VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

W. L. STEWART
VICE PRESIDENT
NUCLEAR OPERATIONS

January 7, 1983

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
Attn: Mr. Steven A. Varga, Chief
Operating Reactors Branch No. 1
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Serial No. 001
NO/WDC:acm
Docket Nos. 50-280
50-281
License Nos. DPR-32
DPR-37

Gentlemen:

RELIEF REQUESTS FROM ASME XI FOR
SURRY POWER STATION UNITS 1 AND 2 10 YEAR INSERVICE INSPECTION

Surry Power Station is preparing for its 10 year inservice inspection outage and has identified certain cases where the requirements of the governing code are not practical or achievable. These cases were not addressed in our original relief submittals dated December 15, 1980 (Serial Nos. 944 and 945).

This submittal is the first part of a two part submittal of requests for relief. In Attachment 1, the format of the information provided in the subsequent relief requests is outlined. In Attachments 2 and 3, relief is requested for Units 1 and 2, respectively, on a case by case basis pursuant to 10 CFR 50.55a. In each case, the basis for relief and alternate testing is provided.

The NRC Staff is requested to begin the review of Attachment 2, which is the Unit 1 submittal. The Unit 2 submittal supplied in Attachment 3, will be forwarded for review at a later date. Enclosed is a check for payment of the review fee.

Very truly yours,

W. L. Stewart

Attachments
1. Relief Request Format
2. Unit 1 Relief Requests
3. Unit 2 Relief Requests (to be forwarded at a later date)
4. Voucher Check No. 88197 in the amount of $4,400.

cc: Mr. James P. O'Reilly
Regional Administrator
Region II

A047
1/40 w/check
$4,400

ATTACHMENT 1

a) The subsequent specific Relief Requests from code required system pressure tests will be in the following format:

1. Identification of the component for which relief is requested:

   a. Name and number as located on station drawings.

   b. Function

   c. ASME code class

2. Specific identification of the ASME code (1977 Edition Section XI with Addenda through the summer of 1979) requirement that has determined to be impractical for each component.

3. Information to support the determination that the requirement in (2) is impractical; i.e. the basis of the relief.

4. Specification of the inservice pressure testing that will be performed in lieu of the ASME code Section XI requirements, if any.

ATTACHMENT 2

RR-1 1a) Piping between the following check valves shown on station print number 11448-FM-89B:

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

b) Safety Injection System

c) Class I

2. Class I System Hydrostatic Test, IWB-5222

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

4. 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.

RR-2 1a) Piping between following check valves located on station print 11448-FM-89B:

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

b) Safety Injection System

c) Class I

2. Class I System Leakage Test, IWB-5221

3. The pressure during normal operation, 100% power, would be the static head left when the system was isolated or at most a few pounds over atmospheric. It is felt this test would be inconsequential and would not indicate existing leakage problems effectively.

4. As an alternative test the system will be flushed to prove flow capability to the primary system. During this test A VT-2 examination will be conducted.

RR-3 1a) Pumps located on station drawing 11448-FM-88C as listed:

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

Piping associated from the flange to the pump

b) Chemical volume control system

c) Class I

2. Class I System Hydrostatic Test, IWB-5222

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

4. 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.

RR-4 1a) Piping and valves as listed located on station print 11448-FM-88C:

1-CH-430 to 1-CH-312
HCV-1311 to 1-CH-313

b) Chemical and Volume Control System

c) Class I (1-CH-430 to 1-CH-312)
Class II (HCV-3111 to 1-CH-313)

2. Class I System Hydrostatic Test, IWB-5222.
Class II System Pressure Test, IWC-5222.

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

4. 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.

RR-5 1a) Piping and Valves located on station print 11448-FM-87A

Component	Connected Piping	Component
MOV-1701	14"-RH-18-602	MOV-1700

b) Residual Heat Removal

c) Class I

2. Class I System Hydrostatic Test, IWB-5222

3. 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.

4. 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 over-pressurization risk the Class I hydrostatic test presented.

RR-6 1a) 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 to 30"-SHP-22-601 to 4"-SHP-37-601	SV-MS-101A SV-MS-102A SV-MS-103A SV-MS-104A SV-MS-105A RV-MS-101A
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

Component	Connected Piping	Component
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-3-601 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

b) Main Steam
Feed Water
Stm Gen Nitrogen Conn
Chemical Feed
Blow Down
Recirc and Transfer

c) Class II

2. IWA 5213(d) System Hydrostatic Tests - 4 hr. holding time required after attaining test pressure and temperature conditions for insulated systems.

3. 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 surfacs for leakage or weeping."

4. As an alternative, the primary side is to 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.

RR-7 1a Valves and piping on station drawing 11448-FM-68C

Class	Component	Connected Piping	Component
2	1-FW-12	14"-WFPD-17-601	1-FW-10
2	1-FW-43	14"-WFPD-13-601	1-FW-41
2	1-FW-74	14"-WFPD-9-601	1-FW-72
3	1-FW-31	3"-WAPD-10-601 to 3"-WAPD-9-601	1-FW-27
3	1-FW-30	3"-WAPD-9-601	1-FW-27
3	1-FW-62	3"-WAPD-12-601 to 3"-WAPD-11-601	1-FW-58
3	1-FW-61	3"-WAPD-11-601	1-FW-58
3	1-FW-93	3"-WAPD-14-601 to 3"-WAPD-13-601	1-FW-89
3	1-FW-92	3"-WAPD-13-601	1-FW-89

b) Feedwater and auxiliary feedwater connections.

c) Class II and III

2. IWA 5213(d) System Hydrostatic Tests - 4 hr. holding time required after attaining test pressure and temperature conditions for insulated systems.

3. 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.

4. 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.

RR-8 1a) Piping and valves as listed located on station print 11448-FM-88C:

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

b) ChemicAL AND Volume Control System

c) Class II

2. Class II System Hydrostatic Test, IWC-5222

3. The double one-way check valve placement of 1-CH-430 and 1-Ch-312 makes it impossible to isolate the primary Class I system from the Class II pressure test required. Since no safety or relief valve exists for this hydrostatic test boundary, design pressure of the pipe, Pd, must be use. 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 I Hydrostatic test condition described in IWB 5222.

4. 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.

RR-9 1a) Piping and valves located on station prints 11448-FM-89A
11448-FM-89B:

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

b) Safety Injection System

c) Class II

2. Class II System Hydrostatic Test, IWC-5222

3. 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 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.

4. 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.

RR-10 1a) Piping and valves located on station print 11448-FM-89B:

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

b) Safety Injection System

c) Class II

2. Class II System Hydrostatic Test, IWC-5222

3. The check valve boundary prevents isolation of the adjoining Class I system from the Class II 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 I 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 II test pressure will be far in excess of the test pressure for the Class I system.

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

RR-11 1a) Piping and valves located on station print 11448-FM-84A.

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

b) Containment and Recirculation Spray System

c) Class II

2. Class II System Hydrostatic Test, IWC-5222(a)

3. 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 in (1a) 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 in (1a) 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.

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

RR-12 1a) Steam Generators located on station print 11448-FM-86A.

1-RC-E-1A
1-RC-E-1B
1-RC-E-1C

b) Reactor Coolant System

c) Class I

2. System Leakage Test, IWB-5221
System Hydro Test, IWB-5222
Visual Examination, IWA-5240

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

4. 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.

RR-13 1a) Components and piping as listed on station print 11448-FM-88C.

Component	Piping
1-CH-E-3	2"-CH-5-1502
1-CH-368	3"-CH-1-1502
1-CH-429	3"-CH-79-1503
1-CH-369	2"-CH-68-1502
1-CH-428	3/4"-CH-240-1502
1-CH-365	2"-CH-82-1502
1-CA-367	3/4"-CH-1502
	3"-CH-79-1503
	2"-CH-86-602
	2"-CH-83-1502

b) Chemical and Volume Control System

c) Class II

2. Class II System Hydrostatic Test, IWC-5222

3. The piping and components in the immediate vicinity of the Regenerative Heat Exchanger are in a high radiation area. The Regenerative Heat Exchanger is located in a small cubicle requiring personnel to be in the close vicinity of the piping and components (i.e. very close to contact) during the conduct of IWC-5222. General area readings in this vicinity are 1000-6000 mr/hr. Considering the radiation dose to inspection personnel that would result, it is deemed impractical to perform this inspection.

4. As an alternative, pressure test this piping as a buried component. IWA-5244. (NOTE: This is an amplification of our relief request letter of December 15, 1980 in Attachment A paragraph (d)(v).

RR-14 1a) Filter components and piping listed on station prints as follows:

Component	Piping	Print
1-CH-FL-4A 1-CH-FL-4B	2"-CH-74-1503 2"-CH-76-1503 3/4"-CH-166-1503 2"-CH-75-1503 2"-CH-77-1503 3/4"-CH-167-1503	11448-FM-88B
1-CH-FL-2	3"-CH-25-152 3"-CH-119-152	11448-FM-88B
1-CH-FL-3	3"-CH-99-152 3"-CH-100-152	11448-FM-88B

b) Chemical and Volume Control System

c) Class II

2. Class II Hydrostatic Test IWC-5222

3. The immediate vicinity of these filters is normally in High Radiation areas sometimes as high as 20,000 MR/HR. During hydrostatic tests of these systems, inspectors and operators would be required to enter the high exposure areas.

4. As an alternative it is proposed that the portions of these systems in Radiation areas greater than 1000 MR/HR be treated as buried components during the conduct of the required hydrostatic tests. Inspectors and operators would not enter the areas greater than 1000 MR/HR unless the system cannot pass the requirements of a buried component hydrostatic test, at which time entry into the area for further inspection would be made as necessary.

RR-15 1a) All Centrifugal Pumps

b) NA

c) All Classes

2. IWA 5000

3. 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.

4. It is requested that application of subarticle IWA 5224 (d) of the 1980 Code edition of with winter 1980 Addenda be allowed when establishing hydrostatic test boundaries.

ATTACHMENT 3

(To be forwarded at a later date)

VIRGINIA ELECTRIC AND POWER COMPANY

CHECK VOUCHER # 157.6 BANK NO. 26 CHECK NO. 88197 DATE 11/15/82 VENDOR NO. 3301

LINE	DATE	INVOICE NO./OR DESCRIPTION	GROSS AMOUNT	DISCOUNT	NET AMOUNT
1	11/09/82	SPSLTSC #115A STAFF	4,400.00	0.00	4,400.00

ATTACHED CHECK ISSUED AS PAYMENT OF ITEMS LISTED ABOVE - PLEASE DETACH STUB AND CASH CHECK PROMPTLY.

Vepco

VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA

56-152
531

WACHOVIA BANK & TRUST COMPANY N.A.

VOID IF NOT CASHED IN 90 DAYS

03301 26 0088197 00000440000

PAY FOUR THOUSAND FOUR HUNDRED AND 00/100 DOLLARS

TO THE ORDER OF UNITED STATES NUCLEAR
REGULATORY COMMISSION
NUCLEAR REG C DC 20555

BK	CHECK NO.	DATE	VENDOR NO.	AMOUNT
26	88197	11/15/82	3301	$4,400.00

VOID

03301 26 0088197 00000440000

"032634" :053101529: 3608 088819"

O J Peterson III