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Southern Nuclear Operating Company
the southern electric system

J. D. Woodard
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December 17, 1992

Docket Nos. 50-348
50-364

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

Joseph M. Farley Nuclear Plant - Units 1 & 2
Inservice Testing (IST) Program
for ASME Code Class 1, 2 and 3 Pumps and Valves

Gentlemen:

This letter is in response to the NRC Safety Evaluation/Technical Evaluation Report (SE/TER) dated September 17, 1992. The SE/TER provided the results of the Nuclear Regulatory Commission (NRC) staff's review of the information provided by Southern Nuclear Operating Company (SNC) letters dated July 26, 1991, July 29, 1991, December 3, 1991, December 30, 1991 (2 letters), and April 10, 1992 (2 letters), concerning the relief requests for Joseph M. Farley Nuclear Plant Units 1 and 2, Inservice Testing (IST) Program for Pumps and Valves. These submittals included responses to the IST program action items that were identified in the NRC's Safety Evaluation (SE) issued by letter dated May 23, 1991, and to the NRC's request for additional information contained in a letter dated February 14, 1992.

The September 17, 1992, SE/TER denied three relief requests and stated that compliance with applicable ASME XI requirements and Generic Letter 89-04 guidelines would be required in three months. Two of the reliefs were withdrawn and replaced with cold shutdown test justifications in compliance with ASME XI requirements. The remaining relief request, Q1(2)N23-RV-1, has been revised and is being resubmitted because the pressure decay type test proposed may be considered an alternative test requiring relief. Performance of the pressure decay type test during cold shutdown complies with the applicable ASME Section XI requirements and NRC Generic Letter 89-04 guidelines.

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The NRC SE/TER also provisionally granted certain reliefs. A summary of these items was documented in Section 5 of the SE/TER. The SNC response to each of the action items listed in Section 5 of the SE/TER, including those denied and provisionally granted, is summarized in Enclosure 1. Revised relief requests and cold shutdown test justifications for Unit 1 and Unit 2 are included in Enclosures 2 and 3 respectively.

SNC respectfully requests that the relief requests be reviewed and granted by June 15, 1993.

If there are any questions or if additional information is needed, please advise.

Respectfully submitted,

SOUTHERN NUCLEAR OPERATING COMPANY

J. D. Woodard

DEM/AJP:cht-ISTEFB.NRC

Enclosures

cc: Mr. S. D. Ebneter
Mr. S. T. Hoffman
Mr. G. F. Maxwell

Enclosure 1

Southern Nuclear Operating Company Response to
NRC September 17, 1992 SE/TER Action Items
Reference SE/TER Section 5.

Section	Response
5.1	See revised relief request PR-10.
5.2	See cold shutdown testing justification Q1(2)B13-CS-2. The FSAR has been revised to indicate the modification made (PCNB88-2-5245) rerouting the discharge of the vent system to the pressurizer relief tank.
5.3	See revised relief requests Q2E13-RV-1 (Version 1), Q2E13-RV-1 (Version 2) and Q2E13-RV-4 (Version 1).
5.4	See revised relief request Q1(2)E21-RV-1.
5.5	See revised relief request Q1(2)E21-RV-4.
5.6	See revised relief request Q1(2)N23-RV-1.
5.7	See cold shutdown testing justification Q1(2)P19-CS-2.
5.8	See revised relief request Q1(2)P19-RV-3. These valves have been withdrawn from the IST Program; therefore the relief request is being withdrawn. The valves are not in ASME Class 1, 2 or 3 piping, and instrument air systems do not fall within the requirements of Regulatory Guide 1.26 for the classification of safety related components. These valves will be added to the FNP preventative maintenance program for the performance of appropriate testing.
5.9	Code Case N-472 will be used in its entirety for pump vibration testing, thus relief is not required.

ENCLOSURE 2

Summary of Changes to the J. M. Farley Nuclear Power Plant
Unit No. 1 Second Ten Year Inservice Testing Program
for ASME Code Class 1, 2, and 3 Pumps and Valves

Description/Reason for Change

1. Relief Request PR-10: This relief request has been revised to add individual service water pump testing at each refueling outage and at any cold shutdown of sufficient duration to support the testing. Additional actions have been specified to address corrective actions in the event three pumps are not available to support three dual pump testing.

2. Relief Request Q1B13-RV-1: This relief request has been withdrawn and replaced with cold shutdown justification Q1B13-CS-2.

3. Relief Request Q1E21-RV-1: This relief request has been revised to add partial exercising with flow while changing modes from power operation to cold shutdown or during cold shutdown.

4. Relief Request Q1E21-RV-4: Relief Request has been revised to perform full stroke exercising with flow for each check valve during each refueling outage.

5. Relief Request Q1E21-RV-15: This approved relief request has been revised to add additional justification discussed in the SE/TER that supports why quarterly testing is not possible.

6. Relief Request Q1N23-RV-1: This relief request has been revised to add pressure decay type testing during cold shutdown and at each refueling outage.

7. Relief Request Q1P19-RV-2: This relief request has been withdrawn and replaced with cold shutdown justification Q1P19-CS-2.

8. Relief Request Q1P19-RV-3: This relief request has been withdrawn. The subject valves are not required to be included in the IST Program.

PUMP RELIEF REQUEST

PR-10

System:	Service Water
Pump:	P001A-A, P001B-A, P001C-AB, P001D-B, P001E-B
Class:	3
Function:	Provide cooling water to safety-related equipment.
Test Requirement:	IWP-3400(a) requires that a quarterly inservice test be run on each pump.
Basis for Relief:	The Service Water System is designed so that during normal operation there are two pumps in each of the two trains operating, with a standby pump available to swing to either train. Each pump has pressure gages, however flow instrumentation is installed only to measure the flow from each of the two trains. Since flow instrumentation was not provided during construction for each pump, the only viable means of individually testing these pumps is by removal of one pump from service and measuring flow through the train with only one pump aligned. However, a flow of 32,186 gpm, which requires four pumps (or both trains operable) is required for normal operation per the FSAR. A condition where only one pump is aligned at a time to a train would result in degraded cooling water flow to essential or safety related equipment and is therefore an unacceptable method of operation. Furthermore, removal of one pump from the service water train could lead to an isolation of the turbine building service water supply lines causing a plant trip. Since hydraulic performance of a degrading pump may be masked by the other pump when service water pumps are tested in pairs, FNP has developed analytical methods which can be used to determine individual pump flow rate. These analytical methods involve solving three equations involving dual pump flows for three individual pump flow rates. These analytical methods have proven reliable in determining individual pump degradation when the other pump in combination is compensating for the degraded pump.
Alternate Testing:	Quarterly combined flow, differential pressure and vibration will be measured and compared to reference values. Whenever combined flow measurements are not in the acceptable range, individual pump evaluations, which consist of performing three dual pump combination tests at a reference differential pressure and solving analytical equations for individual flows, will be performed. If three pumps are not immediately available to support this testing, tests will be performed as soon as three pumps are available. For the case in which three pumps are not immediately available to support testing and flow is in the ALERT Range, dual

PUMP RELIEF REQUEST

PR-10 (cont)

pump testing of the two pumps in the ALERT Range will be performed at double the required frequency until three pumps are available. Corrective action will be taken on the individual pumps as a result of the evaluation in accordance with IWP-3230.

Individual service water pumps testing will be performed at each refueling outage and any cold shutdown of sufficient duration to support such testing. Individual pump testing will consist of monitoring pump flow, differential pressure, and vibration and comparison of test data to reference values for each parameter.

COLD SHUTDOWN TEST JUSTIFICATION

Q1B13-CS-2

System:	Reactor Coolant
Valve:	HV-1, HV-2, HV-3, HV-4
Category:	B
Class:	2
Function:	Valves open to vent the reactor vessel.
ASME Section XI Quarterly Test Requirements:	Exercise, time and fail. (IWV-3411, 3413 and 3415)
Cold Shutdown Test Justification:	The head vent valves can not be exercised during normal operation with adequate assurance that an uncontrolled release of reactor coolant and a rapid RCS depressurization would not occur. To exercise the valves open in any order could result in a potential pressure shock to the closed valve and a potential "BURP" reaction. The consequences of this reaction are too severe to warrant testing during normal operation.
Quarterly Part Stroke Testing:	None, these are rapid acting valves and their operating logic does not allow for partial exercising.
Cold Shutdown Testing:	Exercise, time and fail test.

RELIEF REQUEST

Q1B13-RV-1
(Withdrawn see Q1B13-CS-2)

RELIEF REQUEST

Q1E21-RV-1

System:	SI/CVCS
Valve:	QV026
Category:	C
Class:	2
Function:	RWST to charging pump suction line check valve.
ASME Section XI Test Requirements:	Verify forward flow operability quarterly or at cold shutdown. (IWV-3521)
Basis for Relief:	The only possible method of full flow testing this valve is by aligning the RWST to the charging pump suction and injecting full design flow into the RCS. Full flow testing during normal operation is impossible because the charging pumps cannot develop full rated flow against RCS pressure. Partial flow testing utilizing the charging pump cannot be performed during normal operation because water from the RWST is highly borated and injection into the RCS could adversely affect reactivity.
Alternate Testing:	Valve will be partial exercised with flow while changing modes from power operation to cold shutdown or during each cold shutdown. Additionally, valve will be full exercised with flow during each refueling outage.

RELIEF REQUEST

Q1E21-RV-4

System:	SI/CVCS
Valve:	Group 1 - QV062A, QV062B, QV062C Group 2 - QV066A, QV066B, QV066C Group 3 - QV078A, QV078B, QV078C Group 4 - QV079A, QV079B, QV079C
Category:	C
Class:	1
Function:	Safety injection to the RCS check valves.
ASME Section XI Test Requirements:	Verify full forward flow operability quarterly or at cold shutdown. (IWV-3521)
Basis for Relief:	It is impractical to full- or part- stroke any of these check valves with flow during normal operation because all of the associated flow paths bypass the regenerative heat exchanger and establishing flow through these valves would result in relatively cold water being injected into the RCS. The thermal stresses produced by injecting cold water could greatly reduce the service life of the injection nozzles. These valves cannot be full-stroke exercised during cold shutdowns because the RCS may not contain sufficient expansion volume to accommodate the flow required and a low temperature overpressure condition could occur. It is also impractical to perform a part-stroke exercise of these valves during cold shutdowns. Part-stroke testing would require lowering the pressurizer level to accommodate the insurge volume and would result in an increased risk of a low temperature overpressure condition and possibly delay plant start up. In addition, initiating flow through Group 3 and Group 4 valves would also disturb RCS pressure isolation valves leading to further technical specification required testing, ALARA concerns, and possible delay of plant start up.
Alternate Testing:	All valves will be full stroke exercised with flow during each refueling outage. Either permanently installed or removable instrumentation will be utilized to confirm check valve exercising. Confirmation of full stroke exercising will be either by flow measurement or by the use of non-intrusive check valve testing technology at the discretion of FNP.

RELIEF REQUEST

Q1E21-RV-15

System:	SI/CVCS
Valve:	QV115A, B, C
Category:	C
Class:	2
Function:	Prevent loss of RCS inventory upon break in the seal injection line.
ASME Section XI Quarterly Test Requirements:	Verify reverse flow closure quarterly or at cold shutdown. (IWV-3521)
Basis for Relief:	Reverse flow closure testing this valve will require isolation of seal injection flow to the reactor coolant pumps therefore testing during normal operation (quarterly) is impractical. Test performance will require personnel entry into the containment to position associated system valves and to set up testing equipment. Personnel entry into the containment and performance of this test has the potential to: increase personnel radiation exposure, increase the potential for RCP seal and bearing damage due to interruption of seal injection flow, and prolong the shutdown due to the stringent requirements on personnel entry into containment and the time required to perform the test. Therefore the only practical method available to verify reverse flow closure is by pressure decay or leak testing at each refueling outage.
Alternate Testing:	Reverse flow closure will be confirmed by a pressure decay type test or leak test procedure (similar to Appendix J, Type C test) at each refueling outage. This type test will confirm that the check valve is capable of reverse flow closure.

RELIEF REQUEST

Q1N23-RV-1

System:	Auxiliary Feedwater
Valve:	QV006, QV007A, QV007B
Category:	C
Class:	3
Function:	Condensate storage tank to auxiliary feedwater pump suction line check valves.
ASME Section XI Test Requirements:	Verify reverse flow closure quarterly. (IWV-3521)
Basis for Relief:	There are no system design provisions for verification of reverse flow closure. The only possible test method would involve isolating the condensate storage tank and performing a pressure decay type test which confirms that the check valve is closed. Performing this type test is impractical during normal operation since it would render the auxiliary feedwater system inoperable for an extended period of time.
Alternate Testing:	Reverse flow closure will be confirmed by performing a pressure decay type test at cold shutdown and at each refueling outage. This pressure decay type test will confirm that the check valve is capable of reverse flow closure. If multiple shutdowns occur, testing frequency is not to exceed quarterly.

COLD SHUTDOWN TEST JUSTIFICATION

Q1P19-CS-2

System:	Instrument Air
Valve:	QV004
Category:	AC
Class:	2
Function:	Backup nitrogen supply to pressurizer PORVs.
ASME Section XI Quarterly Test Requirements:	Verify forward-flow operability (IWV-3521).
Cold Shutdown Test Justification:	The only practical way to forward flow exercise this valve would be to isolate the normal instrument air supply to the PORVs and utilize the backup nitrogen supply and exercise a PORV. Isolating the instrument air supply outside the containment (Q1P19HV3611) results in isolation of the normal air supply to all components located inside the containment that rely on normal instrument air for their supply thus rendering them inoperable. Isolating the normal instrument air supply to the PORVs only (Q1P19NV139) requires a containment entry which is not practical during normal operation.
Quarterly Part Stroke Testing:	None, these are rapid acting valves and control logic does not allow for partial exercising.
Cold Shutdown Testing:	Valve will be forward-flow exercised by exercising a PORV at cold shutdown. If multiple shutdowns occur, testing frequency is not to exceed quarterly.

RELIEF REQUEST

Q1P19-RV-2
(Withdrawn see Q1P19-CS-2)

RELIEF REQUEST

Q1P19-RV-3
(Withdrawn)

ENCLOSURE 3

Summary of Changes to the J. M. Farley Nuclear Power Plant
Unit No. 2 Second Ten Year Inservice Testing Program
for ASME Code Class 1, 2, and 3 Pumps and Valves

Description/Reason for Change

1. Relief Request PR-10: This relief request has been revised to add individual service water pump testing at each refueling outage and at any cold shutdown of sufficient duration to support the testing. Additional actions have been specified to address corrective actions in the event three pumps are not available to support three dual pump testing.

2. Relief Request Q2B13-RV-1: This relief request has been withdrawn and replaced with cold shutdown justification Q2B13-CS-2.

3. Relief Request Q2E21-RV-1: This relief request has been revised to add partial exercising with flow while changing modes from power operation to cold shutdown or during cold shutdown.

4. Relief Request Q2E13-RV-1 (Version 1): This relief request has been revised to add partial exercising with air during cold shutdowns with additional justification for not partial stroke testing the valves during cold shutdown.

   Relief Request Q2E13-RV-1 (Version 2): This relief request has been revised to add partial exercising valves QV002A(B) with air during cold shutdowns.

5. Relief Request Q2E21-RV-4: Relief Request has been revised to perform full stroke exercising with flow for each check valve during each refueling outage.

6. Relief Request Q2E13-RV-4 (Version 1): This approved relief request has been revised to explain that the subject check valve is partially exercised with flow quarterly during normal containment spray pump testing.

7. Relief Request Q2E21-RV-15: This approved relief request has been revised to add additional justification discussed in the SE/TER that supports why quarterly testing is not possible.

8. Relief Request Q2N23-RV-1: This relief request has been revised to add pressure decay type testing during cold shutdown and at each refueling outage.

9. Relief Request Q2P19-RV-2: This relief request has been withdrawn and replaced with cold shutdown justification Q2P19-CS-2.

10. Relief Request Q2P19-RV-3: This relief request has been withdrawn. The subject valves are not required to be included in the IST Program.

PUMP RELIEF REQUEST

PR-10

System:	Service Water
Pump:	P001A-A, P001B-A, P001C-AB, P001D-B, P001E-B
Class:	3
Function:	Provide cooling water to safety-related equipment.
Test Requirement:	IWP-3400(a) requires that a quarterly inservice test be run on each pump.
Basis for Relief:	The Service Water System is designed so that during normal operation there are two pumps in each of the two trains operating, with a standby pump available to swing to either train. Each pump has pressure gages, however flow instrumentation is installed only to measure the flow from each of the two trains. Since flow instrumentation was not provided during construction for each pump, the only viable means of individually testing these pumps is by removal of one pump from service and measuring flow through the train with only one pump aligned. However, a flow of 32,186 gpm, which requires four pumps (or both trains operable) is required for normal operation per the FSAR. A condition where only one pump is aligned at a time to a train would result in degraded cooling water flow to essential or safety related equipment and is therefore an unacceptable method of operation. Furthermore, removal of one pump from the service water train could lead to an isolation of the turbine building service water supply lines causing a plant trip. Since hydraulic performance of a degrading pump may be masked by the other pump when service water pumps are tested in pairs, FNP has developed analytical methods which can be used to determine individual pump flow rate. These analytical methods involve solving three equations involving dual pump flows for three individual pump flow rates. These analytical methods have proven reliable in determining individual pump degradation when the other pump in combination is compensating for the degraded pump.
Alternate Testing:	Quarterly combined flow, differential pressure and vibration will be measured and compared to reference values. Whenever combined flow measurements are not in the acceptable range, individual pump evaluations, which consist of performing three dual pump combination tests at a reference differential pressure and solving analytical equations for individual flows, will be performed. If three pumps are not immediately available to support this testing, tests will be performed as soon as three pumps are available. For the case in which three pumps are not immediately available to support testing and flow is in the ALERT Range, dual

PUMP RELIEF REQUEST

PR-10 (cont)

pump testing of the two pumps in the ALERT Range will be performed at double the required frequency until three pumps are available. Corrective action will be taken on the individual pumps as a result of the evaluation in accordance with IWP-3230.

Individual service water pumps testing will be performed at each refueling outage and any cold shutdown of sufficient duration to support such testing. Individual pump testing will consist of monitoring pump flow, differential pressure, and vibration and comparison of test data to reference values for each parameter.

COLD SHUTDOWN TEST JUSTIFICATION

Q2B13-CS-2

System:	Reactor Coolant
Valve:	HV-1, HV-2, HV-3, HV-4
Category:	B
Class:	2
Function:	Valves open to vent the reactor vessel.
ASME Section XI Quarterly Test Requirements:	Exercise, time and fail. (IWV-3411, 3413 and 3415)
Cold Shutdown Test Justification:	The head vent valves can not be exercised during normal operation with adequate assurance that an uncontrolled release of reactor coolant and a rapid RCS depressurization would not occur. To exercise the valves open in any order could result in a potential pressure shock to the closed valve and a potential "BURP" reaction. The consequences of this reaction are too severe to warrant testing during normal operation.
Quarterly Part Stroke Testing:	None, these are rapid acting valves and their operating logic does not allow for partial exercising.
Cold Shutdown Testing:	Exercise, time and fail test.

RELIEF REQUEST

Q2B13-RV-1
(Withdrawn see Q2B13-CS-2)

RELIEF REQUEST

Q2E21-RV-1

System:	SI/CVCS
Valve:	QV026
Category:	C
Class:	2
Function:	RWST to charging pump suction line check valve.
ASME Section XI Test Requirements:	Verify forward flow operability quarterly or at cold shutdown. (IWV-3521)
Basis for Relief:	The only possible method of full flow testing this valve is by aligning the RWST to the charging pump suction and injecting full design flow into the RCS. Full flow testing during normal operation is impossible because the charging pumps cannot develop full rated flow against RCS pressure. Partial flow testing utilizing the charging pump cannot be performed during normal operation because water from the RWST is highly borated and injection into the RCS could adversely affect reactivity.
Alternate Testing:	Valve will be partial exercised with flow while changing modes from power operation to cold shutdown or during each cold shutdown. Additionally, valve will be full exercised with flow during each refueling outage.

RELIEF REQUEST

Q2E13-RV-1 (Version 1)

System:	Containment Spray
Valve:	QV002A, QV002B
Category:	C
Class:	2
Function:	Containment spray system inside containment isolation check valves (QV002A, B).
ASME Section XI Quarterly Test Requirements:	Verify forward-flow operability quarterly. (IWV-3521)
Basis for Relief:	The only way to verify full forward-flow operability during normal operating or cold shutdown would be by using the pumps and injecting a large quality of water into the containment. Spraying the containment would result in extensive damage to safety-related equipment located inside the containment. Partial exercising using air as a test medium is not possible during normal operation because Technical Specifications requires primary containment integrity in operating modes 1 - 4 and attachment of test connections would violate containment integrity.
Alternate Testing:	One of these valves will be disassembled and manually full stroke tested at each refueling on a staggered test basis. The valve internals will be verified as structurally sound (no loose or corroded parts) and the disk manually exercised to verify full stroke capability. If the disassembled valve is not capable of being full-stroke exercised or there is binding or failure of valve internals, the remaining valve must also be disassembled, inspected, and manually full-stroke exercised during the same outage. The disassembled valves will be part stroked with air flow after reassembly. Flow indication will be through installed instrumentation, observed pressure changes, level changes or through the use of ultrasonic (or similar) flow measuring devices. Additionally, these valves will be partially exercised using air as a test medium during cold shutdown. If multiple shutdowns occur, testing frequency is not to exceed quarterly.

Note: This relief request is applicable until the Unit 2 modification which supports full flow containment spray pump testing is implemented.

RELIEF REQUEST
Q2E13-RV-1 (Version 2)

System:	Containment Spray
Valve:	QV002A, QV002B, QV014
Category:	C
Class:	2
Function:	Containment spray system inside containment isolation check valves (QV002A, B) and RWST to containment spray pump suction line check valve (QV014).
ASME Section XI Quarterly Test Requirements:	Verify forward-flow operability. (IWV-3521)
Basis for Relief:	The only way to verify full forward-flow operability during normal operation or cold shutdown would be by using the pumps and injecting a large quality of water into the containment. Spraying the containment would result in extensive damage to safety-related equipment located inside the containment. Partial exercising using air as a test medium is not possible during normal operation because Technical Specifications requires primary containment integrity in operating modes 1 - 4 and attachment of test connections would violate containment integrity.
Alternate Testing:	The system has been modified such that spool pieces can be installed downstream of these check valves. During refueling, these spool pieces will be installed and a full-forward-flow test performed by pumping water through these full-flow test lines to the containment refueling cavity. Because of the time involved in installing the spool pieces and the large quantity of water necessary, this test can only be performed at refueling. Additionally, QV014 will be partial-forward-flow verified during quarterly pump testing, and valves QV002A(B) will be partially exercised using air as a test medium during cold shutdown. If multiple shutdowns occur, testing frequency for valves QV002A(B) is not to exceed quarterly.

Note: This relief request is not applicable until the Unit 2 modification which supports full flow testing of the containment spray pumps is completed.

RELIEF REQUEST

Q2E21-RV-4

System:	SI/CVCS
Valve:	Group 1 - QV062A, QV062B, QV062C Group 2 - QV066A, QV066B, QV066C Group 3 - QV078A, QV078B, QV078C Group 4 - QV079A, QV079B, QV079C
Category:	C
Class:	1
Function:	Safety injection to the RCS check valves.
ASME Section XI Test Requirements:	Verify full forward flow operability quarterly or at cold shutdown. (IWV-3521)
Basis for Relief:	It is impractical to full- or part- stroke any of these check valves with flow during normal operation because all of the associated flow paths bypass the regenerative heat exchanger and establishing flow through these valves would result in relatively cold water being injected into the RCS. The thermal stresses produced by injecting cold water could greatly reduce the service life of the injection nozzles. These valves cannot be full-stroke exercised during cold shutdowns because the RCS may not contain sufficient expansion volume to accommodate the flow required and a low temperature overpressure condition could occur. It is also impractical to perform a part-stroke exercise of these valves during cold shutdowns. Part-stroke testing would require lowering the pressurizer level to accommodate the insurge volume and would result in an increased risk of a low temperature overpressure condition and possibly delay plant start up. In addition, initiating flow through Group 3 and Group 4 valves would also disturb RCS pressure isolation valves leading to further technical specification required testing, ALARA concerns, and possible delay of plant start up.
Alternate Testing:	All valves will be full stroke exercised with flow during each refueling outage. Either permanently installed or removable instrumentation will be utilized to confirm check valve exercising. Confirmation of full stroke exercising will be either by flow measurement or by the use of non-intrusive check valve testing technology at the discretion of FNP.

RELIEF REQUEST

Q2E13-RV-4 (Version 1)

System:	Containment Spray
Valve:	QV014
Category:	C
Class:	2
Function:	RWST to containment spray pump suction line check valve.
ASME Section XI Quarterly Test Requirements:	Verify forward-flow operability. (IWV-3521)
Basis for Relief:	The only way to verify forward-flow operability using flow would be by using the pumps and injecting a large quantity of water into the containment. Spraying the containment would result in extensive damage to safety-related equipment located inside the containment. There are no valves between QV014 and the RWST to shut off flow during valve disassembly. The valve has been disassembled, inspected and manually full-stroke exercised three times since 1985 by freeze plugging the 12 in line just upstream of the valve. This has been done at refueling outages with the RWST drained to minimum level. In each case the valve was found to be in excellent condition, with no visible signs of degradation. With the RWST at minimum level there is a 66 foot head of water on the freeze plug. If the plug does not hold during disassembly a minimum of 30,000 gallons of water will flood the auxiliary building with potential severe damage to safety-related equipment.
Alternate Testing:	The valve will be disassembled and manually full-stroke exercised once every three refueling outages using the freeze plug method described above. The valve internals will be verified as structurally sound (no loose or corroded parts) and the disk manually exercised to verify full stroke capability. The disassembled valve will be part stroked with flow after reassembly. Flow indication will be through installed instrumentation, observed pressure changes, level changes or through the use of ultrasonic (or similar) flow measuring devices. Additionally, this check valve is partially exercised quarterly during containment spray pump surveillance testing when flow is recirculated to the RWST.

Note: This relief request is applicable until the Unit 2 modification which supports full flow testing of the containment spray pumps is implemented.

RELIEF REQUEST

Q2E21-RV-15

System:	SI/CVCS
Valve:	QV115A, B, C
Category:	C
Class:	2
Function:	Prevent loss of RCS inventory upon break in the seal injection line.
ASME Section XI Quarterly Test Requirements:	Verify reverse flow closure quarterly or at cold shutdown. (IWV-3521)
Basis for Relief:	Reverse flow closure testing this valve will require isolation of seal injection flow to the reactor coolant pumps therefore testing during normal operation (quarterly) is impractical. Test performance will require personnel entry into the containment to position associated system valves and to set up testing equipment. Personnel entry into the containment and performance of this test has the potential to: increase personnel radiation exposure, increase the potential for RCP seal and bearing damage due to interruption of seal injection flow, and prolong the shutdown due to the stringent requirements on personnel entry into containment and the time required to perform the test. Therefore the only practical method available to verify reverse flow closure is by pressure decay or leak testing at each refueling outage.
Alternate Testing:	Reverse flow closure will be confirmed by a pressure decay type test or leak test procedure (similar to Appendix J, Type C test) at each refueling outage. This type test will confirm that the check valve is capable of reverse flow closure.

RELIEF REQUEST

Q2N23-RV-1

System:	Auxiliary Feedwater
Valve:	QV006, QV007A, QV007B
Category:	C
Class:	3
Function:	Condensate storage tank to auxiliary feedwater pump suction line check valves.
ASME Section XI Quarterly Test Requirements:	Verify reverse flow closure quarterly. (IWV-3521)
Basis for Relief:	There are no system design provisions for verification of reverse flow closure. The only possible test method would involve isolating the condensate storage tank and performing a pressure decay type test which confirms that the check valve is closed. Performing this type test is impractical during normal operation since it would render the auxiliary feedwater system inoperable for an extended period of time.
Alternate Testing:	Reverse flow closure will be confirmed by performing a pressure decay type test during cold shutdown and at each refueling outage. This pressure decay type test will confirm that the check valve is capable of reverse flow closure. If multiple shutdowns occur, testing frequency is not to exceed quarterly.

COLD SHUTDOWN TEST JUSTIFICATION

Q2P19-CS-2

System:	Instrument Air
Valve:	QV004
Category:	AC
Class:	2
Function:	Backup nitrogen supply to pressurizer PORVs.
ASME Section XI Quarterly Test Requirements:	Verify forward-flow operability (IWV-3521).
Cold Shutdown Test Justification:	The only practical way to forward flow exercise this valve would be to isolate the normal instrument air supply to the PORVs and utilize the backup nitrogen supply and exercise a PORV. Isolating the instrument air supply outside the containment (Q1P19HV3611) results in isolation of the normal air supply to all components located inside the containment that rely on normal instrument air for their supply thus rendering them inoperable. Isolating the normal instrument air supply to the PORVs only (Q1P19NV139) requires a containment entry which is not practical during normal operation.
Quarterly Part Stroke Testing:	None, these are rapid acting valves and control logic does not allow for partial exercising.
Cold Shutdown Testing:	Valve will be forward-flow exercised by exercising a PORV at cold shutdown. If multiple shutdowns occur, testing frequency is not to exceed quarterly.

RELIEF REQUEST

Q2P19-RV-2
(Withdrawn see Q2P19-CS-2)

RELIEF REQUEST

Q2P19-RV-3
(Withdrawn)