VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

February 6, 1997

Document Control Desk
U. S. Nuclear Regulatory Commission
Washington, D. C. 20005

Serial No. 97-027
NLOS/ETS: R1
Docket No. 50-339
License No. NPF-7

Dear Sir:

VIRGINIA ELECTRIC AND POWER COMPANY
NORTH ANNA POWER STATION UNIT 2
SECOND INTERVAL INSERVICE INSPECTION PROGRAM
ADDITIONAL INFORMATION ASME RELIEF REQUEST

By letter dated December 7, 1995 (Serial No. 95-602), Virginia Electric and Power Company requested the use of Code Cases N-522 and N-535. In a subsequent letter dated June 10, 1996 (Serial No. 95-602A), the request to use Code Case N-535 was withdrawn and the request for use of Code Case N-522 was revised and submitted as Relief Request SPT-16 for Unit 2 only. The NRC Staff requested additional information to complete the review of the relief request. Relief Request SPT-16 has been revised to include the additional conditions and is provided in the Attachment to this letter.

This letter is not intended to establish any additional commitments. Should you have any questions or require additional information, please contact us.

Very truly yours,

R F Saunders

R. F. Saunders, Vice President
Nuclear Engineering and Services

Attachment

A047

cc: United States Nuclear Regulatory Commission
Regional Administrator
Region II
101 Marietta Street, N. W Suite 2900
Atlanta, Georgia 30323

Mr. R. D. McWhorter
NRC Senior Resident Inspector
North Anna Power Station

ATTACHMENT 1

REVISED RELIEF REQUEST SPT-16
NORTH ANNA POWER STATION UNIT 2

Virginia Electric & Power Company
North Anna Unit 2
Second 10-Year Interval
Request for Relief No. SPT-16, Revision 2

I. IDENTIFICATION OF COMPONENTS

Class 2 piping that penetrates the containment vessel where the piping and isolation valves are part of the containment system but the balance of the piping is outside of the scope of Section XI.

Drawing	Test boundary	Penetration Number
12050-SPM-096A-2 SH. 3	1"-SI-450-1502-Q1, 3"-SI-567-1502-Q1 between 2-SI-MOV-2867D and 3"-SI-568-1502-Q1, 3"-SI-568-1502-Q1 between 2-SI-2867C and 3"-SI-417-1502-Q1, 3"-SI-417-1502-Q1 between 3"-SI-568-1502-Q1 and penetration 7	7
12050-SPM-096B-2 SH. 4	3"-SI-417-1502-Q1 between 2-SI-93 and penetration 7	7
12050-SPM-079B-2 SH. 3	6"-CC-752-151-Q2	13
12050-SPM-095C-2 SH. 1	3"-CH-479-1502-Q1 between 2-CH-MOV-2289A and 2-CH-335	15
12050-SPM-095B-2 SH. 1	3"-CH-499-153A-Q1 between 2-CH-MOV-2381 and penetration 19	19
12050-SPM-095C-2 SH. 2	3"-CH-499-153A-Q1 between 2-CH-MOV-2380 and penetration 19 and ¾"-CH-799-153A-Q1 between 2-CH-331 and penetration 19	19
12050-SPM-096A-2 SH. 1	1"-SI-413-602-Q2 between penetration 20 and 2-SI-47	20
12050-SPM-096B-2 SH. 1	1"-SI-413-602-Q2 between 2-SI-136 and penetration 20	20
12050-SPM-096A-2 SH. 3	3"-SI-538-1502-Q1 between 2-SI-MOV-2836 and penetration 22	22
12050-SPM-096B-2 SH. 4	3"-SI-538-1502-Q1 between 2-SI-85 and penetration 22	22
12050-SPM-079A-2 SH. 2	8"-CC-678-151-Q2	25
12050-SPM-079A-2 SH. 4	8"-CC-688-151-Q2	26
12050-SPM-079A-2 SH. 3	8"-CC-739-151-Q2	27
12050-SPM-090A-2 SH. 1	2"-DG-435-153A-Q2	33

Drawing	Test boundary	Penetration Number
12050-SPB-104B-2 SH. 1	4" line between 2-FP-79 and 2-FP-82	34
12050-SPM-082B-2 SH. 2	1"-ARC-401-153A-Q2 between 2-RM-TV-200D and 2-IA-428	43
12050-SPM-082B-2 SH. 2	1"-ARC-402-153A-Q2 between 2-RM-TV-200B and 2-RM-TV-200C	44
12050-SPM-093B-2 SH. 2	3"-RC-452-153A-Q2 between 2-RC-2519A to 2-RC-162	45
12050-SPM-095C-2 SH. 1	2"-CH-666-1502-Q2 between 2-CH-332 and 2-CH-FCV-2160	46
12050-SPM-082A-2 SH. 1	2"-ACC-421-153A-Q2 between penetration 47 and 2-IA-250	47
12050-SPM-082B-2 SH. 1	2"-ACC-421-153A-Q2 between penetration 47 and 2-IA-TV-202B	47
12050-SPM-096B-2 SH. 1	1"-SI-498-601-Q2 between 2-SI-HCV-2936 and 2-SI-TV-201	50
12050-SPM-096B-2 SH. 1	1"-SI-517-1501-Q2 between 2-SI-132 and 2-SI-TV-200	53
12050-SPM-089B-2 SH. 2	⅜"-SS-749-ICN9-Q1 between 2-SS-TV-206A and 2-SS-TV-206B	56B
12050-SPM-089B-2 SH. 2	⅜"-SS-750-ICN9-Q1 between 2-SS-TV-202A and 2-SS-TV-202B	56C
12050-SPM-089A-2 SH. 3	⅜"-SS-622-ICN9-Q2 between 2-SS-TV-212A and 2-SS-TV-212B	56D
12050-SPM-089B-2 SH. 1	⅜"-SS-402-ICN9-Q2 between 2-SS-TV-201A and 2-SS-TV-201B	57C
12050-SPM-096A-2 SH. 2	10"-SI-415-1502-Q1 and 6"-SI-416-1502-Q1	60
12050-SPM-096B-2 SH. 4	6"-SI-416-1502-Q1 between 2-SI-126 and penetration 60	60
12050-SPM-096A-2 SH. 2	10"-SI-464-1502-Q1 and 6"-SI-421-1502-Q1	61
12050-SPM-096B-2 SH. 4	6"-SI-421-1502-Q1 between 2-SI-128 and penetration 60	61
12050-SPM-096A-2 SH. 2	6"-SI-531-1502-Q1, 10"-SI-418-1502-Q1, and 10"-SI-624-1502-Q1	62
12050-SPM-096B-2 SH. 4	6"-SI-531-1502-Q1, 6"-SI-532-1502-Q1 between 6"-SI-531-1502-Q1 and 2-SI-105, and 6"-SI-533-1502-Q1 between 6"-SI-531-1502-Q1 and 2-SI-99	62

Drawing	Test boundary	Penetration Number
12050-SPM-096B-2 SH. 2	8"-QS-439-153A-Q2 between 2-QS-MOV-201B and 2-QS-22	63
12050-SPM-096B-2 SH. 2	8"-QS-437-153A-Q2 between 2-QS-MOV-201A and 2-QS-11	64
12050-SPM-091A-2 SH. 4	12"-RS-407-153A-Q2 and 8"-RS-J73-153A-Q2	66
12050-SPM-091B-2 SH. 1	8"-RS-J73-153A-Q2, 4"-RS-457-153A-Q2, 8"-RS-456-153A-Q2, and 6"-RS-J82-153A-Q2	66
12050-SPM-091A-2 SH. 4	12"-RS-408-153A-Q2 and 8"-RS-J74-153A-Q2	67
12050-SPM-091B-2 SH. 1	8"-RS-J74-153A-Q2, 4"-RS-461-153A-Q2, 8"-RS-460-153A-Q2, and 6"-RS-J83-153A-Q2	67
12050-SPM-091A-2 SH. 4	10"-RS-410-153A-Q2 between 2-RS-MOV-256B and 2-RS-30	70
12050-SPM-091A-2 SH. 4	10"-RS-409-153A-Q2 between 2-RS-MOV-256A and 2-RS-20	71
11715-SPM-078B-2 SH. 3	16"-WS-627-151-Q2 between 2-SW-MOV-203D and 2-SW-104	79
11715-SPM-078B-2 SH. 3	16"-WS-625-151-Q2 between 2-SW-MOV-203C and 2-SW-94	80
11715-SPM-078B-2 SH. 3	16"-WS-623-151-Q2 between 2-SW-MOV-203B and 2-SW-84	81
11715-SPM-078B-2 SH. 3	16"-WS-621-151-Q2 between 2-SW-MOV-203A and 2-SW-74	82
11715-SPM-078B-2 SH. 3	16"-WS-622-151-Q2	83
11715-SPM-078B-2 SH. 3	16"-WS-624-151-Q2	84
11715-SPM-078B-2 SH. 3	16"-WS-626-151-Q2	85
11715-SPM-078B-2 SH. 3	16"-WS-628-151-Q2	86
12050-SPM-072A-2 SH. 2	6"-AJA-410-151-Q2	89
11715-SPM-106A-2 SH. 3	⅜"-HC-75-ICN9-Q2 between 2-HC-TV-200A and 2-HC-TV-200B	98A
11715-SPM-088A-2 SH. 3	6"-RP-454-152-Q2 and 6"-RP-444-153A-Q2	103
11715-SPM-088A-2 SH. 3	6"-RP-449-152-Q2	104
11715-SPM-106A-2 SH. 2	⅜"-HC-413-ICN6-Q2 between 2-HC-TV-203B and 2-HC-3-154-Q2, and 2½"-HC-440-154-Q2 between 2"-HC-3-154-Q2 and 2-HC-TV-207B, and 2-HC-3-154-Q2	109
12050-SPM-096A-2 SH. 3	3"-SI-457-1502-Q1	113

Drawing	Test boundary	Penetration Number
12050-SPM-096B-2 SH. 4	3"-SI-457-1502-Q1 between 2-SI-119 and penetration 113	113
12050-SPM-096A-2 SH. 3	3"-SI-539-1502-Q1	114
12050-SPM-096B-2 SH. 4	3"-SI-539-1502-Q1 between 2-SI-107 and penetration 114	114

II. IMPRACTICABLE CODE REQUIREMENTS

Table IWC-2500-1, Examination Category C-H, Items C7.30 and C7.70 requires a system pressure test each inspection period and Items C7.40 and C7.60 requires a system hydrostatic test each inspection interval.

III. CODE REQUIREMENT FROM WHICH RELIEF IS REQUESTED

Relief is requested from performing the Code-required hydrostatic test at the end of the inspection interval and the Code-required system pressure test during each period for the containment penetrations listed.

IV. BASIS FOR RELIEF

The sole safety function of the piping and associated valves listed is to provide containment isolation. The components listed are part of the containment system. Containment penetrations are classified as Class 2 per ANSI 18.2, "Nuclear Safety Criteria for the Design of Stationary Pressurized Water Reactor Plants", section 2.3.1.2 (1). For the subject penetrations the connecting piping beyond the containment isolation valves serves no safety function and is classified as nonclass by the classification criteria used by Virginia Electric and Power Company for North Anna Unit 2.

The ASME Section XI pressure testing requirements have verified leak-tight integrity by an over pressure test every ten years and a nominal operating test every inspection period. The 10-year hydrostatic tests were considered inordinately burdensome for the marginal benefit in safety they assure and have been eliminated by Code Case N-498, "Alternative Rules for 10-year Hydrostatic Pressure Testing for Class 1 and 2 Systems, Section XI, Division 1", which has been approved by Regulatory Guide 1.147, Inservice Inspection Code Case Acceptability ASME Section XI Division 1. The 10-Year hydrostatic test is now conducted at nominal operating pressure.

The subject penetrations are Type C pressure tested to a peak containment internal pressure of greater than or equal to 44.1 psig. This test is performed to satisfy Technical Specification Surveillance Requirement 4.6.1.2 which requires all containment penetrations to be leak rate tested as required by 10 CFR 50, Appendix J, Option B, as modified by approved exemptions, and in accordance with the guideline contained in Regulatory Guide 1.163, dated September 1995. The testing frequency of 10 CFR 50, Appendix J, Option B is performance based and can vary from 2 years to 5 years or three refueling cycles. This frequency will not coincide with the inspection period frequency required in Table IWC-2500-1 for system pressure tests and therefore, the ASME Code in effect at North Anna will require additional leak tightness testing.

The ASME Section XI Code has acknowledged that testing of these components beyond the requirements of Appendix J is not necessary and issued Code Case N-522, "Pressure Testing of Containment Penetration Piping", to define its position.

NUREG-1493, "Performance-Based Containment Leak-Test Program", concluded that prescriptive leak rate testing could be replaced with performance based requirements with only a marginal and acceptable impact on safety. The total cost of Type B (electrical penetrations) and Type C testing all containment penetrations (approximately 90 penetrations) was estimated to be $87,500 per outage for North Anna as reported in NUREG-1493. NUREG-1493 estimates that 5% of the total cost of Type B & C testing could be saved if the acceptance criteria were relaxed. Performing ASME Section XI pressure testing beyond the requirements of 10 CFR 50, Appendix J, Option B testing would cause Virginia Electric & Power Company to incur additional cost with a marginal gain in safety.

V. PROPOSED ALTERNATIVE

As an alternative to the testing frequency and pressures required by Table IWC-2500-1, Examination Category C-H, Items C7.30, C7.40, C7.60, and C7.70, the subject penetrations and associated piping and valves, will be pressure tested at peak containment calculated pressures to the requirements of 10 CFR Appendix J, as allowed by Code Case N-522. Testing will be performed in accordance with Technical Specification Surveillance Requirement 4.6.1.2 which requires all containment penetrations to be leak rate tested as required by 10 CFR 50, Appendix J, Option B, as modified by approved exemptions, and in accordance with the guideline contained in Regulatory Guide 1.163, dated September 1995.

Methods for the detection and location of leakage at containment isolation valves and the pipe segments between the containment isolation valves will be identified in procedures.

All subject penetrations will be Type C tested at least once every 60 months.

VI. IMPLEMENTATION SCHEDULE

The Technical Specifications were revised on 2/9/96 to incorporate 10 CFR 50, Appendix J, Option B. The subject containment penetrations were Type C tested in the second period. The third period starts on 12/14/97. Test intervals for valves having two consecutive periodic As-found Type C tests where the results are within the allowable administrative limits may be increased up to a maximum of 60 months. The subject valves have satisfied this criteria and are not scheduled to be tested during the third period.