Enclosure 2

SAFETY EVALUATION REPORT
RELATED TO REQUESTS FOR RELIEF FROM INSERVICE EXAMINATION REQUIREMENTS
(January 7, March 7, April 14 and December 27, 1983 requests)
VIRGINIA ELECTRIC AND POWER COMPANY
SURRY NUCLEAR POWER STATION UNITS 1 & 2
DOCKET NOS. 50-280 & 281

I. INTRODUCTION

Technical Specification 4.2-1 for the Surry Nuclear Power Station Units 1 & 2 states that inservice examination of ASME Code Class 1, 2, and 3 components shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable addenda as required by 10 CFR 50.55a(g) except where specific written relief has been granted by the Commission. The Examination Programs for Units 1 & 2 are based on the requirements of the 1974 Edition through Summer 1975 addenda of Section XI of the ASME Code. Certain requirements of this Edition and Addenda of Section XI are impractical to perform on older plants because of their design, component geometry, and materials of construction. Pursuant to 10 CFR 50.55a(g)(6)(i), the Commission may grant relief from those requirements upon making the necessary findings.

By letters dated January 7, March 7, April 14, and December 27, 1983, Virginia Electric and Power Company submitted requests for relief from certain Code requirements determined to be impractical to perform on Surry Units 1 & 2. These requests for relief and the supporting information are evaluated in this report and relief from the examination requirements granted if the necessary findings are made. In some cases, it is determined that relief is not necessary. The component designations shown are for Unit 1 but apply to Unit 2 in all cases except as specified in the licensee's December 27, 1983 letter. In the same letter the licensee stated that relief requests RR-2, RR-13 and RR-14 were unnecessary.

II. EVALUATION OF REQUESTS

A. Class 1 Components

1. Request for Relief RR-1: Relief is requested from the pressure testing requirements for piping in the Safety Injection System located between the check valves listed:

1-SI-79 AND 1-SI-235, 1-SI-241
1-SI-82 AND 1-SI-236, 1-SI-242
1-SI-85 AND 1-SI-237, 1-SI-243
1-SI-88 AND 1-SI-238
1-SI-91 AND 1-SI-239
1-SI-94 AND 1-SI-240

Code Requirement

The pressure retaining components shall be subjected to a hydrostatic test at a pressure not less than 1.10 times the system operating pressure at least once toward the end of each inspection interval and a leakage test at operating pressure following each outage.

The test pressure may be reduced in accordance with the following table when system hydrostatic testing is required to be conducted at temperatures above 100 F in order to meet the fracture toughness criteria applicable to ferritic materials of which the system components are constructed:

Test Temperature	Test Pressure
100 F	1.10 P_o
200 F	1.08 P_o
300 F	1.06 P_o
400 F	1.04 P_o
500 F	1.02 P_o

Licensee's Basis For Requesting Relief

The double check valve combination prevents pressurization of the area in between the check valves when conducting IWB-5222 on the primary system.

Proposed Alternative Test

The alternative test proposed is to pressurize the primary system to 2335 psig. The reactor will be borated to equal to or greater than cold shutdown Boron Concentration. The pressurized primary will act as a boundary for the test, forcing closed the first check valve in the pressure boundary. A charging test pump will provide test pressure and a VT-2 examination will be conducted on the area.

Evaluation and Conclusion

Additional information related to the staff by conference call on July 20, 1983 provided clarification of the licensee's proposed alternative test. The hydrostatic test will be performed at 2335 psig and 500°F. At this temperature and pressure, the alternative test is in compliance with IWB-5000 of Section XI of the Code and the relief requested is not necessary.

2. Request for Relief RR-3: Relief is requested from the hydrostatic test requirements for piping between the first flange and the pumps listed:

1-RC-P-1A
1-RC-P-1B
1-RC-P-1C

Code Requirement

The pressure retaining components shall be subjected to a hydrostatic test at 1.10 times the system operating pressure at least once toward the end of each inspection interval and a leakage test at operating pressure following each outage.

Licensee Basis For Requesting Relief

The number one seal return is the pressure boundary for the reactor coolant pumps. The nature of the design of this system precludes the use of an external pressure source for this test.

Proposed Alternative Test

As an alternative it is proposed that a normal system operating pressure test be conducted with a VT-2 examination of the piping from the flanges to the pumps.

Evaluation and Conclusions

Additional information related to the staff by conference call on July 20, 1983 provided an explanation of the relief request. The Class 1 pressure boundary was originally located at the pumps shaft seal return and the piping from the seal to the first flange designated Class 2. with the Class 1/2 boundary located at the seal, the piping from the flange to the seal was subject to the requirements of IWC-5000, hydrostatic test requirements for Class 2 components. The Class 1/2 boundary has been relocated to the flange and the piping tested to Class 1 requirements. The licensee is in compliance with the Code requirements and relief from the hydrostatic test requirements is not necessary.

3. Request for Relief RR-4: Relief is requested from the pressure testing requirements for piping between the valves and the valves listed:

1-CH-430 to 1-CH-312

Code Requirement

The pressure retaining components shall be subjected to a hydrostatic test at a pressure not less than 1.10 times the system operating pressure at least once toward the end of each inspection interval and a leakage test at operating pressure following each outage.

The test pressure may be reduced in accordance with the following table when system hydrostatic testing is required to be conducted at temperatures above 100 F in order to meet the fracture toughness criteria applicable to ferritic materials of which the system components are constructed:

Test Temperature	Test Pressure
100 F	1.10 P_o
200 F	1.08 P_o
300 F	1.06 P_o
400 F	1.04 P_o
500 F	1.02 P_o

Licensee's Basis For Requesting Relief

The one-way check valve placement prevents pressurization of the area in between the valves when conducting IWB-5222 on the primary system.

Proposed Alternative Test

The alternative test proposed is to pressurize the primary system to 2335 psig while the reactor is in a shutdown condition. The reactor will be borated to equal to or greater than cold shutdown Boron Concentration. The pressurized primary will act as a boundary for the test forcing closed the first check valve in the pressure boundary. A charging test pump will provide test pressure and a VT-2 examination will be conducted on the area.

Evaluation and Conclusion

Additional information related to the staff by conference call on July 20, 1983 provided clarification of the licensee's alternative test. The hydrostatic test will be performed at 2335 psig and 500°F. At this temperature and pressure, the alternative test is in compliance with IWB-5000 of Section XI of the Code and the relief requested is not necessary.

4. Request for Relief RR-5: Relief is requested from the pressure testing requirements for piping between the valves and the valves listed.

MOV-1701 to MOV-1700 (VALVES)
14"-RH-18-602 (PIPING)

CODE REQUIREMENT

The pressure retaining components shall be subjected to a hydrostatic test at 1.10 times the system operating pressure at least once toward the end of each inspection interval and a leakage test at operating pressure following each outage.

LICENSEE'S BASIS FOR REQUESTING RELIEF

During a normal hydrostatic test of the primary system, MOV-1700 and MOV-1701 are closed. This prevents pressurization of MOV-1701 and the piping between the two MOVS. Both valves are closed to prevent possible overpressurization of the Residual Heat Removal System.

PROPOSED ALTERNATIVE TEST

As an alternative MOV-1701 and the piping between MOV-1701 and MOV-1700 will be tested in accordance with the Class II hydrostatic test to be administered to 14"-RH-18-602 on the suction

side of the Residual Heat Removal pumps. This piping is protected from overpressure by RV-1721 which is set at 600 psig. Class II test pressure will be 750 psig. It is felt that a VT-2 examination at the test pressure will identify any leakage and eliminate the overpressurization risk the Class I hydrostatic test presented.

EVALUATION AND CONCLUSION

It is impractical to pressurize the piping between MOV-1700 and MOV-1701 to Class I hydrostatic test requirements because of the significant probability of failure of the single Class 1/2 boundary and overpressurization of Class 2 piping. The piping between the valves and the valve (MOV-1701) will be tested to the requirements of Class 2 piping of the Residual Heat Removal System. The pressure to which the piping and valve will be subjected is adequate to determine the structural integrity of the pressure boundary. The staff therefore concludes that relief from the Class I hydrostatic test requirements may be granted.

5. REQUEST FOR RELIEF RR-12: Relief is requested from visual examination of steam generator tubes during primary system hydrostatic and leakage tests.

CODE REQUIREMENT

The pressure-retaining components shall be visually examined while the system is under the hydrostatic test pressure and temperature.

LICENSEE'S BASIS FOR REQUESTING RELIEF

Primary to secondary leakage detection using code prescribed visual detection techniques are impossible to conduct.

PROPOSED ALTERNATIVE EXAMINATION

As an alternative compliance with Technical Specification 3.1.C.6 will be verified during power operations. This verification supplemented by code required eddy current testing is sufficient to assure integrity of the pressure retaining (tube) boundary.

EVALUATION AND CONCLUSIONS

Visual examination of the tubes is impractical to perform. The Technical Specification and Code required eddy current testing are sufficient to determine the structural integrity of steam generator tubes.

6. REQUEST FOR RELIEF RR-15: It is requested that application of subarticle IWA-5224 (d) of the 1980 Edition through Winter 1980 Addenda of Section XI be allowed when establishing hydrostatic test boundaries.

CODE REQUIREMENT: (1980 EDITION)

Where the respective system primary pressure ratings on the suction and discharge side of system pumps differ, the system test boundary shall be divided into two separate boundaries (such as suction side and discharge side test boundaries). In the case of positive displacement pumps, the boundary interface shall be considered as the pump. In the case of centrifugal pumps, the boundary interface shall be the first shutoff valve on the discharge side of the pump.

LICENSEE'S BASIS FOR REQUEST

Hydrostatic testing of the short section of piping between the pump discharge and the first isolation valve is especially difficult when the pump becomes the boundary in many cases requiring either undesirable cold springing of piping to install blank flanges or application of abnormally high pressures to pump seals.

EVALUATION AND CONCLUSIONS

It is impractical in many cases to hydrostatically test piping to Code requirements on the suction and discharge sides of pumps without damaging seals. This impracticality has been recognized by the Code and the requirement changed by changing the test boundary. The staff agrees with the change and recommends that the request be granted.

B. CLASS 2 COMPONENTS

1. REQUEST FOR RELIEF RR-4: Relief is requested from the pressure testing requirements for piping between the valves and the valves listed:

HCV-1311 to 1-CH-313

CODE REQUIREMENT

(a) The system hydrostatic test pressure shall be at least 1.25 times the system design pressure (P_D) and conducted at a test temperature not less than 100 F except as may be required to meet the test temperature requirements of IWA-5230.

(b) The test pressure may be reduced in accordance with the following table when system hydrostatic testing is required to be conducted at temperatures above 100 F in order to meet the fracture toughness criteria applicable to ferritic materials of which the system components are constructed.

Test Temperature	Test Pressure
100 F	1.25 P_D
200 F	1.20 P_D
300 F	1.15 P_D
400 F	1.10 P_D
500 F	1.05 P_D

LICENSEE'S BASIS FOR REQUESTING RELIEF

The one-way check valve placement prevents pressurization of the area in between the valves when conducting IWB-5222 on the primary system.

PROPOSED ALTERNATIVE TEST

The alternative test proposed is to pressurize the primary system to 2335 psig while the reactor is in a shutdown condition. The reactor will be borated to equal or to greater than cold shutdown Boron Concentration. The pressurized primary will act as a boundary for the test forcing closed the first check valve in the pressure boundary. A charging test pump will provide pressure and a VT-2 examination will be conducted on the area.

EVALUATION AND CONCLUSION

Additional information related to the staff by conference call on July 20, 1983 provided clarification of the licensee's alternative test. The hydrostatic test will be performed at 2335 psig and 500°F. At this temperature and pressure, the alternative test is in compliance with IWC-5000 of Section XI of the Code and the relief requested is not necessary.

2. REQUEST FOR RELIEF RR-6: Relief is requested from the four-hour holding time after attaining code required test pressure and temperature conditions during the system Hydrostatic Test for the insulated piping and components listed:

Steam generators and piping located on station prints:

11448-FM-64A
11448-FM-64B
11448-FM-68A
11448-FM-124A
11448-FM-138A
11448-FM-123A

Component	Connected Piping	Component
1-RC-E-1A	30"-SHP-1-601	SV-MS-101A
	to 30"-SHP-22-601	SV-MS-102A
	to 4"-SHP-37-601	SV-MS-103A
		SV-MS-104A
		SV-MS-105A
		RV-MS-101A

Component	Connected Piping	Component
1-RC-E-1A	30"-SHP-1-601 to 2"-GN-23'601	1-GN-1
1-RC-E-1A	30"-SHP-1-601 to 6"-SHP-45-601	NRV-MS-101A 1-MS-80,81,266,74
1-RC-E-1A	30"-SHP-1-601 to 30"-SHP-22-601 to 3"-SDHV-1-601 to 4"-SDHB-4-601	HCV-MS-104
1-RC-E-1A	14"-WFPD-17-601	1-FW-27 1-FW-10 1-WT-174
1-RC-E-1A		1-BD-1 1-BD-2 1-BD-4 1-RT-1
1-RC-E-1A	30"-SHP-1-601	1-MS-379 1-MS-87
1-RC-E-1B	30"-SHP-2-601 to 30"-SHP-23-601 to 4"-SHP-38-601	SV-MS-101B SV-MS-102B SV-MS-103B SV-MS-104B SV-MS-105B SV-MS-101B
1-RC-E-1B	30"-SHP-2-601 to 2"-GN-24-601	1-GN-2
1-RC-E-1B	30"-SHP-2-601 to 6"-SHP-46-601	NRV-MS-101B 1-MS 112,268, 113,106
1-RC-E-1B	30"-SHP-2-601 to 30"-SHP-23-601 to 3"-SDHV-2-601 to 4"-SDHV-4-601	HCV-MS-104
1-RC-E-B	14"-WFPD-13-601	1-FW-41,58 1-WT-177
1-RC-E-1B		1-BD-11 1-BD-12 1-BD-14 1-RT-20

Component	Connected Piping	Component
1-RC-E-1C	30"-SHP-3-601 to 30"-SHP-24-601 to 4"-SHP-39-601	SV-MS-101C SV-MS-102C SV-MS-103C SV-MS-104C SV-MS-105C RV-MS-101C
1-RC-E-1C	30"-SHP-3-601 to 2"-GN-25-601	1-GN-3
1-RC-E-1C	30"-SHP-3-601 to 6"-SHP-47-601	NRV-MS-101C 1-MS-152,149,208, 143
1-RC-E-1C	30"-SHP-601 to 30"-SHP-24-601 to 3"-SDHV-3-601 to 4"-SDHV-4-601	HCV-MS-104
1-RC-E-1C	30"-SHP-3-601	1-MS-158 1-MS-377
1-RC-E-1C	14"-WEPD-9-601	1-FW-72 1-FW-89 1-FW-182
1-RC-E-1C		1-BD-21 1-BD-22 1-BD-24 1-BD-39

CODE REQUIREMENT

The pressure-retaining components shall be visually examined while the system is under the hydrostatic test pressure and temperature. The test pressure and temperature shall be maintained for at least four hours prior to the performance of the examinations.

LICENSEE'S BASIS FOR REQUESTING RELIEF

Westinghouse requires specific testing requirements in order to maintain integrity and warranty of the steam generators. These requirements are found in the Westinghouse Technical Manual Steam Generator Vepco Surry Power Station Units 1 & 2 Volume 1, March 1979, Section 3.10.2, "Secondary Side Hydrostatic Test". The requirements of 3.10.2 of the Westinghouse Technical Manual require the following: "The secondary side hydrostatic test shall be conducted in accordance with the ASME Code Section XI for Class 2 components. During these tests the secondary side steam generator shell and water must have a temperature greater than 150°F but less than 250°F. Test pressure on the secondary side shall be 1356 psig, while the pressure on the primary side is maintained at 0 psig at a temperature of 70°F to 100°F. The secondary side pressure is to

be raised to 1356 psig, held for 30 minutes and then reduced to 1085 psig for a time sufficient to permit proper examination of welds, closures and surfaces for leakage or weeping."

PROPOSED ALTERNATIVE TEST

As an alternative, the primary side is to be used as the heating source to control temperature. The steam generator shell and water must have a temperature greater than 150°F but less than 200°F. The primary side (Reactor Coolant) must be 250°F and 350 psig with a steam bubble established in the pressurizer. If the above limits are exceeded, secondary pressure must be reduced below 500 psig and procedure halted until system temperature can be restored. The steam generator may be filled and pressurized up to 450 psig prior to heatup. The secondary side pressure is to be raised to 1356 psig, held for 30 minutes and then reduced to 1085 psig for a time sufficient to permit examination.

EVALUATION AND CONCLUSIONS

The four-hour hold time at temperature and pressure for insulated piping being hydrostatically tested is arbitrarily chosen to allow any leakage from the pressure boundary sufficient time to wet the surface of the insulation or accumulate on floor areas or equipment and thus be detectable by visual examination. The licensee's proposed alternative test which is recommended by Westinghouse is to hold the system at the Code required pressure (1.25 times design) and temperature for thirty minutes and then reduce pressure to system design for the period of time necessary to visually examine insulation, welds, closures, and floor areas for evidence of leakage. The staff finds that although the four-hour hold time is arbitrary, thirty minutes is not sufficient to accomplish the intent of the requirement; that the thirty-minute hold time at 1.25 times the design pressure is acceptable provided the system is held at the design pressure (1085 psig) at least three and one-half hours prior to the performance of the visual examinations.

3. REQUEST FOR RELIEF RR-7: Relief is requested from the four-hour holding time required after attaining test pressure and temperature conditions during the System Hydrostatic Test for the insulated piping and components listed:

Component	Connected Piping	Component
1-FW-12	14"-WFPD-17-601	1-FW-10
1-FW-43	14"-WFPD-13-601	1-FW-41
1-FW-74	14"-WFPD-9-601	1-FW-72

CODE REQUIREMENT

The pressure-retaining components shall be visually examined while the system is under the hydrostatic test pressure and temperature. The test pressure and temperature shall be maintained for at least four hours prior to the performance of the examination.

LICENSEE'S BASIS FOR REQUESTING RELIEF

The check valves associated with the piping as listed open to the steam generators. Hydrostatic test pressure would therefore pressurize the steam generator area and would subject them to the conditions discussed in relief request 6.

PROPOSED ALTERNATIVE TEST

As an alternative these areas will be tested to the pressure and conditions discussed in relief request 6. As the individual steam generators are tested the piping and valves attached in this request will be tested.

EVALUATION AND CONCLUSION

It is impractical to hydrostatically test the valves and piping bounded by the valves listed to Code requirements without subjecting the steam generators to conditions adverse to those specified in the Westinghouse Technical Manual. (See Request for Relief RR-6). The staff finds that the hydrostatic test performed on the secondary side of the steam generators is also acceptable for the piping and valves listed under this request. We conclude that relief from the Code requirements may be granted provided the alternative test is performed as stipulated in Request for Relief RR-6.

4. REQUEST FOR RELIEF RR-8: Relief is requested from the hydrostatic test pressure requirement for the piping and components listed which cannot be isolated from the Class 1 system:

Component	Piping Connected	Component
1-CH-311	3/4"-CH-240-1502	1-CH-312
HCV-1310A	3"-CH-1-1502	1-CH-312

CODE REQUIREMENT

The pressure-retaining components shall be subjected to a hydrostatic test at 1.25 times the system design pressure.

LICENSEE'S BASIS FOR REQUESTING RELIEF

The double one-way check valve placement of 1-CH-430 and 1-CH-312 makes it impossible to isolate the primary Class 1 system from the required Class 2 pressure test. Since no safety or relief valve exists for this hydrostatic test boundary, design pressure of the pipe, Pd, must be used. This valve Pd is 2735 psig therefore required test pressure would be 1.25 times Pd or 3419 psig. Since the primary cannot be isolated this test pressure would over pressurize the primary system which is limited to the Class 1 Hydrostatic test condition described in IWB 5222.

PROPOSED ALTERNATIVE TEST

As an alternative during the test described in relief request 1 the piping and components covered by this relief will receive a VT-2 examination.

EVALUATION AND CONCLUSION

The piping system design makes it impractical to isolate at the Class 1/2 boundary. In order to hydrostatically test the Class 2 piping to Code requirements, Class I piping would have to be overpressurized significantly. As an alternative, the licensee has committed to test the Class 2 portion of piping to 2335 psig at 500°F, the same pressure and temperature as the Class I piping. The staff finds the alternative test acceptable. We conclude that relief from the Class 2 requirements may be granted.

5. REQUEST FOR RELIEF RR-9: Relief is requested from hydrostatic test pressure requirement for the piping and components listed which cannot be isolated from the Class I system:

Component	Connected Piping	Component
MOV-1890C	10"-SI-152-1502	1-SI-243
	to 6"-SI-153-1502	1-SI-241
	to 6"-SI-145-1502	1-SI-242
	to 6"-SI-144-1502	
MOV-1890A	6"-SI-49-1502	1-SI-229
MOV-1890B	6"-SI-48-1502	2"-SI-81-1502
	to 6"-SI-143-1502	6"-SI-79-1502
	to 6"-SI-48-1502	
	to 6"-SI-50-1502	2"-SI-79-1502
1-SI-174 and	3"-SI-72-1503	
MOV-1869A	to 2"-SI-72-1503/	1-SI-240
	2"-SI-79-1502	1-SI-257
	2"-SI-77-1503/	1-SI-239
	2"-SI-80-1502	1-SI-255
MOV-1869B	3"-SI-147-1503	
	to 2"-SI-73-1503	
	to 2"-SI-81-1502	1-SI-238
		1-SI-253
1-SI-150	3"-SI-70-1503	
MOV-1867D	to 2"-SI-70-1503/	1-SI-237
	2"-SI-75-1502	1-SI-250
MOV-1867C	2"-SI-76-1503/	1-SI-236
	2"-SI-85-1502	1-SI-248

Component	Connected Piping	Component
MOV-1842	3"-SI-146-1503 to 2"-SI-71-1503/ 2"-SI-74-1502	1-SI-235 1-SI-245

CODE REQUIREMENT

The pressure-retaining components shall be subjected to a hydrostatic test at 1.25 times the system design pressure.

LICENSEE'S BASIS FOR REQUESTING RELIEF

Check valve boundaries between Class II and Class I systems make it impractical to establish hydrostatic test boundaries so that the primary system is not included. Design pressure for this piping is 2800 psig (Pd); therefore normal test pressure would be 3080 psig (T = 200°F). This pressure would overpressurize the primary since it cannot be isolated.

PROPOSED ALTERNATIVE TEST

As an alternative during the testing described in relief request 1, test boundaries will be extended so that the components and piping described are included in a VT-2 examination under the conditions described in relief request 1.

EVALUATION AND CONCLUSIONS

The piping system design makes it impractical to isolate at the Class 1/2 boundary. In order to hydrostatically test the Class 2 piping to Code requirements, Class I piping would have to be overpressurized significantly. As an alternative, the licensee has committed to test the Class 2 portion of piping to 2335 psig at 500°F, the same pressure as the Class I piping. The staff finds the alternative test acceptable and concludes that relief from the Class 2 requirements may be granted.

6. REQUEST FOR RELIEF RR-10: Relief is requested from the hydrostatic test pressure requirement for the piping and components listed which cannot be isolated from the Class I system:

Component	Connected Piping	Component
MOV-1865A	12"-SI-45-1502	1-SI-107
1-SI-105	3/4"-SI-33-1502	1-SI-107
MOV-1865B	12"-SI-46-1502	1-SI-128
1-SI-126	3/4"-SI-34-1502	1-SI-128
MOV-1865C	12"-SI-47-1502	1-SI-145
1-SI-143	3/4"-SI-35-1502	1-SI-145

CODE REQUIREMENT

The pressure-retaining components shall be subjected to a hydrostatic test at 1.25 times the system design pressure.

LICENSEE'S BASIS FOR REQUESTING RELIEF

The check valve boundary prevents isolation of the adjoining Class 1 system from the Class 2 system mentioned. The lack of overpressure protection within the boundary requires a valve Pd (Design Pressure) equal to 2485 psig times 1.25 (T = 200°F) for a test pressure of 3106 psig. The nominal operating pressure Po for the adjoining Class 1 system is 660 psig which at 100°F requires a test pressure of 726 psig. As is evident, since isolation is not practical, the normal Class 2 test pressure will be far in excess of the test pressure for the Class 1 system.

PROPOSED ALTERNATIVE TEST

As an alternative it is proposed that the Class 2 components and piping listed be examined (VT-2) to the conditions required for the adjacent Class 1 piping. (PO = 660 psig).

EVALUATION AND CONCLUSIONS

According to the drawing referenced (11148-FM-89B), the Class 1/2 boundary occurs at check valves 1-SI-107, 1-SI-123, and 1-SI-145, each located downstream of motor-operated valves MOV-1865A, MOV-1865B, and MOV-1865C in the accumulator discharge lines of Accumulator Tanks No. 1, 2, and 3, respectively. The piping between these check valves and motor-operated valves is therefore designated Class 2 as well as the 3/4" lines which are connected to the discharge piping and the shut-off valves 1-SI-125, 1-SI-143, and 1-SI-126. Since the Code requirements for hydrostatically testing Class 2 systems are being applied to these portions of Class 2 systems, relief from the requirement is not necessary.

7. REQUEST FOR RELIEF RR-11: Relief is requested from the hydrostatic test pressure requirement for the piping and components listed:

Component	Connected Piping	Component
1-CS-48	6"-CS-15-152	1-CS-47
	6"-CS-14-152	1-CS-46
	2"-CS-19-152	1-CS-45

CODE REQUIREMENT

IWC-5220 PRESSURE

(a) The system hydrostatic test pressure shall be at least 1.25 times the system design pressure (P_D) and conducted at a

test temperature not less than 100F except as may be required to meet the test temperature requirements of IWA-5230.

(b) The test pressure may be reduced in accordance with the following table when system hydrostatic testing is required to be conducted at temperatures above 100 F in order to meet the fracture toughness criteria applicable to ferritic materials of which the system components are constructed.

Test Temperature	Test Pressure
100F	$1.25P_D$
200F	$1.20P_D$
300F	$1.15P_D$
400F	$1.10P_D$
500F	$1.05P_D$

(c) For components that are not required to function during reactor operation, the system test pressure shall not be less than 100% of the pressure developed during the conduct of a periodic system inservice test.[1] In the case of storage tanks, the nominal hydrostatic pressure developed with the tank filled to its design capacity shall be acceptable as the system test pressure.

(d) Open-ended portions of a nonclosed system (e.g., suction line from a storage tank, or discharge line of a containment spray header) extending to the first shutoff valve may be exempted from the test requirements of IWC-2510.

LICENSEE BASIS FOR REQUESTING RELIEF

Tank 1-CS-TK-1 (RWST) and piping up to 1-CS-48 will be tested to system hydrostatic test criteria of IWC-5222 (b,c). The piping and components listed attach to the system and are included only due to the requirements of Reg. Guide 1.26 (Feb. 1976) to include piping up to the first valve that is either normally closed or capable of automatic closure. Since the requirements of IWC-5222 (b,c) can only be applied from the RWST to 1-CS-48, the piping mentioned must be tested in accordance with IWC-5222(a). It is felt that this test would be excessive since the piping would only see pressure associated with the RWST when performing its safety function.

PROPOSED ALTERNATIVE TEST

As an alternative it is proposed that the piping and components be tested to the requirements of IWC-5222 (b,c) associated with 1-CS-TK-1 (RWST).

[1]System inservice tests include pressurization of systems to conduct functional tests (i.e., valves and pumps), or a system pressure test.

EVALUATION AND CONCLUSIONS

The piping and valves listed are required to be hydrostatically tested to the 1974 Edition through Summer 1975 Addenda of Section XI of the ASME Code. The Code specifically states that open-ended portions of a nonclosed system extending to the first shutoff valve may be exempted from hydrostatic test at 1.25 times design pressure. The nominal hydrostatic pressure developed with the tank filled to its design capacity shall be acceptable as the system test pressure, the system being comprised of the tank and piping up to the first shutoff valve. The staff finds that the piping and valves listed comprise part of the tank system and are therefore subject to the pressure at which the tank is tested.

8. REQUEST FOR RELIEF RR-15: It is requested that application of subarticle IWA-5224(d) of the 1980 Edition through Winter 1980 Addenda of Section XI be allowed when establishing hydrostatic test boundaries.

CODE REQUIREMENT: (1980 EDITION)

Where the respective system primary pressure ratings on the suction and discharge side of system pumps differ, the system test boundary shall be divided into two separate boundaries (such as suction side and discharge side test boundaries). In the case of positive displacement pumps, the boundary interface shall be considered as the pump. In the case of centrifugal pumps, the boundary interface shall be the first shutoff valve on the discharge side of the pump.

LICENSEE'S BASIS FOR REQUEST

Hydrostatic testing of the short section of piping between the pump discharge and the first isolation valve is especially difficult when the pump becomes the boundary in many cases requiring either undesirable cold springing of piping to install blank flanges or application of abnormally high pressures to pump seals.

EVALUATION AND CONCLUSIONS

It is impractical in many cases to hydrostatically test piping on the suction and discharge sides of pumps to Code requirements without damaging seals. This impracticality has been recognized by the Code and the requirement changed by changing the test boundary in the 1980 Edition of Section XI. The staff agrees with the change and recommends that the request be granted.

C. CLASS 3 COMPONENTS

1. REQUEST FOR RELIEF RR-7: Relief is requested from the four-hour holding time required after attaining test pressure and temperature conditions during the System Hydrostatic Test for the insulated piping and components listed:

Component	Connected Piping	Component
1-FW-31	3"-WAPD-10-601 to 3"-WAPD-9-601	1-FW-27
1-FW-30	3"-WAPD-9-601	1-FW-27
1-FW-62	3"-WAPD-12-601 to 3"-WAPD-11-601	1-FW-58
1-FW-61	3"-WAPD-11-601	1-FW-58
1-FW-93	3"-WAPD-14-601 to 3"-WAPD-13-601	1-FW-89
1-FW-92	3"-WAPD-13-601	1-FW-89

CODE REQUIREMENT

The pressure-retaining components shall be visually examined while the system is under the hydrostatic test pressure and temperature. The test pressure and temperature shall be maintained for at least four hours prior to the performance of the examination.

LICENSEE'S BASIS FOR REQUESTING RELIEF

The check valves associated with the piping as listed open to the steam generators. Hydrostatic test pressure would therefore pressurize the steam generator area and would subject them to the conditions discussed in relief request 6.

PROPOSED ALTERNATIVE TEST

As an alternative these areas will be tested to the pressure and conditions discussed in relief request 6. As the individual steam generators are tested the piping and valves attached in this request will be tested.

EVALUATION AND CONCLUSION

It is impractical to hydrostatically test the valves and piping bounded by the valves listed to Code requirements without subjecting the steam generators to conditions adverse to those specified in the Westinghouse Technical Manual. (See Request for Relief RR-6). The staff finds that the hydrostatic test performed on the secondary side of the steam generators is also acceptable for the piping and valves listed under this request. We conclude that relief from the Code requirements may be granted provided the alternative test is performed as stipulated in Request for Relief RR-6.

2. REQUEST FOR RELIEF RR-15: It is requested that application of subartible IWA-5224(d) of the 1980 Edition through Winter 1980 Addenda of Section XI be allowed when establishing hydrostatic test boundaries.

CODE REQUIREMENT: (1980 EDITION)

Where the respective system primary pressure ratings on the suction and discharge side of system pumps differ, the system test boundary shall be divided into two separate boundaries (such as suction side and discharge side test boundaries). In the case of positive displacement pumps, the boundary interface shall be considered as the pump. In the case of centrifugal pumps, the boundary interface shall be the first shutoff valve on the discharge side of the pump.

LICENSEE'S BASIS FOR REQUEST

Hydrostatic testing of the short section of piping between the pump discharge and the first isolation valve is especially difficult when the pump becomes the boundary in many cases requiring either undesirable cold springing of piping to install blank flanges or application of abnormally high pressures to pump seals.

EVALUATION AND CONCLUSIONS

It is impractical in many cases to hydrostatically test piping on the suction and discharge sides of pumps to Code requirements without damaging seals. This impracticality has been recognized by the Code and the requirement changed by changing the test boundary. The staff agrees with the change and recommends that the request be granted.

Based on the review, the staff concludes that relief granted from the examination requirements and alternate methods in this document gives reasonable assurance of the piping and component pressure boundary and support structural integrity, that granting relief where the Code requirements are impractical is authorized by law and will not endanger life or property, or the common defense and security, and is otherwise in the public interest considering the burden that could result if they were imposed on the facility.

ENVIRONMENTAL CONSIDERATION

We have determined that granting relief from specific ASME Section XI Code requirements does not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that this is an action which is insignificant from the standpoint of environmental impact and, pursuant to 10 CFR Section 51.5 (d)(4), that an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with the grant of this relief.

Dated: February 28, 1984

Contributor: George Johnson, METB