VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

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United States Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D. C. 20555

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VIRGINIA ELECTRIC AND POWER COMPANY (DOMINION)
NORTH ANNA POWER STATION UNITS 1 & 2
SURRY POWER STATION UNITS 1 & 2
ASME SECTION XI INSERVICE INSPECTION PROGRAM
END OF INTERVALS SYSTEM PRESSURE TESTING

North Anna Units 1 and 2 are currently in the second period of the third Inservice Inspection (ISI) interval. Surry Units 1 and 2 are currently in the first period of the fourth ISI interval. The attached requests for relief are necessary for certain pressure tests and associated visual examinations required at or near the end of the ISI interval on ASME Class 1 components for each of the units. The relief requests address components and piping considered part of the extended Class 1 boundary and only require pressurization at or near the end of the ISI interval. Pursuant to 10 CFR 50.55a(a)(3)(i) or (ii), Dominion requests relief from the applicable ASME Code pressure testing requirements for North Anna and Surry. To support the Staff's review of the relief requests, a CD with the associated system drawings is also attached.

If approved, the relief requests for the system pressure test program that are provided, will be appropriately added to the North Anna and Surry ISI Plans in lieu of creating separate plans for system pressure tests. The ISI Plan for each unit addresses all Class 1, 2, and 3 components and their supports for examination and pressure testing.

If you have any questions or require additional information, please contact Mr. Thomas Shaub at (804) 273-2763.

Very truly yours,

Leslie N. Hartz
Vice President - Nuclear Engineering

Attachments

Commitments made in this letter: None

A047

cc: U.S. Nuclear Regulatory Commission (without CD)
Region II
Sam Nunn Federal Atlanta Center
61 Forsyth Street, SW
Suite 23T85
Atlanta, Georgia 30303

Mr. M. S King (without CD)
NRC Senior Resident Inspector
North Anna Power Station

Mr. N. P. Garrett (without CD)
NRC Senior Resident Inspector
Surry Power Station

Mr. S. R. Monarque
NRC Project Manager
U. S. Nuclear Regulatory Commission
One White Flint North
11555 Rockville Pike
Mail Stop 8-H12
Rockville, MD 20852

Mr. J. E. Reasor, Jr. (w/out attachments)
Old Dominion Electric Cooperative
Innsbrook Corporate Center
Suite 300
4201 Dominion Blvd.
Glen Allen, Virginia 23060

Mr. M. Grace (w/out CD)
Authorized Nuclear Inspector
North Anna Power Station

Mr. R. A. Smith (w/out CD)
Authorized Nuclear Inspector
Surry Power Station

Attachment 1

Letter Serial No. 04-766

Surry Power Station Units 1 and 2
Relief Requests

Virginia Electric and Power Company
(Dominion)

SURRY UNIT 1

SPT 005, 006 and 007

SPT-005

I. IDENTIFICATION OF COMPONENTS

System: Residual Heat Removal (RHR) and Safety Injection (SI)

Components:Class 1 components and piping between:

1-SI-109,	1-SI-107	and 1-SI-HCV-1850B	on	drawing 11448-CBM-089B-4, sheet 1 of 4
1-SI-130,	1-SI-128	and 1-SI-HCV-1850D	on	drawing 11448-CBM-089B-4, sheet 2 of 4
1-RH-MOV-1720A			on	drawing 11448-CBM-087A-4, sheet 2 of 2
1-SI-147,	1-SI-145	and 1-SI-HCV-1850F	on	drawing 11448-CBM-089B-4, sheet 3 of 4
1-RH-MOV-1720B			on	drawing 11448-CBM-087A-4, sheet 2 of 2

ISI Class: 1

II. CODE REQUIREMENT

IWB-5222(b) (1998 Edition through the 2000 Addenda of ASME Section XI) requires the system leakage test shall be conducted at or near the end of the inspection interval to extend to all Class 1 pressure retaining components within the system boundary. IWB-5221(a) states the system leakage test shall be conducted at a pressure not less than the pressure corresponding to 100% rated reactor power.

III. BASIS OF REQUEST FOR RELIEF

Surry Unit 1 is in the fourth ISI interval utilizing the 1998 Edition through the 2000 Addenda of ASME Section XI. The unit is currently in the first ISI period.

Normal reactor coolant pressure at 100% rated power is approximately 2235 psig. The piping in question is separated from this reactor coolant pressure by a single check valve, and as such does not normally see this pressure. Part of the area in question is pressurized during normal operation to approximately 660 psig from the passive safety injection accumulators. The accumulator pressure is monitored from the control room throughout the operating cycle. An external pressurization source would be necessary to meet requirement of normal reactor coolant pressure. Since the check valve would be part of the test boundary, a pressure differential would be required between the reactor coolant system and the area in question to maintain check valve closure. Maintaining the differential

pressure and ensuring no test fluid intrusion into the reactor coolant system (reactivity control issue) is considered unusually difficult to meet with no compensating increase in quality or level of safety when considering the alternative below.

IV. ALTERNATE PROVISIONS

The areas in question are examined (VT-2) each refueling as part of the normal Class 1 system leakage test (normal valve line-up) for evidence of leakage. Except for the areas between, 1-SI-108 and 1-SI-HCV-1850B, 1-SI-129 and 1-SI-HCV-1850D, and 1-SI-146 and 1-SI-HCV-1850F, the areas will be examined at that time at the safety injection accumulator nominal operating pressure. Additionally, except for the areas between, 1-SI-108 and 1-SI-HCV-1850B, 1-SI-129 and 1-SI-HCV-1850D, and 1-SI-146 and 1-SI-HCV-1850F, the components are under safety injection accumulator pressure during normal operation. Through-wall leakage for these areas would be identified by the control room through their monitoring of the pressure on the safety injection accumulators. The areas between 1-SI-108 and 1-SI-HCV-1850B, 1-SI-129 and 1-SI-HCV-1850D, and 1-SI-146 and 1-SI-HCV-1850F would also be examined at or near the end of the interval by using an external pressurization source, or by opening the isolation valves separating the lines from the safety injection accumulator pressure. The test pressure would again correspond to the safety injection accumulator nominal operating pressure.

In accordance with 10 CFR 50.55a(a)(3)(ii) Dominion requests that the tests described above be alternatively performed for the fourth inspection interval.

SPT-006

I. IDENTIFICATION OF COMPONENTS

System: Residual Heat Removal (RHR)

Components:Class 1 components and piping between:

1-RH-MOV-1700 and 1-RH-MOV-1701 (RHR suction) on drawing 11448-CBM-087A-4, sheet 1 of 2

ISI Class: 1

II. CODE REQUIREMENT

IWB-5222(b) (1998 Edition through the 2000 Addenda of ASME Section XI) requires the system leakage test shall be conducted at or near the end of the inspection interval to extend to all Class 1 pressure retaining components within the system boundary. IWB-5221(a) states the system leakage test shall be conducted at a pressure not less than the pressure corresponding to 100% rated reactor power.

III. BASIS OF REQUEST FOR RELIEF

Surry Unit 1 is in the fourth ISI interval utilizing the 1998 Edition through the 2000 Addenda of ASME Section XI. The unit is currently in the first ISI period.

Normal reactor coolant pressure at 100% rated power is approximately 2235 psig. The piping in question is separated from this reactor coolant pressure by a single closed valve, and as such does not normally see this pressure. Opening valve 1-RH-MOV-1700 is prevented by a pressure interlock, which prevents opening, when pressure in the reactor coolant system is above 465 psig. The interlock protects the low pressure RHR system from being over-pressurized by the higher pressure reactor coolant system. There is no other valve that would allow pressurization of the area from an external source. The system design prevents Code compliance in this area and it is therefore considered a hardship, since a plant modification would be needed, to meet code requirements.

IV. ALTERNATE PROVISIONS

The area in question is examined (VT-2) each refueling as part of the normal Class 1 system leakage test (normal valve line-up) for evidence of leakage. Additionally, it is proposed that the area be examined as part of the Class 2 system leakage test pressure boundary using the Class 2 test requirements associated with the adjoining Class 2 piping. This would result in an additional

pressure test each period at the Class 2 RHR system nominal operating pressure with the associated visual VT-2 examination.

It is requested per 10 CFR 50.55a(a)(3)(ii) that the tests described above for the fourth inspection interval be alternatively performed.

SPT-007

I. IDENTIFICATION OF COMPONENTS

System: All Class 1 systems

Components: Class 1 components and piping located in the extended portion (beyond the first normally closed valve) of the Class 1 boundary

II. CODE REQUIREMENT

Table IWB-2500-1 Category B-P, note 2, "The system leakage test (IWB-5220) shall be conducted prior to plant startup following reactor refueling outage," and

IWB-5221(a) states the system leakage test shall be conducted at a pressure not less than the pressure corresponding to 100% rated reactor power.

IWB-5222(b) requires the system leakage test shall be conducted at or near the end of the inspection interval to extend to all Class 1 pressure retaining components within the system boundary.

Code: Above references based on ASME Section XI, 1998 Edition through the 2000 Addenda

III. BASIS OF REQUEST FOR RELIEF

Surry Unit 1 is in the fourth ISI interval utilizing the 1998 Edition through the 2000 Addenda of ASME Section XI. The unit is currently in the first ISI period.

Normal reactor coolant pressure at 100% rated power is approximately 2235 psig. At or near the end of the interval the system leakage test at 2235 psig is to be extended to all Class 1 components. Note 2 in Table 2500-1, Category B-P restricts performance of the required system leakage test to prior to plant startup following a reactor refueling outage. The note 2 requirement for the normal system leakage tests (non 10-year, every refueling) can be met, but it is considered an unnecessary burden for the end of interval (10-year) test requirement on the extended Class 1 boundaries.

A significant number of extended Class 1 boundary areas are isolated from RCS pressure by check valves. Pressurizing the extended Class 1 boundaries could lift these check valves off the seats. Current practice is to test many of these check valves for positive closure following any potential opening to verify reactor coolant system pressure boundary integrity. These check valve tests are normally run with the plant shutdown and with a lower reactor coolant pressure. Requiring the ASME Section XI 10 year test at the note's prescribed time would

put the plant in a situation where it would possibly be required to reduce pressure again following the ASME Section XI test to repeat check valve closure testing.

Secondly, the test in question is performed only once in 10 years. At all other times the system leakage test is performed with normal valve line-up examining the extended boundary at a pressure less than 2235 psig. The "when" at the end of the interval to verify piping integrity of the extended Class 1 boundary is not technically relevant. Tests performed anytime at or near the end of the interval prior to startup at test pressure would verify piping integrity. This is exemplified by Code Case N-498 (-1,-2,-3,-4), which was used with earlier ASME Section XI codes as an alternative for the Class 1 end of interval (10 year) test (hydrostatic). The code case does not have the same restriction, stipulating testing following a refueling outage. Inquiry IN04-002 from ASME indicates the N-498 (-1,-2,-3,-4) test may be conducted anytime prior to startup without the "following refueling outage" stipulation. Considering the information above, it is our position performing these extended boundary tests at test pressure at or near the end of the interval at anytime prior to startup would be equivalent in quality and safety.

IV. ALTERNATE PROVISIONS

The system leakage test at or near the end of the interval of the extended Class 1 boundary will be performed prior to startup without the "following refueling outage" stipulation.

It is requested per 10 CFR 50.55a(a)(3)(i) that the test described above for the fourth inspection interval be alternatively performed.

SURRY UNIT 2

SPT 004, 005 and 006

SPT-004

I. IDENTIFICATION OF COMPONENTS

System: Residual Heat Removal (RHR) and Safety Injection (SI)

Components:Class 1 components and piping between:

2-SI-109,	2-SI-107	and	2-SI-HCV-2850B	on	drawing 11548-CBM-089B-3 sheet 1 of 4
2-SI-130,	2-SI-128	and	2-SI-HCV-2850D	on	drawing 11548-CBM-089B-3 sheet 2 of 4
2-RH-47				on	drawing 11548-CBM-087A-3 sheet 2 of 2
2-SI-147,	2-SI-145	and	2-SI-HCV-2850F	on	drawing 11548-CBM-089B-3 sheet 3 of 4
MOV-2720B				on	drawing 11548-CBM-087A-3 sheet 2 of 2

ISI Class: 1

II. CODE REQUIREMENT

IWB-5222(b) (1998 Edition through the 2000 Addenda of ASME Section XI) requires the system leakage test shall be conducted at or near the end of the inspection interval to extend to all Class 1 pressure retaining components within the system boundary. IWB-5221(a) states the system leakage test shall be conducted at a pressure not less than the pressure corresponding to 100% rated reactor power.

III. BASIS OF REQUEST FOR RELIEF

Surry Unit 2 is in the fourth ISI interval utilizing the 1998 Edition through the 2000 Addenda of ASME Section XI. The unit is currently in the first ISI period.

Normal reactor coolant pressure at 100% rated power is approximately 2235 psig. The piping in question is separated from this reactor coolant pressure by a single check valve, and as such does not normally see this pressure. Part of the area in question is pressurized during normal operation to approximately 660 psig from the passive safety injection accumulators. The accumulator pressure is monitored from the control room throughout the operating cycle. An external pressurization source would be necessary to meet requirement of normal reactor coolant pressure. Since the check valve would be part of the test boundary, a pressure differential would be required between the reactor coolant system and the area in question to maintain check valve closure. Maintaining the differential

pressure and ensuring no test fluid intrusion into the reactor coolant system (reactivity control issue) is considered unusually difficult to meet with no compensating increase in quality or level of safety when considering the alternative below.

IV. ALTERNATE PROVISIONS

The areas in question are examined (VT-2) each refueling as part of the normal Class 1 system leakage test (normal valve line-up) for evidence of leakage. Except for the areas between, 2-SI-108 and 2-SI-HCV-2850B, 2-SI-129 and 2-SI-HCV-2850D, and 2-SI-146 and 2-SI-HCV-2850F, the areas will be examined at that time at the safety injection accumulator nominal operating pressure. Additionally, except for the areas between, 2-SI-108 and 2-SI-HCV-2850B, 2-SI-129 and 2-SI-HCV-2850D, and 2-SI-146 and 2-SI-HCV-2850F, the components are under safety injection accumulator pressure during normal operation. Through-wall leakage for these areas would be identified by the control room through their monitoring of the pressure on the safety injection accumulators. The areas between 2-SI-108 and 2-SI-HCV-2850B, 2-SI-129 and 2-SI-HCV-2850D, and 2-SI-146 and 2-SI-HCV-2850F would also be examined at or near the end of the interval by using an external pressurization source, or by opening the isolation valves separating the lines from the safety injection accumulator pressure. The test pressure would again correspond to the safety injection accumulator nominal operating pressure.

In accordance with 10 CFR 50.55a(a)(3)(ii) Dominion requests that the tests described above be alternatively performed for the fourth inspection interval.

SPT-005

I. IDENTIFICATION OF COMPONENTS

System: Residual Heat Removal (RHR)

Components:Class 1 components and piping between:

MOV-2700 and MOV-2701 (RHR suction) on drawing 11548-CBM-087A-3 sheet 1 of 2

ISI Class: 1

II. CODE REQUIREMENT

IWB-5222(b) (1998 Edition through the 2000 Addenda of ASME Section XI) requires the system leakage test shall be conducted at or near the end of the inspection interval to extend to all Class 1 pressure retaining components within the system boundary. IWB-5221(a) states the system leakage test shall be conducted at a pressure not less than the pressure corresponding to 100% rated reactor power.

III. BASIS OF REQUEST FOR RELIEF

Surry Unit 2 is in the fourth ISI interval utilizing the 1998 Edition through the 2000 Addenda of ASME Section XI. The unit is currently in the first ISI period.

Normal reactor coolant pressure at 100% rated power is approximately 2235 psig. The piping in question is separated from this reactor coolant pressure by a single closed valve, and as such does not normally see this pressure. Opening valve MOV-2700 is prevented by a pressure interlock, which prevents opening, when pressure in the reactor coolant system is above 465 psig. The interlock protects the low pressure RHR system from being over-pressurized by the higher pressure reactor coolant system. There is no other valve that would allow pressurization of the area from an external source. The system design prevents Code compliance in this area and it is therefore considered a hardship, since a plant modification would be needed, to meet code requirements.

IV. ALTERNATE PROVISIONS

The area in question is examined (VT-2) each refueling as part of the normal Class 1 system leakage test (normal valve line-up) for evidence of leakage. Additionally, it is proposed that the area be examined as part of the Class 2 system leakage test pressure boundary using the Class 2 test requirements associated with the adjoining Class 2 piping. This would result in an additional

pressure test each period at the Class 2 RHR system nominal operating pressure with the associated visual VT-2 examination.

It is requested per 10 CFR 50.55a(a)(3)(ii) that the tests described above for the fourth inspection interval be alternatively performed.

SPT-006

I. IDENTIFICATION OF COMPONENTS

System: All Class 1 systems

Components: Class 1 components and piping located in the extended portion (beyond the first normally closed valve) of the Class 1 boundary

II. CODE REQUIREMENT

Table IWB-2500-1 Category B-P, note 2, "The system leakage test (IWB-5220) shall be conducted prior to plant startup following reactor refueling outage," and

IWB-5221(a) states the system leakage test shall be conducted at a pressure not less than the pressure corresponding to 100% rated reactor power.

IWB-5222(b) requires the system leakage test shall be conducted at or near the end of the inspection interval to extend to all Class 1 pressure retaining components within the system boundary.

Code: Above references based on ASME Section XI, 1998 Edition through the 2000 Addenda

III. BASIS OF REQUEST FOR RELIEF

Surry Unit 2 is in the fourth ISI interval utilizing the 1998 Edition through the 2000 Addenda of ASME Section XI. The unit is currently in the first ISI period.

Normal reactor coolant pressure at 100% rated power is approximately 2235 psig. At or near the end of the interval the system leakage test at 2235 psig is to be extended to all Class 1 components. Note 2 in Table 2500-1, Category B-P restricts performance of the required system leakage test to prior to plant startup following a reactor refueling outage. The note 2 requirement for the normal system leakage tests (non 10-year, every refueling) can be met, but it is considered an unnecessary burden for the end of interval (10-year) test requirement on the extended Class 1 boundaries.

A significant number of extended Class 1 boundary areas are isolated from RCS pressure by check valves. Pressurizing the extended Class 1 boundaries could lift these check valves off the seats. Current practice is to test many of these check valves for positive closure following any potential opening to verify reactor coolant system pressure boundary integrity. These check valve tests are normally run with the plant shutdown and with a lower reactor coolant pressure. Requiring the ASME Section XI 10 year test at the note's prescribed time would

put the plant in a situation where it would possibly be required to reduce pressure again following the ASME Section XI test to repeat check valve closure testing.

Secondly, the test in question is performed only once in 10 years. At all other times the system leakage test is performed with normal valve line-up examining the extended boundary at a pressure less than 2235 psig. The "when" at the end of the interval to verify piping integrity of the extended Class 1 boundary is not technically relevant. Tests performed anytime at or near the end of the interval prior to startup at test pressure would verify piping integrity. This is exemplified by Code Case N-498 (-1,-2,-3,-4), which was used with earlier ASME Section XI codes as an alternative for the Class 1 end of interval (10 year) test (hydrostatic). The code case does not have the same restriction, stipulating testing following a refueling outage. Inquiry IN04-002 from ASME indicates the N-498 (-1,-2,-3,-4) test may be conducted anytime prior to startup without the "following refueling outage" stipulation. Considering the information above, it is our position performing these extended boundary tests at test pressure at or near the end of the interval at anytime prior to startup would be equivalent in quality and safety.

IV. ALTERNATE PROVISIONS

The system leakage test at or near the end of the interval of the extended Class 1 boundary will be performed prior to startup without the "following refueling outage" stipulation.

It is requested per 10 CFR 50.55a(a)(3)(i) that the test described above for the fourth inspection interval be alternatively performed.

Attachment 2

Letter Serial No. 04-766

North Anna Power Station Units 1 and 2
Relief Requests

Virginia Electric and Power Company
(Dominion)

NORTH ANNA UNIT 1

SPT 010, 011, 012 and 013

SPT-010

I. IDENTIFICATION OF COMPONENTS

System: Residual Heat Removal (RHR) and Safety Injection (SI)

Components:Class 1 components and piping between:

1-SI-127, 1-SI-125 and 1-SI-126	on drawing 11715-CBM-096B-3 sheet 1 of 4
1-SI-144, 1-SI-142 and 1-SI-143	on drawing 11715-CBM-096B-3 sheet 2 of 4
1-RH-MOV-1720A	on drawing 11715-CBM-094A-3 sheet 2 of 2
1-SI-161, 1-SI-159 and 1-SI-160	on drawing 11715-CBM-096B-3 sheet 3 of 4
1-RH-MOV-1720B	on drawing 11715-CBM-094A-3 sheet 2 of 2

Note: The Class 1 area between 1-SI-126 and 1-SI-HCV-1850B, 1-SI-143 and 1-SI-HCV-1850D, and 1-SI-160 and 1-SI-HCV-1850F will be tested externally to required test pressure, and is not part of this relief request.

ISI Class: 1

II. CODE REQUIREMENT

IWB-5222, 1989 Edition of ASME Section XI, System Hydrostatic Test

III. BASIS OF REQUEST FOR RELIEF

North Anna Unit 1 is in the third ISI interval utilizing the requirements of ASME Section XI, 1989 Edition. Additionally, the unit makes use of Code Case N-498-1, "Alternative Rules for 10-Year System Hydrostatic Testing for Class 1, 2, and 3 Systems." The unit is currently in the second ISI period.

Normal reactor coolant pressure at 100% rated power is approximately 2235 psig. The piping in question is separated from this reactor coolant pressure by a single check valve, and as such does not normally see this pressure. The area in question is pressurized during normal operation to approximately 660 psig from the passive safety injection accumulators. The accumulator pressure is monitored from the control room throughout the operating cycle. An external pressurization source would be necessary to meet either the ASME Code hydrostatic test requirement or the alternative code case requirement of normal reactor coolant pressure. Since the check valve would be part of the test boundary, a pressure differential would be required between the reactor coolant system and the area in question to maintain check valve closure. Maintaining the differential pressure and ensuring no test fluid intrusion into the reactor coolant system (reactivity control issue) is considered unusually difficult to meet with no

compensating increase in quality or level of safety when considering the alternative below.

IV. ALTERNATE PROVISIONS

The areas in question are examined (VT-2) each refueling as part of the normal Class 1 system leakage test (normal valve line-up) for evidence of leakage. These areas will be examined at that time at the safety injection accumulator nominal operating pressure. Additionally, the area in question is subject to safety injection accumulator pressure during normal operation. Through-wall leakage for the area in question would be identified by the control room through their monitoring of the pressure on the safety injection accumulators.

In accordance with 10 CFR 50.55a(a)(3)(ii) Dominion requests that the test described above be alternatively performed for the third inspection interval.

SPT-011

I. IDENTIFICATION OF COMPONENTS

System: Residual Heat Removal (RHR)

Components:Class 1 components and piping between:

1-RH-MOV-1700 and 1-RH-MOV-1701 (RHR suction) on drawing 11715-CBM-094A-3, sheet 1 of 2

ISI Class: 1

II. CODE REQUIREMENT

IWB-5222, 1989 Edition of ASME Section XI, System Hydrostatic Test

III. BASIS OF REQUEST FOR RELIEF

North Anna Unit 1 is in the third ISI interval utilizing the requirements of ASME Section XI, 1989 Edition. Additionally, the unit makes use of Code Case N-498-1, "Alternative Rules for 10-Year System Hydrostatic Testing for Class 1, 2, and 3 Systems." The unit is currently in the second ISI period.

Normal reactor coolant pressure at 100% rated power is approximately 2235 psig. The piping in question is separated from this reactor coolant pressure by a single closed valve, and as such does not normally see this pressure. Opening valve 1-RH-MOV-1700 is prevented by a pressure interlock, which prevents opening, when pressure in the reactor coolant system is above 418 psig. The interlock protects the low pressure RHR system from being over-pressurized by the higher pressure reactor coolant system. There is no other valve that would allow pressurization of the area from an external source. The system design prevents Code compliance (Code or Code Case) in this area and it is therefore considered a hardship, since a plant modification would be needed, to meet code requirements.

IV. ALTERNATE PROVISIONS

The area in question is examined (VT-2) each refueling as part of the normal Class 1 system leakage test (normal valve line-up) for evidence of leakage. Additionally, it is proposed that the area be examined as part of the Class 2 system inservice test pressure boundary using the Class 2 test requirements associated with the adjoining Class 2 piping. This would result in an additional pressure test each period at the Class 2 RHR system nominal operating pressure with the associated visual VT-2 examination.

It is requested per 10 CFR 50.55a(a)(3)(ii) that the tests described above for the third inspection interval be alternatively performed.

SPT-012

I. IDENTIFICATION OF COMPONENTS

System: Safety Injection (SI)

Components:Class 1 components and piping between:

1-SI-195, 1-SI-197 and 1-SI-199 on drawing 11715-CBM-096B-3, sheet 4 of 4, and 1-SI-MOV-1890C and 1-SI-MOV-1890D on drawing 11715-CBM-096A-3, sheet 2 of 3 [low head safety injection to the reactor coolant cold legs]

1-SI-211, 1-SI-209 and 1-SI-213 on drawing 11715-CBM-096B-3, sheet 4 of 4, and 1-SI-MOV-1890A and 1-SI-MOV-1890B on drawing 11715-CBM-096A-3, sheet 2 of 3 [low head safety injection to the reactor coolant hot legs]

ISI Class: 1

II. CODE REQUIREMENT

IWB-5222, 1989 Edition of ASME Section XI, System Hydrostatic Test

III. BASIS OF REQUEST FOR RELIEF

North Anna Unit 1 is in the third ISI interval utilizing the requirements of ASME Section XI, 1989 Edition. Additionally, the unit makes use of Code Case N-498-1, "Alternative Rules for 10-Year System Hydrostatic Testing for Class 1, 2, and 3 Systems." The unit is currently in the second ISI period.

Normal reactor coolant pressure at 100% rated power is approximately 2235 psig. The piping in question is separated from this reactor coolant pressure by check valves, and as such does not normally see this pressure. The Class 1 boundary for Section XI matches the construction code (B31.7 1969 with the 1970 Addenda) Class 1 (Q1) classification. This earlier classification followed closely the definition of reactor coolant system pressure boundary for the Class 1 boundary. This meant for systems connected to the reactor coolant system, the boundary extended to the outermost containment isolation valve in system piping which penetrates primary reactor containment. As such, more than two valves separate the reactor coolant system from certain parts of the extended Class 1 boundary. External pressurization would be necessary to meet either the ASME Code hydrostatic test requirement or the alternative code case requirement of normal reactor coolant pressure. Since check valves would be part of the test boundary, a pressure differential would be required between the reactor coolant system and the area in question to maintain check valve closure. Maintaining the differential pressure and ensuring no test fluid intrusion into the reactor coolant

system (reactivity control issue) is considered unusually difficult to meet with no compensating increase in quality or level of safety when considering the alternative below.

IV. ALTERNATE PROVISIONS

The areas in question are examined (VT-2) each refueling as part of the normal Class 1 system leakage test (normal valve line-up) for evidence of leakage. Additionally, it is proposed that the areas identified above be examined (VT-2) based upon a Class 2 system functional test at or near the end of the interval. The test would be performed at reduced pressure based upon low head safety injection pump pressure and flow to an unpressurized reactor coolant system. The pressure, although reduced, would simulate actual system pressure in an accident situation. Additionally, it only involves Class 1 piping beyond the second isolation valve from the reactor coolant system to the first isolation valve outside containment. This piping based upon 10 CFR 50.55a(c)(2)(ii) would now allow a Class 2 classification, if constructed today.

It is requested per 10 CFR 50.55a(a)(3)(ii) that the tests described above for the third inspection interval be alternatively performed.

SPT-013

I. IDENTIFICATION OF COMPONENTS

System: Reactor Coolant (RCS)

Components:Class 1 components and piping between:

1-RC-R-1 (reactor inner O-ring), 1-RC-32 and 1-RC-HCV-1544 on drawing 11715-CBM-093A-3, sheet 1 of 3

ISI Class: 1

II. CODE REQUIREMENT

IWB-5222, 1989 Edition of ASME Section XI, System Hydrostatic Test

III. BASIS OF REQUEST FOR RELIEF

North Anna Unit 1 is in the third ISI interval utilizing the requirements of ASME Section XI, 1989 Edition. Additionally, the unit makes use of Code Case N-498-1, "Alternative Rules for 10-Year System Hydrostatic Testing for Class 1, 2, and 3 Systems." The unit is currently in the second ISI period.

Normal reactor coolant pressure at 100% rated power is approximately 2235 psig. The components and piping being addressed are associated with the reactor head and flange leakage detection system. They are used to support identification of inner O-ring leakage. An increase in temperature above ambient is an indication of inner O-ring seal leakage. High temperature actuates an alarm. On indication of inner O-ring leakage the isolation valve in the leak-off line can be closed to put the outer O-ring into the pressure retention mode, and the inner O-ring leak detection system would be pressurized to reactor coolant pressure up to the closed isolation valve.

These lines can only be tested externally, since during normal operation they are separated from RCS pressure by the inner O-ring. Pressurizing the lines externally would put pressure on the inner O-ring in a direction opposite that it was designed for. This could move the inner O-ring from its normal position against the outer channel wall of the reactor vessel flange potentially affecting the O-ring leak tightness and requiring that maintenance be performed. This is considered an unnecessary hardship without a compensating increase in quality or safety when considering the system design and the monitoring capability of the system.

IV. ALTERNATE PROVISIONS

The area in question is examined (VT-2) each refueling as part of the normal Class 1 system leakage test for evidence of leakage. Additionally, leakage past the inner O-ring must occur to potentially pressurize the components and piping being addressed. This leakage would be identified by an alarm or by RCS inventory balance calculations and addressed by procedures. The leakage would also be limited by the passive inner O-ring. Any leakage is normally directed to the primary drain transfer tank unless the system is isolated by operator action. These activities would be closely monitored by the procedurally controlled operator actions allowing identification of any further compensatory actions required.

It is requested per 10 CFR 50.55a(a)(3)(ii) that the test, monitoring, and operator actions described above for the third inspection interval be alternatively performed.

NORTH ANNA UNIT 2

SPT 009, 010, 011, 012 and 013

SPT-009

I. IDENTIFICATION OF COMPONENTS

System: Residual Heat Removal (RHR) and Safety Injection (SI)

Components:Class 1 components and piping between:

2-SI-153, 2-SI-151 and 2-SI-152 on drawing 12050-CBM-096B-3 sheet 1 of 4
2-SI-170, 2-SI-168 and 2-SI-169 on drawing 12050-CBM-096B-3 sheet 2 of 4
and 2-RH-MOV-2720A on drawing 12050-CBM-094A-3 sheet 2 of 2
2-SI-187, 2-SI-185 and 2-SI-186 on drawing 12050-CBM-096B-3 sheet 3 of 4
and 2-RH-MOV-2720B on drawing 12050-CBM-094A-3 sheet 2 of 2

Note: The Class 1 area between 2-SI-152 and 2-SI-HCV-2850B, 2-SI-169 and 2-SI-HCV-2850D, and 2-SI-186 and 2-SI-HCV-2850F will be tested externally to required test pressure, and is not part of this relief request.

ISI Class: 1

II. CODE REQUIREMENT

IWB-5222(b) (1995 Edition with 1996 Addenda of ASME Section XI) requires the pressure retaining boundary during the system leakage test shall be conducted at or near the end of each inspection interval shall extend to all Class 1 pressure retaining components within the system boundary. IWB-5221(a) states the system leakage test shall be conducted at a pressure not less than nominal operating pressure associated with normal system operation.

III. BASIS OF REQUEST FOR RELIEF

North Anna Unit 2 is in the third ISI interval utilizing the requirements of ASME Section XI, 1995 Edition with the 1996 Addenda. The unit is currently in the second ISI period.

Normal reactor coolant pressure at 100% rated power is approximately 2235 psig. The piping in question is separated from this reactor coolant pressure by a single check valve, and as such does not normally see this pressure. The area in question is pressurized during normal operation to approximately 660 psig from the passive safety injection accumulators. The accumulator pressure is monitored from the control room throughout the operating cycle. An external pressurization source would be necessary to meet the test requirement of normal reactor coolant pressure. Since the check valve would be part of the test boundary, a pressure differential would be required between the reactor coolant system and the area in question to maintain check valve closure. Maintaining the

differential pressure and ensuring no test fluid intrusion into the reactor coolant system (reactivity control issue) is considered unusually difficult to meet with no compensating increase in quality or level of safety when considering the alternative below.

IV. ALTERNATE PROVISIONS

The areas in question are examined (VT-2) each refueling as part of the normal Class 1 system leakage test (normal valve line-up) for evidence of leakage. These areas will be examined at that time at the safety injection accumulator nominal operating pressure. Additionally, the area in question is subject to safety injection accumulator pressure during normal operation. Through-wall leakage for the area in question would be identified by the control room through their monitoring of the pressure on the safety injection accumulators.

In accordance with 10 CFR 50.55a(a)(3)(ii) Dominion requests that the test described above be alternatively performed for the third inspection interval.

SPT-010

I. IDENTIFICATION OF COMPONENTS

System: Residual Heat Removal (RHR)

Components:Class 1 components and piping between:

2-RH-MOV-2700 and 2-RH-MOV-2701 (RHR suction) on drawing 12050-CBM-094A-3, sheet 1 of 2

ISI Class: 1

II. CODE REQUIREMENT

IWB-5222(b) (1995 Edition with 1996 Addenda of ASME Section XI) requires the pressure retaining boundary during the system leakage test shall be conducted at or near the end of each inspection interval shall extend to all Class 1 pressure retaining components within the system boundary. IWB-5221(a) states the system leakage test shall be conducted at a pressure not less than nominal operating pressure associated with normal system operation.

III. BASIS OF REQUEST FOR RELIEF

North Anna Unit 2 is in the third ISI interval utilizing the requirements of ASME Section XI, 1995 Edition with the 1996 Addenda. The unit is currently in the second ISI period.

Normal reactor coolant pressure at 100% rated power is approximately 2235 psig. The piping in question is separated from this reactor coolant pressure by a single closed valve, and as such does not normally see this pressure. Opening valve 2-RH-MOV-2700 is prevented by a pressure interlock, which prevents opening, when pressure in the reactor coolant system is above 418 psig. The interlock protects the low pressure RHR system from being over-pressurized by the higher pressure reactor coolant system. There is no other valve that would allow pressurization of the area from an external source. The system design prevents Code compliance in this area and it is therefore considered a hardship, since a plant modification would be needed, to meet code requirements.

IV. ALTERNATE PROVISIONS

The area in question is examined (VT-2) each refueling as part of the normal Class 1 system leakage test (normal valve line-up) for evidence of leakage. Additionally, it is proposed that the area be examined as part of the Class 2 system leakage test pressure boundary using the Class 2 test requirements

associated with the adjoining Class 2 piping. This would result in an additional pressure test each period at the Class 2 RHR system nominal operating pressure with the associated visual VT-2 examination.

It is requested per 10 CFR 50.55a(a)(3)(ii) that the tests described above for the third inspection interval be alternatively performed.

SPT-011

I. IDENTIFICATION OF COMPONENTS

System: All Class 1 systems

Components: Class 1 components and piping located in the extended portion (beyond the first normally closed valve) of the Class 1 boundary

II. CODE REQUIREMENT

Table IWB-2500-1 Category B-P, note 2, "The system leakage test (IWB-5220) shall be conducted prior to plant startup following reactor refueling outage," and

IWB-5221(a) states the system leakage test shall be conducted at a pressure not less than nominal operating pressure associated with normal system operation.

IWB-5222(b) requires the system leakage test shall be conducted at or near the end of the inspection interval to extend to all Class 1 pressure retaining components within the system boundary.

Code: Above references based on ASME Section XI, 1995 Edition with the 1996 Addenda

III. BASIS OF REQUEST FOR RELIEF

North Anna Unit 2 is in the third ISI interval utilizing the 1995 Edition through the 1996 Addenda of ASME Section XI. The unit is currently in the second ISI period.

Normal reactor coolant pressure at 100% rated power is approximately 2235 psig. At or near the end of the interval the system leakage test at 2235 psig is to be extended to all Class 1 components. Note 2 in Table 2500-1, Category B-P restricts performance of the required system leakage test to prior to plant startup following a reactor refueling outage. The note 2 requirement for the normal system leakage tests (non 10-year, every refueling) can be met, but it is considered an unnecessary burden for the end of interval (10-year) test requirement on the extended Class 1 boundaries.

A significant number of extended Class 1 boundary areas are isolated from RCS pressure by check valves. Pressurizing the extended Class 1 boundaries could lift these check valves off the seats. Current practice is to test many of these check valves for positive closure following any potential opening to verify reactor coolant system pressure boundary integrity. These check valve positive closure tests are normally run with the plant shutdown and with a lower reactor coolant

pressure. Requiring the ASME Section XI 10 year test at the note's prescribed time would put the plant in a situation where it would possibly be required to reduce pressure again following the ASME Section XI test to repeat check valve closure testing.

Secondly, the test in question is performed only once in 10 years. At all other times the system leakage test is performed with normal valve line-up examining the extended boundary at a pressure less than 2235 psig. The "when" at the end of the interval to verify piping integrity of the extended Class 1 boundary is not technically relevant. Tests performed anytime at or near the end of the interval prior to startup at test pressure would verify piping integrity. This is exemplified by Code Case N-498 (-1,-2,-3,-4), which was used with earlier ASME Section XI codes as an alternative for the Class 1 end of interval (10 year) test (hydrostatic). The code case does not have the same restriction, stipulating testing following a refueling outage. Inquiry IN04-002 from ASME indicates the N-498 (-1,-2,-3,-4) test may be conducted anytime prior to startup without the "following refueling outage" stipulation. Considering the information above, it is our position performing these extended boundary tests at test pressure at or near the end of the interval at anytime prior to startup would be equivalent in quality and safety.

IV. ALTERNATE PROVISIONS

The system leakage test at or near the end of the interval of the extended Class 1 boundary will be performed prior to startup without the "following refueling outage" stipulation.

It is requested per 10 CFR 50.55a(a)(3)(i) that the test described above for the third inspection interval be alternatively performed.

SPT-012

I. IDENTIFICATION OF COMPONENTS

System: Safety Injection (SI)

Components:Class 1 components and piping between:

2-SI-91, 2-SI-99 and 2-SI-105 on drawing 12050-CBM-096B-3, sheet 4 of 4, and 2-SI-MOV-2890C and 2-SI-MOV-2890D on drawing 12050-CBM-096A-3, sheet 2 of 3 [low head safety injection to reactor coolant cold legs]

2-SI-112, 2-SI-117 and 2-SI-124 on drawing 12050-CBM-096B-3, sheet 4 of 4, and 2-SI-MOV-2890A and 2-SI-MOV-2890B on drawing 12050-CBM-096A-3, sheet 2 of 3 [low head safety injection to reactor coolant hot legs]

ISI Class: 1

II. CODE REQUIREMENT

IWB-5222(b) (1995 Edition with 1996 Addenda of ASME Section XI) requires the pressure retaining boundary during the system leakage test shall be conducted at or near the end of each inspection interval shall extend to all Class 1 pressure retaining components within the system boundary. IWB-5221(a) states the system leakage test shall be conducted at a pressure not less than nominal operating pressure associated with normal system operation.

III. BASIS OF REQUEST FOR RELIEF

North Anna Unit 2 is in the third ISI interval utilizing the requirements of ASME Section XI, 1995 Edition with the 1996 Addenda. The unit is currently in the second ISI period.

Normal reactor coolant pressure at 100% rated power is approximately 2235 psig. The piping in question is separated from this reactor coolant pressure by check valves, and as such does not normally see this pressure. The Class 1 boundary for Section XI matches the construction code (B31.7 1969 with the 1970 Addenda) Class 1 (Q1) classification. This earlier classification followed closely the definition of reactor coolant system pressure boundary for the Class 1 boundary. This meant for systems connected to the reactor coolant system, the boundary extended to the outermost containment isolation valve in system piping which penetrates primary reactor containment. As such, more than two valves separate the reactor coolant system from certain parts of the extended Class 1 boundary. External pressurization would be necessary to meet the ASME Code test requirement of normal reactor coolant pressure. Since check valves would

be part of the test boundary, a pressure differential would be required between the reactor coolant system and the area in question to maintain check valve closure. Maintaining the differential pressure and ensuring no test fluid intrusion into the reactor coolant system (reactivity control issue) is considered unusually difficult to meet with no compensating increase in quality or level of safety when considering the alternative below.

IV. ALTERNATE PROVISIONS

The areas in question are examined (VT-2) each refueling as part of the normal Class 1 system leakage test (normal valve line-up) for evidence of leakage. Additionally, it is proposed that the areas identified above be examined (VT-2) based upon a Class 2 system functional test at or near the end of the interval. The test would be performed at reduced pressure based upon low head safety injection pump pressure and flow to an unpressurized reactor coolant system. The pressure, although reduced, would simulate actual system pressure in an accident situation. Additionally, it only involves Class 1 piping beyond the second isolation valve from the reactor coolant system to the first isolation valve outside containment. This piping based upon 10 CFR 50.55a(c)(2)(ii) would now allow a Class 2 classification, if constructed today.

It is requested per 10 CFR 50.55a(a)(3)(ii) that the tests described above for the third inspection interval be alternatively performed.

SPT-013

I. IDENTIFICATION OF COMPONENTS

System: Reactor Coolant (RCS)

Components:Class 1 components and piping between:

2-RC-R-1 (reactor inner O-ring), 2-RC-32 and 2-RC-HCV-2544 on drawing 12050-CBM-093A-3, sheet 1 of 3

ISI Class: 1

II. CODE REQUIREMENT

IWB-5222(b) (1995 Edition with 1996 Addenda of ASME Section XI) requires the pressure retaining boundary during the system leakage test shall be conducted at or near the end of each inspection interval shall extend to all Class 1 pressure retaining components within the system boundary. IWB-5221(a) states the system leakage test shall be conducted at a pressure not less than nominal operating pressure associated with normal system operation.

III. BASIS OF REQUEST FOR RELIEF

North Anna Unit 2 is in the third ISI interval utilizing the requirements of ASME Section XI, 1995 Edition with the 1996 Addenda. The unit is currently in the second ISI period.

Normal reactor coolant pressure at 100% rated power is approximately 2235 psig. The components and piping being addressed are associated with the reactor head and flange leakage detection system. They are used to support identification of inner O-ring leakage. An increase in temperature above ambient is an indication of inner O-ring seal leakage. High temperature actuates an alarm. On indication of inner O-ring leakage the isolation valve in the leak-off line can be closed to put the outer O-ring into the pressure retention mode, and the inner O-ring leak detection system would be pressurized to reactor coolant pressure up to the closed isolation valve.

These lines can only be tested externally, since during normal operation they are separated from RCS pressure by the inner O-ring. Pressurizing the lines externally would put pressure on the inner O-ring in a direction opposite that it was designed for. This could move the inner O-ring from its normal position against the outer channel wall of the reactor vessel flange potentially affecting the O-ring leak tightness and requiring that maintenance be performed. This is considered an unnecessary hardship without compensating increase in quality or

safety when considering the system design and the monitoring capability of the system.

IV. ALTERNATE PROVISIONS

The area in question is examined (VT-2) each refueling as part of the normal Class 1 system leakage test for evidence of leakage. Additionally, leakage past the inner O-ring must occur to potentially pressurize the components and piping being addressed. This leakage would be identified by an alarm or by RCS inventory balance calculations and addressed by procedures. The leakage would also be limited by the passive inner O-ring. Any leakage is normally directed to the primary drain transfer tank unless the system is isolated by operator action. These activities would be closely monitored by the procedurally controlled operator actions allowing identification of any further compensatory actions required.

It is requested per 10 CFR 50.55a(a)(3)(ii) that the test, monitoring, and operator actions described above for the third inspection interval be alternatively performed.

CD for Serial #04-766