



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO THE INSERVICE INSPECTION PROGRAM

RELIEF REQUESTS ISI-2-003 AND ISI-2-011

WASHINGTON PUBLIC POWER SUPPLY SYSTEM

NUCLEAR PROJECT NO. 2

DOCKET NO. 50-397

1.0 INTRODUCTION

The Technical Specifications for WNP-2 state that the inservice inspection and testing of American Society of Mechanical Engineers (ASME) Code Class 1, 2, and 3 components shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda as required by 10 CFR 50.55a(g), except where specific written relief has been granted by the Commission pursuant to 10 CFR 50.55a(g)(6)(i).

Pursuant to 10 CFR 50.55a(g)(4), ASME Code Class 1, 2, and 3 components (including supports) shall meet the requirements, except the design and access provisions and the preservice examination requirements, set forth in the ASME Code, Section XI, "Rules for Inservice Inspection (ISI) of Nuclear Power Plant Components," to the extent practical within the limitations of design, geometry, and materials of construction of the components. The regulations require that inservice examination of components and system pressure tests conducted during each 10-year interval comply with the requirements in the latest edition and addenda of Section XI of the ASME Code incorporated by reference in 10 CFR 50.55a(b) on the date 12 months prior to the start of the 120-month inspection interval, subject to the limitations and modifications listed therein. The applicable edition of Section XI of the ASME Code for the WNP-2 first 10-year ISI interval is the 1980 Edition, through Winter 1980 Addenda. The components (including supports) may meet the requirements set forth in subsequent editions and addenda of the ASME Code incorporated by reference in 10 CFR 50.55a(b) subject to the limitations and modifications listed therein and subject to Commission approval.

Pursuant to 10 CFR 50.55a(g)(5), if the licensee determines that conformance with an examination requirement of Section XI of the ASME Code is not practical for its facility, information shall be submitted to the Commission in support of that determination. After evaluation of the determination, pursuant to 10 CFR 50.55a(g)(6)(i), the Commission may grant relief and may impose alternative requirements that are determined to be authorized by law, will not endanger life, property, or the common defense and security, and are otherwise in the public interest, giving due consideration to the burden upon the licensee that could result if the requirements were imposed.

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By letter dated October 19, 1994, Washington Public Power Supply System (licensee) submitted Relief Requests ISI-02-003 and ISI-02-011. The licensee had determined that the Code requirements discussed in the relief requests were impractical to perform at WNP-2.

2.0 EVALUATION

The staff, with technical assistance from its contractor, the Idaho National Engineering Laboratory (INEL), has evaluated the information provided by the licensee in support of its first 10-year interval inservice inspection program plan Requests for Relief Nos. 003 and 011 for WNP-2. The evaluation is included in the attached technical letter report.

3.0 CONCLUSION

Based on the information provided by the licensee in Relief Requests ISI-02-003 and ISI-02-011, the staff adopts the conclusions and recommendations presented in the attached INEL technical letter report. The staff concludes that (1) the examinations performed provide reasonable assurance that operational readiness has been maintained, (2) the Code requirements discussed above are impractical and would be a burden on the licensee if imposed, and (3) granting relief from the Code requirements discussed above is authorized by law, will not endanger life or property or the common defense and security, and is otherwise in the public interest. Therefore, relief is granted as requested pursuant to 10 CFR 50.55a(g)(6)(i).

Attachment: Technical Letter Report

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Date: August 23, 1995



TECHNICAL LETTER REPORT ON THE
FIRST TEN-YEAR INTERVAL INSERVICE INSPECTION
REQUESTS FOR RELIEF 003 & 011
FOR
WASHINGTON PUBLIC POWER SUPPLY SYSTEM
WNP-2
DOCKET NUMBER: 50-397

1.0 INTRODUCTION

In a letter dated October 19, 1994, the licensee, Washington Public Power Supply System (WNP-2), submitted Requests for Relief ISI-2-003 and ISI-2-011. These requests for relief are applicable for the first 10-year inservice inspection (ISI) interval at WNP-2, which ended December 13, 1994. The Idaho National Engineering Laboratory (INEL) staff has evaluated the subject requests for relief in the following section.

2.0 EVALUATION

The Code of record for WNP-2, first 10-year ISI interval, is the American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section XI, 1980 Edition, through Winter 1980 Addenda. The information provided by the licensee in support of the requests for relief has been evaluated and the basis for granting relief is documented below.

A. Request for Relief ISI-2-003, Part 1, Examination Categories F-B and F-C, Items F2.10, F2.20, and F3.10 through F3.50, Class 2 and 3 Component Supports

Code Requirement: Table IWF-2500-1, Examination Categories F-B and F-C, Items F2.10, F2.20, and F3.10 through F3.50 require a VT-3 or VT-4 visual examination of 100% of the Class 2 and 3 component supports as defined by Figures IWF-3410, -3420, -3430 as applicable.

Licensee's Code Relief Request: Relief is requested from the Code-required VT-3 and VT-4 visual examinations for the components listed below.



COMPONENT	COMPONENT ID.	EXAM. DESCRIPTION	CATEGORY
SW-69	Rigid	F-B	
SW-67	Rigid	F-B	
SW-72	Rigid	F-B	
SW-317	Rigid	F-B	
SW-152	Rigid	F-B	
SW-431	Rigid	F-B	
SW-137	Rigid	F-B	
SW-438	Rigid	F-B	
SW-203	Rigid	F-B	
SW-77	Rigid	F-B	
SW-34	Rigid	F-B	
SW-142	Rigid	F-B	
SW-60	Rigid	F-B	
SW-916N	Rigid	F-B	
SW-75	Rigid	F-B	
RCIC-18	Rigid	F-B	
FPC-64	Box	F-B	
FPC-98	Rigid	F-B	
FPC-114	Rigid	F-B	
FPC-203	Box	F-B	
LPCS-19	Anchor	F-B	
RHR-99	Anchor	F-B	
RHR-174	Box	F-B	
RHR-605	Strut	F-B	
RHR-606	Strut	F-B	
SLC-4453-57	Rigid	F-B	
SW-90	Rigid	F-B	
SW-123	Rigid	F-B	
SW-439	Rigid	F-B	
SW-946N	Rigid	F-B	
SW-951N	Rigid	F-B	
SW-950N	Rigid	F-B	
RHR-53	Spring	F-C	

Licensee's Basis for Requesting Relief (as stated):

"The component supports and welded attachments are completely or partially inaccessible to examination. The component supports and welded attachments are within or close to wall penetrations which are foam filled for fire protection barriers or enclosed in cubicles or pipe chases. The support is covered by the foam. A loss of function of the component support is expected to be identified at adjacent supports which are examined. For supports within wall penetrations, it should also be noted that the pipe is completely surrounded by concrete with the metal support embedded in the concrete; the annulus between the pipe and concrete is foam filled. If any failure did occur, the concrete would perform a backup support function.

"There will be no adverse impact on plant quality and safety. Failure of

these component supports or welded attachments will not prevent the reactor from being shutdown. During the first inspection period the following percent of items were examined:

Examination Category Percent

D-B	>97%
D-C	>90%
F-B	>93%
F-C	>99%

"No unacceptable indications were found during these examinations.

"Later editions of ASME Section XI define the sample size for category F-B (category F-A in later Code editions) as 10% of the Class 3 piping supports. The percent of Class 3 component supports examined during the first interval (>93% of rigid type supports for F-B) exceeds the minimum sample size of 10% required in later Code editions.

"Later editions of ASME Section XI define the sample size for category F-C (category F-A in later Code editions) as 15% of the Class 2 piping supports. The percent of Class 2 component supports examined during the first interval (>93% of rigid type supports for F-B) exceeds the minimum sample size of 15% required in later Code editions.

"The Class 3 welded attachments in Categories D-B and D-C examined during the first inspection interval represent greater than 96% of the total welded attachments in these two categories.

"The sample sizes in these four categories are reasonably large and representative and assure continued plant quality and safety."

Licensee's Proposed Alternative (as stated):

"The component supports and welded attachments are completely or partially inaccessible to all examination techniques. No examinations are proposed."

Evaluation: The Code of record requires 100% of the Class 2 and 3 component supports to be examined per their respective examination category each inspection interval. The licensee examined 93% of Class 2 and 99% of Class 3 component supports.

The subject component supports are completely or partially inaccessible to examination. The component supports are within or close to wall penetrations or enclosed in cubicles or pipe chases. Supports within wall penetrations are embedded in concrete and the annulus between the pipe and concrete is foam filled. Therefore, the subject component

support examinations are impractical to perform to the extent required by the Code. To meet the Code requirements, the supports would have to be redesigned, modified, or replaced; imposition of the requirements would cause a considerable burden on the licensee.

A total of 93% of Class 2 and 99% of Class 3 component supports required by the Code to be examined, were examined. Since a significant number of component supports were examined, it is reasonable to conclude that a pattern of degradation, if present, would have been detected. Therefore, reasonable assurance of operational readiness has been maintained by the examinations that were performed and, considering the impracticality of meeting the Code requirements, it is recommended that relief be granted pursuant to 10 CFR 50.55a(g)(6)(i).

B. Request for Relief ISI-2-003, Part 2, Examination Categories D-B and D-C, Items D2.20 and D3.20, Class 3 Welded Integral Attachments

Code Requirement: Table IWD-2500-1, Examination Categories D-B and D-C, Items D2.20 and D3.20 require a VT-3 visual examination of Class 3 integral attachments as defined by Figure IWD-2500-1.

Licensee's Code Relief Request: Relief is requested from the Code-required VT-3 visual examinations for the components listed below.

COMPONENT ID.	COMPONENT EXAM. DESCRIPTION	CATEGORY
FPC-64(W)	Welded Attachment	D-C
SW-90(W)	Welded Attachment	D-B
SW-123(W)	Welded Attachment	D-B
SW-439(W)	Welded Attachment	D-B
SW-946(W)	Welded Attachment	D-B
SW-951(W)	Welded Attachment	D-B

Licensee's Basis for Requesting Relief (as stated):

"The component supports and welded attachments are completely or partially inaccessible to examination. The component supports and welded attachments are within or close to wall penetrations which are foam filled for fire protection barriers or enclosed in cubicles or pipe

chases. The support is covered by the foam. A loss of function of the component support is expected to be identified at adjacent supports which are examined. For supports within wall penetrations, it should also be noted that the pipe is completely surrounded by concrete with the metal support embedded in the concrete; the annulus between the pipe and concrete is foam filled. If any failure did occur, the concrete would perform a backup support function.

"There will be no adverse impact on plant quality and safety. Failure of these component supports or welded attachments will not prevent the reactor from being shutdown. During the first inspection period the following percent of items were examined:

Examination Category Percent

D-B >97%

D-C >90%

"No unacceptable indications were found during these examinations.

"The Class 3 welded attachments in Categories D-B and D-C examined during the first inspection interval represent greater than 96% of the total welded attachments in these two categories.

Licensee's Proposed Alternative (as stated):

"The component supports and welded attachments are completely or partially inaccessible to all examination techniques. No alternate examinations are proposed."

Evaluation: The Code of record requires 100% of the Class 3 integrally welded attachments be examined per their respective examination category each inspection interval. The licensee examined 97% of Examination Category D-B and 90% of Examination Category D-C integrally welded attachments.

The subject welded attachments are completely or partially inaccessible to examination. These welded attachments are within or close to wall penetrations or enclosed in cubicles or pipe chases. Attachments within wall penetrations are embedded in concrete and the annulus between the pipe and concrete is foam filled. Therefore, the subject integrally welded attachment examinations are impractical to perform to the extent required by the Code. To meet the Code requirements, the piping systems would have to be redesigned and replaced; imposition of the requirements would cause a considerable burden on the licensee.

A total of 97% of Examination Category D-B and 90% of Examination Category D-C Class 3 integrally welded attachments required by the Code to be examined, were examined. Since a significant number of attachments were examined, it is reasonable to conclude that a pattern of degradation, if present, would have been detected. Therefore, reasonable assurance of operational readiness has been maintained by the examinations that were performed and, considering the impracticality of meeting the Code requirements, it is recommended that relief be granted pursuant to 10 CFR 50.55a(g)(6)(i).

C. Request for Relief ISI-2-011, Examination Categories B-K-1 and C-C, Items B10.10 and C3.40, Class 1 and 2 Welded Integral Attachments

Code Requirement: Table IWD-2500-1, Examination Categories B-K-1 and C-C, Items B10.10 and C3.40 require surface examination of Class 1 and 2 integral attachments as defined by Figures IWB-2500-13, -14, -15 and IWC-2500-5 as applicable.

Licensee's Code Relief Request: Relief is requested from the Code-required surface examinations for the components listed below.

COMPONENT ID.	COMPONENT EXAM. DESCRIPTION	CATEGORY
RRC-HA-1(W)	Welded Attachment	B-K-1
RRC-HB-1(W)	Welded Attachment	B-K-1
RHR-77(W)	Welded Attachment	C-C
RHR-410(W)	Welded Attachment	C-C

Licensee's Basis for Requesting Relief (as stated):

"Relief is required from ASME Section XI examination requirements for the two item B10.10 welds on the basis of partial inaccessibility of the weld due to plant design and high dose required to prepare for and perform the examinations. The welds identified in this relief request require disassembly of a component support collar to gain access to perform a 100% Code examination.

"Relief is required from ASME Section XI examination requirements for the two C3.40 welds on the basis of inaccessibility of the welds due to their location in a pipe chase where access will place a hardship on the plant to gain access.



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"There will be no adverse impact on plant quality and safety by doing only a partial Code examination of the item B10.10 welds.

1. The attachment welds have passed dye penetrant examination in accordance with Section III.
2. Seventy-five (75) percent of weld RRC-HA-1(W) and fifty (50) percent of weld RRC-HB-1(W) are accessible without removing the component support collar.
3. The percent of category B-K-1 welds examined during the first inspection interval exceeds 95% of total welds in this category. During the first inspection interval no unacceptable indications were found in this sample.
4. Other similar welds in this system and in the area of the subject welds have or will receive full Code surface examination coverage. The integrity of the pressure boundary can thus be verified by sampling.

"There will be no adverse impact on plant quality and safety by doing only a partial Code examination of the item C3.40 welds.

1. The attachment welds have passed magnetic particle examination in accordance with Section III.
2. The percent of category C-C welds examined in the first inspection interval exceeds 96% of total welds in this category. During the first inspection interval no unacceptable indications were found in this sample.
3. Other similar welds in this system and in the area of the subject welds have or will receive full Code surface examination coverage. The integrity of the pressure boundary can thus be verified by sampling.

"The sample sizes in these two categories are reasonably large and representative and assure continued plant quality and safety."

Licensee's Proposed Alternative (as stated):

"The accessible portion of the item B10.10 welds, without removing the component support, of each weld will be examined per Section XI requirements.

"No alternate examination is proposed for item C3.40 welds."

Evaluation: The Code requires 100% of the Class 1 and 2 integrally welded attachments to be examined per their respective examination category each inspection interval. The licensee examined 95% of the Class 1 and 96% of the Class 2 integrally welded attachments.

The subject B10.10 welded attachments will have partial examinations due to partial inaccessibility and the subject C3.40 welded attachments will

not be examined due to the inaccessibility of welds within a pipe chase. Therefore, the subject integrally welded attachment examinations are impractical to perform to the extent required by the Code. To meet the Code requirements, the piping systems would have to be redesigned and replaced; imposition of the requirements would cause a considerable burden on the licensee.

A total of 95% of Class 1 and 96% of Class 2 integrally welded attachments required by the Code to be examined, were examined. Since a significant number of attachments were examined, it is reasonable to conclude that a pattern of degradation, if present, would have been detected. Therefore, reasonable assurance of operational readiness has been maintained by the examinations that were performed and, considering the impracticality of meeting the Code requirements, it is recommended that relief be granted pursuant to 10 CFR 50.55a(g)(6)(i).

3.0 CONCLUSION

Based on the above evaluation, the INEL staff concludes that the Code requirements addressed in Requests for Relief ISI-2-003 and ISI-2-011 are impractical for WNP-2, and recommends that relief be granted for these relief requests. In these cases the licensee's examinations should provide reasonable assurance of continued structural integrity. Therefore, it is recommended that relief be granted pursuant to 10 CFR 50.55a(g)(6)(i).