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August 31, 2000  
NMP1L 1530

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

RE:                   Nine Mile Point Unit 1  
                        Docket No. 50-220  
                        DPR-63

Nine Mile Point Unit 2  
Docket No. 50-410  
NPF-69

**Subject:**       *Inservice Inspection Relief Requests*  
                    *TAC No. 's MA9803 (Unit 1) and MA9804 (Unit 2)*

Gentlemen:

Pursuant to 10 CFR 50.55a(a)(3)(i), 10 CFR 50.55a(a)(3)(ii) and 10 CFR 50.55a(g)(6)(i) Niagara Mohawk Power Corporation (NMPC) is submitting five inservice inspection (ISI) relief requests, which are common to Nine Mile Point Unit 1 and Nine Mile Point Unit 2 (NMP1 and NMP2), and two relief requests for NMP1 only, for NRC approval.

The attached relief requests numbered ISI-14 through ISI-20, relate to the NRC's Final Rule amending 10 CFR 50.55a, as published in the Federal Register on September 22, 1999 (64 FR 51370). This rulemaking requires NMPC to implement Appendix VIII titled, "Performance Demonstration for Ultrasonic Examination Systems," to the American Society of Mechanical Engineers (ASME) Section XI, Division 1, 1995 Edition with the 1996 Addenda, with modifications as stated in 10 CFR 50.55a(b)(2)(xiv, xv and xvi), on an expedited basis.

The attached requests for relief have been prepared using the revised guidance from the Electric Power Research Institute and Performance Demonstration Initiative (PDI), and their discussions with the NRC.

The Final Rule specifies an implementation date of May 22, 2000, for Supplements 1, 2, 3 and 8 of Appendix VIII. NMPC has revised the applicable Ultrasonic Testing examination procedures to comply with the 1995 Edition, 1996 Addenda of ASME Section XI as they pertain to Appendix VIII and PDI. Refueling Outage 16 (RFO16) for NMP1 is currently scheduled to start in March 2001. Inservice Inspections per Supplements 1, 2, 3 or 8 pursuant to the Final Rule will be performed during RFO16 as described in the attached relief requests. Therefore, NRC approval of the attached relief requests is requested by March 1, 2001.

Sincerely,

Richard B. Abbott  
Vice President Nuclear Engineering

RBA/SHC/jlb  
Attachments

A047

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xc: Mr. H. J. Miller, NRC Regional Administrator, Region I  
Mr. G. K. Hunegs, NRC Senior Resident Inspector  
Ms. M. K. Gamberoni, Section Chief PD-I, Section 1, NRR  
Mr. P. S. Tam, Senior Project Manager, NRR  
Records Management

**NINE MILE POINT UNIT 1/2  
INSERVICE INSPECTION INTERVAL  
RELIEF REQUEST ISI-14**

**A. COMPONENT IDENTIFICATION**

System: Reactor Pressure Vessel

Class: Quality Group A, ASME Code Class 1

Component Description: Reactor Pressure Vessel Circumferential, Longitudinal, and Reactor Vessel Closure Head Welds

**B. ASME SECTION XI EXAMINATION REQUIREMENTS**

1. ASME Section XI, Table IWB-2500-1, Examination Category B-A, "Pressure Retaining Welds in Reactor Vessel, Examination Item Number B1.10, "Shell Welds", and B1.20, "Head Welds"

| Code Item Number | Component Identification    | Examination Description                                  |
|------------------|-----------------------------|----------------------------------------------------------|
| B1.11            | Circumferential Shell Welds | Volumetric Examination of all welds                      |
| B1.12            | Longitudinal Shell Welds    | Volumetric Examination of all welds                      |
| B1.21            | Circumferential Head Welds  | Volumetric Examination of accessible length of all welds |
| B1.22            | Meridional Head Welds       | Volumetric Examination of accessible length of all welds |

2. 10 CFR 50.55a(b)(2) was amended to reference ASME Section XI, 1995 Edition, through 1996 Addenda (64 FR 51370), Appendix VIII, Supplement 4, Subparagraph 3.2(b), length sizing qualification criteria, that requires flaw lengths, estimated by ultrasonic examination be the true length -1/4 inch +1 inch.
3. As amended, 10 CFR 50.55a(b)(2)(xv)(C)(1) requires a depth sizing acceptance criteria of 0.15 inch root mean square (RMS) be used in lieu of the requirements of Subparagraphs 3.2(b) to supplement 4 to Appendix VII of Section XI, 1995 Edition through 1996 Addenda.

**C. RELIEF REQUESTED**

Pursuant to 10 CFR 50.55a(a)(3)(i), NMPC requests relief from the length sizing qualification criteria of Appendix VIII, Supplement 4, Subparagraph 3.2(b) as defined in B.2 and B.3 above.

**D. BASIS FOR RELIEF**

Qualifications administered by the Performance Demonstration Initiative (PDI) have used a length sizing acceptance criteria of 0.75 inch root means square (RMS) error since the inception of these demonstrations in 1994.

The USNRC performed an assessment of the PDI program in 1995. As a part of this assessment, they reviewed exceptions to the ASME Code, which were part of the PDI Program. The Assessment report states that the USNRC "does not take exception" to the 0.75-inch RMS error length sizing tolerance, Reference 1.

As amended, 10 CFR 50.55a(b)(2)(xv)(C)(1) required a depth sizing acceptance criteria of 0.15 inch root mean square (RMS) be used in lieu of the requirements of Subparagraphs 3.2(b) to supplement 4 to Appendix VII of Section XI, 1995 Edition through 1996 Addenda.

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The USNRC staff requested that the length sizing difference between PDI and the ASME Code be resolved.

The difference between the PDI program and the ASME Code was resolved by the issuance of ASME Code Case N-622, "Ultrasonic Examination of RPV and Piping, Bolts and Studs, Section XI, Division 1", that incorporated the length sizing tolerance of 0.75 inch RMS, as required by PDI.

Discussions between the USNRC Staff and representatives from PDI were held on January 12, 2000. In this discussion, it was acknowledged that the 0.75-inch RMS length sizing criteria should have been included in the modifications provided for Supplement 4 to Appendix VIII in 10 CFR 50.55a(b)(2)(xv)(C), Reference 2. It was also stated that this would be corrected in future revisions.

**E. ALTERNATIVE EXAMINATIONS**

NMPC proposes to utilize in lieu of the length sizing requirements of the ASME Section XI, 1995 Edition through the 1996 Addenda, of Appendix VIII, Supplement 4, Subparagraph 3.2(b), a length sizing qualification criteria of 0.75 inch RMS error.

This length sizing criteria will be applicable to the welds identified in Table 1 and 2 attached to this request for relief.

This alternative to the requirements of the ASME Code will provide an acceptable level of quality and safety.

**F. IMPLEMENTATION SCHEDULE**

Third Ten-Year Inservice Inspection Interval for Unit 1  
Second Ten-Year Inservice Inspection Interval for Unit 2

Note: Supplement 4 will be implemented by November 22, 2000, as required by the Final Rule (Reference 3)

**G. REFERENCES**

1. USNRC Assessment of the PDI Program, Jack R. Strosnider, Chief Materials and Chemical Engineering Branch, to Bruce J. Sheffel, Chairman, PDI, March 6, 1996, Table 2, Item 94-005, Page 34.
2. Meeting Summary, Teleconference between NRC and representatives from PDI, D. G. Naujock, Metallurgist, NDE & Metallurgy Section, to Edmund J. Sullivan, Chief NDE & Metallurgy Section, Chemical Engineering Branch, Division of Engineering, USNRC March 6, 2000.
3. Federal Register, Volume 64, Number 183, dated September 22, 1999, amendment to 10 CFR 50.55(a) Code of Federal Regulations..

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| Table 1<br>APPLICABLE NMP1 WELD IDENTIFICATION |                                   |                                  |
|------------------------------------------------|-----------------------------------|----------------------------------|
| RPV CIRCUMFERENTIAL WELDS                      | RPV CLOSURE HEAD WELDS            | RPV BOTTOM HEAD WELDS            |
| RV-WD-100                                      | RV-WD-002                         | RV-WD-147                        |
| RV-WD-101                                      | RPV CLOSURE MERIDIONAL HEAD WELDS | RV-WD-162                        |
| RV-WD-137                                      | RV-WD-003                         | RPV BOTTOM HEAD MERIDIONAL WELDS |
| RV-WD-138                                      | RV-WD-004                         | RV-WD-148                        |
| RPV AXIAL WELDS                                | RV-WD-005                         | RV-WD-149                        |
| RV-WD-130                                      | RV-WD-006                         | RV-WD-150                        |
| RV-WD-131                                      | RV-WD-007                         | RV-WD-151                        |
| RV-WD-132                                      | RV-WD-008                         | RV-WD-152                        |
| RV-WD-133                                      | RV-WD-009                         | RV-WD-153                        |
| RV-WD-134                                      | RV-WD-010                         | RV-WD-154                        |
| RV-WD-135                                      |                                   | RV-WD-155                        |
| RV-WD-139                                      |                                   | RV-WD-156                        |
| RV-WD-140                                      |                                   | RV-WD-157                        |
| RV-WD-141                                      |                                   | RV-WD-158                        |
| RV-WD-142                                      |                                   | RV-WD-159                        |
| RV-WD-143                                      |                                   | RV-WD-160                        |
| RV-WD-144                                      |                                   | RV-WD-161                        |
|                                                |                                   |                                  |
|                                                |                                   |                                  |
|                                                |                                   |                                  |

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| Table 2<br>APPLICABLE NMP2 WELD IDENTIFICATION |                                   |                                  |
|------------------------------------------------|-----------------------------------|----------------------------------|
| RPV CIRCUMFERENTIAL WELDS                      | RPV CLOSURE HEAD WELDS            | RPV BOTTOM HEAD WELDS            |
| 2RPV-AA                                        | 2RPV-AH                           | 2RPV-AJ                          |
| 2RPV-AB                                        | 2RPV-AG                           |                                  |
| 2RPV-AC                                        | RPV CLOSURE MERIDIONAL HEAD WELDS |                                  |
| 2RPV-AD                                        | 2RPV-DH                           | RPV BOTTOM HEAD MERIDIONAL WELDS |
| 2RPV-AE                                        | 2RPV-DJ                           | 2RPV-DA                          |
| RPV AXIAL WELDS                                | 2RPV-DK                           | 2RPV-DB                          |
| 2RPV-BA                                        | 2RPV-DM                           | 2RPV-DC                          |
| 2RPV-BB                                        | 2RPV-DN                           | 2RPV-DD                          |
| 2RPV-BC                                        | 2RPV-DP                           | 2RPV-DE                          |
| 2RPV-BD                                        |                                   | 2RPV-DF                          |
| 2RPV-BE                                        |                                   | 2RPV-DG                          |
| 2RPV-BF                                        |                                   | 2RPV-DR                          |
| 2RPV-BG                                        |                                   |                                  |
| 2RPV-BH                                        |                                   |                                  |
| 2RPV-BJ                                        |                                   |                                  |
| 2RPV-BK                                        |                                   |                                  |
| 2RPV-BM                                        |                                   |                                  |
| 2RPV-BN                                        |                                   |                                  |
|                                                |                                   |                                  |
|                                                |                                   |                                  |
|                                                |                                   |                                  |

**NINE MILE POINT UNIT 1/2  
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RELIEF REQUEST ISI-15**

**A. COMPONENT IDENTIFICATION**

System: Various

Class: Quality Group A and B, ASME Code Class 1 and 2

Component Description: Components with single side access, subject to ultrasonic examination with Supplement 2 of Appendix VIII to the 1995 Edition with 1996 Addenda of ASME Section XI.

**B. ASME SECTION XI EXAMINATION REQUIREMENTS**

10 CFR 50.55a(b)(2)(xv)(A), requires the following examination coverage when applying Supplement 2 to 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.
- (2) Where examination from both sides are not possible, full credit may be claimed from a single side for ferritic welds. Where examination from both sides are not possible for austenitic piping welds, full credit may be claimed from a single side only after completing a successful single sided Appendix VIII demonstration using flaws located on the opposite side of the weld.

10 CFR 50.55a(b)(2)(xvi)(B), requires that examinations performed from one side of a ferritic or stainless steel pipe weld must be conducted with equipment, procedures, and personnel that have demonstrated proficiency with single side examinations. To demonstrate equivalency to two sided examinations, the demonstration must be performed to the requirements of Appendix VIII as modified by this paragraph and 10 CFR 50.55a(b)(2)(xv)(A).

**C. RELIEF REQUESTED**

Pursuant to 10 CFR 50.55a(g)(6)(i), NMPC requests relief from the new examination coverage and qualification demonstration requirements for austenitic piping welds with single side access.

**D. BASIS FOR RELIEF**

The Final Rule requires that 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 are currently no qualified ultrasonic examination procedures for single side coverage that demonstrate equivalency to ultrasonic examination two-sided coverage on austenitic piping welds. Current technology is not capable of reliably detecting or sizing flaws on the far side of an austenitic weld, for configurations common to US nuclear applications.

With the exception of those austenitic piping welds for which current technology is not capable of detecting or sizing flaws on the far side of a piping weld, the PDI Program is in agreement with the Final Rule, regarding single side access for piping.

PDI Performance Demonstration Qualification Summary (PDQS) certificates for austenitic piping welds list the

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limitation that single side examination is performed on a best efforts basis.

When the ultrasonic examination on austenitic piping welds are limited to access from one side, the ultrasonic examination coverage will not comply with 10 CFR 50.55a(b)(2)(xv)(A) and proficiency demonstrations will not comply with 10 CFR 50.55a(b)(2)(xvi)(B), therefore full examination coverage can not be claimed.

**E. ALTERNATIVE EXAMINATIONS**

As an alternate to the single sided requirements defined above, NMPC proposes the following:

1. As qualified through the Performance Demonstration Initiative, the best available ultrasonic examination techniques shall be used from the accessible side of the weld as discussed above in the basis for relief.
2. NMPC will continue to evaluate the development of new or improved ultrasonic examination techniques with the intent of applying these techniques where practical improvement of examination coverage can be achieved.
3. Because the exact extent of single side coverage achievable under these new rules are unknown, NMPC proposes to maintain a list of affected welds. This list will be updated following each refueling outage and included in the periodic revision to the ISI program. This updated list shall be submitted as an integral part of each report submittal required by ASME Section XI, with a finalized list submitted to the USNRC following completion of each plants respective Inservice Inspection Interval.
4. This list shall be accessible for review by the enforcement and regulatory authorities having jurisdiction at the plant site in accordance with the provisions of ASME Section XI. The attached form or similar form, with the information provided will be maintained.

This alternative will provide a reasonable level of quality and safety, in consideration of the impracticality of meeting the requirements of the Code and the regulation for this specific group of weld examinations.

**F. IMPLEMENTATION SCHEDULE**

Third Ten-Year Inservice Inspection Interval for Unit 1  
Second Ten-Year Inservice Inspection Interval for Unit 2

**G. REFERENCES**

Federal Register, Volume 64, Number 183, dated September 22, 1999, amendment to 10 CFR 50.55(a) Code of Federal Regulations.



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[illegible]

**NINE MILE POINT UNIT 1/2  
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RELIEF REQUEST ISI-16**

**A. COMPONENT IDENTIFICATION**

System: Various

Class: Quality Group A and B, ASME Code Class 1 and 2

Component Description: All components subject to ultrasonic examination in accordance with Appendix VIII to the 1995 Edition with 1996 Addenda of ASME Section XI.

**B. ASME SECTION XI EXAMINATION REQUIREMENTS**

10 CFR 50.55a(g)(6)(ii)(C) requires the expedited implementation of the ASME Code, Section XI, 1995 Edition through 1996 Addenda, of Appendix VIII, ultrasonic examinations. The Supplements to Appendix VIII requires implementation in accordance with the following schedule:

| IMPLEMENTATION SCHEDULE |                                                                               |                     |
|-------------------------|-------------------------------------------------------------------------------|---------------------|
| SUPPLEMENT              | QUALIFICATION REQUIREMENTS                                                    | IMPLEMENTATION DATE |
| 1                       | Evaluating Electronic Characteristics of Ultrasonic Systems                   | May 22, 2000        |
| 2                       | Wrought Austenitic Piping Welds                                               | May 22, 2000        |
| 3                       | Ferritic Piping Welds                                                         | May 22, 2000        |
| 4                       | Clad/Basemetal Interface of Reactor Vessel                                    | November 22, 2000   |
| 5                       | Nozzle Inside Radius Section                                                  | November 22, 2002   |
| 6                       | Reactor Vessel Welds other than Clad/Basemetal Interface                      | November 22, 2000   |
| 7                       | Nozzle-to-Vessel Welds                                                        | November 22, 2002   |
| 8                       | Bolts and Studs                                                               | May 22, 2000        |
| 9                       | Cast Austenitic Piping (in course of preparation)                             | N/A                 |
| 10                      | Dissimilar Metal Welds                                                        | November 22, 2002   |
| 11                      | Full Structural Overlaid Wrought Austenitic Piping Welds                      | November 22, 2001   |
| 12                      | Coordinated Implementation of Selected Aspects of Supplement 2, 3, 10, and 11 | November 22, 2002   |
| 13                      | Coordinated Implementation of Selected Aspects of Supplement 4, 5, 6, and 7   | November 22, 2002   |

ASME Section XI, Division 1, 1995 Edition with Addenda through 1996 requires qualification of Nondestructive Examination (NDE) personnel to CP-189, 1991 Edition, and the additional requirements of Sub-article IWA-2300, same Edition and Addenda.

The 1989 Edition of ASME Section XI, requires qualification of Nondestructive Examination (NDE) personnel to ASNT SNT-TC-1A, 1984 Edition, and the additional requirements of sub-article IWA-2300, including Appendix I, of the same Edition.

**C. RELIEF REQUESTED**

Pursuant to 10 CFR 50.55a(a)(3)(i), NMPC requests relief from the provisions of Sub-article IWA-2300, that personnel performing nondestructive examinations (NDE) shall be Qualified and certified using a written practice prepared in accordance with ANSI/ASNT CP-189, until December 1, 2003.

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**D. BASIS FOR RELIEF**

10 CFR 50.55a was amended in the Federal Register (Volume 64, No. 183 dated September 22, 1999, 64 FR 51370) to require the use of the 1995 Edition, with the 1996 Addenda of ASME Section XI, with an expedited implementation schedule for Appendix VIII qualification requirements. This amendment also imposes the requirements of Article IWA-2300 and Appendix VII of the 1995 Edition, with 1996 Addenda of Section XI.

Sub-article IWA-2300 of Section XI requires a written practice be prepared in accordance with CP-189, 1991 Edition, as amended by the requirements of IWA-2300 of Section XI. Paragraph IWA-2310 stated that current certifications based on SNT-TC-1A are not affected and are valid until recertification is required.

This mandate would require NMPC to develop, implement, and to the extent possible, consolidate a multifaceted written practice, specific to ultrasonic examination personnel, to address the various requirements contained in SNT-TC-1A and CP-189, as amended by different Editions and Addenda of ASME Section XI, including IWA-2300 and Appendix VII. The requirements would be phased in as identified in the above implementation schedule.

Compliance with the specified requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

Regardless of whether CP-189 or ASNT SNT-TC-1A is the base document used to develop the written practice, all personnel conducting ultrasonic examinations to Appendix VIII requirements must be qualified in accordance with Appendix VIII and all personnel qualified through the PDI program must be qualified in accordance with Appendix VII.

Additionally, for non-Appendix VIII ultrasonic examinations, all NDE examiners, (regardless of the examination method) will continue to be certified in accordance with a written practice developed in accordance with ASNT SNT-TC-1A and the additional requirements of IWA-2300 of the applicable ASME Section XI Edition and/or Addenda as identified in the current inservice inspection program for the specific inservice inspection interval.

Note: IWE/IWL personnel qualification and certification requirements were addressed separately under Request for Relief RR-IWE/IWL-1.

A comparison of the implementation requirements for Appendix VIII examinations using the 1984 Edition of SNT-TC-1A as modified by IWA-2300 and Appendix VII of the 1989 Edition of Section XI with the 1991 Edition of CP-189 as modified by IWA-2300 and Appendix VII of the 1995 Edition and 1996 Addenda of Section XI is considered to be unwieldy and subjective because of their myriad differences.

Therefore, three less complex comparisons of technically significant items are attached. Attachment 1 compares IWA-2300 from the 1995 Edition with the 1996 Addenda to the 1989 Edition. Attachment 2 compares Appendix VII of the 1995 Edition with the 1996 Addenda to the 1989 Edition. Attachment 3 compares the 1991 Edition of CP-189 with the 1984 Edition of SNT-TC-1A as modified by Appendix VII.

As written, there are major differences between CP-189 and SNT-TC-1A. However, as illustrated in the attached comparisons, these are minimized by the moderating effects of the applicable IWA-2300 requirements and especially the Appendix VII requirements.

In lieu of maintaining redundant, possibly conflicting programs, the proposed alternative for qualifications of ultrasonic examination personnel will simplify record keeping, satisfy the need to maintain personnel qualifications, eliminate redundant systems, and provide an acceptable level of quality and safety commensurate with the other NDE disciplines.

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**E. ALTERNATIVE EXAMINATIONS**

NMPC proposes to continue basing all requirements for initial certification and recertification of ultrasonic examination personnel on the 1989 Edition of Section XI. This will include the use of ASNT SNT-TC-1A, 1984 Edition, as amended by IWA-2300 and Appendix VII of Section XI, 1989 Edition.

Personnel performing ultrasonic examinations shall also meet the requirements specified in 10 CFR 50.55a as amended by Federal Register 64 FR 51370 which sets forth the requirements for the qualification of ultrasonic NDE Level I, II and III personnel by demonstration.

This combination of a written practice based on ASNT SNT-TC-1A and a performance based demonstration for personnel performing ultrasonic examinations of welds or components will continue to ensure the structural integrity of systems/components.

**F. IMPLEMENTATION SCHEDULE**

NMPC has committed to update the qualification and certification program to CP-189 by December 1, 2003 for the following:

Third Ten-Year Inservice Inspection Interval for Unit 1  
Second Ten-Year Inservice Inspection Interval for Unit 2

**G. ATTACHMENTS**

- Attachment 1 - Comparison of the qualification and certification requirements of ultrasonic examiners certified to CP-189, 1991, and SNT-TC-1A, 1984, as modified by IWA-2300 and Appendix VII of 1989 Edition and 1995/1996 Edition/Addenda of Section XI, respectively.
- Attachment 2 - Comparison of the qualification and certification requirements of ultrasonic examiners certified to Appendix VII of 95/96 and 1989 Edition of Section XI, respectively .
- Attachment 3 - Comparison of the qualification and certification requirements of ultrasonic examiners certified to CP-189, 1991 and SNT-TC-1A as modified by Appendix VII, 1989 Edition.

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**ATTACHMENT 1**

**COMPARISON OF THE QUALIFICATION AND CERTIFICATION REQUIREMENTS OF  
ULTRASONIC EXAMINERS CERTIFIED TO CP-189, 1991, AND SNT-TC-1A, 1984, AS  
MODIFIED BY IWA-2300 AND APPENDIX VII OF 1989 EDITION AND 1995/1996 EDITION/ADDENDA OF  
SECTION XI, RESPECTIVELY**

The following is a summary of pertinent technical aspects of the implementation requirements contained in Sub-paragraph IWA-2300 to the two Editions of ASME Section XI identified below.

The comparison is complicated because some of the requirements may be modified or omitted, simply because they are defined in another location or by another document. Several requirements, such as those for limited certification, differ somewhat but the differences are not considered technically relevant and they are not detailed in this technical comparison. These complications are representative of the increased burden when administering more than one program or a program based on varying requirements.

| <b>1995 Ed with 1996 Add of Section XI</b>                                                                                                                                                                                 | <b>1989 Edition of Section XI</b>                                                                                                                                                     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IWA-2310 – Written practice is prepared using ANSI/ASNT "Standard" CP-189, 1991 Edition. Certifications based on SNT-TC-1A remain valid until recertification.                                                             | IWA-2310 – Written practice is prepared using ASNT "Recommended Practice" SNT-TC-1A, 1984 Edition. Certifications based on earlier editions remain valid until recertification.       |
| IWA-2311 – The written practice shall specify the duties and responsibilities of the Principle Level III.                                                                                                                  | Not Addressed                                                                                                                                                                         |
| IWA-2312 – NDE methods listed in CP-1989 – Similar to 1989 IWA-2311                                                                                                                                                        | IWA-2311 – NDE methods listed in SNT-TC-1A – Similar to 95/96 IWA 2312                                                                                                                |
| IWA-2313 – NDE methods not listed in CP-189 – Similar to 1989 IWA-2312                                                                                                                                                     | IWA-2312 – NDE methods not listed in SNT-TC-1A – Similar to 1989 IWA-2313                                                                                                             |
| IWA-2314 – Level I and II recertified every 3 years, Level III every 5 years by examination per CP-189. ASNT Level III not required                                                                                        | IWA-2313 – Level I and II recertified every 3 years, Level III every 5 years by examination per SNT-TC-1A.                                                                            |
| IWA-2321 – Snellen 20/25 using lower case letters with a known pre-measured height (see IWA-2322). Administered in accordance with a procedure, and by personnel, approved by an NDE Level III designated by the employer. | IWA-2321- Jaeger number 1 or equivalent, conducted by personnel qualified to conduct the examinations.                                                                                |
| IWA-2322 – Requires use of 10x magnifier to measure height of letters.                                                                                                                                                     | Not Addressed                                                                                                                                                                         |
| IWA-2323 – Level III qualifications evaluated by Basic, Method, Specific, and Practical examinations and the Demonstration examination (Level II Practical).                                                               | IWA-2322 – Level III qualifications determined by Basic, Method, and Specific examinations per SNT-TC-1A. (Demonstration examination would be required by Section XI, Appendix VIII). |
| CP-189 General, Specific and Practical examinations administered and graded by a Level III.                                                                                                                                | IWA-2323 – Level I and II qualifications determined by General and Specific examinations, and a Practical hands-on examination administered by a Level III.                           |
| 95/96 Appendix VII is similar to 1989 Appendix VII (See detailed comparison following).                                                                                                                                    | IWA-2324 – Defines requirements for administration of examinations. This is Modified by Appendix VII.                                                                                 |
| IWA-2330 – Level I responsibilities. Identical to 1989 IWA-2330                                                                                                                                                            | IWA-2330 – Level I responsibilities. Identical to 95/96 IWA-2330                                                                                                                      |
| IWA-2340 – Level III education. Similar to 1989 IWA-2340                                                                                                                                                                   | IWA-2340 – Level III education. Similar to 95/96 IWA-2340                                                                                                                             |
| IWA-2350 – Defines limited certification. Provides more definition than 1989.                                                                                                                                              | IWA-2350 – Defines limited certification requirements.                                                                                                                                |
| IWA-2360 – Allows certification directly to Level II. Defines additional Level III responsibilities.                                                                                                                       | Appendix VII allows certification directly to Level II. Defines similar Level III responsibilities.                                                                                   |
| IWA-2370 – Contains experience requirements for Level II candidates.                                                                                                                                                       | 1989 Appendix VII contains requirements that are more stringent.                                                                                                                      |

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**ATTACHMENT 2**

**COMPARISON OF THE QUALIFICATION AND CERTIFICATION REQUIREMENTS OF  
ULTRASONIC EXAMINERS CERTIFIED TO APPENDIX VII 95/96 AND 1989 EDITION OF  
SECTION XI, RESPECTIVELY**

The following is a summary of pertinent technical aspects of the implementation requirements contained in Subparagraph IWA-2300 to the two Editions of ASME Section XI identified below.

The comparison is complicated because some of the requirements may be modified or omitted, simply because they are defined in another location or by another document. These complications are representative of the increased burden when administering more than one program or a program based on varying requirements.

| 95/96 APPENDIX VII                                                                                                                                                                                          | 1989 APPENDIX VII                                                                                                                                                                          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| VII-1000 – Scope – Modifies the requirements of IWA-2300 for Ultrasonic examiners                                                                                                                           | VII-1000 - identical to 95/96                                                                                                                                                              |
| VII-2000 – Qualification Levels – Identifies 5 qualification Levels as defined in CP-189                                                                                                                    | VII-2000 – essentially the same. Defines NDE Instructor qualification since it is not included in SNT-TC-1A.                                                                               |
| VII-3000 – Written Practice – Defines the written practice, including the definition of an "outside agency" since it is not defined in CP-189.                                                              | VII-3000 Identical to 95/96 except "outside agency" is not defined, since it is included in SNT-TC-1A.                                                                                     |
| <b>VIII-4000 – Qualification Requirements</b>                                                                                                                                                               |                                                                                                                                                                                            |
| CP-189 contains no simultaneous experience provisions.                                                                                                                                                      | Table VII-4110-1 states the simultaneous experience provision of SNT-TC-1A is not applicable.                                                                                              |
| Paragraph VII-4223 requires previously qualified individuals to meet the requirements for training.                                                                                                         | Both Appendices in paragraph VII-4300 state that to be considered for examination the Level I, II, and III candidates shall have successfully completed the training required in VII-4200. |
| Paragraph VII-4240 states that no examination is required for the annual retraining.                                                                                                                        | Not Addressed                                                                                                                                                                              |
| Paragraph VII-4310 (a) states that a random selection process must be controlled by the written practice so no individual takes the same examination more than once.                                        | Not Addressed                                                                                                                                                                              |
| Paragraph VII-4310 (b) allows the use of "grading units" to produce a specimen bank for the practical examination.                                                                                          | Not Addressed                                                                                                                                                                              |
| Paragraph VII-4330 (a) Level III examinations per IWA-2300, Basic, Method, Specific, Practical, Demonstration, contains rules for Level II practical examination. An Appendix VIII practical is acceptable. | While the 1989 Appendix VIII contains no requirements for a practical examination, it would be required for the mandatory Appendix VIII.                                                   |
| Paragraph VII-4330 (b) allows recertification of Level III personnel using only the Method and Specific examinations.                                                                                       | IWA-2313 requires recertification using Basic, Method, and Specific written examinations.                                                                                                  |
| Not addressed                                                                                                                                                                                               | VII-6000 – Defines duties of the ANII                                                                                                                                                      |
| VII Supplements                                                                                                                                                                                             | Essentially the same                                                                                                                                                                       |

**NINE MILE POINT UNIT 1/2  
INSERVICE INSPECTION INTERVAL  
RELIEF REQUEST ISI-16**

**ATTACHMENT 3**

**COMPARISON OF THE QUALIFICATION AND CERTIFICATION REQUIREMENTS OF  
ULTRASONIC EXAMINERS CERTIFIED TO CP-189, 1991 and SNT-TC-1A AS MODIFIED BY  
APPENDIX VII, 1989 EDITION**

Comparisons are not detailed in those areas where CP-189 is modified by the requirements of Appendix VII. Please note that the word "should" typically identifies what is considered a requirement in SNT-TC-1A, while CP-189 typically uses the word "shall". Industry practice is to treat SNT-TC-1A recommendations as requirements. Several paragraphs are identified as similar. This is subjective. For example, while SNT-TC-1A does not specifically require suspension of an examiners certification for a lapsed vision examination, as does CP-189, it is industry practice to do so.

| CP-189                                                                                                                           | SNT-TC-1A                                                                             |
|----------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| 1.0 – Scope – CP-189 is a standard that establishes the minimum requirements.                                                    | 1.0 – Scope – SNT-TC-1A is a recommended practice establishing guidelines.            |
| 2.0 – Definitions – More inclusive (19 terms) and more concise. Some Modified by Appendix VII.                                   | 2.0 – Definitions – Less inclusive (7 terms)                                          |
| 3.0 Level of Qualification                                                                                                       |                                                                                       |
| 3.1 – Classification                                                                                                             | Modified by Appendix VII                                                              |
| 3.2 – Level III                                                                                                                  | 4.3 (3) – Similar to CP-189                                                           |
| 3.3 – Level II                                                                                                                   | 4.3 (2) – Similar to CP-189                                                           |
| 3.4 – Level I                                                                                                                    | Modified by Appendix VII                                                              |
| 3.5 – Trainee                                                                                                                    | 4.2 – Similar to CP-189                                                               |
| 3.6 – NDE Instructor                                                                                                             | Modified by Appendix VII                                                              |
| 4.0 Qualification Requirements                                                                                                   |                                                                                       |
| 4.1 – Training                                                                                                                   | Modified by Appendix VII                                                              |
| 4.2 – Experience                                                                                                                 | Modified by Appendix VII                                                              |
| 4.3 – Previous Training and Experience                                                                                           | Modified by Appendix VII                                                              |
| 4.4 – NDT Instructor                                                                                                             | Modified by Appendix VII                                                              |
| 4.5 – Outside services                                                                                                           | Modified by Appendix VII                                                              |
| 5.0 – Qualification and Certification                                                                                            |                                                                                       |
| 5.1 – Procedure                                                                                                                  | Modified by Appendix VII                                                              |
| 5.2 – Procedure requirements                                                                                                     | Modified by Appendix VII                                                              |
| 5.3 – Approval – "written practice" approved by Level III                                                                        | Modified by Appendix VII – Requires that "written practice" specify responsibilities. |
| 6.0 Examinations                                                                                                                 |                                                                                       |
| 6.1 – Vision                                                                                                                     | Modified by IWA-2300                                                                  |
| 6.2 – Level III Examination                                                                                                      | Modified by Appendix VII                                                              |
| 6.3 – Level I and II Examination                                                                                                 | Modified by Appendix VII                                                              |
| 6.4 – Administration and grading                                                                                                 | Modified by Appendix VII                                                              |
| 6.5 – Reexamination                                                                                                              | Modified by Appendix VII                                                              |
| 6.6 – Administration of Examinations – prohibits one's self or one's subordinate from preparing or administering an examination. | Not specifically addressed                                                            |
| 7.0 Expiration, Suspension, Reinstatement of Employer Revocation, and Certification                                              |                                                                                       |
| 7.1 – Expiration                                                                                                                 | Similar to CP-189                                                                     |
| 7.2 – Suspension                                                                                                                 | Similar to CP-189                                                                     |
| 7.3 – Revocation                                                                                                                 | Similar to CP-189                                                                     |
| 7.4 – Reinstatement                                                                                                              | Similar to CP-189                                                                     |
| 8.0 Employer Recertification                                                                                                     |                                                                                       |
| 8.1 – NDT Level I and II                                                                                                         | Modified by Appendix VII                                                              |
| 8.2 – NDT Level III                                                                                                              | Modified by Appendix VII                                                              |
| 9.0 Records                                                                                                                      |                                                                                       |
| 9.1 – Responsibility for Documentation                                                                                           | Modified by Appendix VII                                                              |
| 9.2 – Contents of Certification Record                                                                                           | Modified by Appendix VII                                                              |

**NINE MILE POINT UNIT 1/2  
INSERVICE INSPECTION INTERVAL  
RELIEF REQUEST ISI-17**

**A. COMPONENT IDENTIFICATION**

System: Reactor Pressure Vessel

Class: Quality Group A, ASME Code Class 1

Component Description: Pressure-Retaining Nozzle-to-Vessel welds

**B. ASME SECTION XI EXAMINATION REQUIREMENTS**

ASME Section XI, 1989 Edition, No Addenda, Table IWB-2500-1, Examination Category B-D, "Full Penetration Welds Of Nozzles in Vessels - Inspection Program B

| Code Item Number | Parts Examined         | Extent and Frequency                                                  |
|------------------|------------------------|-----------------------------------------------------------------------|
| B3.90            | Nozzle-to-Vessel Welds | Volumetric Examination of all welds per Figure IWB-2500-7 (a) and (b) |

ASME Section V, 1989 Edition, Article 4, Paragraphs; T-441.3.2.5 Angle Beam Scanning, T-441.3.2.6 Scanning for Reflectors Oriented Parallel to the Weld, and T-441.3.2.7 Scanning for Reflectors Oriented Transverse to the Weld.

**C. RELIEF REQUESTED**

Pursuant to 10 CFR 50.55a (a)(3)(i), NMPC requests relief from the examination volume requirements of ASME Section XI Figures IWB-2500-7 (a) and IWB-2500-7 (b).

NMPC also requests relief from the ASME Section V, Article 4 for the performance of the required volumetric examinations as specified in Table IWB-2500-1 Category B-D of the 1989 Edition of ASME Section XI.

**D. BASIS FOR RELIEF**

NMPC is currently required to perform in-service examinations of selected welds in accordance with the requirements of 10 CFR 50.55a(g)(4) and (g)(5), and the 1989 Edition of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section XI, Rules for Inservice Inspection of Nuclear Power Plant Components. This Code Edition invokes the examination volume requirements of Figures IWB-2500-7 (a) and IWB-2500-7 (b). This Code Edition also invokes the examination requirements of Appendix I, Article I-2000 which reference ASME Section V, Article 4 that essentially prescribes a twenty (20) year old examination methodology.

The examination volume for the Reactor Vessel pressure retaining nozzle-to-vessel welds extends far beyond the weld into the base metal, and is unnecessarily large. This extends the examination time significantly, and results in no net increase in safety, as the area being examined is a base metal region which is not prone to inservice cracking and has been extensively examined before the vessel was put into service and during the First Inservice examination.

The implementation of ASME Code Case N-613, reduces the examination volume next to the widest part of the weld from half of the vessel wall thickness to one-half (1/2) inch. This reduction is applicable to base metal examination volume that was extensively interrogated during the construction and preservice inspections and is not located in the high stressed areas of the nozzle-to-vessel weld. The high stressed areas are included in the examination volume defined in Code Case N-613 and are subject to examination.



**NINE MILE POINT UNIT 1/2  
INSERVICE INSPECTION INTERVAL  
RELIEF REQUEST ISI-17**

Implementation of this Code Case is also expected to reduce on-vessel examination time, which translates to significant cost savings and reduced personnel radiation exposure.

**E. ALTERNATIVE EXAMINATIONS**

NMPC proposes to use the alternative requirements of ASME Code Case N-613 in lieu of the requirements of ASME Section XI Figures IWB-2500-7 (a) and IWB-2500-7 (b).

NMPC also proposes to use the alternative requirements of ASME Code Case N-613 in lieu of the requirements of ASME Section V, Article 4 for the performance of the required volumetric examinations as specified in Table IWB-2500-1 Category B-D of the 1989 Edition of ASME Section XI.

NMPC will perform examinations in accordance with ASME Code, Section XI, Div. 1, 1995 Edition, 1996 Addenda, Appendix VIII Supplement VII as modified by the Code of Federal Regulations Title 10, Part 50, Section 50.55a.

The extent of examination coverage proposed along with the periodic system pressure tests will provide added assurance that the Reactor Vessel welds have remained free of service related flaws, therefore, providing an acceptable level of quality and safety.

**F. IMPLEMENTATION SCHEDULE**

Third Ten-Year Inservice Inspection Interval for Unit 1  
Second Ten-Year Inservice Inspection Interval for Unit 2

**G. ATTACHMENT TO THE RELIEF:**

Code Case N-613, Ultrasonic Examination of Full Penetration Nozzles in Vessels, Examination Category B-D, Item No's. B3.10 and B3.90, Reactor Vessel-To-Nozzle Welds, Figure IWB-2500-7(a), (b), and (c) Section XI, Division 1.

ASME CODE CASE N-613 ATTACHMENT  
CASES OF ASME BOILER AND PRESSURE VESSEL CODE

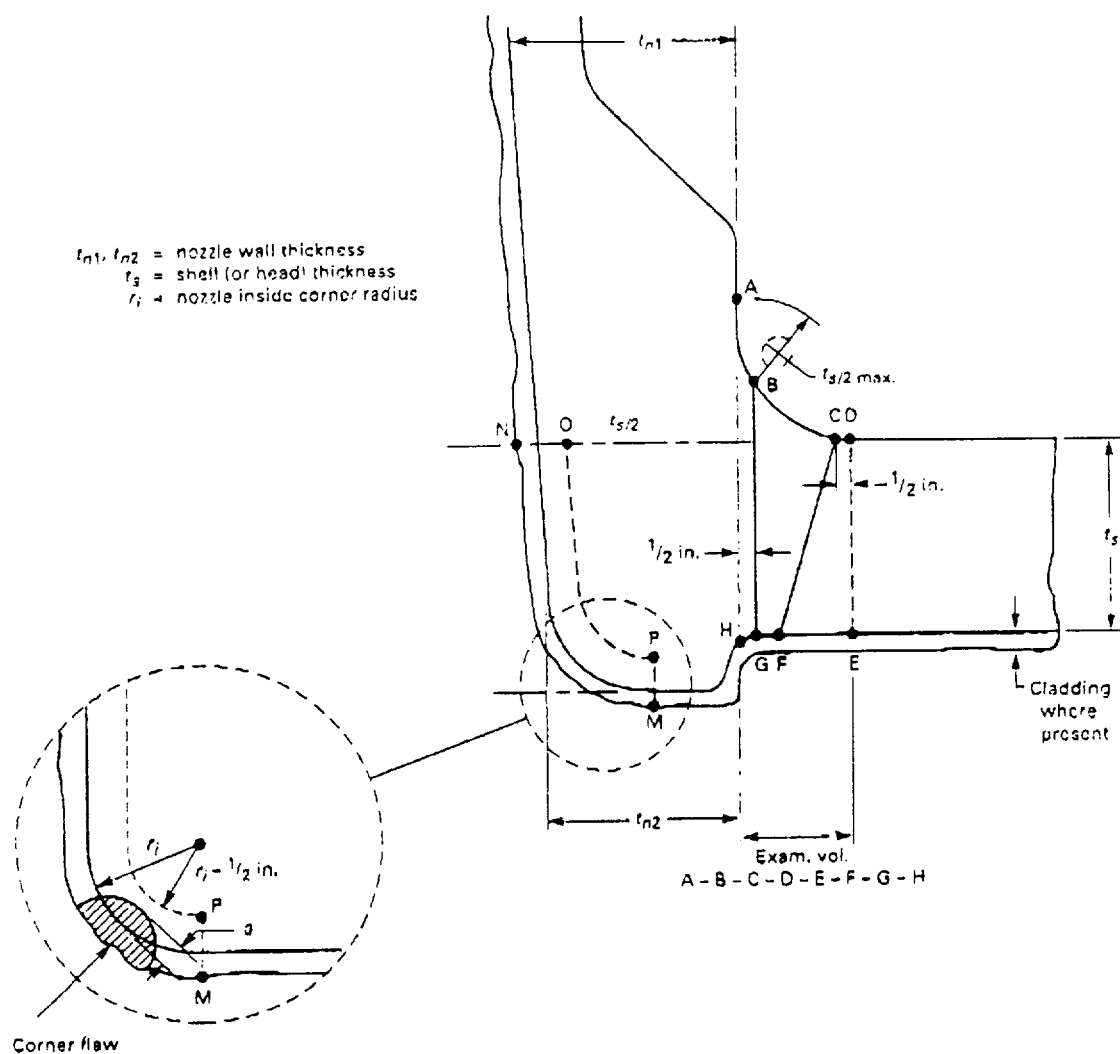
Approval Date: July 30, 1998  
*See Numeric Index for expiration  
and any reaffirmation dates.*

**Case N-613**  
**Ultrasonic Examination of Full Penetration**  
**Nozzles in Vessels, Examination Category B-D,**  
**Item No's. B3.10 and B3.90, Reactor Vessel-To-**  
**Nozzle Welds, Fig. IWB-2500-7(a), (b), and (c)**  
**Section XI, Division 1**

*Inquiry:* What alternatives to the examination requirements of Section XI, Appendix I and Section V, Article 4 are permissible when performing ultrasonic examination of reactor vessel-to-nozzle welds?

*Reply:* It is the opinion of the Committee that ultrasonic examination of Category B-D nozzles may be conducted using techniques designed for detection and sizing of surface and subsurface flaws within the examination volume (A-B-C-D-E-F-G-H), oriented in a plane normal to the vessel inside surface and parallel to the weld for Figs. 1 and 2, and oriented in a plane normal to the nozzle inside surface and parallel to the weld for Fig. 3.

**ASME CODE CASE N-613 ATTACHMENT**  
**CASES OF ASME BOILER AND PRESSURE VESSEL CODE**

**EXAMINATION REGION [Note (1)]**

Shell (or head) adjoining region  
Attachment weld region  
Nozzle cylinder region  
Nozzle inside corner region

**EXAMINATION VOLUME [Note (2)]**

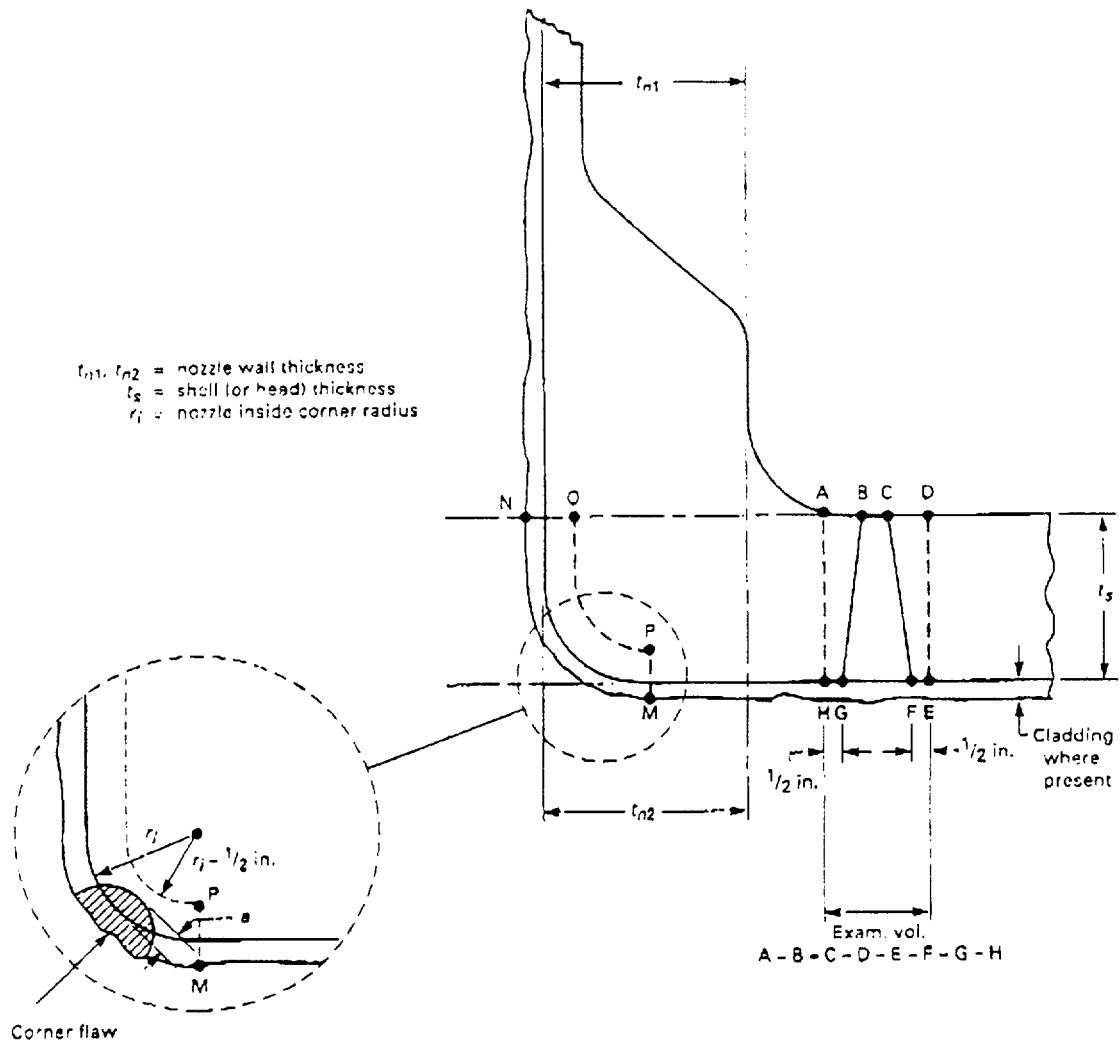
C-D-E-F  
B-C-F-G  
A-B-G-H  
M-N-O-P

**NOTES:**

- (1) Examination regions are identified for the purpose of differentiating the acceptance standards in IWB 3512.
- (2) Examination volumes may be determined either by direct measurements on the component or by measurements based on design drawings.

**FIG. 1 NOZZLE IN SHELL OR HEAD**  
**(Examination Zones in Barrel Type Nozzles Joined by Full Penetration Corner Welds)**

**ASME CODE CASE N-613 ATTACHMENT**  
**CASES OF ASME BOILER AND PRESSURE VESSEL CODE**

**EXAMINATION REGION [Note (1)]**

Shell (or head) adjoining region  
Attachment weld region  
Nozzle cylinder region  
Nozzle inside corner region

**EXAMINATION VOLUME [Note (2)]**

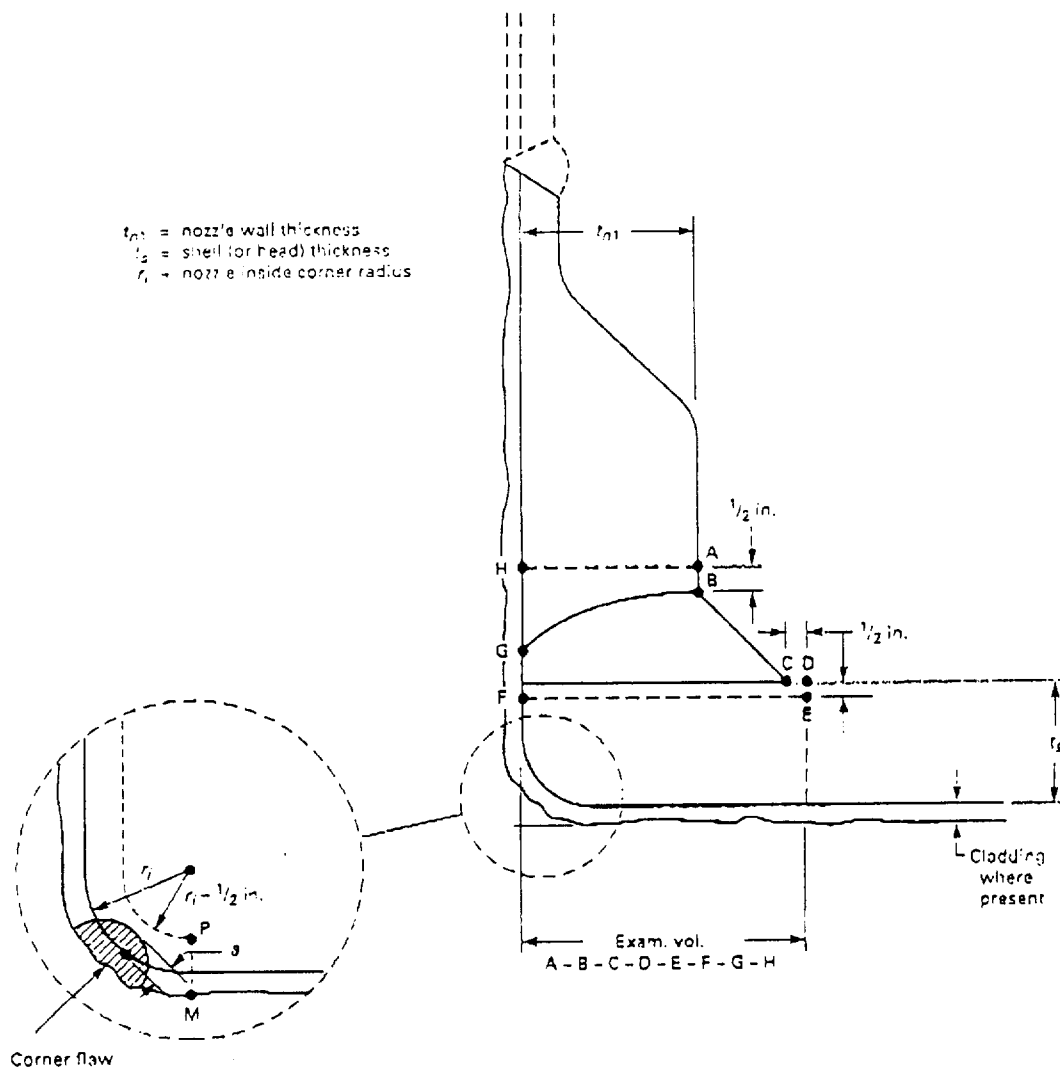
C - D - E - F  
B - C - F - G  
A - B - G - H  
M - N - O - P

**NOTES:**

- (1) Examination regions are identified for the purpose of differentiating the acceptance standards in IWB-3512.  
(2) Examination volumes may be determined either by direct measurements on the component or by measurements based on design drawings.

**FIG. 2 NOZZLE IN SHELL OR HEAD**  
**(Examination Zones in Flange Type Nozzles Joined by Full Penetration Butt Welds)**

**ASME CODE CASE N-613 ATTACHMENT**  
**CASES OF ASME BOILER AND PRESSURE VESSEL CODE**

**EXAMINATION REGION (Note (1))**

Shell (or head) adjoining region  
 Attachment weld region  
 Nozzle cylinder region  
 Nozzle inside corner region

**EXAMINATION VOLUME (Note (2))**

C-D-E-F-G  
 B-C-G  
 A-B-G-H  
 M-N-O-P

**NOTES:**

- (1) Examination regions are identified for the purpose of differentiating the acceptance standards in IWB-3512.  
 (2) Examination volumes may be determined either by direct measurements on the component or by measurements based on design drawings.

**FIG. 3 NOZZLE IN SHELL OR HEAD**  
 (Examination Zones in Set-On Type Nozzles Joined by Full Penetration Corner Welds)

**NINE MILE POINT UNIT 1/2  
INSERVICE INSPECTION INTERVAL  
RELIEF REQUEST ISI-18**

**A. COMPONENT IDENTIFICATION**

System: Various

Class: Quality Group A and B, Code Class 1 and 2

Component Description: All components subject to ultrasonic examination in accordance with the 1995 Edition and 1996 Addenda of ASME Section XI, Appendix VIII.

**B. ASME SECTION XI EXAMINATION REQUIREMENTS**

The 1995 Edition with the 1996 Addenda of ASME Section XI, Sub-article VII-4240 requires a minimum of 10 hours of annual training.

10 CFR 50.55a(b)(2)(xiv) requires that all personnel qualified for performing ultrasonic examination in accordance with Appendix VIII shall receive 8 hours of annual hands-on training on specimens that contain cracks. This training must be completed no earlier than 6 months prior to performing ultrasonic examinations at a licensee's facility.

**C. RELIEF REQUESTED**

Pursuant to 10 CFR 50.55a(a)(3)(i), relief is requested from the provisions of Sub-article VII-4240, that requires a minimum of 10 hours Annual Training.

**D. BASIS FOR RELIEF**

10 CFR 50.55a was amended in the Federal Register (Volume 64, No. 183 dated September 22, 1999) to require the 1995 Edition, with the 1996 Addenda of Section XI for Appendix VIII qualification requirements. This amendment also imposes the requirements of Appendix VII of the 1995 Edition, with 1996 Addenda of Section XI, which includes Sub-article VII-4240, that requires training on an annual basis to impart knowledge of new developments, material failure modes, and any pertinent technical topics as determined by NMPC. The extent of training shall be a minimum of 10 hours per year.

Paragraph 2.4.1.1.1 in the Federal Register stated that the USNRC had determined that the requirement [10 hours of training on an annual basis] was inadequate for the following reasons:

1. The training does not require laboratory work and examination of flawed specimens. Signals can be difficult to interpret and, as detailed in the regulatory analysis for this rule making, experience and studies indicate that the examiner must practice on a frequent basis to maintain the capability for proper interpretation.
2. Studies on the length of training and its frequency have shown that an examiner's capability begins to diminish within approximately 6 months if skills are not maintained.

The USNRC had determined in order to maintain skills, an examiner must practice on a more frequent basis to maintain proper skill level.

The PDI program has adopted a requirement for 8 hours of training, but it is required to be hands-on practice. In addition, the training must be taken no earlier than 6 months prior to performing examinations at a licensee's facility. PDI believes that 8 hours will be acceptable relative to an examiner's abilities in this highly specialized skill area because personnel can gain knowledge of new developments, material failure modes, and other pertinent technical topics through other means.

**NINE MILE POINT UNIT 1/2  
INSERVICE INSPECTION INTERVAL  
RELIEF REQUEST ISI-18**

Therefore, the USNRC has decided to adopt in the final rule the PDI position on this matter. These changes are reflected in § 50.55a(b)(2)(xiv).

Paragraph 50.55a(b)(2)(xiv) of the final rule states all personnel qualified for performing ultrasonic examinations in accordance with Appendix VIII shall receive 8 hours of annual hands-on training on specimens that contain cracks. This training must be completed no earlier than 6 months prior to performing ultrasonic examinations at a licensee's facility.

Implementation of the requirements contained in ASME Section XI and 10 CFR 50.55a will result in redundant training programs. The use of the regulatory requirements in lieu of additional requirements will simplify record keeping, satisfy needs for maintaining skills, and provide an acceptable level of quality and safety.

**E. ALTERNATIVE EXAMINATIONS**

NMPC proposes to use the annual ultrasonic training required by 10 CFR 50.55a(b)(2)(xiv) in lieu of ASME Section XI, Appendix VII, paragraph VII-4240. This training will be completed no earlier than 6 months prior to performing ultrasonic examinations at a licensee's facility.

**F. IMPLEMENTATION SCHEDULE**

Third Ten-Year Inservice Inspection Interval for Unit 1  
Second Ten-Year Inservice Inspection Interval for Unit 2

**G. ATTACHMENTS**

None

**NINE MILE POINT UNIT 1  
INSERVICE INSPECTION INTERVAL  
RELIEF REQUEST ISI-19**

**A. COMPONENT IDENTIFICATION**

System: Emergency Condenser System-Supply

Class: Quality Group B, Code Class 2

Component Description: Pressure-retaining welds in piping containing austenitic weld material applied as Corrosion Resistant Cladding (CRC) on the inside surface

**B. ASME SECTION XI EXAMINATION REQUIREMENTS**

Rules for In-Service Inspection of Nuclear Power Plant Components, Section XI, 1989 Edition, No Addenda, Table IWC-2500-1, Examination Category C-F-1, "Pressure Retaining Welds in Piping"

| Item no. | Component Identification                                        | Examination Requirements                                                   |
|----------|-----------------------------------------------------------------|----------------------------------------------------------------------------|
| C5.11    | Circumferential Welds $\geq$ 3/8" NWT for Piping Greater NPS 4" | 100% volumetric and surface examination of each weld requiring examination |

10 CFR 50.55a(g)(6)(ii)(C) requires implementation of ASME Section XI, 1995 Edition with 1996 Addenda, Appendix VIII.

**C. RELIEF REQUESTED**

Pursuant to 10 CFR 50.55a (a)(3)(i), NMPC requests relief from the requirements of Appendix VIII for austenitic piping welds containing Corrosion Resistant Cladding (CRC) on the inside surface of piping.

**D. BASIS FOR RELIEF**

ASME Section XI, 1995 Edition through 1996 Addenda, Appendix VIII, Supplement 2 "Qualification Requirements for Wrought Austenitic Piping Welds", are applicable to the Emergency Condenser welds identified on Attachment 1. These piping welds contain austenitic weld material, that was applied to the inside surface of these welds. However, for austenitic welds clad with austenitic weld material, the presence of cladding adds additional challenges to the volumetric examination that are beyond the scope of Supplement 2 qualifications as currently implemented by PDI.

CRC is identified in NUREG 0313, "Technical Report on Material Selection and Processing Guidelines for BWR Coolant Pressure Boundary Piping", as a recommended way of mitigating intergranular stress corrosion cracking (IGSCC) in piping systems. However, the inclusion of CRC presents several problems not common to ultrasonic examination of wrought austenitic piping. These problems include anisotropy of the deposited weld metal and attenuation and scattering of the ultrasonic beam as it propagates through the various weld metal/basemetal interfaces. The attenuation and anisotropy of the deposited weld metal causes higher noise levels than those which occur during examination of welds without CRC applied. This impedes both penetration and signal interpretation.

Additional time is required to develop an implementation program, design, fabricate, and acquire specimens; develop the appropriate protocol and implementation procedures; finger print the specimens, develop procedures, and train personnel.



**NINE MILE POINT UNIT 1  
INSERVICE INSPECTION INTERVAL  
RELIEF REQUEST ISI-19**

**E. ALTERNATIVE EXAMINATIONS:**

NMPC requests authorization to:

- (1) Continue current industry practice specific to CRC ultrasonic examination techniques utilizing examiners possessing a demonstrated capability in application of longitudinal wave techniques.
- (2) Continue to evaluate the development of new or improved ultrasonic examination techniques with the intent of applying these techniques where practical improvement of examination coverage can be achieved.
- (3) Perform periodic system pressure tests per Category C-H, Table IWC-2500-1.

**F. IMPLEMENTATION SCHEDULE:**

Third Ten-Year Inservice Inspection Interval for Unit 1

**G. ATTACHMENTS TO THE RELIEF:**

Attachment 1 Applicable Welds With CRC

**NINE MILE POINT UNIT 1  
INSERVICE INSPECTION INTERVAL  
RELIEF REQUEST ISI-19**

| <b>ATTACHMENT 1<br/>APPLICABLE WELDS WITH CRC</b> |                         |                      |                    |                           |                                    |
|---------------------------------------------------|-------------------------|----------------------|--------------------|---------------------------|------------------------------------|
| <b>WELD IDENTIFICATION<br/>NUMBER</b>             | <b>WELD DESCRIPTION</b> | <b>CODE CATEGORY</b> | <b>ITEM NUMBER</b> | <b>IGSCC<br/>CATEGORY</b> | <b>THIRD INTERVAL<br/>SCHEDULE</b> |
| 39-WD-029C1                                       | PIPE-ELBOW              | C-F-1                | C5.11              | GL-A                      | 3 <sup>RD</sup> PERIOD             |
| 39-WD-033C1                                       | PIPE-NOZZLE             | C-F-1                | C5.11              | GL-A                      | N/A                                |
| 39-WD-037C1                                       | PIPE-ELBOW              | C-F-1                | C5.11              | GL-A                      | 2 <sup>ND</sup> PERIOD             |
| 39-WD-041C1                                       | PIPE-NOZZLE             | C-F-1                | C5.11              | GL-A                      | 3 <sup>RD</sup> PERIOD             |
| 39-WD-117C1                                       | PIPE-ELBOW              | C-F-1                | C5.11              | GL-A                      | 3 <sup>RD</sup> PERIOD             |
| 39-WD-121C1                                       | PIPE-NOZZLE             | C-F-1                | C5.11              | GL-A                      | 3 <sup>RD</sup> PERIOD             |
| 39-WD-127C1                                       | PIPE-ELBOW              | C-F-1                | C5.11              | GL-A                      | 1 <sup>ST</sup> PERIOD             |
| 39-WD-132C1                                       | PIPE-NOZZLE             | C-F-1                | C5.11              | GL-A                      | N/A                                |

**NINE MILE POINT UNIT 1  
INSERVICE INSPECTION INTERVAL  
RELIEF REQUEST ISI-20**

**A. COMPONENT IDENTIFICATION**

System: Reactor Pressure Vessel

Class: Quality Group A, ASME Code Class 1

Component Description: Reactor Pressure Vessel (RPV) welds with single side access, subject to ultrasonic examination with Supplement 4 and 6 of Appendix VIII to the 1995 Edition with 1996 Addenda of ASME Section XI.

| ASME Section XI, Table IWB-2500-1,<br>Examination Category B-A Requirements |                        |                      |                             |
|-----------------------------------------------------------------------------|------------------------|----------------------|-----------------------------|
| EXAM ITEM<br>NUMBER                                                         | WELD<br>IDENTIFICATION | WELD DESCRIPTION     | EXAMINATION<br>REQUIREMENTS |
| B1.30                                                                       | RV-WD-099              | Shell to Flange Weld | 100% of weld length         |
| B1.40                                                                       | RV-WD-001              | Head to Flange Weld  | 100% of weld length         |

**B. ASME SECTION XI EXAMINATION REQUIREMENTS**

10 CFR 50.55a(b)(2)(xvi)(A), requires that examinations performed from one side of a ferritic vessel weld must be conducted with equipment, procedures, and personnel that have demonstrated proficiency with single side examinations. To demonstrate equivalency to two sided examinations, the demonstration must be performed to the requirements of Appendix VIII as modified by this paragraph and 10 CFR 50.55a(b)(2)(xv)(B) through 10 CFR 50.55a(b)(2)(xv)(G), on specimens containing flaws with non-optimum sound energy reflecting characteristics or flaws similar to those in the vessel being examined.

**C. RELIEF REQUESTED**

Pursuant to 10 CFR 50.55a(g)(6)(i), NMPC requests relief from the new examination coverage and qualification demonstration requirements for reactor pressure vessel welds with single side access.

**D. BASIS FOR RELIEF**

There are currently no qualified ultrasonic examination procedures for single side coverage of Reactor Pressure Vessel welds that meet the requirements of the Final Rule. Therefore, complying with the requirements is impractical due to the limitations in technology.

Previous qualifications met all requirements of the ASME Section XI Code and the PDI at the time of qualification. Some of the previous qualifications listed a single side capability. However, these demonstrations do not meet the new requirements for single side access qualifications that are listed in the Final Rule, 10 CFR 50.55a(b)(2)(xv)(G)(1), (2), and 10 CFR 50.55a(b)(2)(xvi)(A). Utilities and PDQS certificate holders have either been notified or are in the process of being notified of these differences.

To meet the single side access requirements for reactor pressure vessels examinations in accordance with Supplement 4 and 6 procedures, additional qualifications will be required. The extent of procedure qualifications that must be performed to qualify vessel examinations for single side access remains unresolved at this time for the entire industry.

NMPC submitted a Request for Relief (ISI-1), in a letter, dated December 10, 1998 (NMP1L 1391), and received authorization to utilize an "Alternative for Examination of Reactor Vessel Shell Welds", USNRC Safety Evaluation, dated April 7, 1999 under TAC No. MA4383. As authorized by the USNRC, the use of PDI qualified

**NINE MILE POINT UNIT 1  
INSERVICE INSPECTION INTERVAL  
RELIEF REQUEST ISI-20**

personnel and procedures results in a more sensitive examination and provides added assurance for flaw detection and sizing, and was determined to be an acceptable alternative to the requirements of the 1989 Edition of Section XI and Regulatory Guide 1.150. NMPC committed to utilize the General Electric Remote Inspection System GERIS-2000. The GERIS-2000 system and procedures were demonstrated and qualified to PDI in accordance with ASME Section XI, 1992 Edition through 1993 Addenda of Appendix VIII.

The extent of examination coverage achieved during the previous examination activity is identified in Attachment 1 of this request for relief.

**E. ALTERNATIVE EXAMINATIONS**

As an alternate to the single sided requirements defined above, NMPC proposes the following:

1. As qualified through the Performance Demonstration Initiative, the best available ultrasonic examination techniques shall be used from the accessible side of the weld as discussed above in the basis for relief.
2. NMPC will continue to evaluate the development of new or improved ultrasonic examination techniques with the intent of applying these techniques where practical improvement of examination coverage can be achieved.
3. Because the exact extent of coverage achievable under these new rules are unknown, NMPC proposes the following:
  - A. To add the new extent of coverage under the new rules to Attachment 1, as they become available;
  - B. Update Attachment 1, following each refueling outage and include the updated Attachment in the periodic revision to the ISI program.
  - C. Submit the updated Attachment 1 as an integral part of the report submittal required by ASME Section XI, IWA-6000 and/or Code Case N-532, as applicable.
4. Attachment 1, shall be accessible for review by the enforcement and regulatory authorities having jurisdiction at the plant site in accordance with the provisions of ASME Section XI. The attached form or similar form, with the information provided will be maintained by NMPC.

**F. IMPLEMENTATION SCHEDULE**

Third Ten-Year Inservice Inspection Interval for Unit 1

**G. REFERENCES**

Federal Register, Volume 64, Number 183, dated September 22, 1999, amendment to 10 CFR 50.55(a) Code of Federal Regulations.

**NINE MILE POINT UNIT 1  
INSERVICE INSPECTION INTERVAL  
RELIEF REQUEST ISI-20**

**ATTACHMENT 1**  
**LIST OF RPV SINGLE SIDED EXAMINATIONS**  
**AS REQUIRED BY REQUEST FOR RELIEF ISI-20**

[illegible]