

VIRGINIA ELECTRIC AND POWER COMPANY  
RICHMOND, VIRGINIA 23261

March 12, 1979

Mr. Harold R. Denton, Director  
Office of Nuclear Reactor Regulation  
Attn: Mr. O. D. Parr, Chief  
Light Water Reactors Branch No. 3  
Division of Project Management  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

Serial No. 112  
PO/LSC:scj  
Docket No.: 50-339

Dear Mr. Denton:

Specification 4.0.5 of the proposed Technical Specifications for North Anna Unit 2, requires that inservice inspection of ASME Code Class 1, 2 and 3 components be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda as required by 10 CFR 50, Section 50.55a(g). North Anna Unit 2 was not, however, designed to meet the detailed inservice inspection requirements of the ASME Code, Section XI. Therefore, pursuant to 10 CFR, Section 50.55a(g)(6)(i), we request the specific exemptions for inservice inspection as outlined in the attachment.

Very truly yours,

*C. M. Stallings*

C. M. Stallings  
Vice President-Power Supply  
and Production Operations

Attachment: North Anna Unit 2 Initial Inservice Inspection Requests for Relief from Applicable Codes and Addenda (first 40 month period of the first 10 year interval).

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NORTH ANNA UNIT 2 INITIAL INSERVICE INSPECTION  
REQUESTS FOR RELIEF FROM APPLICABLE  
CODES AND ADDENDA  
(FIRST 40 MONTH PERIOD OF THE FIRST 10 YEAR INTERVAL)

The enclosed tables provide a listing of the Class 1, 2 and 3 pressure retaining components (and their supports) which are subject to the inspection requirements of subsections IWB, IWC, and IWD of Section XI of the ASME Boiler and Pressure Vessel Code, 1974 Edition with Addenda through Summer, 1975 and for which relief is requested per 10 CFR 50.55a(g)(6)(i).

These tabulations identify the components to be inspected, the components safety class, the method of examination, the percentage of code requirements versus the inspection program, and notes on the measures which would be required to make the welds accessible for inservice examination. Relief from the inspection requirements of each subsection is requested in cases where these inspection requirements have been determined to be impractical. Where relief is requested, specific information is provided which identifies the applicable code requirement, justification for the relief request, and the inspection method to be used as an alternative.

The following provide further clarification concerning the Class 1, 2 and 3 system inspection programs.

- (a) Articles IWC-3000 and IWD-3000 entitled, "Evaluation of Examination Results" are in the course of preparation by the Code Committee and, as yet, are not available for use. Standards for examination evaluations as included in the 1974 Edition of Section XI with Addenda through the Summer, 1975, are incomplete and "Acceptance Standards for Flaw Indications" as given in Article IWB-3000 of the 1977 Edition of Section XI will be utilized.
- (b) Articles IWC-4000 and IWD-4000 entitled, "Repair Procedures" state that the rules of IWB-4000 shall apply. It is considered that the repair procedures outlined in IWB-4000 are inappropriate for the Class 2 and 3 components in this program and the rules of IWA-4000 will be applied.
- (c) Requirements for the visual examination of Class 1 systems and components for evidence of leakage during the performance of a system pressure test following each refueling are identified by IWB-5200. Exception is taken to the implementation of these requirements on those portions of Class 1 systems which are contained between two check valves or two normally closed valves, where pressure applied to the reactor coolant system will be retained at the first valve in the line. The portions of systems affected by this limitation are:
  - (i) Cold leg injection from accumulators between check valves 2-SI-151, 2-SI-168 and 2-SI-185 and check valves 2-SI-153, 2-SI-170 and 2-SI-187, test lines to valves HCV-2850B, D and F and RHR return lines to valves MOV-2720A and B.

- (ii) Cold leg high head and boron injection between check valves 2-SI-92, 2-SI-100 and 2-SI-106 and check valves 2-SI-90, 2-SI-98 and 2-SI-104, and low head injection lines to check valves 2-SI-91, 2-SI-99 and 2-SI-105.
  - (iii) Hot leg high head injection between check valves 2-SI-113, 2-SI-118 and 2-SI-125 and check valves 2-SI-107 and 2-SI-119 and low head injection lines to check valves 2-SI-112, 2-SI-117 and 2-SI-124.
  - (iv) RHR take-off line between normally closed (with pressure interlock) valves MOV-2700 and 2701. This portion of the system will be pressurized whenever the system is put into operation during plant shutdown when the reactor coolant system is cooled to 350°F and depressurized to 450 psig. These valves are interlocked to automatically isolate when the reactor coolant system pressure exceeds 660 psig.
- (d) Subsections IWB and IWC contain differing requirements for the hydrostatic testing of Class 1 and Class 2 systems and components. The implementation of these requirements is impractical when the only means of pressurizing the Class 2 system is through the Class 1 system or when the boundary between the two systems is a check valve arranged for flow from Class 2 to the Class 1 system. Exception is taken to the performance of the hydrostatic test requirements as required by Article IWC-2412(a) on those portions of the Class 2 systems identified below. Visual examination for evidence of leakage will be conducted on these portions of the systems at the system nominal operating pressure in accordance with the requirements of IWB-5221 for the adjoining Class 1 system.
- (i) R. C. Pump seal bypass lines from the check valves 2-CH-279, 2-CH-303, and 2-CH-326 and air operated valve HCV-2307.
  - (ii) R. C. Pump seal leak off line to manually operated valves 2-CH-273, 2-CH-297 and 2-CH-356, manual valves 2-CH-272, 2-CH-296 and 2-CH-320 and valves 2-CH-278, 2-CH-302 and 2-CH-325.
  - (iii) R. C. Pump seal injection line from check valve 2-CH-260, 2-CH-284, and 2-CH-308 to manually operated valves 2-CH-233, 2-CH-237, and 2-CH-241.
  - (iv) Excess letdown system from valve HCV-2201 to valve HCV-2137.
  - (v) Letdown line from valve LCV-2460B to orifice outlet valves HCV-2200A, B and C.

- (vi) Pressurizer steam space sampling line from valve 2-RC-158 to valve TV-SS101A pressurizer liquid space sampling line from valve 2-RC-146 to valve TV-SS100A and loop sampling lines from valves 2-RC-10, 2-RC-29, 2-RC-49, 2-RC-68, 2-RC-81, 2-RC-100 and 2-RC-173 to valves HCV-SS201A, B, C and D and HCV-SS202A, B and C.
- (e) The examination requirements for Class 3 systems and components as given in the attached tabulation are in accordance with IWD-2410(c) which specifies that one hundred percent of the components be examined as required by IWA-5240 and IWD-2600 either during normal operation or during system inservice testing. An additional requirement of IWD-2410(b) is for the examination of Class 3 systems and components for evidence of leakage during the performance of a system pressure test in accordance with IWD-5000. The code does not stipulate that certain amounts of these examination requirements be completed within each forty month period such that the system pressure test requirements may be deferred until the end of the ten year inspection interval. However, it should be noted, that these system pressure tests when required are impractical in those systems, such as component cooling, service water, spent fuel pit cooling, and boric acid transfer and recirculation, which are in continuous operation during all modes of plant operation. The continuous functional operation serves to demonstrate the structural and leak-tight integrity of these systems. Visual examinations of these systems will be performed at normal operation pressures to verify leak tightness.
- (f) Ultrasonic examinations will be conducted in accordance with the provisions of Appendix I and Article 5 of Section V as required by Paragraph IWA-2232.

As an alternative to using Article 5 of Section V, Appendix III of Section XI of the 1974 Edition, Winter, 1975 Addenda of the ASME Boiler and Pressure Vessel Code will be used for ultrasonic examination of piping systems.

It is recognized that Appendix III of Section XI was issued in the Winter, 1975, Addenda and, as such, has not been officially recognized by the NRC by reference in 10 CFR 50. However, Appendix III is the first guideline that has been published in the ASME Codes for the ultrasonic examination of pipe welds and, as such, its use is essential.

- (g) As an alternative for I-3121 of Section XI: "Calibration blocks required for the examination of welds in ferritic vessels 2 1/2 inches thick and over will be fabricated from material of the same specification, product form, and heat treatment as one of the materials being joined as allowed by article T-434.1 in the Winter, 1976 Addenda of Section V of the ASME Boiler and Pressure Vessel Code."

The reason this alternative is requested is that the Code requires that calibration blocks for the examination of welds in ferritic vessels 2 1/2 inches thick and greater be fabricated from material taken from the component nozzle drop out or material from the component prolongation. As a third alternative, when it is not possible to fabricate the block from material taken from the component, the block may be fabricated from a material of a specification included in the applicable examination volumes of the component. It is required that the acoustic velocity and attenuation of such a block be demonstrated to fall within the range of beam longitudinal wave velocity and attenuation found in the unclad components.

For the components in North Anna Unit 2, particularly the pressurizer and steam generators, it will be impossible to meet the requirements of alternative 1 or 2. Materials of the specification are readily available, but because all the components involved are clad on the inner surfaces, it would be impossible to obtain a comparison of sound beam velocities and attenuations in the unclad component. The calibration standards used on North Anna Unit 2 are clad.

The inservice inspection program outlined in the attached tabulations have been developed as a result of a design review. Should certain ASME Section XI Code requirements be discovered to be impractical due to unforeseen reasons during the process of performing inspection or tests, or final development of the Inservice Inspection program, relief will be requested from the specific Section XI Code requirement at that time.

Radiation levels in certain areas or of certain components may be found to prohibit the access for operators or inspectors to perform the inspections or tests describe in this program. If source strengths cannot be reduced and access is still restricted by considerations of compliance with the requirements of Regulatory Guides 8.8 and 8.10, relief will be requested from the specific Section XI Code requirements and alternative examination or test requirements be proposed.

The specific program for examinations of the Class 1, 2, and 3 systems has not been outlined as of this date for North Anna Unit 2. The Class 3 systems included in this letter are essentially inclusive for the 1st 10 year period but it should be noted that most of the Class 3 systems were not designed for periodic hydrostatic testing. There are a portion of these systems underground and the valves used in these systems were not designed for complete leak tightness when shut off.

Codes referenced as being applicable to construction of components in the attached tables are:

III C ASME Boiler and Pressure Vessel Code, Section III, Class C Nuclear Vessels, 1968 Edition.

VIII ASME Boiler and Pressure Vessel Code, Section VIII, Pressure Vessels, 1968 Edition.

B 31.1 USA Standard USAS B 31.1 Code for Pressure Piping, 1967 Edition.

B 31.7 USA Standard USAS B 31.7 Code for Pressure Piping, 1969 Edition.

P & V Draft ASME Code for Pumps and Valves for Nuclear Power, November 1968 Edition.

TABLE 1  
 NORTH ANNA UNIT 2  
 INSERVICE INSPECTION  
ASME CODE CLASS 1 COMPONENTS

Table IWB-2600 Item No.	Table IWB-2500 Examination Category	System or Component	Area to be Examined	Examination Requirement	Section XI Code Relief Request	Extent of ISI Coverage vs. Section XI	Measures required for accessibility
B 1.7	B-G-1	Reactor Vessel	Closure Studs (in place)	Not Applicable	No-Note 1	N/A	N/A
B 1.12	B-H		Integrally Welded Supports	Not Applicable	No-Note 2	N/A	N/A
B 1.16	B-N-Z		Interior Attachments and Core Support	Not Applicable	No-Note 3	N/A	N/A
B 2.2	B-D	Pressurizer	Nozzle to Vessel Welds	Volumetric	Yes-Note 4	90%	Note 5
B 2.4	B-F		Nozzle to Safe-End Welds (6)	Volumetric and Surface	Yes-Note 6	90%	Note 5
B 2.5	B-G-1		Pressure Retaining Bolts (In Place)	Not Applicable	No-Note 7	N/A	N/A
B 2.7	B-G-1		Pressure Retaining Bolting	Not Applicable	No-Note 7	N/A	N/A
B 2.8	B-H		Integrally Welded Vessel Supports	Volumetric	Yes-Note 8	90%	Note 5
B 3.2	B-D	Steam Generators (Primary Side)	Nozzle to Vessel Welds	Not Applicable	No-Note 9	N/A	N/A

TABLE 1 (cont.)  
 NORTH ANNA UNIT 2  
 INSERVICE INSPECTION  
ASME CODE CLASS 1 COMPONENTS

Table IWB-2600 Item No.	Table IWB-2500 Examination Category	System or Component	Area to be Examined	Examination Requirement	Section XI Code Relief Request	Extent of ISI Coverage vs. Section XI	Measures required for accessibility
B 3.3	B-F		Nozzle to Safe End Welds	Volumetric and Surface	Yes-Note 10	80%	Note 5
B 3.4	B-G-1		Pressure Retaining Bolting (In Place)	Not Applicable	No-Note 7	N/A	N/A
B 3.5	B-G-1		Pressure Retaining Bolting	Not Applicable	No-Note 7	N/A	N/A
B 3.6	B-G-1		Pressure Retaining Bolting	Not Applicable	No-Note 7	N/A	N/A
B 3.7	B-H		Integrally Welded Supports	Not Applicable	No-Note 11	N/A	N/A
B 4.1	B-F	Piping Pressure Boundary	Safe End to Pipe Welds	Volumetric and Surface	Yes-Note 12	80%	Note 5
B 4.2	B-G-1		Pressure Retaining Bolting (In Place)	Not Applicable	No-Note 7	N/A	N/A
B 4.3	B-G-1		Pressure Retaining Bolting	Not Applicable	No-Note 7	N/A	N/A
B 4.4	B-G-1		Pressure Retaining Bolting	Not Applicable	No-Note 7	N/A	N/A
B 4.5	B-J		Circumferential and Longitudinal Pipe Welds	Volumetric	Yes-Note 13	97%	Note 5

TABLE 1 (cont.)  
 NORTH ANNA UNIT 2  
 INSERVICE INSPECTION  
ASME CODE CLASS 1 COMPONENTS

Table IWB-2600 Item No.	Table IWB-2500 Examination Category	System or Component	Area to be Examined	Examination Requirement	Section XI Code Relief Request	Extent of ISI Coverage vs. Section XI	Measures required for accessibility
B 4.6	B-J		Branch Connec- tion Welds exceed- ing 6 inches diameter	Volumetric	Yes-Note 14	20%	Note 5
B 4.9	B-K-1		Integrally Welded Supports	Volumetric	Yes-Note 15	20%	Note 5
B 5.1	B-G-1	Pump Pressure Boundary	Pressure Retain- ing Bolts, in place	Volumetric	Yes-Note 16	Note 16	N/A
B 5.2	B-G-1		Pressure Retain- ing Bolts, when removed	Volumetric and Surface	Yes-Note 17	Note 17	N/A
B 5.4	B-K-1		Integrally Welded Supports	Not Applicable	No-Note 7	N/A	N/A
B 6.2	B-G-1	Valve Pressure Boundary	Pressure Retain- ing Bolting, when removed	Volumetric and Surface	Yes-Note 17	Note 17	N/A
B 6.4	B-K-1		Integrally Welded Supports	Not Applicable	No-Note 17	N/A	N/A
B 6.6	B-M-1		Valve Body Welds	Not Applicable	No-Note 7	N/A	N/A

TABLE 1  
NORTH ANNA UNIT 2  
INSERVICE INSPECTION  
ASME CODE CLASS 1 COMPONENT

Notes:

- 1) The reactor vessel closure studs are removed during each refueling and there will be no need for examination in place as required by IWB-2600.
- 2) The reactor vessel supports are integral with the primary nozzles and the examination requirement of IWB-2600 is covered by Item B 1.4.
- 3) This requirement of IWB-2600 is applicable only to Boiling Water Type reactors.
- 4) Examination of 90 percent of the pressurizer nozzle to vessel welds (Category B-D) can be performed with the limitation permitted by I-5121. The configuration of the nozzle welds limits 100 percent of the examination coverage. The configuration of a nozzle to vessel weld is shown in Figure B 2.2.
- 5) Examination coverage is limited by configuration. No additional work would improve examination coverage.
- 6) The configuration of a typical pressurizer nozzle to safe-end weld (Category B-F) is shown in Figure B 2.4. Ultrasonic examinations can be performed on 100 percent of the weld and the base metal on the safe-end side of the weld.

Configuration of the nozzle limits the examination to approximately 80 percent of the required base metal on the nozzle side. Surface examinations can be performed to 100 percent of the code requirement.

- 7) There are no items in this category under the requirements of IWB-2600.
- 8) Ultrasonic examination can be performed on 100 percent of the weld and base metal on the support side of the weld. The configuration of the weld to the pressurizer limits the examination to approximately 80 percent of the code requirement.
- 9) The nozzles are integrally cast with the vessel head and there are no welds in this category.
- 10) The reactor coolant pipe to steam generator nozzle safe end welds can be examined by angle beam and straight beam from the top of the weld and from the pipe side to the extent required by T-532 of Section V. The configuration of this weld is shown in Figure B 4.1. Ultrasonic examination from the nozzle side of the weld is not possible due to nozzle configuration. One hundred percent of the surface examination requirement can be performed.

TABLE 1  
NORTH ANNA UNIT 2  
INSERVICE INSPECTION  
ASME CODE CLASS 1 COMPONENT

Notes:

- 11) The supports are integrally cast with the vessel head and there are no welds in this category.
- 12) The pipe to safe end welds for the pressurizer and steam generators are covered in notes 6 and 10. The reactor vessel safe end to piping welds are similar to the steam generator safe ends and Note 10 applies to these welds.
- 13) Limitations may occur for the examination of piping system circumferential butt welds when the welds occur at geometric discontinuities such as pipe to vessel welds, pipe to fitting welds or fitting to fitting welds. For pipe to fitting or pipe to vessel nozzle welds, examinations can be performed to the extent required by T-532 of Section V from the weld and pipe surfaces. Examination from the fitting side would be dependent upon the geometric configuration. Where elbows or tees are concerned, examination can be performed from the fitting side except where the intrados of the fitting prevents adequate ultrasonic coupling. No examinations can be performed from the fitting side when it is a valve or flange. In instances where welds occur at fitting, access restrictions as outlined above occur on both sides of the weld. In instances where the locations of pipe supports or hangers restrict the access available for the examination of pipe welds as required by IWB-2600, examinations will be performed to the extent practical unless removal of the support is permissible without unduly stressing the system.
- 14) The configuration of the reactor coolant branch nozzle connection welds is shown in Figure B 4.6. Ultrasonic examination cannot be performed on the surface of the weld. As an alternate method surface examination will be performed on 100 percent of the weld and adjacent base material.
- 15) The piping system integrally welded supports are attached to the pipe by fillet welds. The configuration of such welds is such that examinations cannot be performed to the extent required by IWB-2600 and only the base material of the pipe wall can be examined by ultrasonic techniques. Surface examination will be performed on the integrally welded attachments to supplement the limited volumetric examination.
- 16) The reactor coolant pump seal housing bolts are of the socket head type and the configuration is such that ultrasonic examinations as required by IWB-2600 cannot be performed when the bolting is in place. Examinations will only be performed to the extent required by IWB-2600 when the seal housing is disassembled for maintenance.
- 17) This examination to the extent required by IWB-2600 will only be performed when the pump or valve is disassembled for maintenance purposes or at the end of the 10 year interval when disassembly is undertaken for the performance of pump casing or valve body examinations.

TABLE 2  
NORTH ANNA UNIT 2  
INSERVICE INSPECTION  
ASME CODE CLASS 2 COMPONENTS

Table IWC-2600 Item No.	Table IWC-2520 Examination Category	System or Component	Area to be Examined	Examination Requirement	Section XI Code Relief Request	Extent of ISI Coverage vs. Section XI	Measures required for accessibility
Cl.2	C-B	Steam Generators (3)	Nozzle to Vessel Welds	Volumetric	Yes-Note 1	80%	Note 2
Cl.3	C-C		Integrally welded supports	N/A	No-Note 3	N/A	N/A
Cl.2	C-B	Excess Letdown Heat Exchanger	Nozzle to Vessel Welds	N/A	No-Note 3	N/A	N/A
Cl.3	C-C		Integrally weld-Supports	N/A	No-Note 3	N/A	N/A
Cl.1	C-A	Residual Heat Exchangers (2)	Circumferential Butt Welds	Volumetric	Yes-Note 4	90%	Note 2
Cl.2	C-B		Nozzle to Vessel welds	Volumetric	Yes-note 5	0%	Note 5
Cl.1	C-A	Seal Water Heat Exchanger	Circumferential Butt Welds	Volumetric	Yes-Note 4	96%	Note 2
Cl.2	C-B		Nozzle to Vessel Welds	N/A	No-Note 3	N/A	N/A
Cl.2	C-B	Non-Regenerative Letdown Heat Exchanger	Nozzle to Vessel Welds	N/A	No-Note 3	N/A	N/A
Cl.1	C-A	Regenerative Heat Exchanger	Circumferential Butt Welds	Volumetric	Yes-Notes 4,6	80%	Note 2, 6
Cl.2	C-B		Nozzle to Vessel Welds	N/A	No-Note 3	N/A	N/A
Cl.3	C-C		Integrally welded Supports	N/A	No-Note 3	N/A	N/A
Cl.4	C-D		Pressure Retaining Bolting	N/A	No-Note 3	N/A	N/A

TABLE 2 (cont.)  
NORTH ANNA UNIT 2  
INSERVICE INSPECTION  
ASME CODE CLASS 2 COMPONENTS

Table IWC-2600 Item No.	Table IWC-2520 Examination Category	System or Component	Area to be Examined	Examination Requirement	Section XI Code Relief Request	Extent of ISI Coverage vs. Section XI	Measures required for accessibility
C1.2	C-B	Volume Control Tank	Nozzle to Vessel Welds	N/A	No-Note 3	N/A	N/A
C1.2	C-B	Seal Water Injection Filters (2)	Nozzle to Vessel weld	N/A	No-Note 3	N/A	N/A
C1.1	C-A	Reactor Coolant Filter	Circumferential Butt Welds	Volumetric	Yes-Note 7	0%	N/A
C1.2	C-B		Nozzle to Vessel Weld	N/A	No-Note 3	N/A	N/A
C1.1	C-A	Seal Water Return Filter	Circumferential Butt Welds	Volumetric	Yes-Note 7	0%	N/A
C1.2	C-B		Nozzle to Vessel Welds	N/A	No-Note 3	N/A	N/A
C2.1	C-F,C-G	Piping	Circumferential Butt Welds	Volumetric	Yes-Note 8	98%	Notes 2,6
C2.3	C-F,C-G		Branch Pipe to pipe welds	Volumetric	Yes-Note 9	10%	Notes 2,9
C3.1	C-F,C-G	Residual Heat Removal Pumps (2)	Casing Welds	N/A	No-Note 3	N/A	N/A
C3.3	C-E-1		Integrally Welded Supports	N/A	No-Note 3	N/A	N/A
C3.1	C-F, C-G	Centrifugal Charging Pumps (3)	Casing Welds	Volumetric	Yes-Note 10	Note 10	N/A
C4.1	C-F,C-G	Valves	Body Welds	N/A	No-Note 3	N/A	N/A
C4.3	C-E-1		Integrally Welded Supports	N/A	No-Note 3	N/A	N/A

TABLE 2  
NORTH ANNA UNIT 2  
INSERVICE INSPECTION  
ASME CODE CLASS 2 COMPONENTS

Notes:

- 1) The geometric configuration of the nozzle surface prevents ultrasonic examinations being performed to the extent required by IWC-2600. Examinations will be performed to the extent practical from the weld and vessel surfaces adjacent to the weld.
- 2) Examination is limited due to configuration, no additional work would improve coverage.
- 3) There are either no items in this category or items are excluded from examination requirements of IWC-2600 by application of criteria given in IWC-1220. The specific details of exclusions are:
  - (a) Letdown heat exchanger inlet and outlet nozzles are 2 inch diameter.
  - (b) Regenerative heat exchanger inlet and outlet nozzles are 3 inch diameter, there are no integrally welded supports or pressure retaining bolting on this vessel.
  - (c) Seal water return filter inlet and outlet nozzles are 3 inch diameter, there are no integrally welded supports or pressure retaining bolting on this vessel.
  - (d) Volume control tank inlet and outlet nozzles are 4, 3 and 2 inch diameter.
  - (e) Excess letdown heat exchanger inlet and outlet nozzles are 2 inch diameter, there are no integrally welded supports.
  - (f) Seal water injection filter inlet and outlet nozzles are 2 inch diameter.
  - (g) There are no integrally welded supports on the steam generators.
  - (h) Reactor coolant filter inlet and outlet nozzles are 2 inch diameter and cover flange bolting is 3/4 inch diameter.
  - (i) Residual heat removal pump casings have no pressure containing welds, there are no integrally welded supports.
  - (j) Seal water heat exchanger, inlet and outlet nozzles are 4 inch diameter, tubesheet flange bolting is 7/8 inch diameter.
  - (k) There are no Class 2 valves with pressure containing welds or integrally welded supports.
- 4) The curvature of the weld reinforcement, heat configuration, and/or the flange configuration limits the extent that examinations can be performed for reflectors transverse to the weld as required by T-535.2 of Section V. Examinations will be performed to the extent practical.

TABLE 2  
NORTH ANNA UNIT 2  
INSERVICE INSPECTION  
ASME CODE CLASS 2 COMPONENTS

- 5) The residual heat exchanger nozzle to shell welds are covered by reinforcement rings and are not accessible for examination by either volumetric or surface techniques. The area will be subject to visual examination for evidence of leakage during system pressure tests.
- 6) The location of support members may prevent ultrasonic examinations being performed to the extent required by IWC-2600. Examinations will be performed to the extent practical unless support components can be removed to provide additional access.
- 7) The thickness of the materials utilized for construction of this component (0.165 to 0.185 inches) is such that meaningful results could not be expected with ultrasonic examination as required by IWC-2600. Surface and visual examination of these welds will be performed as an alternative method.
- 8) Examination of Class 2 piping system welds is limited to those occurring at geometric discontinuities such that some limitations may be expected at all locations. For pipe to fitting or pipe to vessel nozzle welds, examinations can be performed to the extent required by T-532 of Section V from the weld and pipe surfaces. Examination from the fitting side would be dependent upon the geometric configuration. Where elbows or tees are concerned, examination can be performed from the fitting side except where the intrados of the fitting prevents adequate ultrasonic coupling. No examinations can be performed from the fitting side when it is a valve or a flange. In all cases one hundred percent of the weld material can be examined. In instances where welds occur at fitting to fitting, access restrictions as outlined above occur on both sides of the weld. In instances where ultrasonic examinations cannot be performed on one hundred percent of the volume of the weld and heat affected zone, surface examinations may be performed to supplement the limited volumetric examination.
- 9) The same restrictions to the examination of branch pipe to pipe welds occur in Class 2 systems as discussed in Note 14 in the Class 1 systems with examinations being performed from the pipe side only. Surface examinations would be performed to supplement the limited volumetric examination. However, the Class 2 branch connections located on the main steam lines are all covered, except for three 6" relief lines, with welded reinforcement rings or collars and are not accessible for either surface or volumetric examinations.
- 10) The pressure retaining welds in the charging pump casings are not normally accessible for examination as required by IWC-2600. Examination of these welds will only be performed during this interval if the pump is disassembled for maintenance.

TABLE 3  
 NORTH ANNA UNIT 2  
 INSERVICE INSPECTION  
ASME CODE CLASS 3 COMPONENTS

System	Component Description/Identification	Code Applicable to Construction	Method of Examination	Section XI of Code Relief Request
Component Cooling	Component Cooling Pumps	CC-P-1A CC-P-1B	NA	Visual/Operating Pressure
	Surge Tank	CC-TK-1	VIII	Visual/Operating Pressure
	Heat Exchangers (Shell Side)	CC-E-1A CC-E-1B	VIII	Visual/Operating Pressure
	RHR Pump Seal Coolers	RH-E-2A RH-E-2B	NA	Visual/Operating Pressure
	R.C. Pump L.O. and Stator Coolers	RC-P-1A RC-P-1B RC-P-1C	NA	Visual/Operating Pressure
	Fuel Pool Heat Exchanger (Shell Side)	FC-E-1A FC-E-1B	VIII	Visual/Operating Pressure
	Non-Regenerative Heat Exchanger (Shell Side)	CH-E-2	VIII	Visual/Operating Pressure
	Seal Water Heat Exchanger (Shell Side)	CH-E-1	VIII	Visual/Operating Pressure
	RHR Heat Exchangers (Shell Side)	RH-E-1A RH-E-1B	VIII	Visual/Operating Pressure
	Excess Letdown Heat Exchanger (Shell Side)	CH-E-4	VIII	Visual/Operating Pressure
	Neutron Shield Tank Coolers (Shell Side)	NS-E-1A NS-E-1B	VIII	Visual/Operating Pressure
	CRDM Shroud Cooling Coils	HV-E-6A HV-E-6B HV-E-6C	NA	
	Piping		B31.1 & B31.7	Visual/Operating Pressure
Hangers and Supports		N/A	Visual	

TABLE 3 (cont.)  
 NORTH ANNA UNIT 2  
 INSERVICE INSPECTION  
ASME CODE CLASS 3 COMPONENTS

System	Component Description/Identification	Code Applicable to Construction	Method of Examination	Section XI of Code Relief Request
Chemical and Volume Control	Boric Acid Tanks	CH-TK-1A	VIII	Visual/Operating Pressure
		CH-TK-1B	Not Stamped	
		CH-TK-1C		
	Boric Acid Transfer Pumps	CH-P-2A	P&V Class III	Visual/Operating Pressure
		CH-P-2B		
		CH-P-2C		
		CH-P-2D		
Boric Acid Filter	CH-FL-1	IIIC	Visual/Operating Pressure	
Boric Acid Blender	CH-BL-1	NA	Visual/Operating Pressure	
Piping		B31.1 & B31.7	Visual/Operating Pressure	
Hangers and Supports		N/A	Visual	
Spent Fuel Pit Cooling	Spent Fuel Pit Pumps	FC-P-1A	NA	Visual/Operating Pressure
		FC-P-1B		
	Spent Fuel Pit Heat Exchangers (Tube Side)	FC-E-1A	VIII	Visual/Operating Pressure
		FC-E-1B		
	Piping		B31.1 & B31.7	Visual/Operating Pressure
Hangers and Supports		NA	Visual	
Service Water	Service Water Pumps	SW-P-1A		Visual/Operating Pressure
		SW-P-1B		
	Auxiliary Service Water Pump	SW-P-4		Visual/Operating Pressure
	Recirc. Spray Heat Exchangers	RS-E-1A RS-E-1B RS-E-1C RS-E-1D	VIII	Visual/Operating Pressure

TABLE 3 (cont.)  
 NORTH ANNA UNIT 2  
 INSERVICE INSPECTION  
ASME CODE CLASS 3 COMPONENTS

System	Component Description/Identification	Code Applicable to Construction	Method of Examination	Section XI of Code Relief Request
	Charging Pump Lube Oil Coolers	CH-E-5A CH-E-5B CH-E-5C	Visual/Operating Pressure	
	Charging Pump Seal Coolers	CH-E-7A CH-E-7B CH-E-7C	Visual/Operating Pressure	
	Component Cooling Heat Exchangers (Tube Side)	CC-E-1A CC-E-1B	VIII Visual/Operating Pressure	
	Pipe Penetration Cooling Coils		Visual/Operating Pressure	
	Air Compressors	SA-C-1 IA-C-1	Visual/Operating Pressure	
	Air Compressor Coolers	SA-E-1 IA-E-1	Visual/Operating Pressure	
	Piping	B31.7	Visual/Operating Pressure	Valves not provided to permit isolation of underground por- tions of piping. Request relief from IWD-2600(b).
	Hangers and Supports		Visual	
Casing Cooling	Casing Cooling Pumps	RS-P-3A RS-P-3B	Visual/Operating Pressure	
	Casing Cooling Tank	RS-TK-1	Visual/Operating Pressure	
	Piping	B31.7	Visual/Operating Pressure	
	Hangers and Supports		Visual	

TABLE 3 (cont.)  
 NORTH ANNA UNIT 2  
 INSERVICE INSPECTION  
ASME CODE CLASS 3 COMPONENTS

System	Component Description/Identification	Code Applicable to Construction	Method of Examination	Section XI of Code Relief Request
Auxiliary Feedwater	Pumps	FW-P-2	Visual/Operating Pressure	
		FW-P-3A		
		FW-P-3B		
	Condensate Storage Tank	CN-TK-1	Visual/Operating Pressure	
	Piping		Visual/Operating Pressure	
	Hangers and Supports		Visual	
Main Steam to Turbine Driven Auxiliary Feedwater Pump	Piping		Visual/Operating Pressure	
	Hangers and Supports		Visual	