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10CFR50.55a

June 12, 2003
2130-03-20180

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

Oyster Creek Generating Station
Facility Operating License No. DPR-16
NRC Docket No. 50-219

Subject: Proposed Relief Request to the Requirements of 10CFR50.55a Concerning the
Third Ten-Year Interval Inservice Inspection Program

Dear Sir/Madam:

Attached for your review and approval are four (4) proposed relief requests in accordance with 10CFR50.55a, associated with the Third Ten-Year Interval Inservice Inspection (ISI) Program for Oyster Creek Generating Station (OCGS). The OCGS third ten-year interval began on March 15, 1992, and concluded on October 14, 2002. The OCGS ISI Program for the Third Interval complied with the 1986 Edition of the ASME Section XI Code.

We request your review and approval by October 14, 2003 in order to meet the requirements of 10CFR50.55a(g)(5)(iv).

If you have any questions or require additional information, please do not hesitate to contact us.

Very truly yours,



Michael P. Gallagher
Director, Licensing & Regulatory Affairs
AmerGen Energy Company, LLC

Attachment - Oyster Creek Generating Station Proposed Relief Requests

cc: H. J. Miller, Administrator, USNRC, Region I (w/attachment)
S. Dennis, Acting USNRC Senior Resident Inspector, OCGS (w/attachment)
P. Tam, Senior Project Manager, USNRC (w/attachment)
File No. 03068

A047

ATTACHMENT
OYSTER CREEK GENERATING STATION

RELIEF REQUESTS

OC-32
OC-33
OC-34
OC-35

**AmerGen Energy Company
Oyster Creek Generating Station
Third 10-Year Interval
Request for Relief OC-32**

ASME CODE COMPONENTS AFFECTED:

Code Class: Class 1

Reference: ASME Section XI, 1986 Edition, Table IWB-2412-1 ("Inspection Program B"), and Table IWB-2500-1 ("Pressure Retaining Welds in Reactor Vessel")

Examination Categories: B-A

Item Numbers: B1.10, B1.20, B1.30, and B1.40

Description: Deferral of Shell-to-Flange Weld Examination

APPLICABLE CODE EDITION AND ADDENDA:

ASME Section XI, 1986 Edition

APPLICABLE CODE REQUIREMENT:

ASME Section XI, 1986 Edition, Table IWB-2412-1 requires inspections to be performed each inspection period and to satisfy the minimum and maximum completed examination percentage in accordance with the inspection interval.

IMPRACTICALITY OF COMPLIANCE:

Relief is requested from the requirements of Table IWB-2412-1 for examination category B-A in that reactor vessel weld examinations were not performed during the second period as required by Table IWB-2500-1. Examination items B1.20 and B1.40 of Table IWB-2500-1 were inspected in the first period in accordance with the Table IWB-2412-1. However, performance of examination item B1.30 (shell-to-flange weld) was subsequently deferred to the third period as part of the reactor vessel shell weld examinations (B1.10) in order to gain greater coverage of the weld by accessing it from the inner diameter (i.e., the ID exam allowed scanning the weld from two directions) through use of the enhanced shell weld examination tooling. In other words, it was impractical to achieve substantial weld coverage via the examination techniques available in the second period.

In summary, two items (B1.20 and B1.40) were inspected in the first period and two items (B1.10 and B1.30) in the third period, but no items were examined during the second period as required by Table IWB-2412-1. Table IWB-2412-1 provides the required distribution for these categories. This distribution was not followed for the inspection of these examination items.

BURDEN CAUSED BY COMPLIANCE:

Pursuant to 10 CFR 50.55a(g)(5)(iii), relief is requested from the distribution of examinations as provided on Table IWB-2412-1. Performance of examination item B1.30 (shell-to-flange weld) during the third period, as part of the reactor vessel shell weld examinations (B1.10), provided greater coverage of the weld (i.e., scanning the weld from the Vessel ID from two directions) through use of the enhanced shell weld examination tooling used as part of the shell weld examinations. Additionally, performing the B1.30 examination during the third period avoided the burden of the significant staging costs necessary for performing the examinations during the second period.

The required distribution provided in Table IWB-2412-1 of the 1986 version of the Code has been updated in the 1995 Edition, up to the 1996 Addenda, to provide more flexibility in the examination of the Category B-A welds. Specifically, as discussed in the 1995 Edition, up to the 1996 Addenda, IWB-2412, "Inspection Program B", "if there are less than three items or welds to be examined in an Examination Category, the items or welds may be examined in any two periods, or in any one period if there is only one item or weld, in lieu of the percentage requirements of Table IWB-2412-1." Therefore, as discussed above in the 1995 version of the code, if there are less than three (3) items or welds to be examined in an Examination Category during a period, which occurred at Oyster Creek Generating Station, the items or welds may be examined in any two periods during the interval, in lieu of the percentages of Table IWB-2412-1. Therefore, the new version of the code would eliminate the need for this proposed relief.

PROPOSED ALTERNATIVE AND BASIS FOR USE:

Oyster Creek Generating Station proposes to utilize the 1995 Edition, up to the 1996 addenda, of the ASME Code with regard to the examinations completed in accordance with Section IWB-2412, "Inspection Program B", for Category B-A welds. The proposed relief will not adversely impact the health and safety of the public.

DURATION OF PROPOSED ALTERNATIVE:

This relief is requested for examinations performed during the third ten-year interval at Oyster Creek Generating Station, which concluded on October 14, 2002.

**AmerGen Energy Company
Oyster Creek Generating Station
Third 10-Year Interval
Request for Relief OC-33**

ASME CODE COMPONENTS AFFECTED:

Code Class: Class 1

Reference: ASME Section XI, 1986 Edition, Table IWB-2500-1 ("Pressure Retaining Welds in Reactor Vessel"), Examination Item B1.30, Shell-to-Flange Weld

Examination Category: B-A

Item Numbers: B1.30

Description: Reduced Coverage of the Reactor Vessel Shell-to-Flange Weld

APPLICABLE CODE EDITION AND ADDENDA:

ASME Section XI, 1986 Edition

APPLICABLE CODE REQUIREMENT:

ASME Section XI, 1986 Edition, requires inspections of the Shell-to-Flange Weld. As part of the examination coverage, examination of the shell-to-flange weld requires "essentially 100%" coverage.

IMPRACTICALITY OF COMPLIANCE:

Relief is requested from the Section XI requirement to examine "essentially 100%" (defined in 50.55a(g)(6)(ii)(A)(2) as greater than 90% coverage) of the volume of the shell-to-flange weld (Examination Item B1.30), which was performed during the third period, of the third inspection interval.

BURDEN CAUSED BY COMPLIANCE:

Pursuant to 10 CFR 50.55a(g)(5)(iii), relief is requested from the Section XI requirement to examine "essentially 100%" (defined in 50.55a(g)(6)(ii)(A)(2) as greater than 90% coverage) of the volume of the shell-to-flange weld (Examination Item B1.30), which was performed during the third period of the third inspection interval.

The examination category B1.30 examination performed in refueling outage 1R18 (2000) was performed using an automatic technique applied to the inner diameter of the vessel where the inspection coverage was taken in two directions (above and below the weld). Sixty-six percent (66%) of the shell-to-flange weld was inspected and no reportable indications were identified.

The remaining sections of the flange-to-shell weld could not be inspected during 1R18 because of interference due to guide rods; main steam nozzle plugs and hoses, and excessive clad roughness. These limitations are the result of vessel internal structures and necessary outage in-vessel configurations. Removal of these interferences was impractical. The 66% of the weld that was examined was distributed around the circumference of the vessel, which provided a good representative sample of the weld. At the completion of the 1R18 outage this weld had been examined to the maximum extent practical. No reportable indications were identified in the 66% coverage.

Additional weld examination would require scaffolding off the biological shield completely around the vessel and the removal of the mirror insulation to gain access to the weld. For the personnel involved with scaffolding, handling insulation, prepping the weld and performing the examination, the estimated dose was 8.6 person-rem.

An assessment of the additional weld coverage which could have been achieved with this manual OD examination determined that a maximum of 17% additional coverage could have been obtained. Even if this manual OD examination would have been performed, and if maximum expected coverage was achieved, total exam coverage would be 83% combining ID and OD examinations, which would still not meet the Code requirement.

Therefore, given the substantial personnel dose and cost considerations which would have been incurred to achieve the incremental coverage using an OD manual inspection approach, and the fact that essentially 100% coverage still would not have been achieved with these additional manual exams, inspections beyond the B1.30 examination that was performed in outage 1R18 would constitute an undue burden.

PROPOSED ALTERNATIVE AND BASIS FOR USE:

Oyster Creek Generating Station proposes to accept the 66% weld coverage for the shell-to-flange weld.

DURATION OF PROPOSED ALTERNATIVE:

This relief is requested for examination performed during the third ten-year interval at Oyster Creek Generating Station, which concluded on October 14, 2002.

**AmerGen Energy Company
Oyster Creek Generating Station
Third 10-Year Interval
Request for Relief OC-34**

ASME CODE COMPONENTS AFFECTED:

Code Class: Class 1

Reference: ASME Section XI, 1986 Edition, Figure IWB-2500-7(d)

Examination Categories: B-D

Item Numbers: B3.90 and B3.100

Description: Limited Code Coverage on Nozzle to Vessel Weld Examinations

APPLICABLE CODE EDITION AND ADDENDA:

ASME Section XI, 1986 Edition

APPLICABLE CODE REQUIREMENT:

ASME Section XI, 1986 Edition, Examination Category B-D, Items B3.90 and B3.100 require 100% volumetric examination of nozzle-to-vessel welds and nozzle inside radius sections, as defined by Figure IWB-2500-7(d).

IMPRACTICALITY OF COMPLIANCE:

Relief is requested from the Code required 100% volumetric examination of the reactor vessel nozzle welds listed below due to nozzle forging configuration and access restrictions.

Component ID	Component Description	Estimated % of CRV Achieved (1)	Description of Limitation
NR02 4-566A	FW nozzle to vessel weld N4A	62.4%	Restricted access due to adjacent N13B and N6A nozzles
NR02 4-566B	FW nozzle to vessel weld N4B	71.2%	Nozzle geometry
NR02 4-566C	FW nozzle to vessel weld N4C	61.7%	Restricted access due to adjacent N15B and N6B nozzles and nozzle geometry
NR02 4-566D	FW nozzle to vessel weld N4D	71.2%	Nozzle geometry and surface conditions
NR02 6-567	CRD Return Nozzle N9	52%	Automated exams restricted due to the proximity of N17B Instrumentation nozzle
NR02 2-567A	CS nozzle to vessel weld N6A	34.1%	Restricted access at left side of bio-shield opening
NR02 2-567A	CS nozzle N6A Inner Radius	50%	Restricted access at left side of bio-shield opening
NR02 3-576	Nozzle to top head N7B	53.8%	Nozzle geometry
NR02 5-576	Nozzle to top head N8	45.3%	Nozzle geometry

(1) The volume coverage that was achieved utilizing automated and manual UT techniques (composite coverage).

BURDEN CAUSED BY COMPLIANCE:

Pursuant to 10 CFR 50.55a(g)(5)(iii), relief is requested from ASME Section XI, 1986 Edition, Examination Category B-D, Items B3.90 and B3.100, which requires 100% volumetric examination of nozzle-to-vessel welds and nozzle inside radius sections, as defined by Figure IWB-2500-7(d).

Oyster Creek has twenty-four Reactor Vessel nozzles that apply to this B-D examination category. Due to the nozzle forging configuration and access restrictions, portions of the Code required examination volume can not be completely examined with automated or manual techniques. The curvature of the blend radius of several nozzle forgings are such that ultrasonic scanning of the weld is interrupted due to loss of contact of the ultrasonic search unit. This limitation affects both transverse and parallel scanning of the Code required examination volume. Also, in support of ALARA, many of the nozzle to vessel welds are examined utilizing a remote automated nozzle scanner. These techniques however, further limit the examination coverage due to scanning limitations caused by scanner design. Attached Figures 1 and 2 provide a typical example of a limited nozzle examination.

All examinations were performed to the maximum extent practical utilizing automated and manual techniques. The volumetric examination coupled with the visual examination

requirements of Code Examination Category B-P during system pressure testing provide reasonable assurance of weld structural integrity.

Pursuant to 10 CFR 50.55a(g)(5)(iii), relief is requested from the Code required 100% volumetric examination of the reactor nozzle welds listed in the above table.

PROPOSED ALTERNATIVE AND BASIS FOR USE:

No alternate provisions are practical for the subject welds. Examinations were performed to the maximum extent feasible.

DURATION OF PROPOSED ALTERNATIVE:

This relief is requested for examinations performed during the third ten-year interval at Oyster Creek Generating Station, which concluded on October 14, 2002.

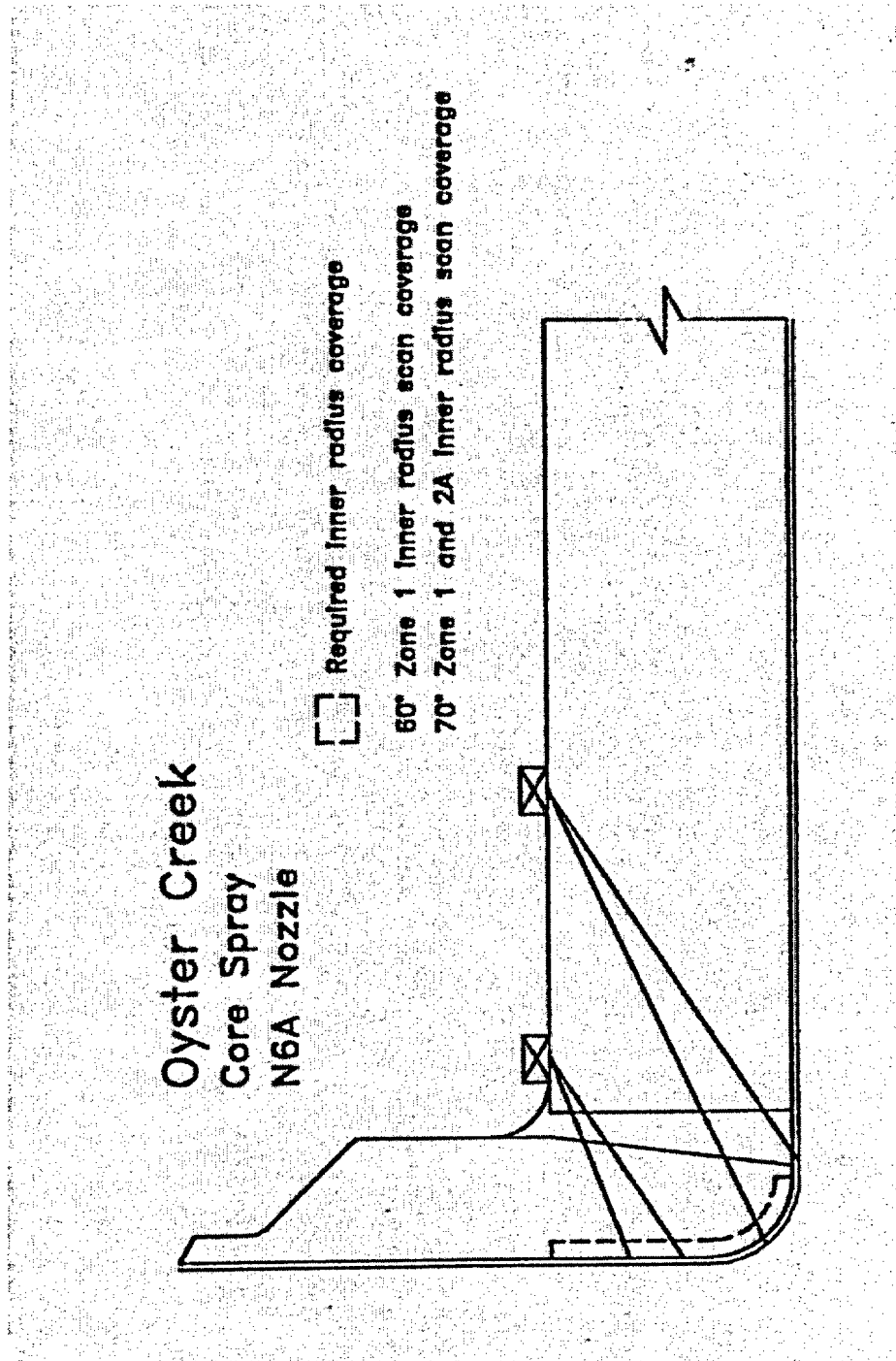


FIGURE 1
Relief Request OC-34
TYPICAL INNER RADIUS SCAN

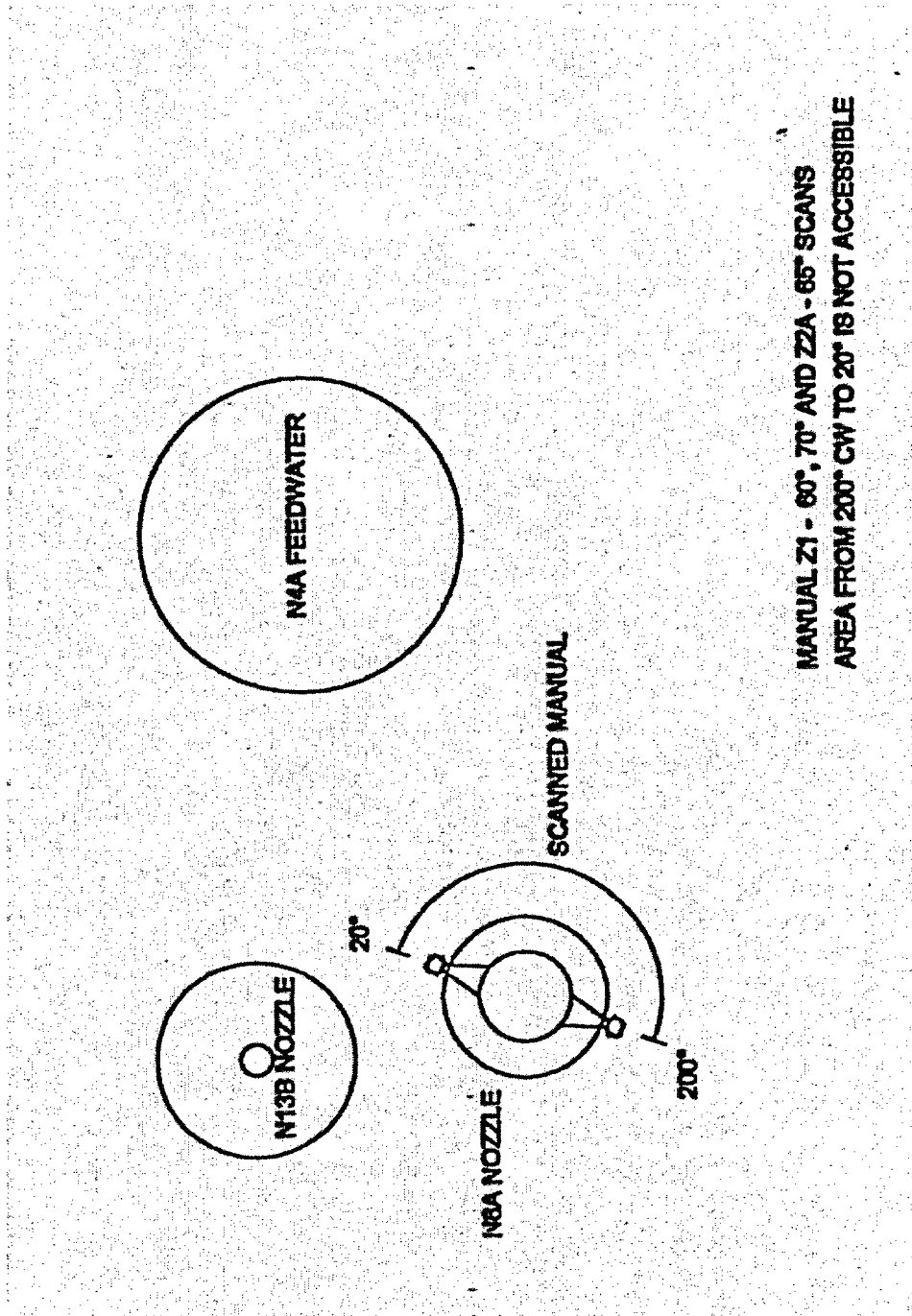


FIGURE 2
Relief Request OC-34
EXAMPLE OF ACCESS RESTRICTION

**AmerGen Energy Company
Oyster Creek Generating Station
Third 10-Year Interval
Request for Relief OC-35**

ASME CODE COMPONENTS AFFECTED:

Code Class: Class 1 and 2
Reference: ASME Section XI, 1986 Edition, Table IWB-2500-1, and Table IWC-2500-1
Examination Categories: B-J, C-F-1, C-F-2 and C-B
Item Numbers: Various
Description: Limited Code Coverage on Piping Weld Examinations (PDI)

APPLICABLE CODE EDITION AND ADDENDA:

ASME Section XI, 1986 Edition

APPLICABLE CODE REQUIREMENT:

ASME Section XI, 1986 Edition, require 100% volumetric examination of Class 1 and 2 piping welds as defined by Table IWB-2500-1, and Table IWC-2500-1.

10CFR50.55a(b)(2)(xv)(A) requires the following examination coverage when applying Supplement 2 of Appendix VIII:

1. Piping must be examined in two axial directions, and when examination in the circumferential direction is required, the circumferential examination must be performed in two directions, provided access is available. Dissimilar metal welds must be examined axially and circumferentially.
2. Where examination from both sides is not possible, full coverage credit may be claimed from a single side for ferritic welds or dissimilar metal welds. Where examination from both sides is not possible on austenitic welds, full coverage credit from a single side may be claimed only after completing a successful single-sided Appendix VIII demonstration using flaws on the opposite side of the weld.

IMPRACTICALITY OF COMPLIANCE:

Pursuant to 10 CFR 50.55a(g)(5)(iii), relief is requested from the new examination coverage requirements for austenitic piping welds with single side access as required in 10CFR50.55a(b)(2)(xv)(A)(2), in that procedures were not available at the time of the examination of the welds below to perform a single-sided Appendix VIII demonstration using flaws on the opposite side of the weld.

Component ID	Component Description	Estimated % of CRV Achieved	Description of Limitation
NG-A-0002	Elbow to Pipe Weld	50%	Exam performed from Elbow side only due to Tee configuration
NG-C-0001A	Safe-End to Elbow Weld	50%	Exam performed from Elbow side only due to Safe-end configuration
NG-D-0022A	Pipe to Safe-End Weld	50%	Exam limited to Safe-End side due to Safe-End configuration
NG-E-0001A	Safe-End to Elbow Weld	50%	Exam from Elbow side only due to Safe-End configuration
NU-3-0001	Pipe to Branch Weld	50%	Exam from Pipe side only due to Branch connection configuration
NU-4-0001	Branch to Tee Weld	50%	Exam performed from Tee side only due to branch configuration
NU-2-0037	Pipe to Valve Weld	75%	Exam performed from pipe side due to valve configuration
ND-10-0021	Pipe to Valve Weld	50%	Exam performed from pipe side due to valve configuration
NG-A-0006	Pipe to Valve Weld	50%	Exam performed from pipe side due to valve configuration
NG-B-0005	Pipe to Valve Weld	50%	Exam performed from pipe side due to valve configuration
NZ-3-0023	Pipe to Valve Weld	50%	Exam performed from pipe side due to valve configuration
NU-3-0006	Valve to Pipe Weld	50%	Exam performed from pipe side due to valve configuration
NZ-3-0069	Pipe to Valve Weld	50%	Exam performed from pipe side due to valve configuration
NZ-3-0081	Pipe to Valve Weld	50%	Exam performed from pipe side due to valve configuration
ND-1-0209	Valve to Pipe Weld	50%	Exam performed from pipe side due to valve configuration
ND-1-0208	Elbow to Valve Weld	50%	Exam performed from elbow side due to valve configuration
NE-2-0255	Valve to Pipe Weld (PSI)	50%	Exam performed from pipe side due to valve configuration
NE-2-0256	Pipe to Valve Weld (PSI)	50%	Exam performed from pipe side due to valve configuration
NE-2-0257	Valve to Pipe Weld (PSI)	50%	Exam performed from pipe side due to valve configuration
NZ-3-0004	Pipe to Valve Weld	50%	Exam performed from pipe side due to valve configuration
NE-2-238	Tee to Pipe Weld	75%	Exam performed from pipe side due to tee configuration

Component ID	Component Description	Estimated % of CRV Achieved	Description of Limitation
NQZ-1-0054	Reducing Tee to Pipe Weld	68%	Exam performed from pipe side. Due to weld crown geometry the scans could not be performed on the weld crown.
NQ-2-0053	Valve to Pipe Weld	52%	Exam was limited by the weld crown and the valve configuration
NQ-2-0160	Flange to Pipe Weld	64%	Exam was limited due to flange and weld crown configuration
CD-14-001A 211-S-5	Isolation Condenser (Steam Side) Weld (PSI)	50%	Exam performed from the head side due to nozzle configuration
CD-14-001A 211-C-5	Isolation Condenser (Condenser Side) Weld (PSI)	50%	Exam performed from the head side due to nozzle configuration
CD-14-001A 211-S-6	Isolation Condenser (Steam Side) Weld (PSI)	50%	Exam performed from the head side due to nozzle configuration
CD-14-001A 211-C-6	Isolation Condenser (Condenser Side) Weld (PSI)	50%	Exam performed from the head side due to nozzle configuration

BURDEN CAUSED BY COMPLIANCE:

As discussed in 10CFR50.55a(b)(2)(xv)(A)(1) and 10CFR50.55a(b)(2)(xv)(A)(2), if access is available, the weld shall be ultrasonically scanned in both directions parallel to the weld and both directions perpendicular to the weld, where required. Full credit for examination coverage may be claimed for single side exams on ferritic piping welds. However, for austenitic piping welds, an ultrasonic examination procedure must be qualified with flaws located in the inaccessible side of the weld.

There were no qualified PDI ultrasonic examination procedures available for single side coverage that demonstrates equivalency to ultrasonic examination two-sided coverage on austenitic piping welds at the time of the examinations for the welds above.

At Oyster Creek, qualified PDI ultrasonic examination techniques have been used since 2000. However, qualified PDI procedures were not available at the time of the examination of the welds above to perform a single-sided Appendix VIII demonstration using flaws on the opposite side of the weld as required by 10CFR50.55a(b)(2)(xv)(A)(2).

The table above provides the weld, the code required volume achieved, and the basis for not achieving full coverage.

Pursuant to 10 CFR 50.55a(g)(5)(iii), relief is requested from the new examination coverage requirements for austenitic piping welds with single side access.

PROPOSED ALTERNATIVE AND BASIS FOR USE:

No alternate provisions are practical for the subject welds. Examinations were performed to the maximum extent feasible.

DURATION OF PROPOSED ALTERNATIVE:

This relief is requested for examinations performed during the third ten-year interval at Oyster Creek Generating Station, which concluded on October 14, 2002.