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June 1, 2000  
JPN-00-017

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

**Subject:** James A. FitzPatrick Nuclear Power Plant  
Docket 50-333  
**Request for Relief From Selected Portions of 10 CFR 50.55a**

**References:** 1. 64 FR 51370, September 22, 1999 "Industry Codes and Standards; Amended Requirements"  
2. EPRI "Draft Guideline for the Implementation of Appendix VIII and 10 CFR 50.55a," Revision D, April 2000.

Dear Sir:

In accordance with the provisions of 10 CFR 50.55a(g)(5)(iii) and 10 CFR 50.55a(a)(3)(i), the New York Power Authority requests relief from the requirements of 10 CFR 50 and Section XI of the ASME code for the James A. FitzPatrick nuclear power plant. Specifically, the Authority has prepared four separate relief requests: RR-22, RR-23, RR-24, and RR-25. Attachment I summarizes these four relief requests. Attachments II - V provide the details of the relief requests, along with the associated technical justification. A copy of the two ASME code cases referred to in the relief requests are included as Attachments VI and VII.

Three of the four relief requests (RR-22, RR-23 and RR-25) were made necessary by the changes adopted in 1999 to 10 CFR 50.55a "Codes and Standards," (Reference 1). The requests are consistent with the draft EPRI (Electric Power Research Institute) guidance on the implementation of these new requirements (Reference 2). The fourth relief request (RR-24) was not a direct result of the recently adopted changes.

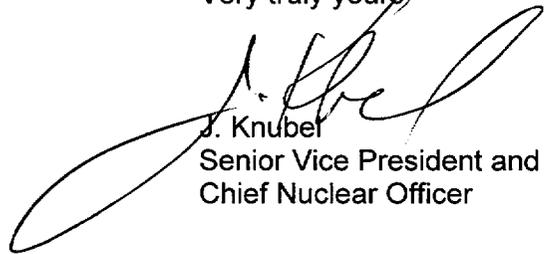
The Authority would like to use these reliefs in the upcoming refueling outage (RO14) at FitzPatrick. Therefore, the Authority requests that these relief requests be reviewed and approved prior to September 1, 2000.

A047

REN-001

This letter contains no new commitments. If you have any questions, please contact Ms. C.D. Faison.

Very truly yours,



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**Attachments:**

- I. Summary Table of Relief Requests
- II. Relief Request RR-22 – Request for Relief from the Requirements of 10CFR 50.55a(b)(2)(xv)(A) – Single Sided Access for Coverage and Qualification Demonstration
- III. Relief Request RR-23 – Request for Relief from the Requirements of ASME Section XI, 1995 Edition with 1996 Addenda, Sub-Article IWA-2300 – Qualification of Nondestructive Examination Personnel to CP-189, 1991 Edition, and the Additional Requirements of Division 1
- IV. Relief Request RR-24 – Request for Relief from the Requirements of ASME Section XI, 1989 Edition Examination Category B-D / Full Penetration Welds of Nozzles in Vessels, Item No. B3.90, Figure IWB-2500-7(a) & (b)
- V. Relief Request RR-25 – Request for Relief from the Requirements of ASME Section XI, 1995 Edition, up to and including 1996 Addenda of Appendix VIII qualification requirements and Appendix VII Sub-Article VII-4240
- VI. ASME Code Case N-583, Annual Training Alternative Section XI, Division 1
- VII. ASME 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, Fig. IWB-2500-7(a), and (c) Section XI, Division 1

## New York Power Authority, James A. FitzPatrick Nuclear Power Plant

Summary of Relief Requests

Identification	Subject	Details
RR-22	10CFR 50.55a(b)(2)(xv)(A) – Single Sided Access for Coverage and Qualification Demonstration	Requests relief to allow, as qualified through the Performance Demonstration Initiative, the best available techniques to be used from the accessible side of the weld for ultrasonic examinations performed on austenitic piping. This will require that the far side of the weld, which can only be accessed from one side, must be listed as best effort and an area of no coverage.
RR-23	ASME Section XI, 1995 Edition with 1996 Addenda, Sub-Article IWA-2300 – Qualification of Nondestructive Examination Personnel to CP-189, 1991 Edition, and the Additional Requirements of Division 1	Requests relief to allow, initial certification and re-certification of NDE personnel to be conducted in accordance with the requirements contained in the 1989 Edition of ASME Section XI.
RR-24	ASME Section XI, 1989 Edition Examination Category B-D / Full Penetration Welds of Nozzles in Vessels, Item No. B3.90, Figure IWB- 2500-7(a), (b) and (c)	Requests relief to use the alternative requirements of Code Case N-613 in lieu of the requirements of ASME Section XI, Figures IWB-2500-1 and IWB-2500-7 (b).
RR-25	ASME Section XI, 1995 Edition, up to and including 1996 Addenda of Appendix VIII qualification requirements and Appendix VII Sub- Article VII-4240	Requests relief to use the alternative requirements of Code Case N-583 in lieu of the requirements of ASME Section XI, 1995 Edition up to and including 1996 Addenda, Appendix VIII, Sub-article VII-4240.

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Relief Request RR-22 – Request for Relief from the Requirements of 10CFR  
50.55a(b)(2)(xv)(A) – Single Sided Access for Coverage and Qualification  
Demonstration

**A. SYSTEM / COMPONENT(s) FOR WHICH RELIEF IS REQUESTED**

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

**B. CODE REQUIREMENTS**

10 CFR 50.55a(b)(2)(xv)(A), 10 CFR 50.55a(b)(2)(xv) G, and 10 CFR 50.55a(b)(2)(xvi), define new requirements for coverage and qualification demonstration. These requirements affect both piping and RPV (Reactor Pressure Vessel) examinations.

**C. CODE REQUIREMENTS FROM WHICH RELIEF IS REQUESTED**

The PDI (Performance Demonstration Initiative) program is in agreement with the final rule (10 CFR 50.55a as effective November 22, 1999) regarding single side access for piping. The rule requires that if access is available the weld shall be scanned in each of the four directions (parallel and perpendicular to the weld) where required. Coverage credit may be taken for single side exams on ferritic piping. However, for austenitic piping, a procedure must be qualified with flaws on the inaccessible side of the weld.

Previously issued RPV qualifications do not meet the new requirements for single side access, that are listed in 10 CFR 50.55a(b)(2)(xv)(G)(1), (2), and 10 CFR 50.55a(b)(2)(xvi)(A), as effective November 22, 1999.

**D. BASIS FOR RELIEF**

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. In lieu of a full single side qualification, PDI offers a best effort approach, which demonstrates that the best available technology is applied. PDI Performance Demonstration Qualification Summary (PDQS) austenitic piping certificates list the limitation that single side examination is performed on a best efforts basis. This will require that the far side of the weld, which can only be accessed from one side, must be listed as an area of no coverage

RPV qualifications have been performed which met all requirements of the ASME Code and the PDI Program at the time of qualification. Some of these qualifications list a single side capability. However, these demonstrations do not meet the new requirements for single side access, qualifications that are listed in 10 CFR 50.55a(b)(2)(xv)(G)(1), (2), and 10 CFR 50.55a(b)(2)(xvi)(A). Licensees

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Relief Request RR-22 – Request for Relief from the Requirements of 10CFR  
50.55a(b)(2)(xv)(A) – Single Sided Access for Coverage and Qualification  
Demonstration

and PDQS certificate holders, which list single side qualifications, will be notified of these differences. New certificates will be issued as amended single side procedures are demonstrated and qualified. There are currently no qualified procedures.

**E. ALTERNATIVE EXAMINATIONS**

As qualified through the PDI, the best available techniques will be used from the accessible side of the weld

**F. IMPLEMENTATION SCHEDULE**

The remainder of 3<sup>RD</sup> Ten-Year interval

New York Power Authority, James A. FitzPatrick Nuclear Power Plant  
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Relief Request RR-23 – Request for Relief from the Requirements of ASME Section XI, 1995 Edition with 1996 Addenda, Sub-Article IWA-2300 – Qualification of Nondestructive Examination Personnel to CP-189, 1991 Edition, and the Additional Requirements of Division 1

**A. SYSTEM / COMPONENT(S) FOR WHICH RELIEF IS REQUESTED**

All components subject to ultrasonic examination with Appendix VIII to the 1995 Edition with 1996 Addenda of ASME Section XI.

**B. CODE REQUIREMENTS**

Sub-article IWA-2300 requires qualification of NDE personnel to CP-189, 1991 Edition, and the additional requirements of Division 1.

**C. CODE REQUIREMENTS FROM WHICH RELIEF IS REQUESTED**

Relief is requested from the provisions of Sub-article IWA-2300, Qualification of Nondestructive Examination Personnel.” This requires that personnel performing NDE shall be qualified and certified using a written practice prepared in accordance with CP-189, and the additional requirements of Division 1.

**D. BASIS FOR RELIEF**

10 CFR 50.55a (as effective November 22, 1999) requires the use of the 1995 Edition, with the 1996 Addenda for Appendix VIII qualification requirements. This also imposes the requirements of IWA and Appendix VII of the 1995 Edition, with 1996 Addenda of Section XI. This includes Sub-article IWA-2300, which requires a written practice prepared in accordance with CP-189, 1991 Edition, as amended by the requirements of Division 1.

This requires development, implementation, and to the extent possible, consolidation, of multiple certification requirements into one or more written practices. This is needed to address the various NDE certification requirements contained in SNT-TC-1A, for non-Appendix VIII applications and CP-189, for Appendix VIII applications. These are further modified by IWA-2300 and Appendix VII, as amended by respectively the 1989 Edition of Section XI or the 1995 Edition with 1996 Addenda of Section XI.

Relief is requested in accordance with 10 CFR 50.55a(a)(3)(ii) to continue basing all requirements for initial certification and recertification of ultrasonic examination personnel on the 1989 Edition of Section XI. This includes use of ASNT SNT-TC-1A, 1984, as amended by IWA-2300 and Appendix VII of Section XI, 1989 Edition.

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

New York Power Authority, James A. FitzPatrick Nuclear Power Plant  
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Relief Request RR-23 – Request for Relief from the Requirements of ASME Section XI,  
1995 Edition with 1996 Addenda, Sub-Article IWA-2300 – Qualification of Nondestructive  
Examination Personnel to CP-189, 1991 Edition, and the Additional Requirements of  
Division 1

and Appendix VII of the 1995 Edition and 1996 Addenda of Section XI are unwieldy and subjective because of the significant differences. Therefore, three less complex comparisons of technically significant items were prepared by EPRI in their draft "Guideline for the Implementation of Appendix VIII and 10 CFR 50.55a," Revision D dated April 18, 2000, pages 44-51.

As written, there are major differences between CP-189 and SNT-TC-1A. However, as illustrated in the comparisons, these are minimized by the moderating effects of the applicable IWA-2300 requirements and especially the Appendix VII requirements. Compliance with the specified requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety. For example, the 1995 Edition with the 1996 Addenda requires near vision acuity of 20/25 or greater Snellen fraction while the 1989 Edition requires Jaeger No. 1 print. Development and administration of a second or consolidated program would not enhance safety or quality and would serve as a burden, particularly in developing an additional written practice, tracking of certifications, duplication of paperwork, etc. This duplication would also apply to NDE vendor programs.

Current certifications are not affected, paragraph IWA-2310 in the 1995 Edition with 1996 Addenda states that certifications based on SNT-TC-1A are valid until recertification is required.

**E. PROPOSED ALTERNATE**

Initial certification and recertification of NDE personnel shall continue to be conducted in accordance with the requirements contained in the 1989 Edition of ASME Section XI.

**F. IMPLEMENTATION SCHEDULE**

The remainder of 3<sup>rd</sup> Ten-Year Interval

**G. ATTACHMENTS TO THE RELIEF**

Comparison of the Qualification and Certification Requirements of Ultrasonic Examiners Certified to CP-189, 1991, and SNT-TC-1A, 1984, as modified by IWA and Appendix VII of 1989 and 95/96 Edition of Section XI Respectively.

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Relief Request RR-24 – Request for Relief from the Requirements of ASME Section XI,  
1989 Edition Examination Category B-D / Full Penetration Welds of Nozzles in Vessels,  
Item No. B3.90, Figure IWB-2500-7(a), (b) and (c)

**A. SYSTEM / COMPONENT(s) FOR WHICH RELIEF IS REQUESTED**

Class: 1 Reactor Pressure Vessel

Pressure-retaining Nozzle-to-Vessel Welds / Code Cat. B-D, Item No. B3.90

**B. EXAMINATION REQUIREMENT**

Rules for Inservice Inspection of Nuclear Power Plant Components, Section XI, 1989 Edition, Examination Category B-D Full Penetration Welds of Nozzles in Vessels. Code Item B3.90, Figure IWB-2500-7 (a), (b) and (c).

ASME Section V, 1989 Edition, Article 4, Paragraphs; T-441.3.2.5 *Angle Beam Scanning*, T-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), NYPA requests to use the alternative requirements of Code Case N-613 in lieu of the requirements of ASME Section XI Figures IWB-2500-7 (a), IWB-2500-7 (b) and IWB-2500-7 (c). We also request to use this Code Case 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.

**D. BASIS FOR RELIEF**

FitzPatrick is currently required to perform in-service examinations of selected welds in accordance with the requirements of the 1989 Edition of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section XI, Rules for In-Service Inspection of Nuclear Power Plant Components. This Code edition invokes the examination volume requirements of Figures IWB-2500-7 (a), IWB-2500-7 (b), and IWB-2500-7 (c).

The examination volume for the Reactor Vessel pressure retaining nozzle-to-vessel welds extend 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 in-service cracking and has been extensively examined before the vessel was put into service and during the first inservice examination.

The implementation of Code Case N-613 is also expected to reduce on-vessel examination time by as much as 12 hours, which translates to significant cost savings and reduced personnel radiation exposure.

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Relief Request RR-24 – Request for Relief from the Requirements of ASME Section XI,  
1989 Edition Examination Category B-D / Full Penetration Welds of Nozzles in Vessels,  
Item No. B3.90, Figure IWB-2500-7(a), (b) and (c)

**E. ALTERNATIVE EXAMINATIONS:**

- 1) Perform examinations in accordance with Code Case N-613

**F. IMPLEMENTATION SCHEDULE:**

- 1) Remainder of Interval
- 2) November 22, 2002

**G. ATTACHMENTS TO THE RELIEF:**

Code Case N-613

New York Power Authority, James A. FitzPatrick Nuclear Power Plant  
Third Inspection Interval

Relief Request RR-25 – Request for Relief from the Requirements of ASME Section XI, 1995 Edition, up to and including 1996 Addenda of Appendix VIII qualification requirements and Appendix VII Sub-Article VII-4240

**A. SYSTEM / COMPONENT(s) FOR WHICH RELIEF IS REQUESTED**

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

**B. CODE REQUIREMENTS**

Sub-article VII-4240 requires a minimum of 10 hours of annual training.

**C. CODE REQUIREMENTS FROM WHICH RELIEF IS REQUESTED**

Relief is requested from the provisions of Sub-article VII-4240, Annual Training. This requires supplemental training on an annual basis to impart knowledge of new developments, material failure modes, and any pertinent technical topics as determined by the employer. The extent of training shall be a minimum of 10 hours per year.

**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 also imposes the requirements of Appendix VII of the 1995 Edition, with 1996 Addenda of Section XI. This includes Sub-article VII-4240, which requires a minimum of 10 hours of annual training.

Paragraph 2.4.1.1.1 in the Federal register contained the following statement, "The NRC had determined that this requirement (*10 hours of training on an annual basis*) was inadequate for two reasons. The first reason was that 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 rulemaking, experience and studies indicate that the examiner must practice on a frequent basis to maintain the capability for proper interpretation. The second reason is related to the length of training and its frequency. Studies have shown that an examiner's capability begins to diminish within approximately 6 months if skills are not maintained. Thus, the NRC had determined that 10 hours of annual training is not sufficient practice to maintain skills, and that 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

New York Power Authority, James A. FitzPatrick Nuclear Power Plant  
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Relief Request RR-25 – Request for Relief from the Requirements of ASME Section XI,  
1995 Edition, up to and including 1996 Addenda of Appendix VIII qualification  
requirements and Appendix VII Sub-Article VII-4240

developments, material failure modes, and other pertinent technical topics through other means. Thus, the NRC has decided to adopt in the final rule the PDI position on this matter. These changes are reflected in § 50.55a(b)(2)(xiv)".

This paragraph of the final rule states: "(xiv) Appendix VIII personnel qualification. 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.

Code Case N-583 responds to an inquiry about what alternative to the annual training requirements of Appendix VII-4240 may be used. The reply states "... supplemental practice may be used to maintain UT personnel examination skills. Personnel shall practice UT techniques by examining or by analyzing prerecorded data from materials or welds containing flaws similar to those that may be encountered during inservice examinations. This practice shall be at least 8 hr per year and shall be administered by an NDE Instructor or Level III; no examination is required.

Relief is requested in accordance with 10 CFR 50.55a(a)(3)(i) to use Code Case N-583 for annual training of ultrasonic examination personnel. When completed no earlier than 6 months prior to performing ultrasonic examinations at a licensee's facility this training will also satisfy the requirements of 10 CFR 50.55a(b)(2)(xiv) of the final rule.

**E. ALTERNATIVE EXAMINATIONS**

Annual training, as required by VII-4240, shall be conducted in accordance with Code Case N-583.

**F. IMPLEMENTATION SCHEDULE**

Remainder of 3<sup>rd</sup> Ten-Year Interval

**G. ATTACHMENT TO THE RELIEF:**

ASME Code Case N-583,

Attachment VI to JPN-00-017

New York Power Authority, James A. FitzPatrick Nuclear Power Plant  
Third Inspection Interval

**ASME Code Case N-583**

CASES OF ASME BOILER AND PRESSURE VESSEL CODE

**Approval Date: August 14, 1997**

*See Numerical Index for expiration  
and any reaffirmation dates.*

**Case N-583  
Annual Training Alternative  
Section XI, Division 1**

*Inquiry:* What alternative to the annual training requirements of Appendix VII-4240 may be used?

*Reply:* It is the opinion of the Committee that, as an alternative to the requirements of Appendix VII-4240, supplemental practice may be used to maintain UT personnel examination skills. Personnel shall practice UT techniques by examining or by analyzing pre-recorded data from material or welds containing flaws similar to those that may be encountered during inservice examinations. This practice shall be at least 8 hr per year and shall be administered by an NDE Instructor or Level III; No examination is required.

Attachment VII to JPN-00-017

New York Power Authority, James A. FitzPatrick Nuclear Power Plant  
Third Inspection Interval

**ASME Code Case N-613**

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**

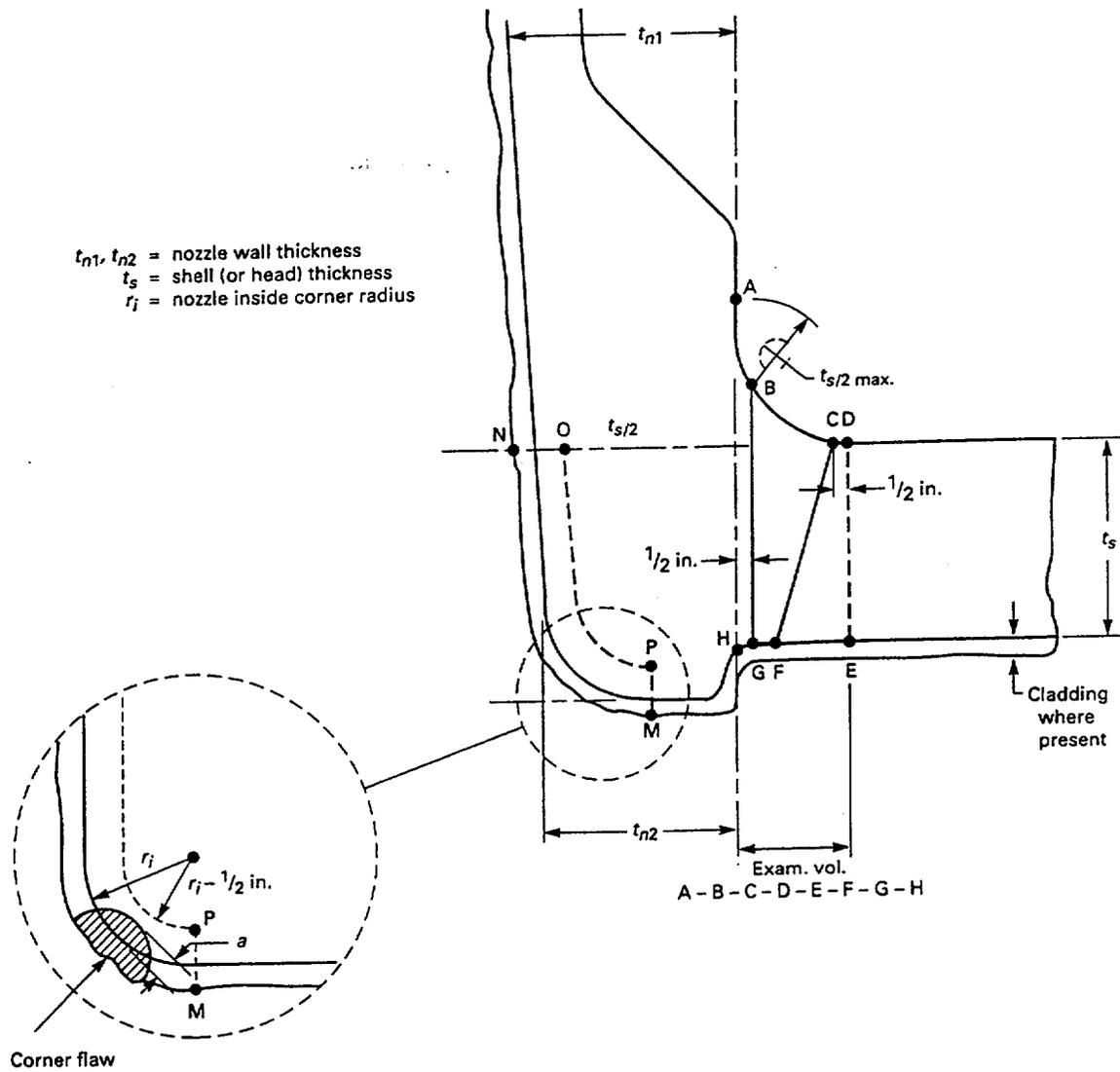
*Inquiry:* What alternatives to the examination requirements of Section XI, Appendix I and Section V, Article 4 are permissible when performing ultrasonic examination of reactor vessel-to-nozzle welds?

*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.

CASE (continued)

**N-613**

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)]

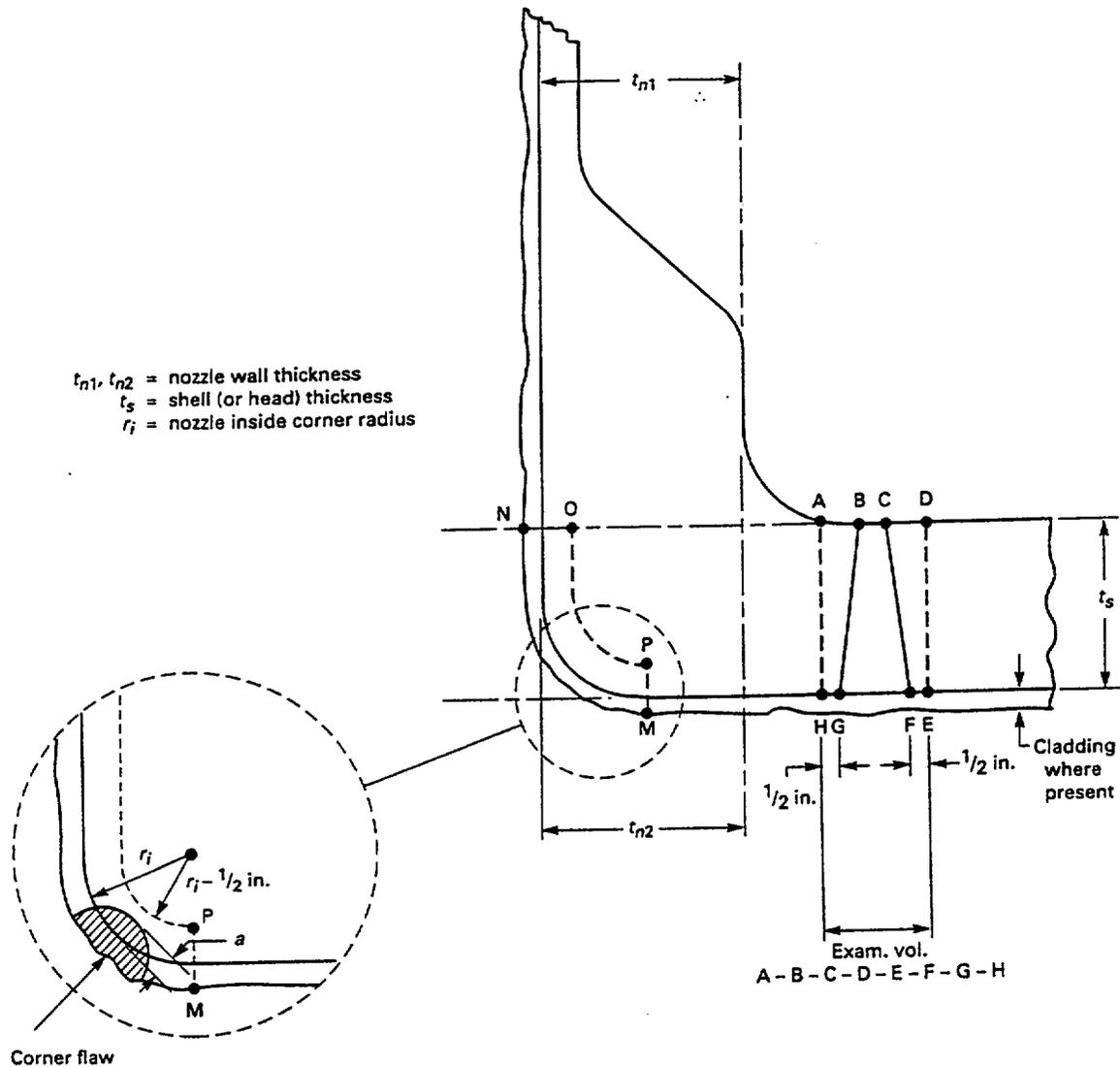
- C-D-E-F
- B-C-F-G
- A-B-G-H
- M-N-O-P

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)

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:**

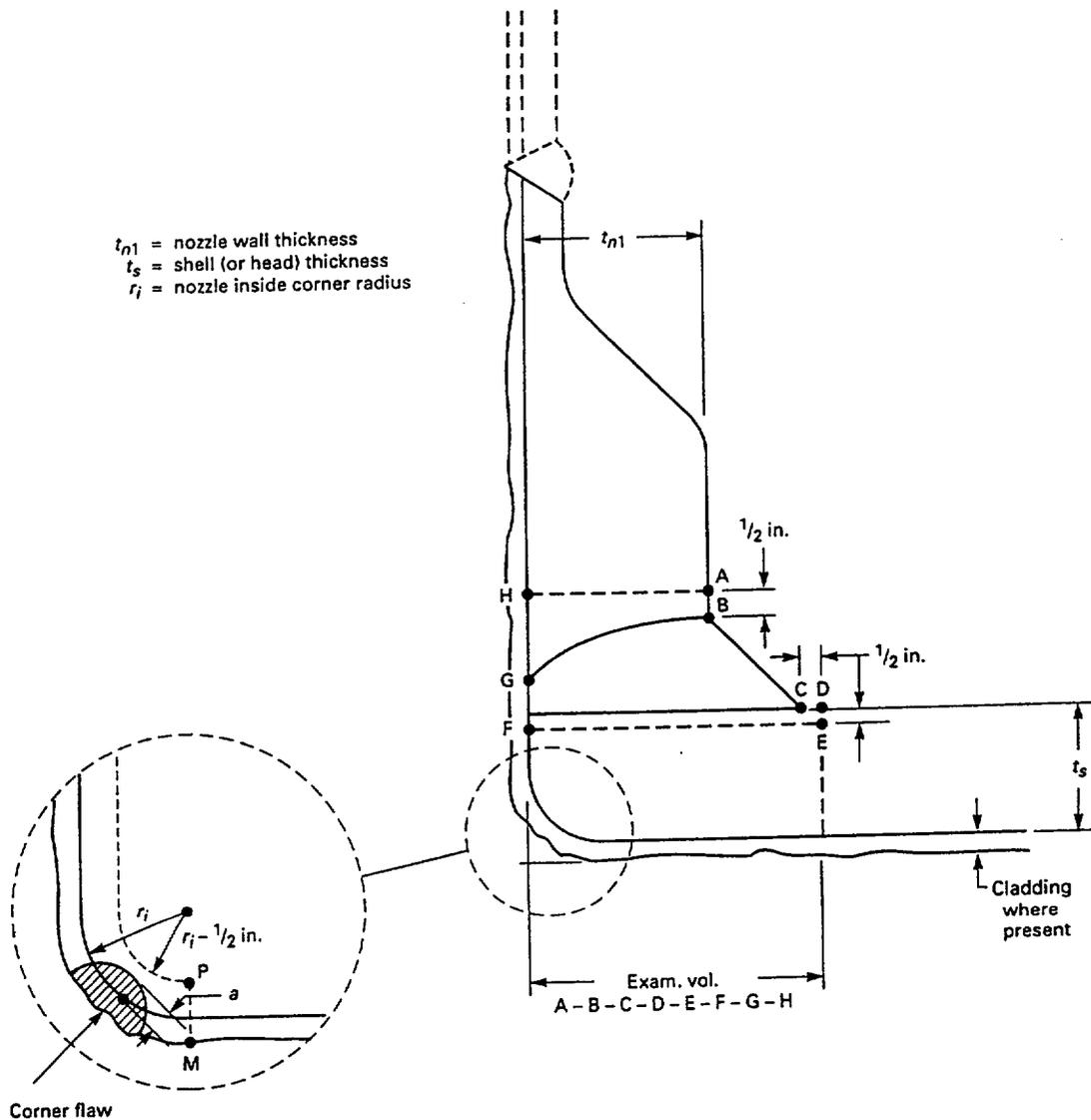
- (1) Examination regions are identified for the purpose of differentiating the acceptance standards in IWB-3512.
- (2) Examination volumes may be determined either by direct measurements on the component or by measurements based on design drawings.

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

CASE (continued)

N-613

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)