.000	2	AC	CIV	CV	C	41		
									LT	C			
	ACCUMULATOR MAKE UP LINE, INSIDE CONTAINMENT ISOLATION CHECK VALVE												
2-SI-151	12050-CBM-096B	1 OF 4	B7	CHECK VALVE	12.000	1	AC	PIV	CV	O	43		
									LT	C			
	"A" ACCUMULATOR DISCHARGE CHECK VALVE												
2-SI-153	12050-CBM-096B	1 OF 4	B8	CHECK VALVE	12.000	1	AC	PIV	CV	C	43		
										O	43		
									LT	C			
	"A" ACCUMULATOR COLD LEG ADMISSION CHECK VALVE												
2-SI-168	12050-CBM-096B	2 OF 4	B5	CHECK VALVE	12.000	1	AC	PIV	CV	O	43		
									LT	C			
	"B" ACCUMULATOR DISCHARGE CHECK VALVE												
2-SI-170	12050-CBM-096B	2 OF 4	B7	CHECK VALVE	12.000	1	AC	PIV	CV	C	43		
										O	43		
									LT	C			

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
	"B" ACCUMULATOR COLD LEG ADMISSION CHECK VALVE												
2-SI-185	12050-CBM-096B	3 OF 4	B5	CHECK VALVE	12.000	1	AC	PIV	CV	O	43		
									LT	C			
	"C" ACCUMULATOR DISCHARGE CHECK VALVE												
2-SI-187	12050-CBM-096B	3 OF 4	B7	CHECK VALVE	12.000	1	AC	PIV	CV	C	43		
										O	43		
									LT	C			
	"C" ACCUMULATOR COLD LEG ADMISSION CHECK VALVE												
2-SI-HCV-2936	12050-CBM-096B	1 OF 4	E5	AO GATE	1.000	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C			
									VP	OC			
	WASTE GAS FROM ACCUMULATORS TO CHARCOAL FILTERS												
2-SI-MOV-2836	12050-CBM-096A	3 OF 3	C8	MO GATE	3.000	2	A	C&P	EV	C	35		
										O	35		
									LT	C			
									ST	C	35		
										O	35		
									VP	OC			
	HIGH HEAD SI FROM CHARGING HEADER TO RCS COLD LEGS, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-SI-MOV-2860A	12050-CBM-096A	1 OF 3	B7	MO GATE	12.000	2	B		EV	C			
										O			
									ST	C			
										O			
									VP	OC			
	"A" LOW HEAD SI PUMP SUCTION ISOLATION FROM CONTAINMENT SUMP												
2-SI-MOV-2860B	12050-CBM-096A	1 OF 3	B5	MO GATE	12.000	2	B		EV	C			
										O			
									ST	C			
										O			
									VP	OC			
	"B" LOW HEAD SI PUMP SUCTION ISOLATION FROM CONTAINMENT SUMP												
2-SI-MOV-2862A	12050-CBM-096A	1 OF 3	A3	MO GATE	12.000	2	B		EV	C			
									ST	C			
									VP	OC			
	"A" LOW HEAD SI PUMP SUCTION FROM RWST												
2-SI-MOV-2862B	12050-CBM-096A	1 OF 3	B3	MO GATE	12.000	2	B		EV	C			
									ST	C			
									VP	OC			

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	192 VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
	"B" LOW HEAD SI PUMP SUCTION FROM RWST												
2-SI-MOV-2863A	12050-CBM-096A	2 OF 3	C5	MO GATE	8.000	2	B		EV	C			
										O			
									ST	C			
										O			
									VP	OC			
	"A" LOW HEAD SAFETY INJECTION PUMP SUPPLY ISOLATION TO CHARGING PUMPS												
2-SI-MOV-2863B	12050-CBM-095B	2 OF 2	B8	MO GATE	8.000	2	B		EV	C			
										O			
									ST	C			
										O			
									VP	OC			
	"B" LOW HEAD SAFETY INJECTION PUMP SUPPLY ISOLATION TO CHARGING PUMPS												
2-SI-MOV-2864A	12050-CBM-096A	2 OF 3	C7	MO GATE	10.000	2	B		EV	C			
										O			
									ST	C			
										O			
									VP	OC			
	"A" LOW HEAD SI PUMP COLD LEG DISCHARGE STOP VALVE												
2-SI-MOV-2864B	12050-CBM-096A	2 OF 3	C6	MO GATE	10.000	2	B		EV	C			
										O			
									ST	C			
										O			
									VP	OC			
	"B" LOW HEAD SI PUMP COLD LEG DISCHARGE STOP VALVE												
2-SI-MOV-2865A	12050-CBM-096B	1 OF 4	C7	MO GATE	12.000	2	B		EV	C		24	
										O		24	
									ST	C		24	
										O		24	
									VP	OC			
	"A" ACCUMULATOR DISCHARGE ISOLATION VALVE TO RCS COLD LEG												
2-SI-MOV-2865B	12050-CBM-096B	2 OF 4	C5	MO GATE	12.000	2	B		EV	C		24	
										O		24	
									ST	C		24	
										O		24	
									VP	OC			
	"B" ACCUMULATOR DISCHARGE ISOLATION VALVE TO RCS COLD LEG												
2-SI-MOV-2865C	12050-CBM-096B	3 OF 4	C5	MO GATE	12.000	2	B		EV	C		24	
										O		24	
									ST	C		24	
										O		24	
									VP	OC			

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
	"C" ACCUMULATOR DISCHARGE ISOLATION VALVE TO RCS COLD LEG												
2-SI-MOV-2867A	12050-CBM-096A	3 OF 3	D4	MO GATE	3.000	2	B		EV	C			
										O			
									ST	C			
										O			
									VP	OC			
	BORON INJECTION TANK HIGH HEAD SI INLET VALVE												
2-SI-MOV-2867B	12050-CBM-096A	3 OF 3	D4	MO GATE	3.000	2	B		EV	C			
										O			
									ST	C			
										O			
									VP	OC			
	BORON INJECTION TANK HIGH HEAD SI INLET VALVE												
2-SI-MOV-2867C	12050-CBM-096A	3 OF 3	E7	MO GATE	3.000	2	A	C&P	EV	C	37		
										O	37		
									LT	C	59		
									ST	C	37		
										O	37		
									VP	OC			
	BORON INJECTION TANK OUTLET TO RCS COLD LEG, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-SI-MOV-2867D	12050-CBM-096A	3 OF 3	D7	MO GATE	3.000	2	A	C&P	EV	C	37		
										O	37		
									LT	C	59		
									ST	C	37		
										O	37		
									VP	OC			
	BORON INJECTION TANK OUTLET TO RCS COLD LEG, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-SI-MOV-2869A	12050-CBM-096A	3 OF 3	C8	MO GATE	3.000	2	A	C&P	EV	C	35		
										O	35		
									LT	C			
									ST	C	35		
										O	35		
									VP	OC			
	HIGH HEAD SI FROM CHARGING HEADER TO RCS HOT LEGS, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-SI-MOV-2869B	12050-CBM-096A	3 OF 3	B8	MO GATE	3.000	2	A	C&P	EV	C	35		
										O	35		
									LT	C			
									ST	C	35		
										O	35		
									VP	OC			
	HIGH HEAD SI FROM CHARGING HEADER TO RCS HOT LEGS, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-SI-MOV-2885A	12050-CBM-096A	2 OF 3	C3	MO GLOBE	2.000	2	A		EV	C			
									LT	C			

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	WC ALT TEST VCN-
2-SI-MOV-2885A	12050-CBM-096A	2 OF 3	C3	MO GLOBE	2.000	2	A		ST	C			
									VP	OC			
	"A" LOW HEAD SI PUMP MINIMUM FLOW/TEST LINE ISOLATION												
2-SI-MOV-2885B	12050-CBM-096A	2 OF 3	B3	MO GLOBE	2.000	2	A		EV	C			
									LT	C			
									ST	C			
									VP	OC			
	"B" LOW HEAD SI PUMP MINIMUM FLOW/TEST LINE ISOLATION												
2-SI-MOV-2885C	12050-CBM-096A	2 OF 3	D3	MO GLOBE	2.000	2	A		EV	C			
									LT	C			
									ST	C			
									VP	OC			
	"A" LOW HEAD SI PUMP MINIMUM FLOW/TEST LINE ISOLATION												
2-SI-MOV-2885D	12050-CBM-096A	2 OF 3	B3	MO GLOBE	2.000	2	A		EV	C			
									LT	C			
									ST	C			
									VP	OC			
	"B" LOW HEAD SI PUMP MINIMUM FLOW/TEST LINE ISOLATION												
2-SI-MOV-2890A	12050-CBM-096A	2 OF 3	D7	MO GATE	10.000	2	A	C&P	EV	C	35		
										O	35		
									LT	C			
									ST	C	35		
										O	35		
									VP	OC			
	"A" LOW HEAD SI PUMP HOT LEG DISCHARGE STOP VALVE, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-SI-MOV-2890B	12050-CBM-096A	2 OF 3	D7	MO GATE	10.000	2	A	C&P	EV	C	35		
										O	35		
									LT	C			
									ST	C	35		
										O	35		
									VP	OC			
	"B" LOW HEAD SI PUMP HOT LEG DISCHARGE STOP VALVE, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-SI-MOV-2890C	12050-CBM-096A	2 OF 3	C8	MO GATE	10.000	2	A	C&P	EV	C	37		
										O	37		
									LT	C	59		
									ST	C	37		
										O	37		
									VP	OC			
	LOW HEAD SI PUMPS COLD LEG DISCHARGE STOP VALVE, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-SI-MOV-2890D	12050-CBM-096A	2 OF 3	C7	MO GATE	10.000	2	A	C&P	EV	C	37		
										O	37		
									LT	C	59		
									ST	C	37		

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
2-SI-MOV-2890D	12050-CBM-096A	2 OF 3	C7	MO GATE	10.000	2	A	C&P	ST	O	37		
									VP	OC			
	LOW HEAD SI PUMPS COLD LEG DISCHARGE STOP VALVE, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-SI-RV-2845A	12050-CBM-096A	2 OF 3	D6	RELIEF VALVE	.750	2	C		SP	O			
	"A" LOW HEAD SI PUMP DISCHARGE RELIEF VALVE, RV DISCHARGE TO SAFEGUARDS AREA SUMP												
2-SI-RV-2845B	12050-CBM-096A	2 OF 3	C7	RELIEF VALVE	.750	2	C		SP	O			
	LOW HEAD SI HEADER TO COLD LEG RELIEF VALVE, RV DISCHARGE TO SAFEGUARDS AREA SUMP												
2-SI-RV-2845C	12050-CBM-096A	2 OF 3	E7	RELIEF VALVE	.750	2	C		SP	O			
	"B" LOW HEAD SI PUMP DISCHARGE RELIEF VALVE, RV DISCHARGE TO SAFEGUARDS AREA SUMP												
2-SI-TV-200	12050-CBM-096B	1 OF 4	F3	AO GLOBE	1.000	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C			
									VP	OC			
	NITROGEN SUPPLY TO ACCUMULATORS, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-SI-TV-201	12050-CBM-096B	1 OF 4	E4	AO GLOBE	1.000	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C	55		
									VP	OC			
	ACCUMULATORS TO WASTE GAS CHARCOAL FILTERS, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-SI-TV-2842	12050-CBM-096B	1 OF 4	D4	AO GLOBE	.750	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C			
									VP	OC			
	ACCUMULATOR TEST LINE, INSIDE CONTAINMENT ISOLATION VALVE												
2-SI-TV-2859	12050-CBM-096A	2 OF 3	F7	AO GLOBE	.750	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C			
									VP	OC			
	ACCUMULATOR TEST LINE, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-SI-TV-2884A	12050-CBM-096A	3 OF 3	E4	AO GLOBE	1.000	2	B		EV	C			
									FS	C			
									ST	C	55		
									VP	OC			

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
	BORON INJECTION TANK RETURN ISOLATION TO BORIC ACID STORAGE TANK												
2-SI-TV-2884B	12050-CBM-096A	3 OF 3	E4	AO GLOBE	1.000	2	B		EV	C			
									FS	C			
									ST	C	55		
									VP	OC			
	BORON INJECTION TANK RETURN ISOLATION TO BORIC ACID STORAGE TANK												
2-SI-TV-2884C	12050-CBM-096A	3 OF 3	D4	AO GLOBE	1.000	3	B		EV	C			
									FS	C			
									ST	C			
									VP	OC			
	BORON INJECTION TANK SUPPLY ISOLATION FROM BORIC ACID TRANSFER PUMPS												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
2-SS-TV-200A	12050-CBM-089B	1 OF 1	F6	AO GLOBE	.375	1	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C			
									VP	OC			
	PRESSURIZER LIQUID SPACE SAMPLE LINE, INSIDE CONTAINMENT ISOLATION VALVE												
2-SS-TV-200B	12050-CBM-089B	1 OF 1	F6	AO GLOBE	.375	1	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C			
									VP	OC			
	PRESSURIZER LIQUID SPACE SAMPLE LINE, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-SS-TV-201A	12050-CBM-089B	1 OF 1	E6	AO GLOBE	.375	1	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C	55		
									VP	OC			
	PRESSURIZER VAPOR SPACE SAMPLE LINE, INSIDE CONTAINMENT ISOLATION VALVE												
2-SS-TV-201B	12050-CBM-089B	1 OF 1	E6	AO GLOBE	.375	1	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C			
									VP	OC			
	PRESSURIZER VAPOR SPACE SAMPLE LINE, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-SS-TV-202A	12050-CBM-089B	1 OF 1	D6	SO GLOBE	.375	1	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C	55		
									VP	OC			
	REACTOR COOLANT COLD LEGS SAMPLE HEADER, INSIDE CONTAINMENT ISOLATION VALVE												
2-SS-TV-202B	12050-CBM-089B	1 OF 1	D6	SO GLOBE	.375	1	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C	55		
									VP	OC			
	REACTOR COOLANT COLD LEGS SAMPLE HEADER, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-SS-TV-203A	12050-CBM-089B	1 OF 1	F6	SO GLOBE	.375	2	AE	CIV	LT	C			
									VP	OC			
	RHR SAMPLE HEADER, INSIDE CONTAINMENT ISOLATION VALVE												
2-SS-TV-203B	12050-CBM-089B	1 OF 1	F6	SO GLOBE	.375	2	AE	CIV	LT	C			
									VP	OC			

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
	RHR SAMPLE HEADER, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-SS-TV-204A	12050-CBM-089B	1 OF 1	C6	AO GLOBE	.375	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C	55		
									VP	OC			
	PRESSURIZER RELIEF TANK GAS SPACE SAMPLE LINE, INSIDE CONTAINMENT ISOLATION VALVE												
2-SS-TV-204B	12050-CBM-089B	1 OF 1	C6	AO GLOBE	.375	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C	55		
									VP	OC			
	PRESSURIZER RELIEF TANK GAS SPACE SAMPLE LINE, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-SS-TV-206A	12050-CBM-089B	1 OF 1	E6	SO GLOBE	.375	1	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C	55		
									VP	OC			
	REACTOR COOLANT HOT LEGS SAMPLE HEADER, INSIDE CONTAINMENT ISOLATION VALVE												
2-SS-TV-206B	12050-CBM-089B	1 OF 1	E6	SO GLOBE	.375	1	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C	55		
									VP	OC			
	REACTOR COOLANT HOT LEGS SAMPLE HEADER, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-SS-TV-212A	12050-CBM-089A	3 OF 4	D3	AO GLOBE	.375	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C	55		
									VP	OC			
	STEAM GENERATORS SAMPLE HEADER, INSIDE CONTAINENT ISOLATION VALVE												
2-SS-TV-212B	12050-CBM-089A	3 OF 4	C3	AO GLOBE	.375	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C	55		
									VP	OC			
	STEAM GENERATORS SAMPLE HEADER, OUTSIDE CONTAINMENT ISOLATION VALVE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
2-SV-TV-202-1	12050-CBM-072A	2 OF 3	C3	AO GLOBE	6.000	2	B		EV FS ST VP	C C C OC			
	CONDENSER AIR REMOVAL DISCHARG TO CONTAIN-MENT, OUTSIDE CONTAIN ISOLATION VALVE												
2-SV-TV-203	12050-CBM-072A	2 OF 3	D3	AO GLOBE	6.000	2	A	CIV	EV FS LT ST VP	C C C C OC			
	CONDENSER AIR REMOVAL DISCHARGE TO CONTAIN-MENT, OUTSIDE CONTAINMENT ISOLATION VALVE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
1-SW-MOV-115B	11715-CBM-078A	1 OF 4	D7	MO BFLY	24.000	3	B		EV ST VP	O O OC			
SERVICE WATER HEADER SUPPLY ISOLATION VALVE FROM AUXILIARY SERVICE WATER PUMPS													
2-SW-003	11715-CBM-078A	3 OF 4	D4	CHECK VALVE	20.000	3	C		CV	C O	64 64		
UNIT 2 "A" SERVICE WATER PUMP DISCHARGE CHECK VALVE													
2-SW-010	11715-CBM-078A	3 OF 4	D3	CHECK VALVE	20.000	3	C		CV	C O	64 64		
UNIT 2 "B" SERVICE WATER PUMP DISCHARGE CHECK VALVE													
2-SW-024	11715-CBM-078A	1 OF 4	C6	CHECK VALVE	24.000	3	C		CV	C O	 74		
UNIT 2 AUXILIARY SERVICE WATER PUMP DISCHARGE CHECK VALVE													
2-SW-068	11715-CBM-078B	3 OF 4	F8	CHECK VALVE	24.000	3	C		CV	O	46		
"A" SERVICE WATR HEADER SUPPLY CHECK VALVE TO RECIRC SPRAY HX UPSTREAM OF CROSS CONNECT													
2-SW-070	11715-CBM-078B	3 OF 4	F8	CHECK VALVE	24.000	3	C		CV	O	46		
"B" SERVICE WATR HEADER SUPPLY CHECK VALVE TO RECIRC SPRAY HX UPSTREAM OF CROSS CONNECT													
2-SW-074	11715-CBM-078B	3 OF 4	E7	CHECK VALVE	16.000	2	C		CV	O	46		
"A" RECIRC SPRAY HEAT EXCHANGER SERVICE WATER SUPPLY CHECK VALVE													
2-SW-084	11715-CBM-078B	3 OF 4	E6	CHECK VALVE	16.000	2	C		CV	O	46		
"B" RECIRC SPRAY HEAT EXCHANGER SERVICE WATER SUPPLY CHECK VALVE													
2-SW-094	11715-CBM-078B	3 OF 4	E4	CHECK VALVE	16.000	2	C		CV	O	46		
"C" RECIRC SPRAY HEAT EXCHANGER SERVICE WATER SUPPLY CHECK VALVE													
2-SW-104	11715-CBM-078B	3 OF 4	E3	CHECK VALVE	16.000	2	C		CV	O	46		
"D" RECIRC SPRAY HEAT EXCHANGER SERVICE WATER SUPPLY CHECK VALVE													
2-SW-281	11715-CBB-040D	2 OF 3	E7	CHECK VALVE	4.000	NC	C		CV	O			
SERVICE WATER SUPPLY TO CONTROL ROOM CONDENSER WATER PUMPS													
2-SW-306	11715-CBB-040D	2 OF 3	C7	CHECK VALVE	4.000	NC	C		CV	O			

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
	SERVICE WATER SUPPLY TO CONTROL ROOM CONDENSER WATER PUMPS												
2-SW-337	11715-CBB-040D	2 OF 3	A7	CHECK VALVE	4.000	NC	C		CV	O			
	SERVICE WATER SUPPLY TO CONTROL ROOM CONDENSER WATER PUMPS												
2-SW-580	11715-CBM-078G	2 OF 2	E7	CHECK VALVE	2.000	3	C		CV	O		36	
	SERVICE WATER SUPPLY TO CHARGING PUMP LUBE OIL COOLER CHECK VALVE												
2-SW-581	11715-CBM-078G	2 OF 2	E7	CHECK VALVE	2.000	3	C		CV	O		36	
	SERVICE WATER SUPPLY TO CHARGING PUMP LUBE OIL COOLER CHECK VALVE												
2-SW-591	11715-CBM-078G	2 OF 2	E6	CHECK VALVE	2.000	3	C		CV	O		36	
	SERVICE WATER SUPPLY TO CHARGING PUMP SEAL COOLER CHECK VALVE												
2-SW-592	11715-CBM-078G	2 OF 2	E7	CHECK VALVE	2.000	3	C		CV	O		36	
	SERVICE WATER SUPPLY TO CHARGING PUMP SEAL COOLER CHECK VALVE												
2-SW-597	11715-CBM-078G	2 OF 2	E6	CHECK VALVE	2.000	3	C		CV	O		36	
	SERVICE WATER SUPPLY TO CHARGING PUMP LUBE OIL COOLER CHECK VALVE												
2-SW-598	11715-CBM-078G	2 OF 2	E6	CHECK VALVE	2.000	3	C		CV	O		36	
	SERVICE WATER SUPPLY TO CHARGING PUMP LUBE OIL COOLER CHECK VALVE												
2-SW-608	11715-CBM-078G	2 OF 2	E5	CHECK VALVE	2.000	3	C		CV	O		36	
	SERVICE WATER SUPPLY TO CHARGING PUMP SEAL COOLER CHECK VALVE												
2-SW-609	11715-CBM-078G	2 OF 2	E5	CHECK VALVE	2.000	3	C		CV	O		36	
	SERVICE WATER SUPPLY TO CHARGING PUMP SEAL COOLER CHECK VALVE												
2-SW-615	11715-CBM-078G	2 OF 2	E4	CHECK VALVE	2.000	3	C		CV	O		36	
	SERVICE WATER SUPPLY TO CHARGING PUMP LUBE OIL COOLER CHECK VALVE												
2-SW-616	11715-CBM-078G	2 OF 2	E4	CHECK VALVE	2.000	3	C		CV	O		36	
	SERVICE WATER SUPPLY TO CHARGING PUMP LUBE OIL COOLER CHECK VALVE												
2-SW-626	11715-CBM-078G	2 OF 2	E3	CHECK VALVE	2.000	3	C		CV	O		36	
	SERVICE WATER SUPPLY TO CHARGING PUMP SEAL COOLER CHECK VALVE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
2-SW-627	11715-CBM-078G	2 OF 2	E3	CHECK VALVE	2.000	3	C		CV	O		36	
	SERVICE WATER SUPPLY TO CHARGING PUMP SEAL COOLER CHECK VALVE												
2-SW-MOV-201A	11715-CBM-078A	4 OF 4	E7	MO BFLY	24.000	3	B		EV ST VP	O O OC		35 35	
	"A" SERVICE WATER HEADER SUPPLY ISOLATION TO RECIRC SPRAY HEAT EXCHANGERS												
2-SW-MOV-201B	11715-CBM-078A	4 OF 4	E7	MO BFLY	24.000	3	B		EV ST VP	O O OC		35 35	
	"A" SERVICE WATER HEADER SUPPLY ISOLATION TO RECIRC SPRAY HEAT EXCHANGERS												
2-SW-MOV-201C	11715-CBM-078A	4 OF 4	E7	MO BFLY	24.000	3	B		EV ST VP	O O OC		35 35	
	"B" SERVICE WATER HEADER SUPPLY ISOLATION TO RECIRC SPRAY HEAT EXCHANGERS												
2-SW-MOV-201D	11715-CBM-078A	4 OF 4	E7	MO BFLY	24.000	3	B		EV ST VP	O O OC		35 35	
	"B" SERVICE WATER HEADER SUPPLY ISOLATION TO RECIRC SPRAY HEAT EXCHANGERS												
2-SW-MOV-202A	11715-CBM-078B	3 OF 4	F8	MO BFLY	24.000	3	E		VP	OC			
	SERVICE WATER SUPPLY CROSS CONNECTS TO RECIRC SPRAY HEAT EXCHANGERS												
2-SW-MOV-202B	11715-CBM-078B	3 OF 4	F8	MO BFLY	24.000	3	E		VP	OC			
	SERVICE WATER SUPPLY CROSS CONNECTS TO RECIRC SPRAY HEAT EXCHANGERS												
2-SW-MOV-203A	11715-CBM-078B	3 OF 4	E7	MO BFLY	16.000	2	A	CIV	EV LT ST VP	C O C C O OC			
	SERVICE WATER SUPPLY TO "A" RECIRC SPRAY HEAT EXCHANGER, OUTSIDE CONT ISOLATION VALVE												
2-SW-MOV-203B	11715-CBM-078B	3 OF 4	E[illegible]	MO BFLY	16.000	2	A	CIV	EV LT ST VP	C O C C O OC			
	SERVICE WATER SUPPLY TO "B" RECIRC SPRAY HEAT EXCHANGER, OUTSIDE CONT ISOLATION VALVE												
2-SW-MOV-203C	11715-CBM-078B	3 OF 4	E4	MO BFLY	16.000	2	A	CIV	EV	C			

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
2-SW-MOV-203C	11715-CBM-078B	3 OF 4	E4	MO BFLY	16.000	2	A	CIV	EV	O			
									LT	C			
									ST	C			
										O			
									VP	OC			
	SERVICE WATER SUPPLY TO "C" RECIRC SPRAY HEAT EXCHANGER, OUTSIDE CONT ISOLATION VALVE												
2-SW-MOV-203D	11715-CBM-078B	3 OF 4	E3	MO BFLY	16.000	2	A	CIV	EV	C			
										O			
									LT	C			
									ST	C			
										O			
									VP	OC			
	SERVICE WATER SUPPLY TO "D" RECIRC SPRAY HEAT EXCHANGER, OUTSIDE CONT ISOLATION VALVE												
2-SW-MOV-204A	11715-CBM-078B	3 OF 4	C7	MO BFLY	16.000	2	A	CIV	EV	C			
										O			
									LT	C			
									ST	C			
										O			
									VP	OC			
	SERVICE WATER RETURN FROM "A" RECIRC SPRAY HEAT EXCHANGER, OUTSIDE CONT ISOLATION VALVE												
2-SW-MOV-204B	11715-CBM-078B	3 OF 4	C6	MO BFLY	16.000	2	A	CIV	EV	C			
										O			
									LT	C			
									ST	C			
										O			
									VP	OC			
	SERVICE WATER RETURN FROM "B" RECIRC SPRAY HEAT EXCHANGER, OUTSIDE CONT ISOLATION VALVE												
2-SW-MOV-204C	11715-CBM-078B	3 OF 4	C5	MO BFLY	16.000	2	A	CIV	EV	C			
										O			
									LT	C			
									ST	C			
										O			
									VP	OC			
	SERVICE WATER RETURN FROM "C" RECIRC SPRAY HEAT EXCHANGER, OUTSIDE CONT ISOLATION VALVE												
2-SW-MOV-204D	11715-CBM-078B	3 OF 4	C3	MO BFLY	16.000	2	A	CIV	EV	C			
										O			
									LT	C			
									ST	C			
										O			
									VP	OC			
	SERVICE WATER RETURN FROM "D" RECIRC SPRAY HEAT EXCHANGER, OUTSIDE CONT ISOLATION VALVE												
2-SW-MOV-205A	11715-CBM-078A	4 OF 4	E7	MO BFLY	24.000	3	B		EV	O		35	
									ST	O		35	
									VP	OC			

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
	"B" SERVICE WATER HEADER RETURN ISOLATION FROM RECIRC SPRAY HEAT EXCHANGERS												
2-SW-MOV-205B	11715-CBM-078A	4 OF 4	E7	MO BFLY	24.000	3	B		EV	O		35	
									ST	O		35	
									VP	OC			
	"B" SERVICE WATER HEADER RETURN ISOLATION FROM RECIRC SPRAY HEAT EXCHANGERS												
2-SW-MOV-205C	11715-CBM-078A	4 OF 4	E6	MO BFLY	24.000	3	B		EV	O		35	
									ST	O		35	
									VP	OC			
	"A" SERVICE WATER HEADER RETURN ISOLATION FROM RECIRC SPRAY HEAT EXCHANGERS												
2-SW-MOV-205D	11715-CBM-078A	4 OF 4	E7	MO BFLY	24.000	3	B		EV	O		35	
									ST	O		35	
									VP	OC			
	"A" SERVICE WATER HEADER RETURN ISOLATION FROM RECIRC SPRAY HEAT EXCHANGERS												
2-SW-MOV-206A	11715-CBM-078B	3 OF 4	B3	MO BFLY	24.000	3	E		VP	OC			
	SERVICE WATER RETURN CROSS CONNECTS FROM RECIRC SPRAY HEAT EXCHANGERS												
2-SW-MOV-206B	11715-CBM-078B	3 OF 4	A3	MO BFLY	24.000	3	E		VP	OC			
	SERVICE WATER RETURN CROSS CONNECTS FROM RECIRC SPRAY HEAT EXCHANGERS												
2-SW-MOV-208A	11715-CBM-078C	1 OF 2	B3	MO BFLY	24.000	3	B		EV	C			
										O			
									ST	C			
										O			
									VP	OC			
	"A" SERVICE WATER HEADER SUPPLY ISOLATION TO COMPONENT COOLING HEAT EXCHANGERS												
2-SW-MOV-208B	11715-CBM-078C	1 OF 2	B3	MO BFLY	24.000	3	B		EV	C			
										O			
									ST	C			
										O			
									VP	OC			
	"A" SERVICE WATER HEADER SUPPLY ISOLATION TO COMPONENT COOLING HEAT EXCHANGERS												
2-SW-MOV-210A	11715-CBM-078A	4 OF 4	E8	MO BFLY	8.000	3	E		VP	OC			
	SERVICE WATER HEADER SUPPLY TO RECIRCULATION AIR COOLERS												
2-SW-MOV-210B	11715-CBM-078A	4 OF 4	F8	MO BFLY	8.000	3	E		VP	OC			
	SERVICE WATER HEADER SUPPLY TO RECIRCULATION AIR COOLERS												
2-SW-MOV-213A	11715-CBM-078A	4 OF 4	B7	MO BFLY	10.000	3	E		VP	OC			

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
	SERVICE WATER RETURN ISOLATION FROM FUEL PIT COOLERS												
2-SW-MOV-213B	11715-CBM-078A	4 OF 4	B5	MO BFLY	10.000	3	E		VP	OC			
	SERVICE WATER SUPPLY ISOLATION TO FUEL PIT COOLERS												
2-SW-MOV-214A	11715-CBM-078A	4 OF 4	F8	MO BFLY	8.000	3	E		VP	OC			
	SERVICE WATER HEADER RETURN FROM RECIRCULATION AIR COOLERS												
2-SW-MOV-214B	11715-CBM-078A	4 OF 4	F8	MO BFLY	8.000	3	E		VP	OC			
	SERVICE WATER HEADER RETURN FROM RECIRCULATION AIR COOLERS												
2-SW-MOV-215A	11715-CBM-078A	1 OF 4	D7	MO BFLY	24.000	3	B		EV	O			
									ST	O			
									VP	OC			
	SERVICE WATER HEADER SUPPLY ISOLATION VALVE FROM AUXILIARY SERVICE WATER PUMPS												
2-SW-MOV-217	11715-CBM-078A	1 OF 4	D6	MO BFLY	24.000	3	B		EV	O			
									ST	O			
									VP	OC			
	UNIT 2 AUXILIARY SERVICE WATER PUMP DISCHARGE ISOLATION VALVE												
2-SW-MOV-219	11715-CBM-078A	1 OF 4	D5	MO BFLY	8.000	3	B		EV	C			
									ST	C			
									VP	OC			
	MAKEUP PUMP SUPPLY VALVE												
2-SW-MOV-220A	11715-CBM-078A	4 OF 4	F3	MO BFLY	10.000	NC	E		VP	OC			
	AUXILIARY SERVICE WATER RETURN HEADER VALVE												
2-SW-MOV-220B	11715-CBM-078A	4 OF 4	F3	MO BFLY	10.000	NC	E		VP	OC			
	AUXILIARY SERVICE WATER RETURN HEADER VALVE												
2-SW-MOV-221A	11715-CBM-078H	1 OF 1	C8	MO BFLY	18.000	3	B		EV	O			
									ST	O			
									VP	OC			
	SERVICE WATER TO SPRAY ARRAYS STOP VALVE												
2-SW-MOV-221B	11715-CBM-078H	1 OF 1	C4	MO BFLY	18.000	3	B		EV	O			
									ST	O			
									VP	OC			
	SERVICE WATER TO SPRAY ARRAYS STOP VALVE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
2-SW-MOV-222A	11715-CBM-078H	1 OF 1	C7	MO BFLY	18.000	3	B		EV	O			
									ST	O			
									VP	OC			
	SERVICE WATER TO SPRAY ARRAYS STOP VALVE												
2-SW-MOV-222B	11715-CBM-078H	1 OF 1	C4	MO BFLY	18.000	3	B		EV	O			
									ST	O			
									VP	OC			
	SERVICE WATER TO SPRAY ARRAYS STOP VALVE												
2-SW-MOV-223A	11715-CBM-078H	1 OF 1	D8	MO BFLY	24.000	3	B		EV	C			
									ST	C			
									VP	OC			
	SERVICE WATER BYPASS VALVE												
2-SW-MOV-223B	11715-CBM-078H	1 OF 1	D4	MO BFLY	24.000	3	B		EV	C			
									ST	C			
									VP	OC			
	SERVICE WATER BYPASS VALVE												
2-SW-RV-200A	11715-CBM-078B	3 OF 4	E7	RELIEF VALVE	.750	2	C		SP	O			
	"A" RECIRC SPRAY HEAT EXCHANG SERVICE WATER RELIEF VALVE, RV DISCHARGE TO CONT SUMP												
2-SW-RV-200B	11715-CBM-078B	3 OF 4	E6	RELIEF VALVE	.750	2	C		SP	O			
	"B" RECIRC SPRAY HEAT EXCHANG SERVICE WATER RELIEF VALVE, RV DISCHARGE TO CONT SUMP												
2-SW-RV-200C	11715-CBM-078B	3 OF 4	E4	RELIEF VALVE	.750	2	C		SP	O			
	"C" RECIRC SPRAY HEAT EXCHANG SERVICE WATER RELIEF VALVE, RV DISCHARGE TO CONT SUMP												
2-SW-RV-200D	11715-CBM-078B	3 OF 4	E3	RELIEF VALVE	.750	2	C		SP	O			
	"D" RECIRC SPRAY HEAT EXCHANG SERVICE WATER RELIEF VALVE, RV DISCHARGE TO CONT SUMP												
2-SW-TCV-202A	11715-CBM-078G	2 OF 2	C4	AO GATE	2.000	3	B		EV	O			
									FS	O			
									ST	O			
	SERVICE WATER FROM CHARGING PUMP LUBE OIL COOLER TEMP CONTROL VALVE												
2-SW-TCV-202B	11715-CBM-078G	2 OF 2	C6	AO GATE	2.000	3	B		EV	O			
									FS	O			
									ST	O			
	SERVICE WATER FROM CHARGING PUMP LUBE OIL COOLER TEMP CONTROL VALVE												
2-SW-TCV-202C	11715-CBM-078G	2 OF 2	C8	AO GATE	2.000	3	B		EV	O			
									FS	O			

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
2-SW-TCV-202C	11715-CBM-078G	2 OF 2	C8	AO GATE	2.000	3	B		ST	O			
	SERVICE WATER FROM CHARGING PUMP LUBE OIL COOLER TEMP CONTROL VALVE												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
2-VG-TV-200A	12050-CBM-090A	1 OF 3	F3	AO GLOBE	1.500	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C	55		
									VP	OC			
	VENT LINE ISOL FROM PRIMARY DRAINS TRANSFER TANK TO GAS STRIPPERS, OUTSIDE CONT ISOL												
2-VG-TV-200B	12050-CBM-090A	1 OF 3	D3	AO GLOBE	1.500	2	A	CIV	EV	C			
									FS	C			
									LT	C			
									ST	C			
									VP	OC			
	VENT LINE ISOL FROM PRIMARY DRAINS TRANSFER TANK TO GAS STRIPPERS, INSIDE CONT ISOL VLV												

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
2-VP-024	12050-CBM-072A	2 OF 3	E3	CHECK VALVE	6.000	2	AC	CIV	CV LT	C C	47		

CONDENSER AIR REMOVAL DISCHARG TO CONTAINMENT
INSIDE CONTAIN ISOLATION CHECK VALVE

VALVE NUMBER	DRAWING NUMBER	SHEET NUMBER	DRWG COOR	VALVE TYPE	VALVE SIZE	ASME CLASS	IWV CAT	ISO VALVE TYPE	TEST TYPE	TEST POS	REL REQ V-	CS JUST CSV-	NC ALT TEST VCN-
2-WT-041	12050-CBM-102A	2 OF 2	F7	CHECK VALVE	.750	2	C		CV	C			
	"A" STEAM GENERATOR CHEMICAL FEED SUPPLY CHECK VALVE												
2-WT-053	12050-CBM-102A	2 OF 2	E7	CHECK VALVE	.750	2	C		CV	C			
	"B" STEAM GENERATOR CHEMICAL FEED SUPPLY CHECK VALVE												
2-WT-069	12050-CBM-102A	2 OF 2	D7	CHECK VALVE	.750	2	C		CV	C			
	"C" STEAM GENERATOR CHEMICAL FEED SUPPLY CHECK VALVE												
2-WT-437	12050-CBM-102B	1 OF 1	E6	MANUAL GATE	3.000	2	AE	CIV	LT	C			
	WET LAY UP RETURN FROM "A" STEAM GENERATOR, INSIDE CONTAINMENT ISOLATION VALVE												
2-WT-438	12050-CBM-102B	1 OF 1	D6	MANUAL GATE	3.000	2	AE	CIV	LT	C			
	WET LAY UP RETURN FROM "B" STEAM GENERATOR, INSIDE CONTAINMENT ISOLATION VALVE												
2-WT-439	12050-CBM-102B	1 OF 1	B6	MANUAL GATE	3.000	2	AE	CIV	LT	C			
	WET LAY UP RETURN FROM "C" STEAM GENERATOR, INSIDE CONTAINMENT ISOLATION VALVE												
2-WT-446	12050-CBM-102B	1 OF 1	E5	MANUAL GATE	3.000	2	AE	CIV	LT	C			
	WET LAY UP RETURN FROM "A" STEAM GENERATOR, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-WT-447	12050-CBM-102B	1 OF 1	D5	MANUAL GATE	3.000	2	AE	CIV	LT	C			
	WET LAY UP RETURN FROM "B" STEAM GENERATOR, OUTSIDE CONTAINMENT ISOLATION VALVE												
2-WT-448	12050-CBM-102B	1 OF 1	B5	MANUAL GATE	3.000	2	AE	CIV	LT	C			
	WET LAY UP RETURN FROM "C" STEAM GENERATOR, OUTSIDE CONTAINMENT ISOLATION VALVE												

2.3.5 VALVE INSERVICE TESTING PROGRAM RELIEF REQUESTS

Relief requests identify those Section XI Code requirements considered to be impractical. The basis for the relief request and the alternate testing to be performed is given.

RELIEF REQUEST V-1

Relief Request withdrawn.

RELIEF REQUEST V-2

Replaced by Cold Shutdown Justification CSV-1

RELIEF REQUEST V-3

I. IDENTIFICATION OF COMPONENTS

System : Component Cooling

Valve(s): 2-CC-78
2-CC-115
2-CC-152

Class : 2

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valves every three months

III. BASIS FOR RELIEF

These check valves must seat upon reversal of flow in order to fulfill their safety functions. The only exercise method to verify this actuation is to perform a leak rate test/back pressure test. Since the valves are located inside containment and their systems are required during power operation, they cannot be tested every three months. The valves will be exercised only during refueling outages because the small increase in safety gained by testing during cold shutdown does not justify the burden of draining lines and performing leak rate tests.

IV. ALTERNATE TESTING

Exercise for operability each refueling (not to exceed 24 months)

RELIEF REQUEST V-4

Replaced by Cold Shutdown Justification CSV-5

RELIEF REQUEST V-5

Replaced by Cold Shutdown Justification CSV-6

RELIEF REQUEST V-6

Replaced by Cold Shutdown Justification CSV-7

RELIEF REQUEST V-7

Replaced by Cold Shutdown Justification CSV-4

RELIEF REQUEST V-8

Replaced by Cold Shutdown Justification CSV-8

RELIEF REQUEST V-9

I. IDENTIFICATION OF COMPONENTS

System : Chemical & Volume Control

Valve(s): 2-CH-MOV-2380
2-CH-MOV-2381

Class : 2

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valves every three months

III. BASIS FOR RELIEF

Charging flow to the reactor coolant pump seals is required at all times while the pumps are in operation. Failure of one of these valves in the closed position could result in damage to the reactor coolant pump seal, thus placing the plant in an unsafe condition. Also, the valve controllers do not allow for a part-stroke exercise test. The reactor coolant pumps must be secured and reactor coolant pressure must be above 100 psig to perform the exercise tests.

IV. ALTERNATE TESTING

Exercise every cold shutdown when the reactor coolant pumps are secured and reactor coolant pressure is above 100 psig.

RELIEF REQUEST V-10

I. IDENTIFICATION OF COMPONENTS

System : Chemical & Volume Control

Valve(s):	2-CH-260	2-CH-308	2-CH-332
	2-CH-284	2-CH-331	2-CH-335

Class : 1 for 2-CH-260, 284, 308 and 332
2 for 2-CH-331 and 335

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valves every three months

III. BASIS FOR RELIEF

These check valves must seat upon reversal of flow in order to fulfill their safety functions. The only method to verify this actuation is to perform a leak rate/back pressure test. Since the valves are located inside containment and their systems are required during power operation, they cannot be tested every three months. 2-CH-335 is in the normal charging line to the RCS. These lines cannot be drained during short cold shutdowns because charging flow is often maintained. 2-CH-260, 284, and 308 are in the RCP seal water supply lines, and 2-CH-331 is in the RCP seal water return line. Seal flow is used during cold shutdown to reduce RCS leakage and to float the RCP seals. 2-CH-332 is the charging supply to loop fill header, inside containment isolation valve. A local backseat/leak test inside containment is required to verify closure for valve 2-CH-332.

The valves will be exercised only during refueling outages because the small increase in safety gained by testing during cold shutdown does not justify the burden of draining lines and performing leak rate tests.

IV. ALTERNATE TESTING

Exercise for operability every refueling (not to exceed 24 months)

RELIEF REQUEST V-11

Replaced by Cold Shutdown Justification CSV-10

RELIEF REQUEST V-12

Relief Request withdrawn, valve removed from IST Program.

RELIEF REQUEST V-13

Relief Request withdrawn.

RELIEF REQUEST V-14

Relief Request withdrawn.

RELIEF REQUEST V-15

Relief Request withdrawn.

RELIEF REQUEST V-16

I. IDENTIFICATION OF COMPONENTS

System : Fire Protection

Valve(s): 2-FP-79

Class : 2

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valve every three months

III. BASIS FOR RELIEF

This check valve must seat upon reversal of flow in order to fulfill its safety function. The only method to verify this actuation is to perform a leak rate/back pressure test. Since the valve is located inside containment, it cannot be tested every three months. 2-FP-79 is in the containment fire protection system. Testing this valve will render the fire protection system inoperable. It will be exercised only during refueling outages because the small increase in safety gained by testing during cold shutdown does not justify the burden of draining the lines and performing a leak rate test.

IV. ALTERNATE TESTING

Exercise for operability every refueling (not to exceed 24 months)

RELIEF REQUEST V-17

Replaced by Cold Shutdown Justification CSV-11

RELIEF REQUEST V-18

Replaced by Cold Shutdown Justification CSV-12

RELIEF REQUEST V-19

Relief Request withdrawn.

RELIEF REQUEST V-20

I. IDENTIFICATION OF COMPONENTS

System : Post Accident Hydrogen Removal

Valve(s): 2-HC-15
2-HC-20

Class : 2

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valves every three months

III. BASIS FOR RELIEF

These check valves must seat to provide containment isolation and open to sample hydrogen to fulfill their safety functions. The only method to verify closure is to perform a local leak rate test. Since the valves are located inside containment, they cannot be tested every three months. They will be verified closed only during refueling outages because the small increase in safety gained by testing during cold shutdown does not justify the burden of performing leak rate tests.

To test these valves either partially or full open requires either a locally installed rotameter (inside containment) or significant manipulation of the hydrogen recombiner system. In addition, should a containment pressurization event occur while operating the hydrogen recombiners, there is a possibility of exceeding the design pressure of the recombiner system, which is a low pressure system intended for use after the containment depressuizes.

They will be verified open at least once every 18 months during the testing of the hydrogen recombiner system because the small increase in safety gained by testing during normal operation or cold shutdown does not justify potential risk of overpressurizing the hydrogen recombiner system, or the added burden of disrupting normal plant operation to manipulate the recombiner system or of installing the rotameter and performing the test on the more frequent basis.

IV. ALTERNATE TESTING

Exercise to the closed position every refueling (not to exceed 24 months). Exercise to the full open position at least once every 18 months.

RELIEF REQUEST V-21

I. IDENTIFICATION OF COMPONENTS

System : Instrument Air

Valve(s): 2-IA-250
2-IA-428

Class : 2

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valves every three months

III. BASIS FOR RELIEF

These check valves must seat upon reversal of flow in order to fulfill their safety functions. The only method to verify this actuation is to perform a leak rate test. Since the valves are located inside containment, they cannot be tested every three months. Valve 2-IA-250 is in the instrument air supply line to containment. Testing this valve renders the instruments and components supplied by instrument air inside containment inoperable.

They will be exercised only during refueling outages because the small increase in safety gained by testing during cold shutdown does not justify the burden of performing leak rate tests.

IV. ALTERNATE TESTING

Exercise for operability each refueling (not to exceed 24 months)

RELIEF REQUEST V-22

Replaced by Cold Shutdown Justification CSV-13

RELIEF REQUEST V-23

Replaced by Cold Shutdown Justification CSV-14

RELIEF REQUEST V-24

Replaced by Cold Shutdown Justification CSV-15

RELIEF REQUEST V-25

Relief Request Withdrawn

RELIEF REQUEST V-26

Replaced by Cold Shutdown Justification CSV-17

RELIEF REQUEST V-27

Replaced by Cold Shutdown Justification CSV-42

RELIEF REQUEST V-28

I. IDENTIFICATION OF COMPONENTS

System : Reactor Coolant

Valve(s): 2-RC-162

Class : 2

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valve every three months

III. BASIS FOR RELIEF

This check valve must seat upon reversal of flow in order to fulfill its safety function. The only method to verify this actuation is to perform a leak rate test. Since the valve is located inside containment, it cannot be tested every three months. 2-RC-162 is in the primary grade water to pressurizer relief tank and the #2 seal stand pipes. This line cannot be drained during short cold shutdowns because the PRT is required during normal cold shutdowns. Standpipe level must be maintained when the RCS is pressurized to control leakage. The valve will be exercised only during refueling outages because the small increase in safety gained by testing during cold shutdown does not justify the burden of draining lines and performing a leak rate test.

IV. ALTERNATE TESTING

Exercise for operability each refueling (not to exceed 24 months)

RELIEF REQUEST V-29

Replaced by Cold Shutdown Justification CSV-18

RELIEF REQUEST V-30

Replaced by Cold Shutdown Justification CSV-19

RELIEF REQUEST V-31

Replaced by Cold Shutdown Justification CSV-20

RELIEF REQUEST V-32

Replaced by Cold Shutdown Justification CSV-21

RELIEF REQUEST V-33

I. IDENTIFICATION OF COMPONENTS

System : Recirculation Spray

Valve(s): 2-RS-103
2-RS-118

Class : 2

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valves every three months

III. BASIS FOR RELIEF

These check valves must open in order to perform their safety functions. Due to system design, they are not in the Casing Cooling Pump test flowpath. Partial or full stroke exercising these valves with flow would flood the containment sump.

IV. ALTERNATE TESTING

These valves will be grouped together and one valve from this group will be disassembled and inspected every reactor refueling. A different valve will be disassembled every reactor refueling.

RELIEF REQUEST V-34

Replaced by Cold Shutdown Justification CSV-22

RELIEF REQUEST V-35

I. IDENTIFICATION OF COMPONENTS

System : Safety Injection

Valve(s): 2-SI-MOV-2836
2-SI-MOV-2869 A,B
2-SI-MOV-2890 A,B

Class : 2

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valve every three months

III. BASIS FOR RELIEF

These valves provide isolation for alternate safety injection paths to the Reactor Coolant System. As required by Technical Specifications 3/4.5.2.a, they are closed with power removed from valve actuators during Modes 1, 2, and 3. Full or part-stroke exercising these valves during power operation would be in violation of Technical Specifications. Also, the valve controllers do not allow for a part-stroke exercise test.

Technical Specification 4.4.6.2.2 requires that these valves be leak tested following valve actuation. They will be exercised only during refueling outages because the small increase in safety gained by testing during cold shutdown does not justify performing leak rate tests.

IV. ALTERNATE TESTING

Exercise for operability each refueling (not to exceed 24 months)

RELIEF REQUEST V-36

Replaced by Cold Shutdown Justification CSV-24

RELIEF REQUEST V-37

I. IDENTIFICATION OF COMPONENTS

System: Safety Injection

Valve(s): 2-SI-MOV-2867C and D
2-SI-MOV-2890C and D

Class: 2

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valve every three months

III. BASIS FOR RELIEF

Technical Specification 4.4.6.2.2 requires that these valves be leak tested following valve actuation. They will be exercised only during refueling outages because the small increase in safety gained by testing during cold shutdown does not justify performing leak rate tests.

IV. ALTERNATE TESTING

Exercise for operability each refueling (not to exceed 24 months)

RELIEF REQUEST V-38

I. IDENTIFICATION OF COMPONENTS

System : Safety Injection

Valve(s): 2-SI-1
2-SI-21

Class : 2

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valves every three months

III. BASIS FOR RELIEF

To partial or full flow test these check valves requires taking suction from the reactor containment sump which is normally empty. Water would have to be added to the sump. However, the water would pick up contaminants from the sump. This untreated water should not be introduced into the system.

IV. ALTERNATE TESTING

These valves will be grouped together and one valve from this group will be disassembled and inspected every reactor refueling. A different valve will be disassembled every reactor refueling.

RELIEF REQUEST V-39

I. IDENTIFICATION OF COMPONENTS

System : Safety Injection

Valve(s): 2-SI-9
2-SI-19
2-SI-32

Class : 2

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valves every three months

III. BASIS FOR RELIEF

Due to system design, check valves 2-SI-9 and 32 are not in the Low Head Safety Injection Pump test flowpaths. They cannot be full or part-stroke tested during power operation because the LHSI pumps cannot overcome reactor coolant system pressure. Valve 2-SI-19 can only be partial stroked every quarter because the quarterly test loop is a mini-flow loop.

During cold shutdown, the reactor coolant system pressure still prevents full flow testing of the check valves. Partial stroke exercising the valves with flow could cause an overpressurization condition during cold shutdowns.

To verify closure of Valves 2-SI-9 and 32 using back flow, the low head safety injection pumps must be tested at design conditions, which can only be done at reactor refueling. By achieving design conditions, adequate seat tightness is verified on the discharge valve to the non-running pump.

IV. ALTERNATE TESTING

Valves 2-SI-9 and 32 will be exercised to the full open and closed position every reactor refueling (not to exceed 24 months). Valve 2-SI-19 will be partial stroke tested every quarter and full flow tested every reactor refueling.

RELIEF REQUEST V-40

I. IDENTIFICATION OF COMPONENTS

System : Safety Injection

Valve(s): 2-SI-18

Class : 2

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valve every three months

III. BASIS FOR RELIEF

Full or part-stroke exercising this valve during power operation would require charging pump suctions be aligned with the Refueling Water Storage Tank. This alignment would cause a sudden increase in Reactor Coolant System boron inventory. Full flow for the charging system can only be established during reactor refueling when the RCS is depressurized.

To verify valve closure, the refueling water storage tank must be isolated which is a violation of Technical Specification 3.1.2.1.b during normal operation.

The only method to verify closure other than disassembly and inspection is to perform a leak rate/back pressure test. This valve is also subject to leak testing, which is performed every reactor refueling. Verification of closure will be performed during the leak test every reactor refueling instead of every cold shutdown because the small increase in safety gained by testing during cold shutdown does not justify the burden of draining the lines and performing a leak rate test.

IV. ALTERNATE TESTING

Exercise to the partially open position during cold shutdown, exercise to the full open and closed positions every reactor refueling.

RELIEF REQUEST V-41

I. IDENTIFICATION OF COMPONENTS

System : Safety Injection

Valve(s): 2-SI-132
2-SI-136

Class : 2

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valve every three months

III. BASIS FOR RELIEF

These check valves must seat upon reversal of flow in order to fulfill their safety functions. The only method to verify closure is to perform a leak rate/back pressure test. Since the valves are located inside containment, they cannot be tested every three months. These valves will be exercised only during refueling outages because the small increase in safety gained by testing during cold shutdown does not justify the burden of performing a leak rate test.

IV. ALTERNATE TESTING

Exercise for operability every refueling (not to exceed 24 months)

RELIEF REQUEST V-42

I. IDENTIFICATION OF COMPONENTS

System : Safety Injection

Valve(s):	2-SI-85	2-SI-107
	2-SI-91	2-SI-119
	2-SI-93	2-SI-126
	2-SI-99	2-SI-128
	2-SI-105	

Class : 1 for 2-SI-91, 99, 105, 107 and 119
2 for 2-SI-85, 93, 126 and 128

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valves every three months

III. BASIS FOR RELIEF

These Safety Injection check valves must open and close to fulfill their safety functions. They cannot be full or part-stroke exercised to the open position during power operation because this would thermally shock the injection system and cause unnecessary plant transients. Flow cannot be established in the low head injection lines during normal plant operation.

During cold shutdown, the Reactor Coolant System pressure still prevents full design flow. Also, a partial or full stroke test could cause an overpressurization of the Reactor Coolant System and force a safety system to function.

These valves can only be tested to the closed position by draining the lines and performing a back seat leak test.

IV. ALTERNATE TESTING

Exercise to the open position using flow every reactor refueling. Exercise to the closed position every reactor refueling per Technical Specification 4.4.6.2.2.

RELIEF REQUEST V-43

I. IDENTIFICATION OF COMPONENTS

System : Safety Injection

Valve(s):	2-SI-151	2-SI-170
	2-SI-153	2-SI-185
	2-SI-168	2-SI-187

Class : 1

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valves for operability every three months

III. BASIS FOR RELIEF

These valves cannot be partial or full flow tested during normal operation because the accumulator pressure (600 to 650 psig) is below Reactor Coolant System pressure and the injection of borated water would upset the reactor coolant chemistry.

During cold shutdown, the RCS pressure may still prevent full flow testing. Also, discharging the accumulators would challenge the Low Temperature Overpressure Protection System.

A partial flow test is not practical during cold shutdowns. The flow from the accumulator is dependent on the pressure differential between the accumulator and the RCS. The pressure differential cannot be controlled to the fine degree necessary to preclude dumping too much water into the pressurizer, thus making it difficult to control pressurizer level while pressure is being reduced during cooldown. Also, the RCS temperature is high during short cold shutdowns. Dumping cold accumulator water into the RCS could thermally shock the system.

The accumulators must be isolated to verify closure using back flow for valves 2-SI-153, 170 and 187. The small increase in safety gained by performing the back seat check valve tests every cold shutdown versus every reactor refueling does not justify the added burden of the increased test frequency.

The use of non-intrusive monitoring techniques are being evaluated for confirming full disk movement. If non-intrusive techniques can provide a "positive means" for verifying obturator movement, a sampling program will be used as described below due to the burden of applying these techniques in the field.

IV. ALTERNATE TESTING

During the first refueling outage where non-intrusive techniques are used, all valves in the group will be tested to verify that the techniques verify valve obturator movement. During subsequent refueling outages, flow testing will be performed on all valves in the group, but the non-intrusive techniques need be applied only to one valve in each group, on a rotating basis, unless indications of problems are identified. In this case, all valves in the group will be subjected to the non-intrusive techniques. Valve 2-SI-151, 153, 168 and 185 will be in one group, and valves 2-SI-170 and 187 will be in the other group. Because valves 2-SI-170 and 187 are downstream from where RHR connects to the SI line, they experience different service conditions than the other valves. The test frequency is in accordance with Generic Letter 89-04, Position 2.

The flow test will consist of discharging the accumulator from an initial pressure that is less than 600 psig. Discharging the accumulator at a lower initial pressure reduces the severity of the transient and the risk of adverse effects on the reactor coolant system. The low pressure test should provide enough flow to force the disk to the full open position.

If full disk movement cannot be confirmed using non-intrusive monitoring, these valves will be placed into two groups and one valve from each group will be disassembled and inspected every other reactor refueling. The justification for the extended disassembly and inspection schedule is available at the station.

Valves 2-SI-153, 170 and 187 will be confirmed closed every reactor refueling.

RELIEF REQUEST V-44

I. IDENTIFICATION OF COMPONENTS

System : Safety Injection

Valve(s): 2-SI-92
2-SI-100
2-SI-106

Class : 1

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valves every three months

III. BASIS FOR RELIEF

These Safety Injection check valves must open and close to fulfill their safety function. They cannot be full or part-stroke exercised to the open position during power operation because this would cause safety injection flow into the Reactor Coolant System which would thermally shock the injection system and cause unnecessary plant transients. Flow cannot be established in the low head injection lines during normal plant operation.

During cold shutdown, the Reactor Coolant System pressure still prevents full design flow. Also, a partial or full stroke test could cause an overpressurization of the Reactor Coolant System and force a safety system to function.

These valves can only be tested to the closed position by a back seat leak test, which requires the draining of the lines.

IV. ALTERNATE TESTING

Exercise to the open position using flow every reactor refueling. Confirm valve closure by leakage testing every reactor refueling.

RELIEF REQUEST V-45

I. IDENTIFICATION OF COMPONENTS

System : Safety Injection

Valve(s):	2-SI-90	2-SI-113
	2-SI-98	2-SI-117
	2-SI-104	2-SI-118
	2-SI-112	2-SI-124

Class : 1

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valves every three months

III. BASIS FOR RELIEF

These Safety Injection check valves must open and close to fulfill their safety function. They cannot be full or part-stroke exercised to the open position during power operation because this would thermally shock the injection system and cause unnecessary plant transients.

During cold shutdown, the Reactor Coolant System pressure still prevents full design flow. Also, a partial or full stroke test could cause an overpressurization of the Reactor Coolant System and force a safety system to function.

The only test methods to individually back seat these valves are to perform leak tests or to use downstream pressure provided by the low head safety injection pump tests. Either test can only be performed during reactor refueling.

IV. ALTERNATE TESTING

Exercise to the open position using flow and to the closed position every reactor refueling.

RELIEF REQUEST V-46

I. IDENTIFICATION OF COMPONENTS

System : Service Water

Valve(s):	2-SW-68 2-SW-70 2-SW-74 2-SW-84	2-SW-94 2-SW-104

Class : 2 for 2-SW-74, 84, 94, 104
3 for 2-SW-68, 70

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valves every three months

III. BASIS FOR RELIEF

Full or part-stroke exercising these valves would flow Service Water into the Recirculation Spray Heat Exchangers. Per FSAR Section 6.2.2.2.5, in order to ensure long term reliability of the heat exchangers, following each periodic test the heat exchangers are drained, purged with air and maintained in dry layup. The logistics of this procedure make testing at cold shutdown impractical considering the small increase in system safety gained from exercising.

IV. ALTERNATE TESTING

Exercise for operability every refueling (not to exceed 24 four months)

RELIEF REQUEST V-47

I. IDENTIFICATION OF COMPONENTS

System : Vacuum Priming

Valve(s): 2-VP-24

Class : 2

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valve every three months

III. BASIS FOR RELIEF

This check valve must seat upon reversal of flow in order to fulfill its safety function. The only method to verify this actuation is to perform a leak rate test. Since the valve is located inside containment, it cannot be tested every three months. The valve will be exercised during refueling outages because the small increase in safety gained by testing during cold shutdown does not justify performing a leak rate test.

IV. ALTERNATE TESTING

Exercise for operability each refueling (not to exceed 24 months)

RELIEF REQUEST V-48

I. IDENTIFICATION OF COMPONENTS

System : CH

Valve(s): 2-CH-178
2-CH-193
2-CH-208

Class : 2

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valve every three months

III. BASIS FOR RELIEF

With present plant design, these valves can only be partial stroke exercised during power operation because the charging pumps cannot achieve design accident flow when pumping into the reactor coolant system at operating pressure. The only available flow path to test these valves is into the reactor coolant system. During cold shutdown, exercising these valves could result in overpressurization of the reactor coolant system and could force a safety system to function.

IV. ALTERNATE TESTING

Exercise closed every three months and exercise full open every reactor refueling. Valves are partial exercised open during normal operation when the charging train is in service.

RELIEF REQUEST V-49

Relief Request Withdrawn

RELIEF REQUEST V-50

Relief Request Withdrawn

RELIEF REQUEST V-51

I. IDENTIFICATION OF COMPONENTS

System : Containment Atmosphere Cleanup

Valve(s): 2-H2-7

Class : NC

II. IMPRACTICAL CODE REQUIREMENTS

Full-stroke exercise valve for operability

III. BASIS FOR RELIEF

This check valve cannot be full flow tested because instrumentation is not installed to measure flow or differential pressure.

IV. ALTERNATE TESTING

This valve will be disassembled and inspected every reactor refueling and partial flow tested every three months.

RELIEF REQUEST V-52

Relief Request Withdrawn

RELIEF REQUEST V-53

Relief Request Withdrawn

RELIEF REQUEST V-54

I. IDENTIFICATION OF COMPONENTS

System : SI

Valve(s): 2-SI-6
2-SI-29

Class : 2

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valves to the closed position every three months

III. BASIS FOR RELIEF

Due to the plant configuration, these valves cannot be verified closed using system flow. The only method to verify closure other than disassembly and inspection is to perform a back pressure test using a primary grade water supply as the pressure source. To perform the back pressure test on these 3/4" check valves, each LHSI pump must be removed from service for approximately two hours. With one ECCS train out of service, the plant must enter the Technical Specification Action Statement per Paragraph 3.5.2.a and proceed to hot shutdown within 72 hours.

Including the preparation for the test which consists of connecting primary grade water to the test volume using supply hoses, the entire test for each valve takes several hours to perform. Also, the seal water line, which may contain contaminated water, must be drained and vented. Considering that one train of ECCS must be removed from service for an extended period of time which degrades the safety of the plant, and the difficulty in performing the back pressure test, testing these 3/4" check valves to the closed position every three months is not practical.

These valves are also subject to leak testing, which is performed every reactor refueling. A leak test provides more information concerning the condition of the valve seats then just a back pressure test. When compared to the Code requirements for a backseat test performed every cold shutdown, the performance of a leak test every refueling outage is an alternative that provides an acceptable level of quality and safety.

IV. ALTERNATE TESTING

Exercise to the closed position every reactor refueling.

RELIEF REQUEST V-55

I. IDENTIFICATION OF COMPONENTS

System : Various

Valve(s): Valves affected by this request are identified in the Valve Table

Class :

II. IMPRACTICAL CODE REQUIREMENTS

Section XI, IWV-3417(a) "Corrective Action"

III. BASIS FOR RELIEF

These valves have normal stroke times of less than 2 seconds; therefore, they can be considered rapid acting valves.

IV. ALTERNATE TESTING

Whenever the stroke time of these valves exceeds 2 seconds, IWV-3417(a) will be applied.

Notes: The list of affected valves in the Valve Table may change due to maintenance activities which affect valve performance. An updated list of rapid acting valves is maintained by the site ISI personnel.

RELIEF REQUEST V-56

Replaced by Non-Code Alternative Testing Description VNC-4

RELIEF REQUEST V-57

Relief Request Withdrawn

RELIEF REQUEST V-58

I. IDENTIFICATION OF COMPONENTS

System : Reactor Coolant

Valve(s): 2-RC-SOV-201A-1
2-RC-SOV-201A-2
2-RC-SOV-201B-1
2-RC-SOV-201B-2

Class : 1

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valves every three months

III. BASIS FOR RELIEF

These valves are the Reactor Vessel Head Vent Valves. Full or part-stroke exercising these valves at power could release reactor coolant into the reactor vessel refueling cavity. Stroking of these valves has been performed while the Reactor Coolant System was pressurized. This test revealed that when the upstream valve was stroked, the downstream valve tended to lift due to the motive force of the steam. As long as these valves remain closed under RCS pressure, they are an effective isolation boundary. However, these valves should not be stroked while the Reactor Coolant System is pressurized. These valves will be exercised during each cold shutdown when the Reactor Coolant System is depressurized.

IV. ALTERNATE TESTING

Exercise for operability during cold shutdown when the Reactor Coolant System is depressurized (but not more frequently than once per three months).

RELIEF REQUEST V-59

I. IDENTIFICATION OF COMPONENTS

System : Various

Valve(s): Valves affected by this request are identified by Table B

Class :

II. IMPRACTICAL CODE REQUIREMENTS

Leakage rate measurements shall be compared with previous measurements and with the permissible leakage rates specified by the plant owner for a specific valve.

III. BASIS FOR RELIEF

The piping configurations for some containment penetrations do not allow for the individual leakage testing of the containment isolation valves.

IV. ALTERNATE TESTING

In cases where containment isolation valves cannot be individually leakage tested, the containment isolation valves are grouped based on the configuration restraints and the groups are assigned permissible leakages. The groups are subject to the acceptance criteria described in IWV-3427(a).

RELIEF REQUEST V-59 (Cont.)
TABLE B

VALVES LEAK TESTED IN GROUPS

Valve	Class	System
2-SI-MOV-2867C 2-SI-MOV-2867D	2	Safety Injection
2-CH-331 2-CH-MOV-1380	2	Chemical and Volume Control
2-SI-MOV-2890C 2-SI-MOV-2890D	2	Safety Injection
2-HV-MOV-200B 2-HV-MOV-202	2	Containment Purge
2-HV-MOV-200D 2-HV-MOV-201	2	Containment Purge

RELIEF REQUEST V-60

Relief Request Withdrawn

RELIEF REQUEST V-61

I. IDENTIFICATION OF COMPONENTS

System : Various

Valve(s): All Valves Subject to Leakage Testing (Category A Valves)

Class :

II. IMPRACTICAL CODE REQUIREMENTS

IWV-3427(b) - Specifies corrective actions in addition to IWV-3427(a) which include increased frequencies for valve sizes of six inches and larger, and repairs or replacements.

III. BASIS FOR RELIEF

Most valves that are leak rate tested are tested in the "as found" condition, subject to maintenance and retested in the "as left" condition. The valve maintenance is performed on a routine basis and it effectively resets the leakage to a small amount. Therefore, basing corrective actions on previous test results or projections serves no useful function.

IV. ALTERNATE TESTING

None. The requirements of IWV-3427(b) will not be implemented.

RELIEF REQUEST V-62

Relief Request Withdrawn

RELIEF REQUEST V-63

I. IDENTIFICATION OF COMPONENTS

System : Component Cooling

Valve(s): 2-CC-276
2-CC-289
2-CC-302

Class : 2

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valves every three months

III. BASIS FOR RELIEF

These check valves must seat upon reversal of flow in order to fulfill their safety functions. The only exercise method to verify this actuation is to perform a leak rate test/back pressure test which would involve isolating the containment air cooling coils. The containment recirculation air cooling coils are required for normal operation to maintain containment temperature below technical specification limits. Therefore, these valves cannot be tested every three months. They will be exercised only during refueling outages because the small increase in safety gained by testing during cold shutdown does not justify the burden of draining the lines and performing a leak rate test.

IV. ALTERNATE TESTING

Exercise for operability every reactor refueling (not to exceed 24 months)

RELIEF REQUEST V-64

I. IDENTIFICATION OF COMPONENTS

System : Service Water

Valve(s): 2-SW-3
2-SW-10

Class : 3

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valves every three months.

III. BASIS FOR RELIEF

These check valves cannot be full flow tested during normal operation or cold shutdown because the Recirculation Spray Heat Exchangers must be included in the flow path in order for full flow conditions to be established. As described in Relief Request V-46, introduction of service water to the Recirculation Spray Heat Exchangers is prohibited without subsequently draining the heat exchangers. This requirement makes testing during normal operation or cold shutdowns impractical.

Monitoring the discharge pressure gauge of the non-running pump would reveal gross failure of the check valve. However, this test may not detect leakage past the valve due to a partially stuck open disk. The service water pumps are deep draft pumps with enough tolerance between the impellers and the pump casing to pass significant flow without pressurizing the discharge piping to a detectable degree.

The verification of full disk closure using back flow can only be performed when design flow is achieved during the service water pump tests. Verification of design flow for the running pump demonstrates adequate back seating for the discharge check valves of the non-running pumps. However, the observation of the non-running pump discharge gauge to detect gross failure can and should be performed every three months.

IV. ALTERNATE TESTING

These valves will be partial flow tested every three months, and full flow and closure tested every reactor refueling. The non-running pump discharge gauge will be observed once every three months to detect gross failure of the disk to seat.

RELIEF REQUEST V-65

Replaced by Non-Code Alternative Test Description VNC-2

RELIEF REQUEST V-66

I. IDENTIFICATION OF COMPONENTS

System : Component Cooling

Valve(s): 2-CC-107
2-CC-144
2-CC-181

Class : 3

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valves every three months.

III. BASIS FOR RELIEF

These check valves must be locally back pressure tested to verify closure. Since the valves are located inside containment, they cannot be back pressure tested during normal operation. The valves will be tested every refueling outage because the small increase in safety gained by testing during cold shutdown does not justify the burden of performing a back pressure test.

IV. ALTERNATE TESTING

Exercise to the close position every reactcr refueling.

RELIEF REQUEST V-67

I. IDENTIFICATION OF COMPONENTS

System : Various

Valve(s): All power operated valves

Class :

II. IMPRACTICAL CODE REQUIREMENTS

IWV-3417(a) - specifies corrective action based on "alert" criteria established from the previous test time.

III. BASIS FOR RELIEF

Testing of power operated valves will be performed to the guidelines presented in ASME/ANSI OM (Part 10) Sections 4.2.1.8 and 4.2.1.9 as approved for use by Section XI, Article IWV-1000, 1986 Edition with Addenda through 1988. These guidelines represent current industry practices when using stroke times as a means for determining valve degradation and provide improved methods for determining acceptance criteria.

IV. ALTERNATE TESTING

Determine stroke time acceptance criteria per ASME/ANSI OM (Part 10), Section 4.2.1.8 and implement corrective action per Section 4.2.1.9.

RELIEF REQUEST V-68

I. IDENTIFICATION OF COMPONENTS

System : Recirculation Spray

Valve(s):	2-RS-20	2-QS-11
	2-RS-30	2-QS-22

Class : 2

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valves every three months.

III. BASIS FOR RELIEF

These valves must seat to maintain containment integrity and open to allow flow to the containment spray headers. Partial or full flow testing these valves would flow water to the spray arrays and saturate containment. These valves can be mechanically exercised to the open and closed positions. However, the valves are located inside containment and require the construction of scaffolding before they can be exercised. The small increase in safety gained by exercising the valves during cold shutdown does not justify the burden of constructing the scaffolding. These valves are containment isolation valves and are leak tested every reactor refueling.

IV. ALTERNATE TESTING

These valves will be exercised to the open and closed positions every reactor refueling.

RELIEF REQUEST V-69

Relief Request Withdrawn

RELIEF REQUEST V-70

I. IDENTIFICATION OF COMPONENTS

System : Various

Valve(s): All Containment Isolation Valves Subject to Appendix J Testing - These valves are identified by the abbreviation "CIV" under the Isolation Valve Type Column in the Valve Table.

Class:

II. IMPRACTICAL CODE REQUIREMENTS

IWV-3427(a) - Valves with leakage rates exceeding the permissible values shall be replaced or repaired.

III. BASIS FOR RELIEF

Permissible valve leakage rates are based on each valve's possible contribution to the total leakage rate for the containment system. The total containment leakage rate must be less than 0.6La as defined in Technical Specification 3.6.1.2. Exceeding an individual valve's permissible leakage rate may have no affect on the containment's ability to maintain an overall leakage rate less than 0.6La.

Also, there may be plant conditions, or schedule constraints, that preclude repair or replacement of a valve when the individual leakage limit is exceeded, but the overall leakage limit for the Type C-tested valves is met. In these cases, imposing the Code requirements of repair or replacement would create an undue burden with no compensating benefit to quality and safety when the bases for leakage limits is met for the overall limit necessary to ensure containment integrity.

IV. ALTERNATE TESTING

In addition to repair or replacement as corrective actions, an evaluation can be performed which demonstrates that even if a valve has exceeded its permissible leakage rate, the overall containment leakage rate will be maintained below 0.6La until the next Type C tests. No repair or replacement is

necessary if the evaluation is performed. However, when the plant conditions are not such that a repair or replacement would adversely impact plant startup and/or continued operations, an evaluation is not appropriate.

RELIEF REQUEST V-71

I. IDENTIFICATION OF COMPONENTS

System : Component Cooling

Valve(s): 2-CC-194
2-CC-199

Class : 2

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valves open and closed every three months

III. BASIS FOR RELIEF

Valves 2-CC-194 and 2-CC-199 are check valves in the component cooling lines to the RHR heat exchangers and must close for isolation and open to allow RHR flow. The only exercise method to verify closure is to perform a leak rate test/back pressure test. These lines cannot be drained for back seat testing because the RHR system is needed during cold shutdown to control the RCS temperature.

To establish full flow through Valves 2-CC-194 and 199 for testing to the full open position, increased component cooling flow must be directed through the RHR heat exchangers. During cold shutdown and reactor refueling when fuel is in the vessel, increased flow to the RHR heat exchangers reduces the volume of the RCS inventory by reducing the RCS temperature. This reduction in volume can be large enough as to cause excessive makeup demands to the RCS. Therefore, the full flow test should be performed during reactor refueling when the vessel is defueled. The vessel is defueled every refueling outage.

IV. ALTERNATE TESTING

Exercise for closure and full open every reactor refueling (not to exceed 24 months). Partial stroke open every quarter.

RELIEF REQUEST V-72

Relief Request Withdrawn

RELIEF REQUEST V-73

I. IDENTIFICATION OF COMPONENTS

System : Chemical & Volume Control System

Valve(s): 2-CH-153

Class : 2

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valve closed every three months

III. BASIS FOR RELIEF

Due to the plant configuration, this valve cannot be verified closed using flow. The only method to verify closure other than disassembly and inspection is to perform a leak rate/back pressure test.

During normal operation, this valve cannot be isolated to perform a back pressure test because normal letdown and charging flow would be interrupted. Also, if the valve was isolated during normal operation, the charging pumps would have to be secured.

This valve is also subject to leak testing, which is performed every reactor refueling. Verification of closure will be performed during the leak test every reactor refueling instead of every cold shutdown because the small increase in safety gained by testing during cold shutdown does not justify the burden of performing a leak rate test.

IV. ALTERNATE TESTING

Exercise to the closed position every reactor refueling.

RELIEF REQUEST V-74

I. IDENTIFICATION OF COMPONENTS

System : Service Water

Valve(s): 2-SW-24

Class : 3

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valve open every three months

III. BASIS FOR RELIEF

Full accident flow cannot be established through this auxiliary service water pump discharge check valve using the normal system lineup because the accident heat loads and corresponding demand on the service water system cannot be duplicated. The accident flow can be established using a lake-to-lake configuration. However, the lake-to-lake lineup could contaminate Lake Anna with chemicals used in treating the service water system. Therefore, the lake-to-lake lineup is never used.

IV. ALTERNATE TESTING

This valve will be disassembled and inspected on a reactor refueling test frequency and partial flow tested every three months.

RELIEF REQUEST V-75

I. IDENTIFICATION OF COMPONENTS

System : Residual Heat Removal

Valve(s): 2-RH-7
2-RH-15

Class : 2

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valve open every three months

III. BASIS FOR RELIEF

These RHR pump discharge check valves can only be partial or full stroke exercised to the open position and verified closed during the testing of RHR pumps 2-RH-P-1A and 2-RH-P-1B. The low pressure pumps take suction from and discharge to the reactor coolant system which operates at 2235 psig. This pressure is well above the operating pressure of the pumps, therefore, testing during normal operation is not possible.

During cold shutdowns of short duration or if the reactor coolant pumps are left running during the cold shutdown, both trains of RHR may be required for decay heat removal and to maintain RCS temperature. Taking one train of RHR out of service for testing purposes even for a short period could allow the RCS temperature to increase to the point that the pressurizer power operated relief valve would be challenged. Therefore, these pumps and the discharge check valves should only be tested during reactor refuelings.

IV. ALTERNATE TESTING

Exercise to the open and closed positions every reactor refueling.

2.3.6 VALVE INSERVICE TESTING PROGRAM COLD SHUTDOWN JUSTIFICATIONS

Section XI, Paragraphs IWV-3410 and IWV-3520 allow for the full-stroke exercising of valves during Cold Shutdown (but not more frequently than every three months) if the valves cannot be exercised during normal operation. Therefore, no request for relief from testing every three months is necessary.

However, the code does require that these valves be specifically identified by the owner. The cold shutdown justifications identify and provide the technical basis for valves exercised during cold shutdown but not during normal operation.

COLD SHUTDOWN JUSTIFICATION CSV-1

I. IDENTIFICATION OF COMPONENTS

System : Component Cooling

Valve(s): 2-CC-TV-201A, B
2-CC-TV-202A, B, C, D, E, F
2-CC-TV-204A, B, C

Class : 2

II. COLD SHUTDOWN JUSTIFICATION

Failure of these valves in the closed position would result in a loss of component cooling flow to the Reactor Coolant Pumps thermal barriers, lube oil, stator and/or shroud coolers. The increased level of safety gained from exercising these valves during power operation does not justify the operational consequences should they fail in the closed position. The valve controllers do not allow for a part-stroke exercise test.

COLD SHUTDOWN JUSTIFICATION CSV-2

Replaced by Relief Request V-63

COLD SHUTDOWN JUSTIFICATION CSV-3

I. IDENTIFICATION OF COMPONENTS

System : CH

Valve(s): 1-CH-118
1-CH-133

Class : 3

II. COLD SHUTDOWN JUSTIFICATION

To achieve full flow through these check valves, a flow path must be established to the reactor coolant system. This test would allow the injection of boric acid into the reactor coolant system which would upset the boron concentration in the primary plant water.

These valves will be partial stroke exercised every quarter.

COLD SHUTDOWN JUSTIFICATION CSV-4

I. IDENTIFICATION OF COMPONENTS

System : Chemical & Volume Control System

Valve(s): 2-CH-MOV-2350
2-CH-155
2-CH-156
2-CH-157
2-CH-159

Class : 2

II. COLD SHUTDOWN JUSTIFICATION

Full or part-stroke exercising these valves during power operation would cause a sudden increase in reactor coolant system boron inventory by providing flow from the emergency and alternate boration paths to charging pump suctions. Also, the valve controller for 2-CH-MOV-2350 does not allow for a part-stroke exercise test. The increased level of safety gained from full or part-stroke exercising these valves during power operation does not justify the operational consequences associated with reactivity transients.

Manual valve 2-CH-156 will be stroked open when the alternate boration path is established every cold shutdown. The increased level of safety gained by exercising this valve every quarter does not justify the added burden of performing a separate test just for the manual valve.

COLD SHUTDOWN JUSTIFICATION CSV-5

I. IDENTIFICATION OF COMPONENTS

System : Chemical & Volume Control System

Valve(s): 2-CH-TV-2204A 2-CH-LCV-2460A
2-CH-TV-2204B 2-CH-LCV-2460B

Class : 2

II. COLD SHUTDOWN JUSTIFICATION

Exercising these valves during power operation interrupts letdown flow from the reactor coolant system (RCS) to the volume control tank. If the valves should fail closed, reactor coolant inventory control would be lost.

The pressurizer level control program controls reactor coolant inventory by regulating the operation of the charging flow control valve so that the charging input flow to the RCS and reactor coolant pump seal injection flow into the RCS matches letdown flow.

Also, exercising these valves during normal operation will interrupt letdown flow through the regenerative heat exchanger. This flow interruption would allow a slug of relatively cool charging water to thermal shock the nozzle connecting the 3" charging line to the 27" loop 2 cold leg injection line.

The valve controllers do not allow for a part stroke exercise test.

COLD SHUTDOWN JUSTIFICATION CSV-6

I. IDENTIFICATION OF COMPONENTS

System : Chemical & Volume Control System

Valve(s): 2-CH-MOV-2115B, C, D, E

Class : 2

II. COLD SHUTDOWN JUSTIFICATION

Full or part-stroke exercising these valves during power operation would require that charging pump suction be aligned with the Refueling Water Storage Tank. That alignment would cause a sudden increase in reactor coolant system boron inventory. The increased level of safety gained from full or part-stroke exercising these valves during power operation does not justify the operational consequences of reactivity transients.

COLD SHUTDOWN JUSTIFICATION CSV-7

I. IDENTIFICATION OF COMPONENTS

System : Chemical & Volume Control System

Valve(s): 2-CH-MOV-2289A, B

Class : 2

II. COLD SHUTDOWN JUSTIFICATION

Varying letdown flow through the Regenerative Heat Exchanger will cause variations in charging flow temperatures. This is not desirable since decreased charging temperatures result in reactivity increases and thermal stress on the piping and heat exchanger.

Full or part-stroke exercising these valves during power operation would isolate the normal charging flow path from the charging pumps to the Reactor Coolant System. Also, the valve controllers do not allow for a part-stroke exercise test. The small increase in safety gained by exercising these valves every three months does not justify the operational consequences of providing an alternate charging flow path during power operation.

COLD SHUTDOWN JUSTIFICATION CSV-8

Cold Shutdown Justification Withdrawn

COLD SHUTDOWN JUSTIFICATION CSV-9

Replaced by Relief Request V-9

COLD SHUTDOWN JUSTIFICATION CSV-10

Cold Shutdown Justification Withdrawn

COLD SHUTDOWN JUSTIFICATION CSV-11

I. IDENTIFICATION OF COMPONENTS

System : Feedwater

Valve(s):	2-FW-FCV-2478	2-FW-MOV-254A
	2-FW-FCV-2479	2-FW-MOV-254B
	2-FW-FCV-2488	2-FW-MOV-254C
	2-FW-FCV-2489	
	2-FW-FCV-2498	
	2-FW-FCV-2499	

Class : NC

II. COLD SHUTDOWN JUSTIFICATION

These valves are in positions required to sustain power operation. Full stroke exercising the valves would result in a reactor trip.

The main feedwater regulating valves 2-FW-FCV-2478, 2488 and 2498 will be partial stroke exercised every three months.

The bypass valves 2-FW-FCV-2479, 2489 and 2499 are used only during plant startup. During this startup period, their safety function is to close. During normal operation, these valves remain closed and, thus are passive in the closed position. Therefore, the bypass valves do not need to be partial stroke tested every three months.

The valve controllers for the motor operated valves 2-FW-MOV-254A, B and C do not allow for a part stroke exercise test.

COLD SHUTDOWN JUSTIFICATION CSV-12

I. IDENTIFICATION OF COMPONENTS

System : Feedwater

Valve(s): 2-FW-62
2-FW-92
2-FW-126

Class : 2

II. COLD SHUTDOWN JUSTIFICATION

These check valves must seat upon reversal of flow to fulfill their safety functions. The only method to verify this actuation is to perform a back pressure test. Since the valves must be open to sustain power operation, they cannot be tested every three months.

COLD SHUTDOWN JUSTIFICATION CSV-13

I. IDENTIFICATION OF COMPONENTS

System : Main Steam

Valve(s): 2-MS-NRV-201A, B, C

Class : 2

II. COLD SHUTDOWN JUSTIFICATION

Valve Description

The main steam non-return valves (NRVs) at North Anna Power Station are located in the main steam valve house and are a globe type stop check design. The valves measure approximately 16 feet from the bottom of the valve body to the top of the hand wheel and weigh almost 24,000 lbs. The disk is welded to a hollow piston and the whole assembly is free to move about 25 vertical inches within the valve body cylinder. The disk measures 25.5 inches across and the disk and piston assembly weighs approximately 1,200 lbs. When the main steam system is not inservice, a motor operator is used to run the valve stem down onto the disk to secure the main steam line.

The valves open to allow steam to the turbine. For accident conditions, the non-return valves in conjunction with the main steam trip valves prevent the blowdown of more than one steam generator for any break location, even if one valve fails to close. For example, for a break upstream of the trip valve in one line, the closure of either the non-return valve in that line or the trip valves in the other lines prevents the blowdown of the other steam generators.

Method of Testing

The piping downstream of each non-return valve leads to a common distribution manifold and cannot be isolated. Therefore, performing a back seat test using flow is not practical. Also, valve disassembly and inspection are not practical alternatives due to the size of the valve and the weight of the disk.

However, an alternative exists to verify that the disk moved to the valve seat during reactor coolant system (RCS) cooldown. When the RCS temperature is between 350 °F and 195 °F during the cooldown process, the main steam trip valves are closed. Then the main steam non-return valves close in response to the loss of steam flow.

After the main steam trip valve is closed, the Valve Operation Test and Evaluation System (VOTES) can be used to determine the position of the disk of the NRV. After the main steam flow is stopped, the non-return valve stem is run down onto the disk after the disk returns to the seat. A change in the running force within the normal travel of the stem indicates a resistance to stem movement (i.e., a stuck disk). Verifying that the stem travels to the seated disk with nominal changes in the running force indicates that the disk is on the seat. The test requires that the cooldown process be delayed between one to two hours to setup the instrumentation and to perform the test on each of three valves. Virginia Power owns the VOTES equipment and has personnel trained to use the equipment and interpret the results.

The VOTES consists of a force sensor mounted on the valve, valve switch current probes and a motor current probe. The force sensor detects the strain experienced by the yoke as the valve stem moves. Strain is converted to force. The valve switch probes determine the status of the torque and limit switches, and the open and closed bypass switches in the motor operator control circuit over the course of stem travel. To attach the switch and motor current probes, the power to the valve must be interrupted.

Testing Frequency Discussion

Full stroke or part stroke exercising of these valves during power operation would result in a turbine and reactor trip.

Plant cooldown procedures require that the NRV stem be run down onto the disk to isolate the main steam system after main steam flow is stopped. The VOTES testing must be performed when the NRVs are initially closed during the cooldown to accurately assess the piston-disk assembly's as-found position. As indicated above,

the VOTES test will delay the cooldown process from between one to two hours. Some cold shutdown outages are forced outages that result from exceeding a Technical Specification limit such as unidentified RCS leakage. The emphasis in a forced outage cooldown is to reach cold shutdown as rapidly as possible and to mitigate the cause of the forced outage. Stopping this process to perform the VOTES test would complicate the operators task to secure the plant and may reduce plant safety. However, during planned cold shutdowns where there are no mitigating circumstances, there is adequate time to notify the test personnel, carry the equipment into the field and perform the test.

There is no evidence in the valve history that a valve has stuck in the partial open position. The piston-disk assembly is not attached to any other internal part, the 1,200 lb piston-disk assembly is maintained parallel within the valve body cylinder and the main steam system is very clean. Consequently, there no mechanism to prevent the disk from dropping from the full open position to the valve seat.

The VOTES test described above will be performed on each main steam non-return valve during the cooldown process going into each planned cold shutdown. This test will not be performed more often then once every three months.

COLD SHUTDOWN JUSTIFICATION CSV-14

I. IDENTIFICATION OF COMPONENTS

System : Main Steam

Valve(s): 2-MS-TV-209

Class : 2

II. COLD SHUTDOWN JUSTIFICATION

Full or part-stroke exercising this valve during power operation would cause undesirable pressure transients in the High Pressure Secondary Drains System. Also, the valve controller does not allow for a part-stroke exercise test. The increased level of safety gained from exercising this valve during power operation does not justify the operational consequences of these pressure variations.

COLD SHUTDOWN JUSTIFICATION CSV-15

Cold Shutdown Justification withdrawn

COLD SHUTDOWN JUSTIFICATION CSV-16

I. IDENTIFICATION OF COMPONENTS

System : Main Steam

Valve(s): 2-MS-TV-201A, B, C

Class : 2

II. COLD SHUTDOWN JUSTIFICATION

These valves are in positions required to sustain power operation. Full or part-stroke exercising these valves during normal operation would result in a reactor trip and safety injection. Also, the valve controllers do not allow for a part-stroke exercise test. These valves are tested during cold shutdown (heatup or cooldown).

COLD SHUTDOWN JUSTIFICATION CSV-17

Replaced by Relief Request V-68

COLD SHUTDOWN JUSTIFICATION CSV-18

I. IDENTIFICATION OF COMPONENTS

System : Residual Heat Removal

Valve(s): 2-RH-MOV-2700
2-RH-MOV-2701
2-RH-MOV-2720A, B

Class : 1

II. COLD SHUTDOWN JUSTIFICATION

These valves isolate the Residual Heat Removal System, which is a 600 lb class system, from the Reactor Coolant System during power operation. These valves are normally closed and cannot be opened when Reactor Coolant System pressure is above 418 psig due to system interlocks. Therefore, the valves cannot be full or part-stroke exercised during power operation. Also, the valve controllers do not allow for a part-stroke exercise test.

COLD SHUTDOWN JUSTIFICATION CSV-19

Replaced by Relief Request V-[illegible]5

COLD SHUTDOWN JUSTIFICATION CSV-20

I. IDENTIFICATION OF COMPONENTS

System : Residual Heat Removal

Valve(s): 2-RH-FCV-2605
2-RH-HCV-2758

Class : 2

II. COLD SHUTDOWN JUSTIFICATION

The position of these valves is determined by demand controllers and must be observed locally to verify proper valve operation. These valves are located inside containment, therefore, they cannot be full or part-stroke exercised every three months.

COLD SHUTDOWN JUSTIFICATION CSV-21

Replaced by Relief Request V-68

COLD SHUTDOWN JUSTIFICATION CSV-22

Cold Shutdown Justification Withdrawn

COLD SHUTDOWN JUSTIFICATION CSV-23

Replaced by Relief Request V-35

COLD SHUTDOWN JUSTIFICATION CSV-24

I. IDENTIFICATION OF COMPONENTS

System : Safety Injection

Valve(s): 2-SI-MOV-2865A, B, C

Class : 2

II. COLD SHUTDOWN JUSTIFICATION

The Accumulator Discharge Isolation Valves are in their safety positions with power removed from the valve actuators during Modes 1, 2, and 3, and when the pressurizer pressure is greater than 1000 psig as specified in Technical Specifications 3/4.5.1. These valves could be called upon to open in Mode 3 when the pressurizer is less than 1000 psig. Full or part-stroke exercising during power operation would be in violation of Technical Specifications and decrease plant safety. Also, the valve controllers do not allow for a part-stroke exercise test.

COLD SHUTDOWN JUSTIFICATION CSV-25

Cold Shutdown Justification Withdrawn

COLD SHUTDOWN JUSTIFICATION CSV-26

Cold Shutdown Justification Withdrawn

COLD SHUTDOWN JUSTIFICATION CSV-27

Cold Shutdown Justification Withdrawn

COLD SHUTDOWN JUSTIFICATION CSV-28

Replaced by Relief Request V-37

COLD SHUTDOWN JUSTIFICATION CSV-29

Replaced by Relief Request V-71

COLD SHUTDOWN JUSTIFICATION CSV-30

I. IDENTIFICATION OF COMPONENTS

System : Auxiliary Feedwater

Valve(s):	2-FW-63	2-FW-97
	2-FW-65	2-FW-127

Class : 3

II. COLD SHUTDOWN JUSTIFICATION

These valves cannot be partial or full flow tested during normal operation because the dedicated auxiliary feedwater flow paths would have to be isolated. These dedicated flow paths are required by the Technical Specifications for normal operation.

COLD SHUTDOWN JUSTIFICATION CSV-31

I. IDENTIFICATION OF COMPONENTS

System : Instrument Air

Valve(s):	2-IA-504	2-IA-531
	2-IA-510	2-IA-537
	2-IA-516	2-IA-543
	2-IA-525	2-IA-549

Class : NC

II. COLD SHUTDOWN JUSTIFICATION

Check valves 2-IA-504, 510 and 516 isolate the normal instrument air supply from the backup bottled air supply for the main steam pressure control valves 2-MS-PCV-201A, B and C. Valves 2-IA-525, 531 and 537 isolate the normal instrument air supply to the auxiliary feedwater valves 2-FW-HCV-200A, B and C. Valves 2-IA-543 and 549 isolate the normal instrument air supply to the auxiliary feedwater valves 2-FW-PCV-259A and B.

To back seat test check valves 2-IA-504, 510 and 516, the instrument air system must be isolated to all three main steam pressure control valves and the lines vented. To back seat test check valves 2-IA-525, 531, 537, 543 and 549, the instrument air system must be isolated to all five auxiliary feedwater valves and the lines vented. Isolating this many valves that are important to safety during normal operation would degrade the safety of the plant and be disruptive to plant operation.

COLD SHUTDOWN JUSTIFICATION CSV-32

I. IDENTIFICATION OF COMPONENTS

System : Auxiliary Feedwater

Valve(s): 2-FW-HCV-200A
2-FW-HCV-200B
2-FW-HCV-200C

Class : 3

II. COLD SHUTDOWN JUSTIFICATION

Stroke time is dependent on how quickly the operator can turn the knob to the potentiometer which controls valve position. Several turns of the knob are necessary to full stroke the valve. Isolating instrument air and electrical power to the valve during the performance of the fail safe test is the only valid method for full stroke exercising and stroke timing these valves. The fail safe test cannot be performed during normal operation because these valves must be available in the event of a reactor trip.

COLD SHUTDOWN JUSTIFICATION CSV-33

I. IDENTIFICATION OF COMPONENTS

System : Auxiliary Feedwater

Valve(s): 2-FW-PCV-259A
2-FW-PCV-259B

Class : 3

II. COLD SHUTDOWN JUSTIFICATION

During normal operation, these valves control auxiliary feedwater header pressure and cannot be full stroked. Isolating instrument air and electrical power to the valve during the performance of the fail safe test is the only valid method for full stroke exercising and stroke timing these valves. The fail safe test cannot be performed during normal operation because these valves must be in service.

COLD SHUTDOWN JUSTIFICATION CSV-34

I. IDENTIFICATION OF COMPONENTS

System : Main Steam

Valve(s): 2-MS-TV-213A
2-MS-TV-213B
2-MS-TV-213C

Class : 2

II. COLD SHUTDOWN JUSTIFICATION

During normal operation, steam condenses in the bypass lines because these valves are normally closed. Exercising these valves during normal operation would introduce a water slug to the turbine.

COLD SHUTDOWN JUSTIFICATION CSV-35

I. IDENTIFICATION OF COMPONENTS

System : Service Water

Valve(s):	2-SW-MOV-201A	2-SW-MOV-205A
	2-SW-MOV-201B	2-SW-MOV-205B
	2-SW-MOV-201C	2-SW-MOV-205C
	2-SW-MOV-201D	2-SW-MOV-205D

Class : 3

II. COLD SHUTDOWN JUSTIFICATION

During normal operation, the lines between the Service Water supply and return he·· er isolation valves given above and the recirculat·· heat exchanger isolation valves (2-SW-MOV-203A, I, C and D, and 2-SW-MOV-204A, B, C and D) are maintained dry to ensure that no service water enters the heat exchangers. Stroking the header isolation valves described above would introduce service water into the lines. These lines would have to be drained after each test.

COLD SHUTDOWN JUSTIFICATION CSV-36

I. IDENTIFICATION OF COMPONENTS

System : Service Water

Valve(s):	2-SW-580	2-SW-581
	2-SW-591	2-SW-592
	2-SW-597	2-SW-598
	2-SW-608	2-SW-609
	2-SW-615	2-SW-616
	2-SW-626	2-SW-627

Class : 3

II. COLD SHUTDOWN JUSTIFICATION

These check valves must open to allow service water to the charging pump lube oil coolers, seal coolers and gear box coolers. Flow through these valves can be detected by differential pressure instrumentation across the coolers. However, full flow conditions would have to be measured by using temporary ultrasonic flow instrumentation. The ultrasonic flow transducers and their mounting carriages must be installed and the transducers referenced to a no flow condition before each test. After each test, the equipment must be removed from the field and decontaminated if necessary. This process must be performed six times for the 12 valves listed above. Therefore, use of the ultrasonic flow instrumentation is very labor intensive and not practical for quarterly testing. These valves will be partial stroke exercised every quarter.

COLD SHUTDOWN JUSTIFICATION CSV-37

Cold Shutdown Justification Withdrawn

COLD SHUTDOWN JUSTIFICATION CSV-38

Cold Shutdown Justification Withdrawn

COLD SHUTDOWN JUSTIFICATION CSV-39

I. IDENTIFICATION OF COMPONENTS

System : Chemical and Volume Control

Valve(s): 2-CH-176
2-CH-191
2-CH-206

Class : 2

II. COLD SHUTDOWN JUSTIFICATION

These check valves must open to allow charging pump recirculation. There is no permanently mounted instrumentation to measure full flow on the recirculation line. Therefore, full flow conditions will have to be measured by using temporary ultrasonic flow instrumentation. The ultrasonic flow transducers and their mounting carriages must be installed and the transducers referenced to a no flow condition before each test. After each test, the equipment must be removed from the field and decontaminated if necessary. This process must be performed three times for the three valves listed above. Therefore, use of the ultrasonic flow instrumentation is very labor intensive and not practical for quarterly testing.

Test experience has shown that the discharge pressure drop is undetectable when flow through the recirculation line is established in conjunction with normal charging. Therefore, quarterly partial flow testing is not verifiable.

COLD SHUTDOWN JUSTIFICATION CSV-40

I. IDENTIFICATION OF COMPONENTS

System : Auxiliary Feedwater

Valve(s):	2-FW-064	2-FW-157
	2-FW-066	2-FW-173
	2-FW-096	2-FW-174
	2-FW-098	2-FW-193
	2-FW-128	2-FW-194
	2-FW-130	2-FW-317

Class : 3

II. COLD SHUTDOWN JUSTIFICATION

Each auxiliary feedwater pump is required by Technical Specification 3.7.1.2 to be aligned to an individual steam generator in modes 1, 2 or 3. The manual valves listed above are positioned to provide these dedicated flow paths. During a main feed line break or steam line break, no credit is taken for operator action during the first 30 minutes. When manual operator action is taken the faulted steam generator is isolated and manual flow control is required. The auxiliary feedwater pumps are realigned using the manual valves. Therefore, the manual valves must be known to be operable.

However, exercising the valves during normal operation would violate the technical specifications and reduce plant safety without a corresponding increase in component reliability. These valves remain in their aligned positions during normal operation and are not subject to wear. Exercising the valves during each cold shutdown is adequate to demonstrate that these valves can be manipulated in case the auxiliary feedwater paths need to be changed.

COLD SHUTDOWN JUSTIFICATION CSV-41

I. IDENTIFICATION OF COMPONENTS

System : Auxiliary Feedwater

Valve(s): 2-FW-147   2-FW-182
2-FW-164   2-FW-202

Class : 3

II. COLD SHUTDOWN JUSTIFICATION

These normally locked closed manual valves are opened as required by the abnormal operating procedures to provide service water to the auxiliary feedwater pumps in the event of an accident where all normal auxiliary feedwater pump supplies have been exhausted. Opening these valves every three months to fulfill quarterly testing requirements would accelerate the buildup of sludge in the supply lines from the service water system. The supply lines are flushed once every 18 months to reduce the buildup of sludge and to identify if there is any accumulation of asiatic clams or shell debris in the lines. Because these manual valves remain in the closed position during normal operation and are not subject to wear, exercising these valves on a cold shutdown test frequency (but not more frequently then once every three months), is adequate to demonstrate that the valves can be opened in the case where service water is required as a supply for the auxiliary feedwater pumps.

COLD SHUTDOWN JUSTIFICATION CSV-42

I. IDENTIFICATION OF COMPONENTS

System : Reactor Coolant

Valve(s): 2-RC-PCV-2455C
2-RC-PCV-2456

Class : 1

II. COLD SHUTDOWN JUSTIFICATION

Full or part-stroke exercising these valves during power operations would cause high differential pressure across the PCV Block Valves. Although these valves are designed to accommodate this differential pressure, cycling would eventually degrade the block valves seating capability, thus decreasing plant safety. Also, the valve controllers do not allow for a part-stroke exercise test. These valves will be full-stroke exercised during cold shutdowns.

2.3.7 ALTERNATIVE TESTING FOR NON-CODE VALVES

According to the minutes of public meeting on Generic Letter 89-04, "Paragraph (g) of 10CFR 50.55a requires the use of Section XI of the ASME Code for inservice testing of components covered by the Code. For other components important to safety, the licensee also has the burden of demonstrating their continued operability." The minutes go on to state that, "The Code-required IST program is a reasonable vehicle to provide a periodic demonstration of the operability of pumps and valves not covered by the Code. If non-Code components are included in the ASME Code IST program (or some other licensee-developed inservice testing program) and certain Code provisions cannot be met, the Commission regulations (10 CFR 50.55a) do not require a 'request for relief' to be submitted to the staff. Nevertheless, documentation that provides assurance of the continued operability of the non-Code components through the performed tests should be available at the plant site." Non-Code components are components that are important to safety but are not in systems or portions of systems that are classified ASME Class 1, 2 or 3.

North Anna Power Station has elected to include certain non-Code components in the ASME IST program. Where the Code provisions cannot be met for non-Code components, alternative testing is performed that is adequate to ensure continued operability. The alternate testing is described in this section. There may be other deviations from Code provisions that are not described in this section. For these cases, documentation is available at the plant site.

As indicated in the minutes of public meeting on Generic Letter 89-04, a 'request for relief' need not be submitted for non-Code components. Therefore, the alternative tests described in this section are not 'requests for relief' but are provided for information.

NON-CODE ALTERNATIVE TESTING VNC-1

I. IDENTIFICATION OF COMPONENTS

System : Service Air

Valve(s):	2-GN-101	2-IA-2130
	2-GN-102	2-IA-2131
		2-IA-2132
		2-IA-2133

Class : NC

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valves to the closed position every three months

Exercise each valve individually

III. BASIS FOR ALTERNATE TESTING

Due to the plant configuration, these valves cannot be verified closed using flow.

The only method to verify closure other than disassembly and inspection is to perform a local leak rate/back pressure test. To perform the leak rate/back pressure test, the normal instrument air and nitrogen supplies to the PORVs must be isolated. The PORVs are required to be operable during normal operation. Also, these valves are located inside containment and are inaccessible during normal operation.

These valves are also subject to leak testing, which is performed every reactor refueling. Verification of closure will be performed during the leak test every reactor refueling instead of every cold shutdown because the small increase in safety gained by testing during cold shutdown does not justify the burden of performing a back pressure test.

Valves 2-IA-2130 and 2131 are in series and valves 2-IA-2132 and 2133 are in series. There are no vents in between the two sets of valves; therefore, these valves cannot be individually back pressure tested or leak tested.

IV. ALTERNATE TESTING

Exercise to the closed position every reactor refueling.

Valves 2-IA-2130 and 2131, and valves 2-IA-2132 and 2133 will be back pressure/leak tested in groups. If the group of valves fails the test, both valves in the group will be subject to repair or replacement.

The leak test for valves 2-IA-2130, 2131, 2132 and 2133, and 2-GN-101 and 102 will consist of recording the nitrogen bottle pressure, waiting a given period of time and then recording the bottle pressure again. The results will be compared to appropriate acceptance criteria.

NON-CODE ALTERNATIVE TESTING VNC-2

I. IDENTIFICATION OF COMPONENTS

System : Instrument Air

Valve(s): 2-IA-396
2-IA-397
2-IA-405
2-IA-406

Class : NC

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valves every three months.

Back seat test each valve individually.

III. BASIS FOR ALTERNATE TESTING

Back seating these valves requires that the lines upstream of the valves be vented. The 2-IA-396 and 397 valves are in series with no vent valves in between, as are 2-IA-405 and 406. Therefore, there is no way to individually leak test or back seat these valves.

IV. ALTERNATE TESTING

These valves will be leak/back seat tested in groups. The leak test will consist of pressurizing the volume upstream of the two valves in series and venting downstream of the valves. Then the upstream test volume will be isolated. If a given differential pressure across the two valves in series can be maintained for a predetermined period of time, the test will be satisfactory. The actual leak rate will not be measured. If the group fails the leak/back seat tests, both valves in the group will be disassembled, inspected and repaired if necessary.

NON-CODE ALTERNATIVE TESTING VNC-3

I. IDENTIFICATION OF COMPONENTS

System : Instrument Air

Valve(s):	2-IA-504	2-IA-531
	2-IA-510	2-IA-537
	2-IA-516	2-IA-543
	2-IA-525	2-IA-549

Class : NC

II. IMPRACTICAL CODE REQUIREMENTS

Determine leakage for Category A valves

III. BASIS FOR ALTERNATE TESTING

Check valves 2-IA-504, 510 and 516 isolate the normal instrument air supply from the backup bottled air supply for the main steam pressure control valves 2-MS-PCV-201A, B and C. Valves 2-IA-525, 531 and 537 isolate the normal instrument air supply to the auxiliary feedwater valves 2-FW-HCV-200A, B and C. Valves 2-IA-543 and 549 isolate the normal instrument air supply to the auxiliary feedwater valves 2-FW-PCV-259A and B.

The purpose of the bottled air supplies is to ensure that the main steam PCVs and the auxiliary feedwater valves can be remotely operated following an accident. The bottled air supplies must be able to cycle the main valves a specified number of times over a predetermined period in order to meet their design requirements. In lieu of a leakage test for the isolation check valves given above, the main valves will be cycled the required number of times over the required period with the normal air supply isolated and vented. This test provides verification that the isolation check valves are leak tight enough to allow the main valves to perform their safety functions.

IV. ALTERNATE TESTING

In lieu of a leakage test for the isolation check valves given above, the main valves will be cycled the required number of times over the required period as defined by their design requirements with the normal air supply isolated and vented.

NON-CODE ALTERNATIVE TESTING VNC-4

I. IDENTIFICATION OF COMPONENTS

System : Emergency Diesel Air Services

Valve(s):	2-EG-SOV-700HA	2-EG-SOV-700JA	2-EB-15
	2-EG-SOV-701HA	2-EG-SOV-707JA	2-EB-34
	2-EG-SOV-700HB	2-EG-SOV-700JB	2-EB-61
			2-EB-78

Class : NC

II. IMPRACTICAL CODE REQUIREMENTS

Section XI, IWV-3410 "Valve Exercising Test"

III. BASIS FOR ALTERNATE TESTING

The solenoid valves have actuation times considerably under a second and there is no visual reference on the solenoid valve to determine when it has stroked. Therefore, the stroke time cannot be measured. The solenoid valves are activated every month to start the diesels. Both air banks are discharged when performing the monthly test. After the test, the air bank pressure is recorded to verify a decrease in pressure, which confirms that the air banks discharged properly.

Flow through check valves 2-EB-15, 34, 61 and 78 cannot be measured because instrumentation is not installed. However, failure of these valves to promptly stroke to their proper positions will affect the starting time of the diesel when the diesel is started from just one air bank. A diesel alarm will activate if the starting time exceeds start failure requirements. Verification that the diesel starts without an alarm constitutes a full stroke test for the check valves. The test to start the diesels on one air bank is performed on a rotating basis once every six months. Based on this rotation, each check valve will be full flow tested once every 18 months.

IV. ALTERNATE TESTING

The solenoid valve will be full stroke exercised and check valves will be partial stroke exercised monthly by observing that the valves perform their intended function (if the diesel starts, the air bank pressures decrease and the air supply manifold maintains its integrity, then the solenoid and check valves were stroked successfully).

Every 18 months, the check valves will be full stroke tested by discharging only one air bank to start the diesel. The failure of either the solenoid or check valves to open will promptly give a diesel alarm. Further investigation would identify problems with the operability of these valves. The diesel start time will be recorded and compared to a maximum allowable start time during this test.

NON-CODE ALTERNATIVE TESTING VNC-5

I. IDENTIFICATION OF COMPONENTS

System : Service Air

Valve(s): 2-IA-497
2-IA-499

Class : NC

II. IMPRACTICAL CODE REQUIREMENTS

Exercise valves to the closed position every three months

III. BASIS FOR ALTERNATE TESTING

These non-Code check valves close in the event of a loss of pressure in the respective instrument air supply header to prevent blowdown of the nitrogen reserve volume tank which supplies the hydrogen recombiner system isolation valves. Testing the check valves to the closed position requires that the instrument air supply be isolated to both Units 1 and 2 hydrogen recombiner isolation valves, the high radiation sampling subsystem, and various liquid waste and boron recovery system components. Isolating the instrument air supply to these systems every three months to perform the back pressure test would be disruptive to normal plant operation. Therefore, these valves should not be closure tested every three months.

The check valves are also subject to leak testing at least once every 24 months. These check valves will be closure tested at least once every 24 months during the leak test because the small increase in safety gained by performing the back pressure test every cold shutdown does not justify the disruption of normal operating activities of the opposite unit or the added burden of performing the back pressure test on the more frequent schedule.

IV. ALTERNATE TESTING

Exercise these valves to the closed position at least once every 24 months.

2.4 REPORTING OF INSERVICE TEST RESULTS

2.4.1 PUMP INSERVICE PROGRAM

Records of Pump Inservice Test Results will be maintained in accordance with the intent of Article IWP-6000. Files will be established for each pump and will include:

1) Pump identification by equipment number and manufacturer.

2) The record of test will include:

   a. date of test,

   b. measured and observed quantities,

   c. comparison of allowable ranges of test values and analysis of deviations,

   d. requirements of corrective actions and,

   e. signature of person or persons responsible for conducting and analyzing the test.

3) The inservice test plans are contained in the applicable surveillance test procedure.

4) Summaries of corrective action will be indexed by maintenance report number, etc.

The Pump Inservice Test Program, associated surveillance test procedures and results will be kept at North Anna Power Station. They will be available for audit by Authorized Nuclear Inspectors and the NRC.

2.4.2 VALVE INSERVICE PROGRAM

Records of Valve Inservice Test Results will be maintained in accordance with the intent of Article IWV-6000. Files will be established for each valve and will include:

1) Valve identification by equipment number, size, valve type, actuator type, ASME class, IWV category, drawing number and coordinate, testing requirements and frequencies.

2) The record of test will include:

a. date of test,

b. measured and observe quantities where applicable,

c. comparisons with allowable ranges of test values and analysis of deviations,

d. requirements for corrective action and,

e. signature of the person or persons responsible for conducting and analyzing the test.

The Valve Inservice Test Program, associated surveillance test procedures and results will be kept at North Anna Power Station. They will be available for audit by the Authorized Nuclear Inspectors and the NRC.

2.5 QUALITY ASSURANCE PROGRAM

The Pump and Valve Inservice Test Program activities will be conducted in accordance with the Nuclear Operations Department Standards Manual and Technical Specifications for North Anna Power Station.