VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

June 2, 1997

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

Serial No. 97-216
NL&OS/GDM R1
Docket Nos. 50-280, 281
50-338, 339
License Nos. DPR-32, 37
NPF-4, 7

Gentlemen:

VIRGINIA ELECTRIC AND POWER COMPANY
NORTH ANNA AND SURRY POWER STATIONS UNITS 1 AND 2
ASME SECTION XI RELIEF REQUESTS
REACTOR VESSEL CLOSURE HEAD NUTS

North Anna Power Station Units 1 and 2 are presently in the second ten year inservice inspection interval, and examinations are conducted to the requirements of the 1983 and 1986 Editions of ASME Section XI, respectively. Surry Power Station Units 1 and 2 are presently in the third ten year inservice inspection interval, and examinations are conducted to the requirements of the 1989 Edition of ASME Section XI. Pursuant to 10 CFR 50.55a(g)(5), relief is requested from certain requirements of the ASME Section XI Code associated with Code required examinations.

The Code requirements for the Code Editions referenced above require a surface examination of the reactor vessel closure head nuts. However, the 1989 Addenda of ASME Section XI has changed the requirement from a surface examination to a visual (VT-1) examination. Relief is requested from performing the Code-required surface examinations of the reactor vessel closure head nuts. The basis for the relief is provided in the attached relief requests.

Relief requests NDE-35 and NDE-37 for North Anna Units 1 and 2 are provided in Attachments 1 and 2, respectively. Relief requests SR-018 and SR-025 for Surry Units 1 and 2 are provided in Attachments 3 and 4, respectively.

The relief requests have been approved by the applicable Station Nuclear Safety and Operating Committee.

If you have any questions concerning this request, please contact us.

Very truly yours,

R F Saunders

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

Commitments contained in this letter:

1. None.

Attachments

cc: U. S. Nuclear Regulatory Commission
Region II
Atlanta Federal Center
61 Forsyth St., SW, Suite 23T85
Atlanta, Georgia 30303

Mr. R. A. Musser
NRC Senior Resident Inspector
Surry Power Station

NRC Senior Resident Inspector
North Anna Power Station

ATTACHMENT 1

ASME SECTION XI RELIEF REQUEST NO. NDE-35
NORTH ANNA POWER STATION UNIT 1

Virginia Electric & Power Company
North Anna Power Station Unit 1
Second Ten Year Interval

Relief Request NDE-35

I. Identification of Component:

Mark No.	Component No.	Drawing No.	Class
N-01 through N-58	1-RC-R-1	11715-WMKS-RC-R-1.4	1

The above are reactor vessel closure head nuts.

II. Code Requirements:

The 1983 Edition, Summer 1983 Addenda of ASME Section XI Table IWB-2500-1, examination category B-G-1, item number B6.10 requires a surface examination of the reactor vessel closure head nuts.

III. Code Requirement From Which Relief Is Requested:

Relief is requested from performing the Code-required surface examination on the above identified reactor vessel closure head nuts.

IV. Basis for Relief:

The 1989 Addenda of ASME Section XI Table IWB-2500-1, examination category B-G-1, item number B6.10 has changed the requirement from a surface examination to a visual (VT-1) examination.

Extensive cleaning of these nuts is required for a surface examination to be performed. This extensive cleaning results in additional costs and the inefficient use of available manpower resources.

Due to design factors, the stripping areas of the female threads in a nut are approximately 1.3 times the areas of the mating male threads (see ASME B1.1, Unified Inch Screw Threads). Accordingly, if a defect were to be developed during service, they would occur in the threads of the bolt or stud before developing in the nut's threads because of higher stresses in the male threads. When reactor vessel head fasteners are tightened for closure or loosened for opening, the studs are tensioned and the nuts are run on the threads with no load as the load is taken by the stud or bolt through the tensioning device.

V. Proposed Alternate Requirement:

It is proposed that the requirements of the 1989 Addenda of ASME Section XI Table IWB-2500-1, examination category B-G-1, item number B6.10 (visual, VT-1) be substituted for the Code surface examination. In addition:

1. A visual (VT-2) examination will be performed during the normally scheduled system leakage test each refueling outage;

2. Technical Specifications require that the reactor coolant system leak rate be limited to one gallon per minute unidentified leakage. This value is calculated at least once per 72 hours; and

3. The containment atmosphere particulate radioactivity is checked every 12 hours.

The proposed alternative examinations stated above will ensure that the overall level of plant quality and safety will not be compromised.

ATTACHMENT 2

ASME SECTION XI RELIEF REQUEST NO. NDE-37
NORTH ANNA POWER STATION UNIT 2

Virginia Electric & Power Company
North Anna Power Station Unit 2
Second Ten Year Interval

Relief Request NDE-37

I. Identification of Component:

Mark No.	Component No.	Drawing No.	Class
N-01 through N-58	2-RC-R-1	12050-WMKS-RC-R-1.4	1

The above are reactor vessel closure head nuts.

II. Code Requirements:

The 1986 Edition of ASME Section XI Table IWB-2500-1, examination category B-G-1, item number B6.10 requires a surface examination of the reactor vessel closure head nuts.

III. Code Requirement From Which Relief Is Requested:

Relief is requested from performing the Code-required surface examination on the above identified reactor vessel closure head nuts.

IV. Basis for Relief:

The 1989 Addenda of ASME Section XI Table IWB-2500-1, examination category B-G-1, item number B6.10 has changed the requirement from a surface examination to a visual (VT-1) examination.

Extensive cleaning of these nuts is required for a surface examination to be performed. This extensive cleaning results in additional costs and the inefficient use of available manpower resources.

Due to design factors, the stripping areas of the female threads in a nut are approximately 1.3 times the areas of the mating male threads (see ASME B1.1, Unified Inch Screw Threads). Accordingly, if a defect were to be developed during service, they would occur in the threads of the bolt or stud before developing in the nut's threads because of higher stresses in the male threads. When reactor vessel head fasteners are tightened for closure or loosened for opening, the studs are tensioned and the nuts are run on the threads with no load as the load is taken by the stud or bolt through the tensioning device.

V. Proposed Alternate Requirement:

It is proposed that the requirements of the 1989 Addenda of ASME Section XI Table IWB-2500-1, examination category B-G-1, item number B6.10 (visual, VT-1) be substituted for the Code surface examination. In addition:

1. A visual (VT-2) examination will be performed during the normally scheduled system leakage test each refueling outage;

2. Technical Specifications require that the reactor coolant system leak rate be limited to one gallon per minute unidentified leakage. This value is calculated at least once per 72 hours; and

3. The containment atmosphere particulate radioactivity is checked every 12 hours.

The proposed alternative examinations stated above will ensure that the overall level of plant quality and safety will not be compromised.

ATTACHMENT 3

ASME SECTION XI RELIEF REQUEST NO. SR-018
SURRY POWER STATION UNIT 1

Virginia Electric & Power Company
Surry Power Station Unit 1
Third Ten Year Interval

Request for Relief No. SR-018

I. Identification of Component:

Mark No.	Component No.	Drawing No.	Class
N-01 through N-58	1-RC-R-1	11448-WMKS-RC-R-1.4	1

The above are reactor vessel closure head nuts.

II. Code Requirements:

The 1989 Edition of ASME Section XI Table IWB-2500-1, examination category B-G-1, item number B6.10 requires a surface examination of the reactor vessel closure head nuts.

III. Code Requirement From Which Relief Is Requested:

Relief is requested from performing the Code-required surface examination on the above identified reactor vessel closure head nuts.

IV. Basis for Relief:

The 1989 Addenda of ASME Section XI Table IWB-2500-1, examination category B-G-1, item number B6.10 has changed the requirement from a surface examination to a visual (VT-1) examination.

Extensive cleaning of these nuts is required for a surface examination to be performed. This extensive cleaning results in additional costs and the inefficient use of available manpower resources.

Due to design factors, the stripping areas of the female threads in a nut are approximately 1.3 times the areas of the mating male threads (see ASME B1.1, Unified Inch Screw Threads). Accordingly, if a defect were to be developed during service, they would occur in the threads of the bolt or stud before developing in the nut's threads because of higher stresses in the male threads. When reactor vessel head fasteners are tightened for closure or loosened for opening, the studs are tensioned and the nuts are run on the threads with no load as the load is taken by the stud or bolt through the tensioning device.

V. Proposed Alternate Requirement:

It is proposed that the requirements of the 1989 Addenda of ASME Section XI Table IWB-2500-1, examination category B-G-1, item number B6.10 (visual, VT-1) be substituted for the Code surface examination. In addition:

1. A visual (VT-2) examination will be performed during the normally scheduled system leakage test each refueling outage;

2. Technical Specifications require that the reactor coolant system leak rate be limited to one gallon per minute unidentified leakage. This value is calculated at least once per 72 hours; and

3. The containment atmosphere particulate radioactivity is checked every 12 hours.

The proposed alternative examinations stated above will ensure that the overall level of plant quality and safety will not be compromised.

ATTACHMENT 4

ASME SECTION XI RELIEF REQUEST NO. SR-025
SURRY POWER STATION UNIT 2

Virginia Electric & Power Company
Surry Power Station Unit 2
Third Ten Year Interval

Request for Relief No. SR-025

I. Identification of Component:

Mark No.	Component No.	Drawing No.	Class
N-01 through N-58	2-RC-R-1	11548-WMKS-RC-R-1.4	1

The above are reactor vessel closure head nuts.

II. Code Requirements:

The 1989 Edition of ASME Section XI Table IWB-2500-1, examination category B-G-1, item number B6.10 requires a surface examination of the reactor vessel closure head nuts.

III. Code Requirement From Which Relief Is Requested:

Relief is requested from performing the Code-required surface examination on the above identified reactor vessel closure head nuts.

IV. Basis for Relief:

The 1989 Addenda of ASME Section XI Table IWB-2500-1, examination category B-G-1, item number B6.10 has changed the requirement from a surface examination to a visual (VT-1) examination.

Extensive cleaning of these nuts is required for a surface examination to be performed. This extensive cleaning results in additional costs and the inefficient use of available manpower resources.

Due to design factors, the stripping areas of the female threads in a nut are approximately 1.3 times the areas of the mating male threads (see ASME B1.1, Unified Inch Screw Threads). Accordingly, if a defect were to be developed during service, they would occur in the threads of the bolt or stud before developing in the nut's threads because of higher stresses in the male threads. When reactor vessel head fasteners are tightened for closure or loosened for opening, the studs are tensioned and the nuts are run on the threads with no load as the load is taken by the stud or bolt through the tensioning device.

V. Proposed Alternate Requirement:

It is proposed that the requirements of the 1989 Addenda of ASME Section XI Table IWB-2500-1, examination category B-G-1, item number B6.10 (visual, VT-1) be substituted for the Code surface examination. In addition:

1. A visual (VT-2) examination will be performed during the normally scheduled system leakage test each refueling outage;

2. Technical Specifications require that the reactor coolant system leak rate be limited to one gallon per minute unidentified leakage. This value is calculated at least once per 72 hours; and

3. The containment atmosphere particulate radioactivity is checked every 12 hours.

The proposed alternative examinations stated above will ensure that the overall level of plant quality and safety will not be compromised.