

ENERGY NORTHWEST

P.O. Box 968 ■ Richland, Washington 99352-0968

October 6, 2000
GO2-00-174

Docket No. 50-397

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

Gentlemen:

Subject: **WNP-2, OPERATING LICENSE NPF-21
INSERVICE INSPECTION PROGRAM PLAN
RELIEF REQUESTS 2ISI-21 THROUGH 2ISI-25**

Reference: Letter GO2-94-286, dated December 27, 1994, JV Parrish (SS) to NRC,
"Second 10-Year Inservice Inspection Program Plan"

This letter submits five relief requests and one commitment change to our Second 10-Year Inservice Inspection Program Plan (Reference 1) for NRC review and approval.

By Federal Register Notice (64FR51370) dated September 22, 1999, the NRC amended 10CFR50.55a to require a phased-in implementation of ASME Section XI 1995 Edition, 1996 Addenda Appendix VIII. The initial implementation began May 22, 2000. Additional requests for relief are required by WNP-2 for implementation of Appendix VIII, portions of the associated later versions of the ASME Section XI Code, and portions of 10CFR50.55a.

To support Energy Northwest's Appendix VIII implementation, approval of the attached relief requests will be required prior to our spring 2001 refuel outage. To support this implementation, review and approval of these relief requests is requested prior to March 31, 2001. This letter contains no new commitments.

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The five relief requests are attached for NRC review and are summarized in the table below.

Attachment	Relief Request	Subject	Summary
1	2ISI-21	RPV length sizing criteria	Use length sizing criteria qualification of 0.75 Root Mean Square Error (RMSE).
2	2ISI-22	Components with single sided access	Use the latest and best techniques qualified through the Performance Demonstration Initiative (PDI).
3	2ISI-23	Personnel qualifications	Use ASME Section XI 1989 Edition for personnel qualifications.
4	2ISI-24	Annual training requirement	Annual ultrasonic training shall be conducted in accordance with 10CFR50.55a(b)(2)(xiv).
5	2ISI-25	RPV nozzle-to-vessel examination	Use Code Case N-613.

The commitment change (Attachment 6) is to use Appendix VIII as an alternate to Regulatory Guide 1.150, "Ultrasonic Testing of Reactor Vessel Welds during Preservice and Inservice Examination," Revision 1, February 1983.

A copy of this letter has been provided to the Chief Boiler Inspector of the State of Washington.

Should you have any questions or desire additional information regarding this matter, please contact PJ Inserra at (509) 377-4147.

Respectfully,



DK Atkinson
(Acting) Vice President, Operations Support/PIO
Mail Drop PE08

Attachments

cc: EW Merschhoff - NRC RIV
JS Cushing - NRC NRR
NRC Resident Inspector - 927N
TC Poindexter - Winston & Strawn

GM Foster - ANII
Chief Boiler Inspector State of Washington
DL Williams - BPA/1399

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RELIEF REQUEST 2ISI-21

Components for Which Relief is Requested

ASME Section XI, Class 1, Examination Category B-A, "Pressure Retaining Reactor Pressure Vessel Welds."

Identification No.	Description	Drawing	Code Category	Item No.
AA	Bottom Head To Shell Course #1 Weld	RPV-101	B-A	B1.11
AB	#1-#2 Shell Course Circ. Weld	RPV-101	B-A	B1.11
AC	#2-#3 Shell Course Circ. Weld	RPV-101	B-A	B1.11
AD	#3-#4 Shell Course Circ. Weld	RPV-101	B-A	B1.11
AE	#4 Shell Course to Flange Circ. Weld	RPV-101	B-A	B1.30
BA	#1 Shell Course Vertical Weld @45	RPV-101	B-A	B1.12
BB	#1 Shell Course Vertical Weld @135	RPV-101	B-A	B1.12
BC	#1 Shell Course Vertical Weld @225	RPV-101	B-A	B1.12
BD	#1 Shell Course Vertical Weld @315	RPV-101	B-A	B1.12
BE	#2 Shell Course Vertical Weld @ 10	RPV-101	B-A	B1.12
BF	#2 Shell Course Vertical Weld @100	RPV-101	B-A	B1.12
BG	#2 Shell Course Vertical Weld @190	RPV-101	B-A	B1.12
BH	#2 Shell Course Vertical Weld @280	RPV-101	B-A	B1.12
BJ	#3 Shell Course Vertical Weld @ 50	RPV-101	B-A	B1.12
BK	#3 Shell Course Vertical Weld @170	RPV-101	B-A	B1.12
BM	#3 Shell Course Vertical Weld @290	RPV-101	B-A	B1.12
BN	#4 Shell Course Vertical Weld @330	RPV-101	B-A	B1.12
BP	#4 Shell Course Vertical Weld @ 90	RPV-101	B-A	B1.12
BR	#4 Shell Course Vertical Weld @210	RPV-101	B-A	B1.12
MRP-1	Repair Area	RPV-101	B-A	B1.51
DA	Bottom Head Meridian @272	RPV-102	B-A	B1.22
DB	Bottom Head Meridian @332	RPV-102	B-A	B1.22
DC	Bottom Head Meridian @ 32	RPV-102	B-A	B1.22
DD	Bottom Head Meridian @ 92	RPV-102	B-A	B1.22
DE	Bottom Head Meridian @152	RPV-102	B-A	B1.22
DF	Bottom Head Meridian @212	RPV-102	B-A	B1.22
AJ	Bottom Head Dollar Plate	RPV-102	B-A	B1.21
DG	Bottom Head Dollar /270	RPV-102	B-A	B1.21
DR	Bottom Head Dollar / 90	RPV-102	B-A	B1.21
AG	Bottom Head-Flange Weld	RPV-102	B-A	B1.40
AH	Top Head Dollar Plate	RPV-102	B-A	B1.21
DH	Top Head Meridian @15	RPV-102	B-A	B1.22

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Identification No.	Description	Drawing	Code Category	Item No.
DJ	Top Head Meridian @75	RPV-102	B-A	B1.22
DK	Top Head Meridian @135	RPV-102	B-A	B1.22
DM	Top Head Meridian @195	RPV-102	B-A	B1.22
DN	Top Head Meridian @255	RPV-102	B-A	B1.22
DP	Top Head Meridian @315	RPV-102	B-A	B1.22

ASME Section XI Requirements

ASME Section XI, 1995 Edition, 1996 Addenda requires examinations be performed in accordance with Appendix VIII of this edition and addenda.

Code Requirements from Which Relief is Requested

ASME Section XI, 1995 Edition, 1996 Addenda, Appendix VIII, Supplement 4, Subparagraph 3.2(b), length sizing qualification criteria that flaw lengths estimated by ultrasonic examination be the true length (-¼ inch +1 inch).

Basis for Relief

Relief is requested in accordance with 10CFR50.55a(a)(3)(i), in that the proposed alternate provides an acceptable level of quality and safety.

Alternative Examination

In lieu of the length sizing requirements of the ASME Section XI, 1995 Edition, 1996 Addenda, Appendix VIII, Supplement 4, Subparagraph 3.2(b), a length sizing qualification criteria of 0.75 inch Root Mean Square Error (RMSE) will be used.

Justification for Granting Relief

Qualifications administered by the Performance Demonstration Initiative (PDI) have used a length sizing qualification criteria of 0.75 inch RMSE since the inception of these demonstrations in 1994. The 0.75 inch RMSE length sizing tolerance is included in ASME Code Case N-622. Relief to use 0.75 inch RMSE has been previously granted (Reference 1).

The NRC performed an assessment of the PDI program in 1995. As a part of this assessment, they reviewed exceptions to the ASME Code, which was part of the PDI Program. The assessment report states that NRC "does not take exception to the 0.75 inch RMSE length sizing tolerance" (Reference 2).

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Conversations between NRC Staff and representatives from PDI were held on January 12, 2000. In this conversation, it was acknowledged that the 0.75 inch RMSE length sizing criteria should have been addressed in the modifications provided for Supplement 4 to Appendix VIII in 10CFR50.55a(b)(2)(xv)(C), (Reference 3). It was also stated that this would be corrected in future revisions.

Implementation Schedule

This relief request applies during the remaining portion of the second inspection interval beginning on the date of relief request approval.

References

1. Letter dated March 24, 2000, Anthony J. Mendiola (NRC) to Guy G. Campbell (FirstEnergy Nuclear Operating Company), "Davis-Bessie Nuclear Power Station - Safety Evaluation of Alternative to ASME Code, Relief Request RR-A21 (TAC No. MA8294)."
2. NRC Assessment of the PDI Program, Jack R. Strosnider (NRC), to Bruce J. Sheffel (PDI), March 6, 1996, Table 2, Item 94-005, p34.
3. 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, U.S. NRC, March 6, 2000.

NRC Safety Evaluation of Relief Request

NRC review and approval is required prior to implementation.

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RELIEF REQUEST 2ISI-22

Components 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.

Regulatory Requirements

10CFR50.55a(b)(2)(xv)(A), 10CFR50.55a(b)(2)(xv)(G), and 10CFR50.55a(b)(2)(xvi), published September 22, 1999 (Final Rule), define new requirements for coverage and qualification demonstrations. These requirements affect both piping and reactor pressure vessel (RPV) examinations. The requirements are defined below.

10CFR50.55a(b)(2)(xv)(A): When applying Supplements 2 and 3 to Appendix VIII, the following examination coverage criteria requirements must be used:

- (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 is not possible, full coverage credit may be claimed from a single side for ferritic welds. Where examination from both sides is not possible on austenitic welds, full coverage credit from a single side may be claimed only after completing a successful single sided Appendix VIII demonstration using flaws on the opposite side of the weld.

10CFR50.55a(b)(2)(xv)(G): When applying Supplement 4 to Appendix VIII, Supplement 6 to Appendix VIII, or combined Supplement 4 and Supplement 6 qualification, the following additional provisions must be used, and examination coverage must include:

- (1) The clad-to-base-metal-interface, including a minimum of 15 percent T (measured from the clad-to-base-metal-interface), shall be examined from four orthogonal directions using procedures and personnel qualified in accordance with Supplement 4 to Appendix VIII.
- (2) If the clad-to-base-metal-interface procedure demonstrates detectability of flaws with a tilt angle relative to the weld centerline of at least 45 degrees, the remainder of the examination volume is considered fully examined if coverage is obtained in one parallel and one perpendicular direction. This must be accomplished using a procedure and personnel qualified for single-side examination in accordance with Supplement 6. Subsequent examinations of this volume may be performed using examination techniques qualified for a tilt angle of at least 10 degrees.

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- (3) The examination volume not addressed by Section 50.55a(b)(2)(xv)(G)(1) is considered fully examined if coverage is obtained in one parallel and one perpendicular direction, using a procedure and personnel qualified for single sided examination when the provisions of Section 50.55a(b)(2)(xv)(G)(2) are met.
- (4) Where applications are limited by design to single side access, credit may be taken for the full volume provided the examination volume is covered from a single direction perpendicular to the weld and the weld volume is examined from at least one direction parallel to the weld.

10CFR50.55a(b)(2)(xvi) Appendix VIII single side ferritic vessel and piping and stainless steel piping examination.

- (A) 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 Sections 50.55a(b)(2)(xv)(B) through (G), on specimens containing flaws with non-optimum sound energy reflecting characteristics or flaws similar to those in the vessel being examined.
- (B) 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 Section 50.55a(b)(2)(xv)(A).

Regulatory Requirements from Which Relief is Requested

Relief is requested from the requirements of:

- 1) 10CFR50.55a(b)(2)(xv)(A) "Where examination from both sides is not possible on austenitic welds, full coverage credit from a single side may be claimed only after completing a successful single sided Appendix VIII demonstration using flaws on the opposite side of the weld."
- 2) 10CFR50.55a(b)(2)(xv)(G) "When applying Supplement 4 to Appendix VIII, Supplement 6 to Appendix VIII, or combined Supplement 4 and Supplement 6 qualification, the following additional provisions must be used, and examination coverage must include:

The clad-to-base-metal-interface, including a minimum of 15 percent T (measured from the clad-to-base-metal-interface), shall be examined from four orthogonal directions using procedures and personnel qualified in accordance with Supplement 4 to Appendix VIII.

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- (1) If the clad-to-base-metal-interface procedure demonstrates detectability of flaws with a tilt angle relative to the weld centerline of at least 45 degrees, the remainder of the examination volume is considered fully examined if coverage is obtained in one parallel and one perpendicular direction. This must be accomplished using a procedure and personnel qualified for single side examination in accordance with Supplement 6. Subsequent examinations of this volume may be performed using examination techniques qualified for a tilt angle of at least 10 degrees.
 - (2) The examination volume not addressed by Section 50.55a(b)(2)(xv)(G)(1) is considered fully examined if coverage is obtained in one parallel and one perpendicular direction, using a procedure and personnel qualified for single sided examination when the provisions of Section 50.55a(b)(2)(xv)(G)(2) are met.
 - (3) Where applications are limited by design to single side access, credit may be taken for the full volume provided the examination volume is covered from a single direction perpendicular to the weld and the weld volume is examined from at least one direction parallel to the weld.”
- 3) 10CFR50.55a(b)(2)(xvi) “Appendix VIII single side ferritic vessel and piping and stainless steel piping examination.
- (A) 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 Sections 50.55a(b)(2)(xv)(B) through (G), on specimens containing flaws with non-optimum sound energy reflecting characteristics or flaws similar to those in the vessel being examined.
 - (B) 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 Section 50.55a(b)(2)(xv)(A).”

Basis for Relief

Relief is requested in accordance with 10CFR50.55a(a)(3)(ii) in that compliance with the Final Rule presents an unusual difficulty.

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Alternative Examinations

As qualified through the Performance Demonstration Initiative (PDI), the latest and best available techniques will be used from the accessible side of the weld.

Justification for the Alternate Examination

The Final 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. Current technology is not capable of reliably detecting or sizing flaws on the far side of an austenitic weld for configurations common to U.S. nuclear applications. To demonstrate that the best available technology was applied, PDI provides a best effort qualification instead of a complete single side qualification. Performance Demonstration Initiative Performance Demonstration Qualification Summary (PDQS) austenitic piping certificates list the limitation that single side examination is performed on a best effort 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.

There are currently no PDI qualified procedures to meet these new rules. 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 the Final Rule, 10CFR50.55a(b)(2)(xv)(G)(1), (2), and 10CFR50.55a(b)(2)(xvi)(A).

Implementation Schedule

The alternative, when approved by the NRC, will be implemented during the entire second inspection interval or until such time that PDI qualification is available.

NRC Safety Evaluation of Relief Request

NRC review and approval is required prior to implementation.

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RELIEF REQUEST 2ISI-23

Components 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.

ASME Section XI Requirements

For components subject to examination with Appendix VIII of the 1995 Edition, 1996 Addenda of ASME Section XI Subarticle IWA-2300 requires qualification of Non Destructive Examination (NDE) personnel to CP-189, 1991 Edition, and the additional requirements of IWA-2000. For components not subject to examination with Appendix VIII of the 1995 Edition, 1996 Addenda of ASME Section XI, Subarticle IWA-2300 of ASME Section XI 1989 Edition requires qualification of NDE personnel to ASNT SNT-TC-1A, 1984, and the additional requirements of IWA-2000.

Code Requirements from Which Relief is Requested

Relief is requested from the provisions of ASME Section XI, 1995 Edition, 1996 Addenda Subarticle IWA-2300, "Qualifications of Nondestructive Examination Personnel." This Subarticle requires personnel that perform nondestructive examinations be qualified and certified using a written practice in accordance with ANSI/ASNT CP-189, "Standard for Qualification and Certification of Nondestructive Testing Personnel," as amended by the requirements of ASME Section XI.

Basis for Relief

Relief is requested in accordance with 10CFR50.55a(a)(3)(i) in that the proposed alternative provides an acceptable level of quality and safety.

Alternate Requirements

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. This includes use of ASNT SNT-TC-1A, 1984, as amended by IWA-2300 and Appendix VII of Section XI, 1989 Edition. Personnel performing ultrasonic examinations shall also meet the requirements specified in 10CFR50.55a as amended by 64FR51370, when applicable, which set forth the requirements for the qualification of personnel by demonstration. These alternate requirements will be revised to the latest written practice, referenced in 10CFR50.55a, when the ISI Program Plan is revised for the third ISI inspection interval. The revision is anticipated to be completed in 2005.

Vendor personnel may be certified to this alternate written practice or to ASME Section XI, 1995 Edition, 1996 Addenda as described in 10CFR50.55a.

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RELIEF REQUEST 2ISI-23

Justification for Granting Relief

10CFR50.55a was amended in the Federal Register (64FR 51370, dated September 22, 1999) to require 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 Subarticle 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 Subarticle IWA-2300 and Appendix VII, as amended respectively by the 1989 Edition of Section XI or the 1995 Edition with 1996 Addenda of Section XI.

Regardless of whether CP-189 or ASNT SNT-TC-1A is the base document used to prepare the written practice, all personnel conducting examinations to Appendix VIII requirements must be qualified in accordance with Appendix VIII and all personnel qualified through the Performance Demonstration Initiative (PDI) program must be qualified in accordance with Appendix VIII. The certified examiners will meet PDI qualification requirements.

In lieu of maintaining redundant, possibly conflicting programs, the proposed alternative of maintaining the current program for qualifications of 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.

Implementation Schedule

This relief request applies during the remaining portion of the second inspection interval beginning on the date of relief request approval.

NRC Safety Evaluation of Relief Request

NRC review and approval is required prior to implementation.

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RELIEF REQUEST 2ISI-24

Components for Which Relief is Requested

All components subject to ultrasonic examination in accordance with the 1989 Edition and the 1995 Edition through the 1996 Addenda of ASME Section XI.

Code Requirements

ASME Section XI, 1989 Edition and 1995 Edition, 1996 Addenda, Appendix VII, Paragraph VII-4240 requires a minimum of 10 hours of annual training.

Code Requirements for Which Relief is Requested

Appendix VII, Paragraph VII-4240, "Annual Training" 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.

Basis for Relief

Relief is requested in accordance with 10CFR50.55a(a)(3)(i), in that the proposed alternate provides an acceptable level of quality and safety.

Alternative Requirement

Annual ultrasonic training shall be conducted in accordance with 10CFR50.55a(b)(2)(xiv) in lieu of Section XI, Appendix VII, Paragraph VII-4240.

Justification for Granting Relief

10CFR50.55a was amended in the Federal Register (64FR51370, 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 Paragraph 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

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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 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."

Implementation of the requirements contained in ASME Section XI and the Final Rule will result in redundant systems. The use of the Final Rule in lieu of Section XI will simplify record keeping, satisfy needs for maintaining skills, and provide an acceptable level of safety.

Implementation Schedule

This relief request applies during the remaining portion of the second inspection interval beginning on the date of relief request approval.

NRC Safety Evaluation of Relief Request

NRC review and approval is required prior to implementation.

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RELIEF REQUEST 2ISI-25

Components for Which Relief Is Requested

Code Category B-D, Item Number B3.90, "Reactor Pressure Vessel Pressure-Retaining Nozzle-to-Vessel Welds."

Identification No.	Description	Drawing	Code Category	Item No.
N1-0	RRC Nozzle To Vessel @ 0	RPV-101	B-D	B3.90
N1-180	RRC Nozzle To Vessel @ 180	RPV-101	B-D	B3.90
N2-120	RRC Nozzle To Vessel @ 120	RPV-101	B-D	B3.90
N2-150	RRC Nozzle To Vessel @ 150	RPV-101	B-D	B3.90
N2-210	RRC Nozzle To Vessel @ 210	RPV-101	B-D	B3.90
N2-240	RRC Nozzle To Vessel @ 240	RPV-101	B-D	B3.90
N2-270	RRC Nozzle To Vessel @ 270	RPV-101	B-D	B3.90
N2-30	RRC Nozzle To Vessel @ 30	RPV-101	B-D	B3.90
N2-300	RRC Nozzle To Vessel @ 300	RPV-101	B-D	B3.90
N2-330	RRC Nozzle To Vessel @ 330	RPV-101	B-D	B3.90
N2-60	RRC Nozzle To Vessel @ 60	RPV-101	B-D	B3.90
N2-90	RRC Nozzle To Vessel @ 90	RPV-101	B-D	B3.90
N3-108	MS Nozzle To Vessel @ 108	RPV-101	B-D	B3.90
N3-252	MS Nozzle To Vessel @ 252	RPV-101	B-D	B3.90
N3-288	MS Nozzle To Vessel @ 288	RPV-101	B-D	B3.90
N3-72	MS Nozzle To Vessel @ 72	RPV-101	B-D	B3.90
N4-150	FW Nozzle To Vessel @ 150	RPV-101	B-D	B3.90
N4-210	FW Nozzle To Vessel @ 210	RPV-101	B-D	B3.90
N4-270	FW Nozzle To Vessel @ 270	RPV-101	B-D	B3.90
N4-30	FW Nozzle To Vessel @ 30	RPV-101	B-D	B3.90
N4-330	FW Nozzle To Vessel @ 330	RPV-101	B-D	B3.90
N4-90	FW Nozzle To Vessel @ 90	RPV-101	B-D	B3.90
N5-120	LPCS Nozzle To Vessel @ 120	RPV-101	B-D	B3.90
N6-135	LPCI Nozzle To Vessel @ 135	RPV-101	B-D	B3.90
N6-315	LPCI Nozzle To Vessel @ 315	RPV-101	B-D	B3.90
N6-45	LPCI Nozzle To Vessel @ 45	RPV-101	B-D	B3.90
N7	Head Spare Nozzle Top Head	RPV-102	B-D	B3.90
N8	Head Vent Nozzle Top Head	RPV-102	B-D	B3.90
N9-105	Jet Pump In Nozzle To Vessel @105	RPV-101	B-D	B3.90
N9-285	Jet Pump In Nozzle To Vessel @285	RPV-101	B-D	B3.90
N10-180	CRD Nozzle To Vessel @180	RPV-101	B-D	B3.90
N16-240	HPCS Nozzle To Vessel @ 240	RPV-101	B-D	B3.90
N18	Spare Nozzle Top Head	RPV-102	B-D	B3.90

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RELIEF REQUEST 2ISI-25

Code Requirements

ASME 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).

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."

Code Requirements from Which Relief is Requested

ASME Section XI Figures IWB-2500-7 (a) and IWB-2500-7 (b).

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.

Basis For Relief

Relief is requested in accordance with 10CFR50.55a(a)(3)(i) in that the proposed alternative provides an acceptable level of quality and safety.

Alternative Examinations

Perform examinations in accordance with Code Case N-613 and ASME Code, Section XI, Division 1, 1995 Edition, 1996 Addenda, Appendix VIII, as required by 10CFR50.55a.

Justification for Granting Relief

WNP-2 is currently required to perform in-service examinations of selected welds in accordance with the requirements of 10CFR50.55a and ASME Section XI, 1989 Edition. 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 20-year old examination methodology. WNP-2 will perform the required examinations using the methodology of Appendix VIII (ASME Section XI 1995 Edition, 1996 Addenda as modified by 10CFR50.55a including the alternative of relief request 2ISI-21 (0.75 RMSE length sizing qualification criteria). This will provide added assurance that the Reactor Vessel welds have remained free of service related flaws thus enhancing quality and ensuring plant safety and reliability.

**INSERVICE INSPECTION PROGRAM PLAN
RELIEF REQUESTS 2ISI-21 THROUGH 2ISI-25
ATTACHMENT 5
Page 3 of 3**

RELIEF REQUEST 2ISI-25

The current 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, which translates to significant cost savings and reduced personnel radiation exposure.

Implementation Schedule

This relief request applies during the remaining portion of the second inspection interval beginning on the date of relief request approval.

NRC Safety Evaluation of Relief Request

NRC review and approval is required prior to implementation.

Chief Boiler Inspector, State of Washington, approval is required prior to implementation.

CASES OF ASME BOILER AND PRESSURE VESSEL CODE

Approval Date: July 30, 1998

See Numeric Index for expiration
and any reaffirmation dates.

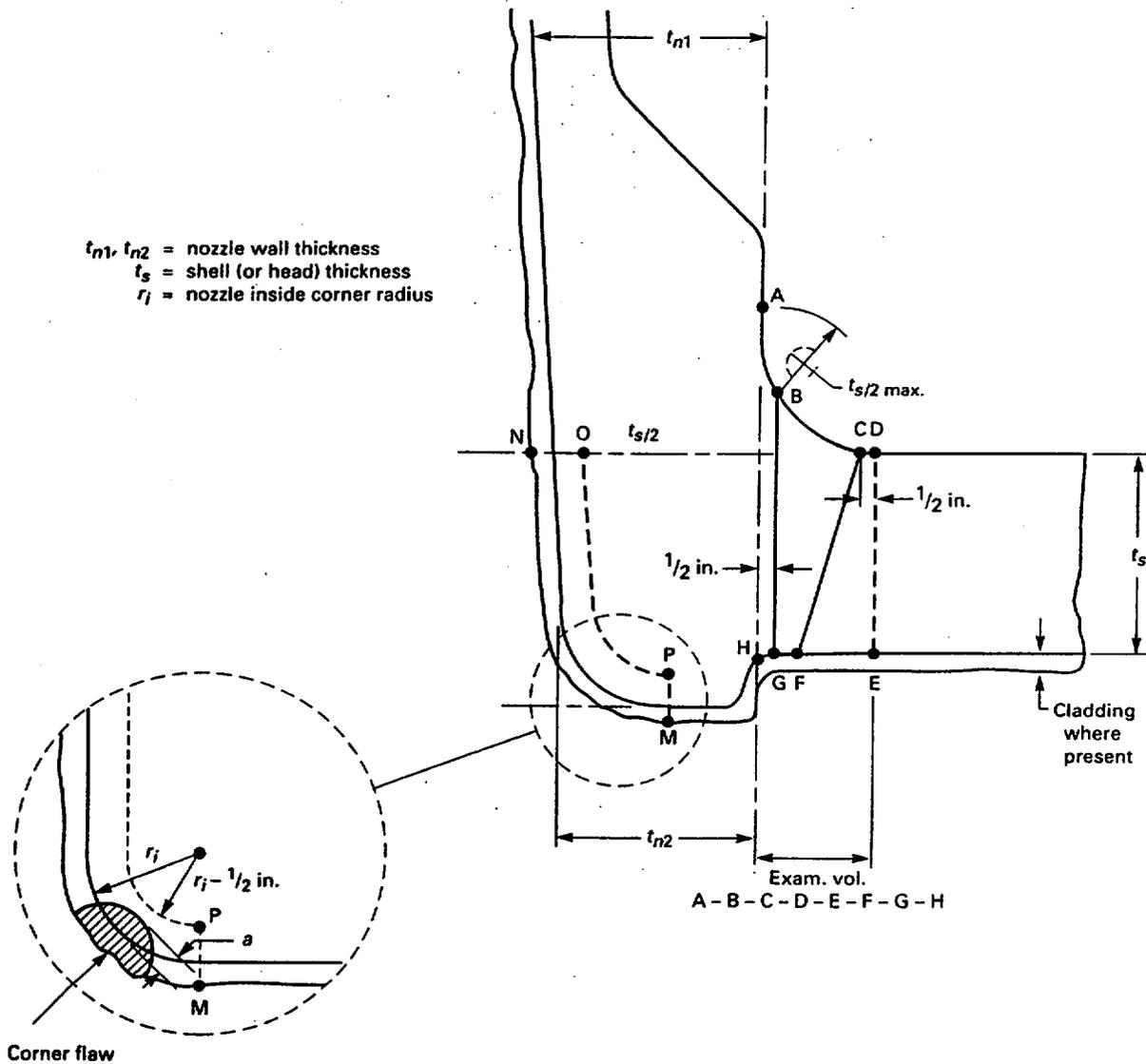
Case N-613

**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.

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)]

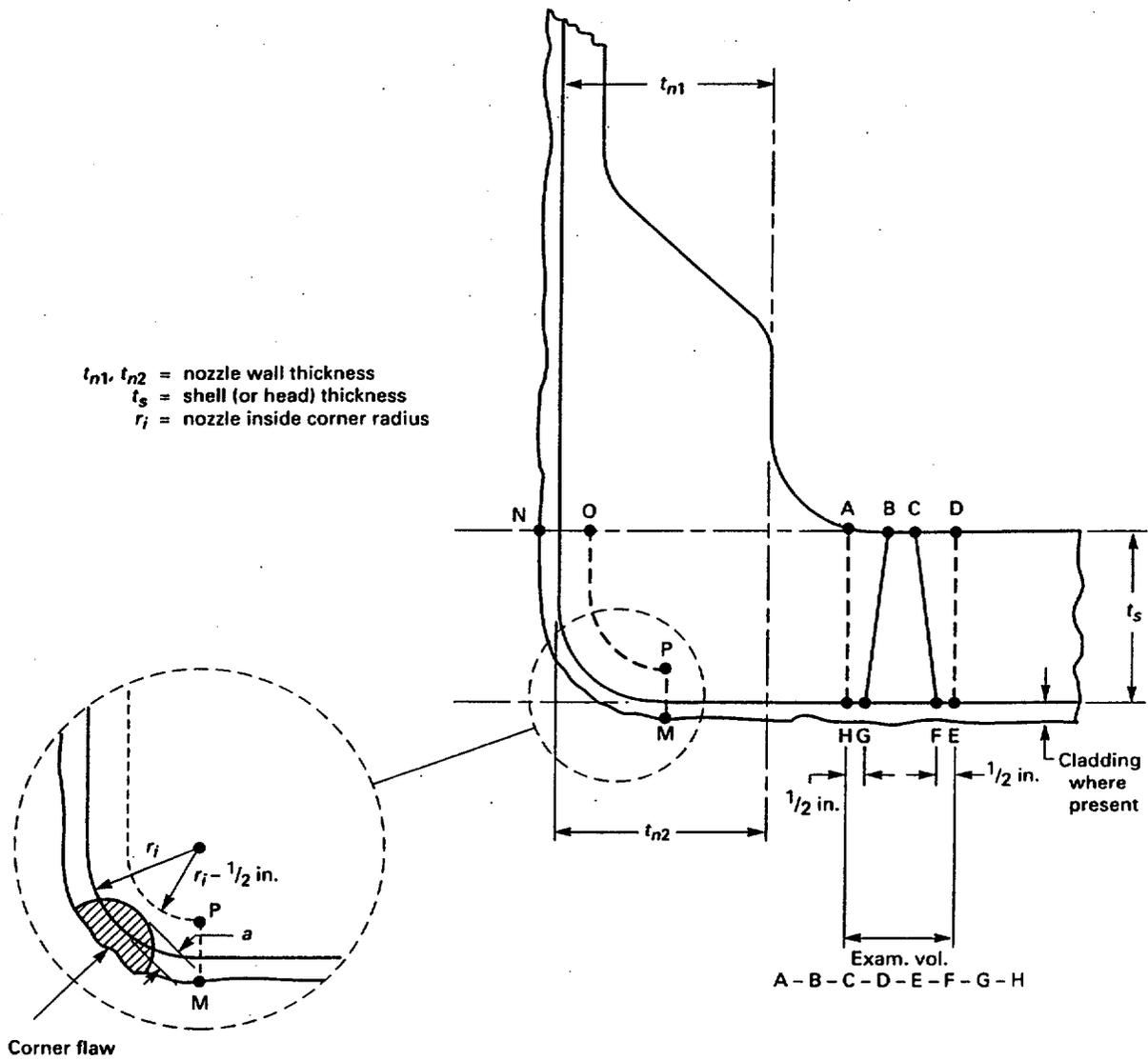
- C-D-E-F
- B-C-F-G
- A-B-G-H
- M-N-O-P

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)]

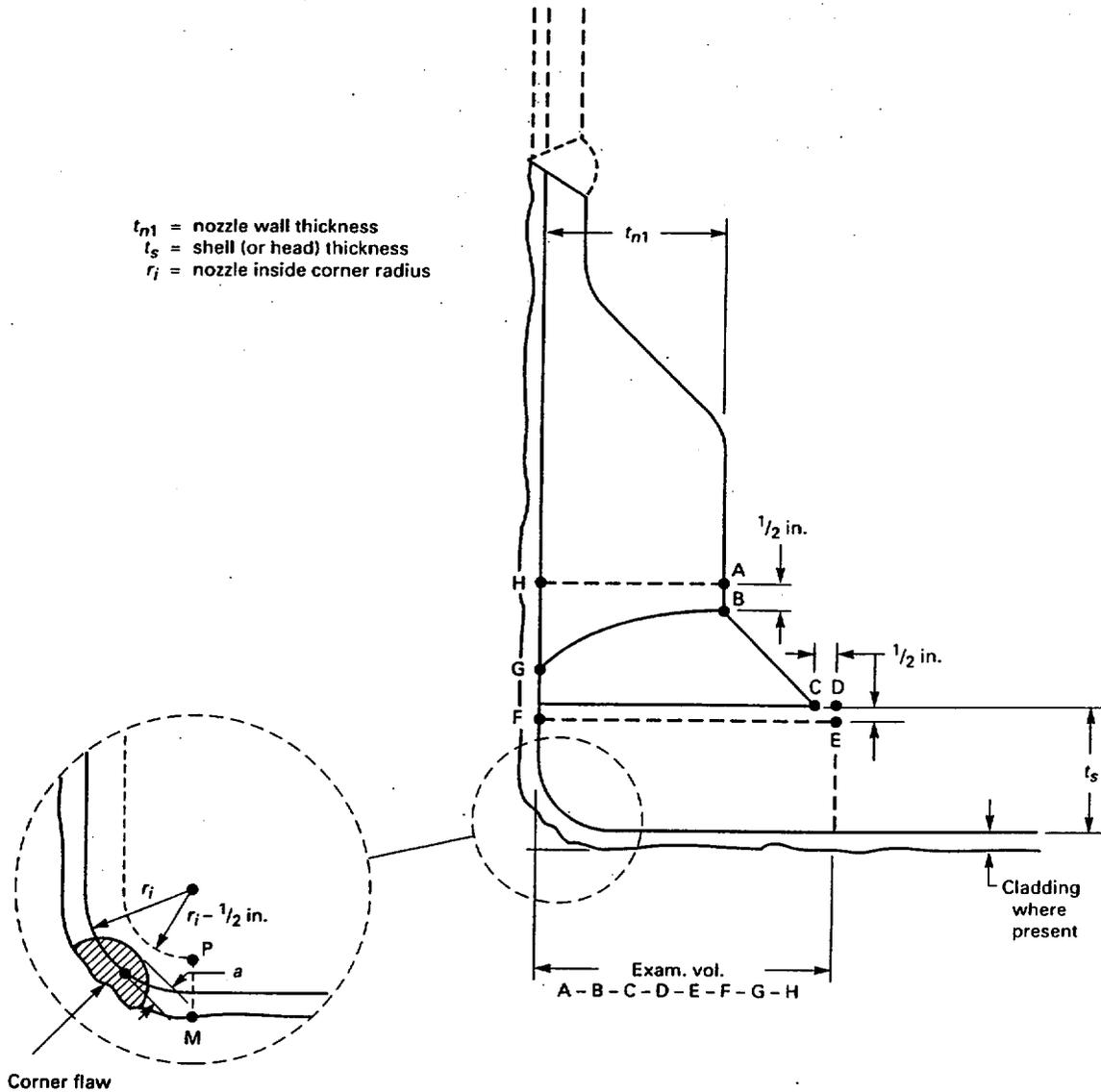
- C-D-E-F
- B-C-F-G
- A-B-G-H
- M-N-O-P

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)

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)

6.4 NRC REGULATORY GUIDES

The Supply System has reviewed the augmented inservice inspection requirements found in the NRC Regulatory Guides listed in Table 6.4.1. Following careful review and consideration of those augmented requirements, the WNP-2 Inservice Inspection Program Plan has been written to comply with the Regulatory Guides which are applicable to WNP-2. A brief statement of applicability is given for each Guide in Table 6.4.1.

Some Regulatory Guides have been addressed through Generic Letters. See next section on Generic Letters.

Table 6.4.1 NRC Regulatory Guide Review for Applicability to WNP-2 ISI Program Plan		
1.26, Rev 3	Quality Group Classifications and Standard for Water, Steam, and Radioactive Waste Containing Components in Nuclear Power Plants.	Applicable; WNP-2 ISI Program Plan is written to comply.
1.65, Rev. 0	Materials and Inspections for Reactor Pressure Vessel Closure Studs.	Applicable; WNP-2 ISI Program Plan complies through incorporation of ASME Section XI examination requirements.
1.147, Rev. 11	Inservice Inspection Code Case Acceptability ASME Section XI Division I.	Applicable; The Code cases being used are identified in Section 5.1.3.
1.150, Rev. 1	UT of Reactor Vessel Welds during Preservice and Inservice Inspection.	Applicable; WNP-2 <u>will use an alternate to the guidance found in RG 1.150. will comply with Appendix A of this Reg. Guide.</u>

6.5 GENERIC LETTERS

83-15 Implementation of Regulatory Guide 1.150, "Ultrasonic Testing of Reactor Vessel Welds During Preservice and Inservice Examinations," Revision 1.

WNP-2 will use ASME Section XI, Appendix VIII, 1995 Edition, 1996 Addenda (as modified by Federal Register Notice 64FR51370) for those RPV components where Appendix VIII is applicable through implementation of 10CFR50.55a. For those RPV components where Appendix VIII is not applicable, ultrasonic examinations will be performed in the "spirit" of Appendix VIII.

~~WNP-2 use the guidance in Appendix A of this Regulatory Guide.~~