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EVALUATION OF INSERVICE INSPECTION EXAMINATIONS

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ABSTRACT

In order to evaluate the effectiveness of Section XI, Division 1, "Rules for Inservice Inspection of Nuclear Power Plant Components," of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code examinations, 26 inservice inspection (ISI) summary reports from 24 facilities were reviewed. It was found that these ASME Code examinations and tests are instrumental in revealing indications and defects in welds and plant components. This study also shows that some of the Section XI requirements are not clear. The need for revising these requirements was evaluated and Code revisions are recommended.

SUMMARY

This is the fourth in a series of reports evaluating inservice inspection (ISI) examinations of commercial nuclear power plants. This work was performed by EG&G Idaho, Inc. at the Idaho National Engineering Laboratory (INEL) for the Nuclear Regulatory Commission (NRC) under task 24 of FIN A6367. The data studied for this report were compiled from licensees' summary inspection reports that are submitted to the NRC at the end of each refueling outage.

The purpose of this phase of Task 24 was to further evaluate the effectiveness of Section XI, Division 1, of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code examination requirements and to recommend changes for improvement if necessary.

This study revealed that ASME Code examinations are detecting relevant conditions in welds and plant components. This study also identified the need to clarify some requirements in certain sections of the Code, and the need to revise other requirements in both the ASME Code and the Code of Federal Regulations.

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EVALUATION OF INSERVICE INSPECTION EXAMINATIONS

INTRODUCTION

This is the fourth in a series of reports on the evaluation of the effectiveness of Inservice Inspection (ISI) examinations performed by commercial nuclear power plants to the requirements of Section XI, Division 1, of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code.¹ The first report² evaluated examinations performed by 12 nuclear facilities and reviewed 96 Licensee Event Report (LER) abstracts in order to determine if Section XI requirements were instrumental in the discovery of the conditions that were reported. The second report³ was a review of the ISI administrative system, and the third report⁴ evaluated the effectiveness of Section XI steam generator examination requirements. The purpose of this phase of Task 24 of FIN A6367, performed for the Nuclear Regulatory Commission (NRC), was to review additional ISI Summary Reports to determine the effectiveness of Section XI examinations and develop recommendations, if necessary, for ASME Code revisions.

This report includes a compilation and analysis of data contained in selected summary reports of ISI examinations that licensees submit to the NRC. These reports are due within 90 days of the end of each series of examinations performed during a refueling outage. Additionally NIS-2 forms, used for reporting repairs and replacements, which accompany most of the summary reports were reviewed to determine if the repairs and replacements were the result of ISI examinations.

DATA BASE DEVELOPMENT

Information was compiled from 26 ISI summary reports of 24 nuclear facilities (see Appendix A). Fourteen of these facilities were pressurized water reactors (PWRs) and ten were boiling water reactors (BWRs). These reports were obtained from the NRC Document Control System (DCS).

A representative cross-section of facilities was chosen for review. Ten facilities went into commercial operation in the 1980s, thirteen in the '70s, and one in the '60s. Four reactor suppliers are represented, (i.e., eleven were Westinghouse (W), ten were General Electric (G-E), two were Combustion Engineering (CE), and one was Babcock and Wilcox (BW). Four of the facilities performed ISI examinations in accordance with the 1974 Edition through the Summer 1975 Addenda (74S75) of the ASME Code, one of these updated to the 83S83 Code for a later examination. One facility used the 77S78 Code and another the 77S79 Code. Five used the 80W80 Code, eight used the 80W81 Code, and five used the 83S83 Code. Also, ten facilities were still in the first inspection interval, while fourteen were in the second interval.

Two computer files, one made using a word processing program and the other made using a data base program, were produced to aid in analysis of summarized data from the reports. Two different files were used because of inconsistencies in the report formats. Many reports did not have charts that included facts such as number of examinations performed, number of components examined, reasons for indications found, corrective action taken, and explanations of examinations not performed to Section XI requirements. These reports did not adapt to the data base file structure. Only eleven of the 26 reports were entered in the data base file. The fields of the records that make up the data base file are listed in Table 1. Appendix B contains tables from both files.

TABLE 1. ISI EXAMINATION DATA FIELDS

<u>Field Title</u>	<u>Explanation</u>
INDEX	Record identification number
CODE_CATEG	ASME Code category examined
CODE_ITEM	ASME Code item number examined
DESCRIPTIO	Specific component or subject of ISI
EXAMS	Number of components examined
METHOD	Method of examination
IND	Number of indications found
TYPE	Type of indication
DISPOSITIO	Decision on status of indications
PLANT	Name of nuclear power plant

DISCUSSION

The types of examinations performed during the inservice inspections were visual (VT), surface, and volumetric. Hydrostatic and functional tests were also performed. Surface examinations were either penetrant (PT) or magnetic particle (MT) and the volumetric examinations were either ultrasonic (UT) or radiography (RT). The examination type to be used and the components to be examined are specified in Tables IWB-2500-1, IWC-2500-1, IWD-2500-1, and IWF-2500-1 of the Code. Table 2 lists the Code categories that were examined by the facilities in this study.

The following sections will cover ISI requirements as specified in the NRC regulations, report requirements, findings from the ISI summary reports, and Code change recommendations.

Rules and Regulations

The documents that control and direct inservice examinations are the Code of Federal Regulations,⁵ the ASME Code, several NRC Regulatory Guides, and the facility's own Technical Specification.

Title 10 of the Code of Federal Regulations, Part 50, Section 55a, Paragraph (g)(4)(i) [10 CFR 50.55a (g)(4)(i)], states that inservice examinations in the initial 120 month interval shall comply with the requirements in the latest edition and addenda of the Code incorporated by reference in paragraph (b) of this section on the date 12 months prior to the date of issuance of the operating license. Paragraph (g)(4)(ii) states that inservice examinations conducted during successive 120-month intervals shall comply with the requirements in the latest edition and addenda of the Code incorporated by reference in paragraph (b) of this section on the date 12 months prior to the start of the 120-month interval. The Code edition and addenda that was used in performing the ISI examinations was specified in the summary reports submitted by each of the facilities in this study.

TABLE 2. CODE CATEGORIES EXAMINED

<u>CLASS 1</u>	
<u>Code Category</u>	<u>Definition</u>
B-A	Pressure Retaining Welds in Reactor Vessel
B-B	Pressure Retaining Welds in Vessels Other Than Reactor Vessels
B-C	Pressure Retaining Welds, Vessel-to-Flange, and Head-to-Flange
B-D	Full Penetration Welds of Nozzles in Vessels
B-E	Pressure Retaining Partial Penetration Welds in Vessels
B-F	Pressure Retaining Dissimilar Metal Welds
B-G-1	Pressure Retaining Bolting, Larger Than 2" in Diameter (74-S75, 2" and Larger)
B-G-2	Pressure Retaining Bolting, 2" and Smaller in Diameter
B-H	Integral Attachments for Vessels
B-J	Pressure Retaining Welds in Piping
B-K-1	Integral Attachments for Piping, Pumps, and Valves
B-K-2	Support Components for Piping, Pumps, and Valves
B-L-1	Pressure Retaining Welds in Pump Casings
B-L-2	Pump Casings
B-M-1	Pressure Retaining Welds in Valve Bodies
B-M-2	Valve Bodies
B-N-1	Interior of Reactor Vessels
B-N-2	Integrally Welded Core Support Structures and Interior Attachments to Reactor Vessels
B-N-3	Removable Core Support Structures
B-O	Pressure Retaining Welds in Control Rod Housings
B-P	All Pressure Retaining Components

TABLE 2 CODE CATEGORIES EXAMINED (continued)

CLASS 2

<u>Code Category</u>	<u>Definition</u>
C-A	Pressure Retaining Welds in Pressure Vessels
C-B	Pressure Retaining Nozzle Welds in Vessels
C-C	Integral Attachments for Piping, Pumps, and Valves
C-D	Pressure Retaining Bolting Greater than 2" in Diameter (74S75, Bolting Exceeding 1")
C-E	Support Members
C-E-1	Support Members for Piping, Pumps, and Valves
C-E-2	Support Components for Piping, Pumps, and Valves
C-F	Pressure Retaining Welds in Piping
C-F-1	Pressure Retaining Welds in Austenitic SST or High Alloy Piping
C-F-2	Pressure Retaining Welds in Carbon or Low Alloy Steel Piping
C-G	Pressure Retaining Welds in Pumps and Valves
C-H	All Pressure Retaining Components

CLASS 3

D-A	Systems in Support of Reactor Shutdown Function
D-B	Systems in Support of Emergency Core Cooling, Containment Heat Removal, Atmosphere Cleanup, and Residual Heat Removal
D-C	Systems in Support of Residual Heat Removal From Spent Fuel Storage Pool

SUPPORTS

F-A	Plate and Shell Type Supports
F-B	Linear Type Supports
F-C	Component Standard Supports

Report Requirements

The first Section XI of the Code published in 1971 was written for Class 1 and required that summary reports for all examinations and tests be submitted to the NRC. The Winter 1972 Addenda added Class 2 and only required reports for examinations, not tests. Further, it only required reports for examinations that resulted in repairs or replacements. The Summer 1973 Addenda incorporated Subsections IWP (pumps) and IWV (valves). Class 3 was added in the 1974 Edition. Article IWA-6000, Records and Reports, of the 1974 Edition required summary reports to be submitted for all examinations and tests for Class 1 and Class 2 components but excluded Class 3. It is possible that the addition of Class 3 was overlooked by the Code group responsible for IWA-6000, and this omission has not yet been corrected.

Subsubarticle IWA-6210, Owner's Responsibility, presently requires that Owners prepare preservice and inservice inspection summary reports for all Class 1 and Class 2 pressure-retaining components and their supports. Subsubarticle IWA-6220, Preparation, states that inservice inspection summary reports shall be prepared at the completion of each inspection conducted during a refueling outage, and that examinations, tests, replacements, and repairs conducted since the preceding summary report shall be included. Subsubarticle IWA-6230, Summary Report Submittal, requires the Owner to file inservice inspection summary reports with the enforcement and regulatory authorities having jurisdiction at the plant site within 90 days of completion of the inservice inspection conducted during each refueling outage.

Three of the 24 facilities missed the IWA-6230 deadline for summary report submittal. One facility was only 15 days late, another 16 days late, and one facility was a year late, having submitted a report containing examination results of two refueling outages.

Another facility performed examinations for the first and second intervals in one refueling outage, and provided a joint summary report for

the two intervals. This joint submittal was in compliance with the Code [IWA-2430(d)] which permits extending or decreasing an inspection interval by as much as one year.

Subsubarticle IWA-6220, which requires summary reports to include all examinations and tests for Class 1 and Class 2 components, is being misinterpreted by many facilities. Only three of the facilities in this study included results of testing pumps or valves. Typical data included results of safety/relief valve lift set tests and type "B" and type "C" valve leak rate testing.

Though required to report only on Class 1 and Class 2 components, eleven facilities' summary reports included Class 3 results. Some important facts were noted in the reports concerning Class 3 components. For example, one facility reported that visual examination of 329 Class 3 supports revealed several conditions that rendered the supports inoperable. A deficiency report was generated and the conditions were corrected. Another facility reported that 88 snubbers (Class 1, 2, 3 inclusive) were selected as a sample of a population of 856 snubbers, and that several failures resulted in the sample being increased to a total of 413 snubbers. The Code should require the summary reports to include the results of all Code examinations and tests, regardless of class. The proposed change to accomplish this is shown in Appendix C. This is a low impact change since IWA-6210(b) already requires preparation of the records which are used to make up the summary report.

Findings From ISI Summary Reports

Generic Problems

Examinations performed by twenty-two out of the 24 facilities in this study revealed support problems. Typical problems were loose nuts, rust, bent rods, spring can settings off scale, missing cotter pins, and missing bolts. Rust was the most common condition noted. The next two most common conditions were loose and missing nuts and bolts. Other conditions included broken brackets, broken welds, and missing grout around base plates.

Many of these deficiencies would not be revealed without Section XI, VT-3 and VT-4 examinations.

Visual examinations of snubbers revealed indications such as twisted pipe clamps, missing washers, leaking fluid, and rust. The Code functional tests revealed inoperable snubbers. Failure of many facilities' snubbers during operation could adversely affect safety-related systems. Most facilities replaced the failed snubbers with new snubbers, but one facility, based on engineering evaluation, deleted five snubbers and replaced another four snubbers with rigid struts.

Supports were by far the components with the most problems in this study. The proposed changes to Section XI, Subsection IWF, that were approved by the Section XI Subcommittee at the January 1990 Code meeting, became a concern after reviewing these data. The proposed IWF-1230, Supports Exempt From Examination, exempts those supports that are connected to components and items exempted from examination under IWB, IWC, IWD, and IWE-1220. In addition, it exempts portions of supports that are inaccessible by being encased in concrete, buried and or encapsulated by guard pipe. "Buried" needs to be defined; if it includes buried in insulation, it conflicts with IWF-1300(e) which states "where the mechanical connection of a non-integral support is buried within the component insulation, the support boundary may extend from the surface of the component insulation, provided the support either carries the weight of the component or serves as a structural restraint in compression." In addition, after stating all of these exemptions, Table IWF-2500-1 was changed to require that 25% of Class 1, 15% of Class 2, and 10% of Class 3 nonexempt piping supports need to be examined each interval. The limited sampling of Section XI will in many facilities result in expanded examinations due to conditions found.

A previous intensive study of supports was performed by EG&G Idaho, Inc. starting late in fiscal year 1981 and completed early in fiscal year 1983.

The published report⁶ from this study made the following statement:

The proposed support exemptions parallel piping and integral attachment exemptions for visual (VT-3), surface, and/or volumetric examination contained in Subsections IWB, IWC, and IWD of Section XI of the ASME Code. However, all piping, including the piping exempt from visual (VT-3), surface, and/or volumetric examinations, does receive a visual (VT-2) examination during system or hydrostatic tests. These tests and the concurrent VT-2 examinations do not verify the integrity of supports. Thus, support exemptions that parallel piping exemptions [for visual (VT-3), surface, and/or volumetric examinations] are not appropriate and should not be adopted by the ASME Code.

Based on the relevant conditions found by examinations of the nonexempt supports, similar conditions are likely to exist in the exempt supports. Thus, it is fortunate that the proposed subsection IWF sampling plan for supports requires that examinations be extended to cover exempt supports if three successive additional samples reveal relevant support indications.

Boric acid buildup and residue were other fairly common reported deficiencies. Visual examinations of supports and valves revealed this problem. Two facilities reported a special examination per NRC Bulletin 79-17, "Commitment to Examine and/or Flush SST Lines Containing Stagnant Borated Water".

Some facilities reported that VT on lines during system pressure testing revealed minor leakage. Causes usually were loose connections or inadequate valve packing, which were easily remedied.

Augmented Examinations

Four facilities reported that ultrasonic examinations were performed to detect intergranular stress corrosion cracking (IGSCC). Two of these facilities found minor IGSCC indications that were evaluated and accepted "as is" for another cycle. Another facility reported nine welds with IGSCC indications which were repaired by Inconel overlay. One facility reported replacement of the reactor A & B recirculation loops 2" 304 SS drain lines with 316 L SS as part of an IGSCC mitigation program.

The following are some NRC documents the facilities referenced for augmented examinations:

1. NRC Bulletin 82-02, "Degradation of Threaded Fasteners in the Reactor Coolant Pressure Boundary of Power Plants"
2. NRC I.E. Bulletin 79-13, "Cracking in Feedwater System Piping"
3. NRC Bulletin 88-08, "Thermal Stresses in Piping Connected to Reactor Coolant Systems"
4. NRC Bulletin 87-01, "Thinning of Pipe Walls in Nuclear Power Plants"
5. Summary NUREG 0578, "TMI Lessons Learned"
6. NRC Bulletin 82-03, "Stress Corrosion Cracking in Thick-Wall, Large Diameter Stainless Steel, Recirculation System Piping at BWR Plants"
7. NRC Bulletin 83-02, "Stress Corrosion Cracking in Thick-Wall, Large Diameter Stainless Steel, Recirculation System Piping at BWR Plants"

NIS-2 Forms

Subsubarticle IWA-6220 of Section XI requires that for repairs or replacements a Form NIS-2 must be filled out and submitted with the summary reports. Several NIS-2 forms were reviewed to determine what repairs or replacements were the result of ISI.

There is confusion as to what should be reported on these forms. On nineteen different pages of one facility's summary report, indications were listed that were dispositioned by either a repair or replacement, but only one of these could be linked to one of the 27 NIS-2 forms that were submitted. Another facility listed 24 indications that were repaired. However, only 7 NIS-2 forms were submitted, none of which were for any of the 24 indications listed. One facility did make the statement that no flaws found during ISI required a repair or replacement; and that all of the 76 NIS-2 forms submitted were of a routine nature. Another facility submitted

92 NIS-2 forms, 67 of which were for repairs of snubbers and supports. The summary report listed only 10 indications on supports.

Two things were revealed by reviewing these forms. First, facilities are apparently doing excellent routine maintenance examinations; secondly, an NIS-2 form is not always submitted for an ISI repair or replacement. A proposed Code change to IWA-6000 that is presently being prepared by the Section XI Working Group on General Requirements, if approved, would clarify the requirements for the NIS-2 forms. One of the proposals is to submit with the ISI Summary Report only the NIS-2 forms for repairs or replacements resulting from inservice examinations and tests. A change to the NIS-2 form as shown in Appendix C would complement the proposed changes to IWA-6000. This is a low impact change, since the additional information for completing the form is readily available from the ISI records.

Limited Examinations

Five facilities reported "limited examinations". The statement made by these facilities was that the piping system and components were designed and fabricated before the access and examination requirements of Section XI of the 1974 Code could be applied; and that consequently some examinations are limited or not practicable due to the geometric configuration or accessibility.

Only one of these five facilities referenced relief requests in the summary reports for these limited examinations. This facility referenced relief requests for all but one examination that was 90% complete. Another facility reported limited examinations for 17 components and listed the percentages that were completed. The interesting fact that was noted was that the sum of the percentage of UT coverage was averaged. Coverage was first expressed for each exam type as a percentage of the volume receiving no coverage, angle-beam coverage in one direction only, and angle-beam coverage in two directions. In the case of 0 degree, the effective coverage was equal

to the balance of 100% minus the percentage receiving no coverage. The effective coverage was calculated from the formula $c = \frac{a + 2b}{2}$

Where a = one direction only percentage

b = two-direction percentage

Examples:

(1)	none	1 dir	2 dir
	0%	0%	100%

$$c = \frac{0 + 2 * 100}{2} = 100\% \text{ effective coverage}$$

(2)	none	1 dir	2 dir
	0%	100%	0%

$$c = \frac{100 + 2 * 0}{2} = 50\% \text{ effective coverage}$$

(3)	none	1 dir	2 dir
	50%	50%	0%

$$c = \frac{50 + 2 * 0}{2} = 25\% \text{ effective coverage}$$

The ASME Code Inquiry Committee's position on limited coverage is: "The total volume of weld permitted to be excluded by Code Case N-460 shall not exceed 10% when the exclusions from all required scans are combined additively." (see Appendix D)

The Technical Evaluation Report (TER) for this facility was obtained and reviewed. There were only two relief requests, neither of which was for any of the limited examinations listed in the summary report.

A decision that resulted from this study is that Title 10 Part 50 of the Code of Federal Regulations should be amended. 10 CFR 50.55a (g)(5)(IV) states that where an examination or test is determined to be impractical and not included in the licensee's revised ISI program the relief requests shall be submitted not later than 12 months after the 120-month interval. A facility can repeatedly not perform a Code-required examination for 11 years. Also, by the time a problem is identified, after the completion of the ISI interval, it is too late to implement corrective actions.

It is suggested that 10 CFR 50.55a be revised to require that relief requests either be referenced in or be submitted with the summary reports.

CONCLUSIONS

This study revealed that Section XI examinations are of value in detecting relevant conditions in welds and plant components. The study also showed that facilities are also performing routine maintenance (not Code required) examinations that find relevant conditions.

Generic problems that were identified in reviewing the ISI summary reports include minor leakage, boric acid buildup, and indications associated with supports. Supports were the plant components with the most problems; 22 out of the 24 facilities studied listed reportable indications from support examinations. Many of these supports were Class 3 which are not required to be listed in the summary reports. The Code should be changed as shown in Appendix C, to include all Section XI examination and test results in the summary reports.

Confusion regarding the NIS-2 forms was noted. Many facilities listed repaired or replaced components due to reportable indications but did not include the associated NIS-2 forms in the summary reports. Changing the NIS-2 form as shown in Appendix C, is recommended to complement other proposed changes to IWA-6000.

Another recommendation, because limited examinations were reported that were not covered by relief requests, is to change 10 CFR 50.55a to require relief requests to be referenced or submitted with the summary reports so that corrective actions or substitute examinations can be identified and implemented before the start of the next inspection interval.

APPENDIX A
SUMMARY REPORT LIST

SUMMARY REPORTS

<u>Facility</u>	<u>Report Date</u>
Big Rock Point	11/3/89
Brunswick 1	6/26/89
Catawba 2	8/30/89
Clinton 1	8/9/89
Crystal River 3	3/21/88
Dresden 2	6/8/83, 5/26/87
Farley 2	7/24/89
Fort Calhoun 1	4/14/89
Hatch 2	6/21/88
Limerick 1	8/15/89
McGuire 2	11/27/89
Millstone 2	7/28/89
North Anna 1	10/13/89
North Anna 2	1/21/88
Peach Bottom 2	6/30/89
Perry 1	11/21/89
Prairie Island 2	4/28/89
Salem 1	9/14/89
Salem 2	3/3/89
South Texas 1	1/16/90
Surry 2	12/15/89
Trojan	10/20/89
Vermont Yankee	6/9/89
WNP 2	9/17/87, 11/27/89

APPENDIX B
TABLES FROM THE COMPUTER FILES

TABLE B-1. NOMENCLATURE

<u>Abbreviation</u>	<u>Definition</u>
ACC	Acceptable
ALT	Alternate
ATTs	Attachments
AUX	Auxiliary
BLDG	Building
BR	Branch
B&W	Babcock & Wilcox
BWR	Boiling Water Reactor
C-E	Combustion Engineering
CIRC	Circumferential
CONN	Connection
CRD	Control Rod Drive
CRDM	Control Rod Drive Mechanism
CS	Containment Spray
CVCS	Chemical Volume Control System
DIS	Dissimilar
ET	Eddy Current Test
EXAM	Examination or Examine
FUNC	Functional
FW	Feedwater
GE	General Electric
Geom	Geometric Indications or Geometry
HD	Head
HX	Heat Exchanger
HYDRO	Hydrostatic Test
ID	Inside Diameter
I.E.	Inspection and Enforcement
IGSCC	Intergranular Stress Corrosion Cracking
INCL	Inclusion
IND	Indication or Indications

TABLE B-1 (Continued)

<u>Abbreviation</u>	<u>Definition</u>
INR-WLD	Integrally Welded
INSTR	Instrument
IRREG	Irregular
ISI	Inservice Inspection
LONG	Longitudinal
MS	Main Steam
MT	Magnetic Particle Test
MTL	Metal
NOREC	No Recordable Indications
NRC	Nuclear Regulatory Commission
NUREG	Nuclear Regulatory
NZL	Nozzle
PMP	Pump
PR	Pressure
PSI	Preservice Inspection
PT	Penetrant Test
PWR	Pressurized Water Reactor
PZR	Pressurizer
RC	Reactor Coolant
RECOR	Recordable Indications
RECIRC	Recirculation
REJ	Rejected or Rejectable
REPOR	Reportable Indications
REQ	Requirement or Required
RET	Retaining
REV	Revision
RHR	Residual Heat Removal
RPV	Reactor Pressure Vessel
RT	Radiographic Test
RV	Reactor Vessel
SG	Steam Generator

TABLE B-1 (Continued)

<u>Abbreviation</u>	<u>Definition</u>
SI	Safety Injection
SUM	Summary
SUR	Surface
SURVN	Surveillance
TER	Technical Evaluation Report
UT	Ultrasonic Test
VAL	Valve
VOL	Volumetric Examination
VSL	Vessel
VT	Visual Test
W	Westinghouse
WK	Week
WLD	Weld
W/	With
YR	Year
>	Greater Than
<	Less Than

PLANT A, BWR-GE

ISI-2, CODE-80W81

EXAM DATE-4/1/87 TO 4/26/89

REPORT DATE-6/30/89

CODE CLASSES-1,2,3

CODE REPORT REQ MET-no

COMMENTS:

1. Report was for two years of inspections-the 1987 refueling outage and the 1988 refueling outage.
2. Numerous indications were reported-subsequent inspections and/or evaluations determined most to be insignificant or geometric. Reportable indications requiring corrective action are summarized in the following:
3. RESULTS:

REPORTABLE INDICATIONS 1987 OUTAGE

CRD Housing Bolting Code Category B-G-2 VT-1 29 bolts rejected and replaced. (report does not state why bolts were rejected)

Guide Code Category F-A VT-3 Loose anchor plate bolts were repaired.

Emergency Service Water System Code Category D-B VT-2 Leak identified on 3" inlet line, repaired.

REPORTABLE INDICATIONS 1988 OUTAGE

Pressure Retaining Boundary Class 1 Hydro VT-2 Leaks
identified from relief valves 71A, 71F, 71L, repaired.

Spring Support Code Category F-A VT-3,VT-4 Severe rust on ID
of spring can, replaced.

Rigid Support Code Category F-A VT-3 Two loose anchor bolts
were repaired.

Spring Hanger Code Category F-A VT-3,VT-4 Hanger setting out
of range, reset.

Guide Code Category F-A VT-3 Bent rear brace identified and
repaired.

4. LIMITED EXAMINATIONS

Five examinations were limited, 4 referenced relief requests. One report with 90% of the required exam did not reference a relief request.

5. INDICATIONS THAT SHOULD HAVE BEEN ON THE 1987 SUMMARY SHEET

3 Piping Welds Code Category C-F MT Linear transverse
indications removed by minor surface conditioning.

Lug Weld Code Category F-A VT-3 Lack of fusion, repaired on
MRF#8704247.

2 Integrally Welded Attachments Code Category F-A VT-3 Broken
grout along base anchor, repaired.

PLANT B, BWR-GE

ISI-2, CODE-77S79

EXAM DATE-1/10/83 TO 3/29/83

REPORT DATE-6/8/83

CODE CLASSES-1,2

CODE REPORT REQ MET=yes

COMMENTS:

1. Lambert, MacGill, & Thomas, Inc., was contracted to perform the nondestructive testing during the refueling outage. Personnel from Commonwealth Edison's Material Analysis Department participated to advise on technical problems.

2. SPECIAL TESTS PERFORMED

Baseline inspection of new and modified pipe supports and primary system 1100 psi hydrostatic test for recirc riser inlet overlays and 100 psi for remaining components.

3. RESULTS:

MT performed on FW weld, Category B-J, two transverse indications found at the O.D. of the base metal. Flapped out, retested with MT. No further action necessary.

UT of 20 recirc riser jet pump inlet elbow welds revealed linear indications in 10 welds. Seven had an overlay applied, 3 were evaluated to be acceptable for the next operating cycle and will be examined at mid-cycle.

PT of a recirc riser jet pump inlet weld revealed 2 small pinholes in the long seam weld. Ground out and retested. No further action necessary.

PT of a recirc riser jet pump inlet weld, cold lap was found in 2 areas. They were flapped out and retested. No further action necessary.

PT of a recirc riser jet pump inlet weld revealed an indication at the O.D. of the base metal. It was flapped out and retested. No further action necessary.

PLANT B, PWR-W

ISI-2, CODE-77S79

EXAM DATE-11/28/86 TO 3/23/87

REPORT DATE-5/26/87

CODE CLASSES-1,2

CODE REPORT REQ MET=yes

COMMENTS:

1. General Electric Co. was contracted to perform the nondestructive examinations. Personnel from Commonwealth Edison's System Material Analysis Department (SMAD) advised on technical problems; reviewed inspection personnel qualifications, reviewed examination results; and evaluated certain indications.

2. SPECIAL TESTS PERFORMED

Primary System 1131 psi Hydrostatic Test SP-87-3-48

Standby Liquid Control Hydrostatic Test DOS1100-3, Rev 9

3. RESULTS:

VT of RV internals revealed a dry tube plunger had broken off. Replaced.

VT of Support 203A-M-101 revealed a missing nut. Replaced, re-examined and accepted.

VT of Support 1302-W-101 revealed the spring can had improper setting. Reset, re-examined and accepted.

VT of Support M-1151D-8 revealed insufficient thread engagement. Turnbuckle and lock nuts were tightened, re-examined and accepted.

VT of Support 140W-103 revealed missing cotter pin. New one installed, re-examined and accepted.

VT of Support 1403-M-208 revealed insufficient thread engagement and a missing bolt. New bolt installed at the top and new bolt installed at the bottom. Re-examined and accepted.

VT of Support 1403-M-201 revealed insufficient thread engagement and loose nuts. Nuts were tightened, re-examined and accepted.

VT of Support 1506-M-205 revealed insufficient thread engagement and a loose nut. Loose nut tightened and longer bolt installed. Re-examined and accepted.

VT of Support 2305-M-22 revealed weld at bracket showed signs of pulling away. Support was rewelded completely around bracket. Re-examined and accepted.

VT of Support 2306-W-202 revealed spring can had improper setting. Spring can was reset. Re-examined and accepted.

VT of Support 2306-M-204 revealed support had a slight misalignment. Misalignment was corrected. Re-examined and accepted.

VT of Support 2305-M-215 revealed loose nuts on the base plate rod. Nuts tightened. Re-examined and accepted.

VT of Support 1403-M-206 revealed the base plate was pulling away from the building. Base plate was repaired, re-examined and accepted. All other supports on the "A" Core Spray line were examined and found acceptable.

VT of Support 1403-M-216 revealed insufficient thread engagement. Longer bolts were installed. Re-examined and accepted.

VT of Support M-1151D-3 revealed a loose nut on the clamp. Nut was tightened, re-examined and accepted.

VT of Support 1403-M-216.2 revealed a cotter pin missing. New cotter pin was installed, re-examined and accepted.

VT of Support 1406-M-201 revealed nuts were missing from the support plate. Support removed and replaced by Support M-3208-08.

VT of Snubber #24 revealed that the pipe clamp was twisted. Pipe clamp was straightened, re-examined and accepted.

VT of snubber #38 revealed that the pipe clamp was twisted. Pipe clamp was straightened, re-examined and accepted.

PLANT C, BWR-GE

ISI-2, CODE-80W81

EXAM DATE-1/88 THRU 3/88

REPORT DATE-6/21/88

CODE CLASSES-1,2,3

CODE REPORT REQ MET-yes

COMMENTS:

1. Georgia Power Company (GPC) performed several inspections not specifically required by the Code:

In response to Surry pipe break, performed UT thickness measurements on selected components in the extracted steam, auxiliary vents and drain, and condensate/feedwater piping system. Erosion/corrosion indications acceptable.

Remote UT examination of the shroud access cover was performed with both a 45-degree shear wave and a 60-degree refracted longitudinal wave technique. No IGSCC or other flaw indications detected.

All 20 jet pump hold-down beams were UT examined per General Electric (GE) Service Information Letter (SIL)-330. Beam #20 had crack-like indication, removed and replaced. Replacement was UT examined and acceptable.

All 36 shroud head hold-down bolts were UT examined per GE SIL-433. Eight bolts had crack-like indications. Six bolts were replaced, the remaining two were evaluated and deemed acceptable.

Per NRC Bulletin 80-13, the core spray sparger and associated piping were visually examined. No reportable indications.

VT of the jet pump mixing nozzles revealed evidence of erosion in the throat area. Erosion was evaluated by GE and deemed acceptable with recommendation for additional monitoring in future outages.

2. RESULTS:

Per ASME Section XI, selected RPV internals were examined using remote visual examination techniques. 45 indications were revealed in the support ring of the steam dryer, 2 in the vertical vane welds and 45 indication in the steam dryer support brackets. Indications were evaluated and found to be acceptable by GE.

63 Class 1 welds examined using volumetric and surface techniques. 56 welds were per NUREG-0313, 1 per MUREG-0619, and 6 were for ASME Section XI requirements. 1 MT indication was reported and evaluated by UT and

found acceptable. 1 weld was re-examined due to previous indications; there was no change, and it was deemed acceptable.

23 Class 1 integral attachments were examined using surface techniques. 1 attachment had unacceptable indications and required surface conditioning to remove indications.

72 Class 2 welds were examined using surface and volumetric techniques. 3 were examined for GPC augmented commitments, 3 were examined per NUREG-0619, and 66 were examined for ASME Section XI requirements. 4 indications were reported, repaired, re-examined, and found acceptable. 165 Class 1, 2, & 3 component supports were VT examined. 23 examinations revealed unacceptable results.. These supports were either repaired and re-examined or evaluated by engineering and found acceptable.

2 valves were disassembled and repaired due to leakage detected during performance of the Class 1 System Leakage Test prior to plant start-up. examined after repairs during performance of an isolated leakage inspection that was performed during plant start-up.

PLANT H, PWR-W

ISI-1, CODE-74S75

EXAM DATE-8/31/88 THRU 12/2/88

REPORT DATE-3/3/89

CODE CLASSES-1,2

CODE REPORT REQ MET-yes

COMMENTS:

1. Southwest Research Institute under the direction of the Salem ISI Group conducted 144 UT, 60 PT, 22 MT, and 35 VT exams on the Main Steam, Residual Heat Removal, Reactor Coolant, Chemical and Volume Control, Steam Generator, Feedwater, Safety Injection, and Containment Spray Systems.

2. This report also contained augmented examinations required by Salem Technical Specifications and Regulatory Guides, Circulars, and Bulletins issued by the NRC.
3. RESULTS:

EXAMINATION SUMMARY-Nonconformances reported by SWRI

VT of bolting on valve 2CV75 revealed heavy rust and residue. Cleaned, replaced stud and nut.

PT of valve to pipe (2-SJ-1247-9) revealed linear indication on valve body. After cosmetic buffing, found no indications.

VT of valve 2PR7 found loose nut. Tightened, no recordable indications. Two remaining valves examined as sampling showed no indications. VT of valve 2PS1 revealed boric acid buildup. Cleaned, no recordable indications.

UT of pipe to elbow (32-MS-2221-2) revealed a laminar reflector w/less than 100% loss of backwall. Noted during PSI, accepted as is.

VT of RPV studs revealed 2 with thread damage. Damaged areas blended out and accepted as is.

VT of 77 Class 1, 73 Class 2, and 329 Class 3 supports revealed several discrepancies that rendered the supports inoperable, (i. e., wrong spring settings, rust, loose bolts). Deficiency report generated, discrepancies corrected.

19 lift set tests revealed 9 relief valves exceeded allowable limits. reset.

20 hydros were performed, minor mechanical leaks were found and noted.

Service Pressure Leak Exams revealed minor mechanical leakage, (e.g., valve packing, etc.). Corrected.

68 Containment Type "B" (penetrations), 122 Type "C" (valves) leak rate testing revealed leakage >0.6 La thru all penetrations and several "C" valves exceeding acceptance criteria. Corrective maintenance performed.

VT on 24 hydraulic and 111 mechanical snubbers revealed minor indications such as minor rust and washers missing. Corrected.

Functional testing of hydraulic snubbers revealed (1) 200 kip MS isolation valve snubber "as found" test acceptable. (2) 1000 kip SG snubbers failed test, 1 replaced, 1 repaired and tested acceptable.

4. SPECIAL EXAMINATIONS

NRC Circular & NRC Bulletin 79-17 commitment to examine and/or flush SST lines containing stagnant borated water. UT 6 piping welds and took chemistry samples. No adverse findings.

NRC Bulletin 82-02, "Degradation of Threaded Fasteners in the Reactor Coolant Pressure Boundary of Power Plants". VT & MT were performed on primary manway closure bolts from all four SG and the pressurizer. No reportable indications.

NRC I.E. Bulletin 79-13, "Cracking in Feedwater System Piping". UT & MT performed on reducer-to-nozzle welds on all four SG.

NRC Bulletin 88-08, "Thermal Stresses in Piping Connected to Reactor Coolant Systems". UT performed on 4 welds on 14" pressurizer surge line, 16 SI, and 2 CVCS welds. No reportable indications.

NRC Bulletin 87-01, "Thinning of Pipe Walls in Nuclear Power Plants". Measurements taken at 164 locations to identify possible pipe corrosion/erosion.

Summary NuReg 0578, "TMI Lessons Learned". Service Pressure Leak exams performed on SI, CVCS, RHR, CS systems. Conducted Waste Gas System Integrated Leak Rate test in accordance w/ISI Procedure M9-ILP-WG-1. No adverse findings relative to this bulletin.

PLANT K, PWR-W

ISI-1, CODE-74S75

EXAM DATE-3/30/86 TO 10/30/87

REPORT DATE-1/21/88

CODE CLASSES-1,2,3

CODE REPORT REQ MET-yes

COMMENTS:

1. Inspections, witnessing, and surveillance of the examinations conducted by Hartford Steam Boiler Inspection and Insurance Co.

2. LIMITATIONS

Some of the piping system and components designed and fabricated before requirements of Section XI of the 1974 Code could be applied; consequently some examinations were limited or not practical due to configuration or accessibility. When examination volume was not 100% the examination was considered to be a partial (PAR) and so noted on the report. (no reference was made to relief requests)

3. RESULTS:

PT performed on Category C-C, Item C1.3 , integrally-welded support revealed 2 rounded and 1 linear indication. Evaluated by Virginia Electric & Power Co. (VE&P) engineering as minor and acceptable.

Although not required by the 74S75 Code, the weld will be reexamined next period as a precautionary measure.

VT performed on Category D-B, component support revealed piston setting to be below minimum setting. Evaluated by VE&P engineering as acceptable for continued operation.

VT performed on Category C-E-2, component support revealed an incorrect spring setting. Evaluated by VE&P engineering as acceptable for continued operation.

VT performed on Category C-E-2, component support revealed grout missing, a gap between the support and pipe, and heavy rust. Evaluated by VE&P engineering as acceptable for continued operation. Prior to end of next refueling, the gap will be repaired, rust removed, support repainted and reexamined.

VT performed on Category C-E-2, component support revealed heavy rust. Rust was evaluated by VE&P engineering as acceptable for continued operation. Rust was removed, support repainted and reexamined and found acceptable.

VT performed on Category C-E-2, component support revealed incorrect spring setting. Evaluated by VE&P engineering as acceptable for continued operation.

VT performed on Category C-E-2, component support revealed heavy rust. Rust was evaluated by VE&P engineering as acceptable for continued operation. Rust was removed, support painted, reexamined acceptable.

VT performed on Category C-E-2, component support revealed 3 anchor bolts cut off. Field verification found only 2 bolts cut off. The cut bolts (2 or 3) were evaluated by VE&P engineering as acceptable for continued use. The number of bolts cut off will be verified prior to next refueling outage.

VT performed on Category D-B component support revealed a lock nut missing. Evaluated by VE&P as acceptable for continued operation.

VT performed on Category C-E-2 component support revealed heavy rust on anchor bolt and channels. Rust was removed, support painted and accepted.

VT performed on Category C-E-2 component support revealed heavy boric acid. Boric acid removed, support reexamined and accepted.

4. System pressure test conducted on RC system in accordance with ASME Code requirements VT performed during test revealed evidence of leakage on valve 2-RC-49. Leakage was evaluated by VE&P as within acceptable limits. Connections tightened and no sign of leakage upon reexamination.

PLANT L,BWR-GE

ISI-1, CODE-80W80

EXAM DATE-1/19/85 TO 6/12/86

REPORT DATE-8/19/86

CODE CLASSES-1,2,3 (snubbers)

CODE REPORT REQ MET-yes

COMMENTS:

1. IWA-2300(a)(1)-upgraded to 83W83 ("updated"-relaxed rules-going from 3 yr. Level III examination to 5 yr.)

C-F-upgraded to 83W83 ("updated"-relaxed rules-smaller Class 2 sample, though methodology is better)

IWF-3400-upgraded to 80W81 (W80 IWF-3410, Acceptance Standards for Support Items was in the course of preparation)

2. AUGMENTED EXAMINATIONS

PT or UT performed on 7 welds in the high energy pipe break exclusion areas. No unacceptable results.

One RPV FW nozzle inner radii, bore and safe end regions examined. No unacceptable indications.

IGSCC program-UT performed on 35 welds. 100% PT performed on all thermocouple removal areas. No unacceptable indications.

RPV core spray spargers and associated piping examined. Results reported to the NRC Administrator of Region V via letter GO-86-388 G.C. Sorenson to J.B. Martin.

3. Snubber testing-Class 1,2,3 snubbers tested per WNP-2 Technical Specification instead of ASME Section XI (relief request submitted to the NRC). 31 snubbers were replaced.

4. RESULTS:

2 significant indications found on piping welds by UT were determined to be due to ID geometry.

4 indications found on supports by VT were evaluated and determined acceptable.

During RPV and Class 1 system leakage tests, 2 leaks were found at bolted connections. Repaired, retested and accepted.

PLANT L, BWR-GE

ISI-1, CODE-80W80

EXAM DATE-6/12/86 TO 6/24/87

REPORT DATE-9/17/87

CODE CLASSES-1,2,3

CODE REPORT REQ MET-yes

COMMENTS:

1. IWA-2300(a)(1)-upgraded to 83W83 ("updated"-relaxed rules-going from 3 yr. Level III examination to 5 yr.)

C-F-upgraded to 83W83 ("updated"-relaxed rules-smaller Class 2 sample, though methodology is better)

IWF-3400-upgraded to 80W81 (W80 IWF-3410, Acceptance Standards for Support Items was in the course of preparation)

2. Class 3 Examinations

VT on 53 integrally welded attachments

VT on 63 component supports

3. Snubber testing-Class 1,2,3 snubbers tested per WNP-2 Technical Specification instead of ASME Section XI (relief request ISI-2-007, approved by the NRC per letter dated 3/27/87). 206 snubbers tested 11 failed snubbers, 2 were replaced with new snubbers, 4 replaced by rigid struts, 5 deleted.
4. Limited examinations-full coverage of the examination coverage could not be performed on a number of piping welds (relief requests not referenced).

5. RESULTS:

All significant indications were evaluated and found acceptable or were repaired.

PT revealed 2 indications, one was re-examined by UT and found acceptable the other was ground out, re-examined and found acceptable.

1 rigid strut had a loose wall plate bolt. Bolting was retorqued and was acceptable.

During Class 1 system leakage examinations 3 pressure boundary fitting leaks were found. Leaks were evaluated, repaired, re-examined and accepted.

6. IGSCC-Reactor recirculation loop A & B 2" drain lines (piping and valves) with type 304 SST were replaced with type 316 L SST as part of the IGSCC mitigation program. PT was performed on the welds in addition to the required RT.

PLANT M, PWR-B&W

ISI-1, CODE-74S75

EXAM DATE-9/87 THRU 12/87

REPORT DATE-3/21/88

CODE CLASSES-1,2

CODE REPORT REQ MET-yes

COMMENTS:

1. Examinations were performed by Babcock & Wilcox
2. Examinations performed on the following:

Reactor Vessel

Steam Generator-A

Steam Generator-B
Reactor Coolant Pump
Associated Piping, Pumps, Valves & Supports

3. RESULTS:

60 reportable indications. 16 were accepted by B&W Level III evaluation. 44 were accepted by re-examination and/or by Florida Power Corporation. All listed an evaluation report number.

PLANT N. BWR-GE

ISI-1, CODE 80W81

EXAM DATE-4/24/87 THRU 5/28/89

REPORT DATE-8/9/89

CODE CLASSES-1,2,3 (Class 3 Snubbers)

CODE REPORT REQ MET-yes

COMMENTS:

1. Report is for ISI performed over two years (permissible because only refueled once). During this refueling cycle Clinton Power Station (CPS) experienced 3 planned outages, 2 for maintenance and 1 for refueling.
2. Other ISI examinations-10 control rod drives were replaced for routine maintenance. Upon reinstallation of replaced control rod drives, the bolting was examined as required by the CPS ISI Program Manual.
3. Snubber Functional Tests-An initial sample of 10% of each type of snubbers (total 88) was selected for testing from the population of 856 Class 1, 2, and 3 snubbers. These snubbers were selected to ensure that the sample was representative of the various configurations, operating environments, and sizes, which exist in the plant. Failure of these snubbers could adversely affect safety related systems. Several failures resulted in the sample being increased to a total of 413 snubbers.

4. Pressure Tests-A system leakage test and VT-2 of ASME Code Class 1 components was performed prior to plant startup. During VT-2, minor leakage from valve packings, one pump seal, and three control rod drive mechanism bolted connections was noted. Leakage was corrected and a second system leakage test was successfully completed.
5. No repairs or replacements were required as a result of the ISI examinations. Snubbers which failed the ISI functional tests were replaced in accordance with ASME Code requirements.

PLANT O, BWR-GE

ISI-1, CODE-80W81

EXAM DATE-9/1/87 TO 5/19/89

REPORT DATE-8/15/89

CODE CLASSES-1,2,3

CODE REPORT REQ MET-yes

COMMENTS:

1. 9/1/87 was the date Unit 1 was placed back in service following the first refueling outage and 5/19/89 was the last day of the second refueling outage.
2. Examinations were performed by Philadelphia Electric Co. (PECo), General Electric, and U. S. Testing.
3. In addition to ASME Section XI examinations, augmented examinations were performed in accordance with:

NRC Generic Letter 88-01

NUREG 0619

NUREG 0800

I. E. Bulletin 80-13

GE SIL 474

GE SIL 289
GE SIL 409
GE SIL 455
GE SIL 433

4. Note: Examinations performed on the Shroud Head Bolts (SIL 433) were performed in accordance with a PECO approved non-code procedure.

5. RESULTS:

Numerous indications were recorded, but subsequent evaluations determined most to be either insignificant or geometric in nature. Others are summarized below.

3 RHR Service Water pipe restraints were found to have lamellar tears located in the W shape structural members of the restraints. Restraints with an improved design were installed, and subsequent baseline examinations were acceptable.

1 RHR variable support was found with a pin installed in the spring can which prohibited the spring from supporting the pipe. Engineering evaluation determined that the piping system was not damaged. The pin was removed, and re-examination was satisfactory.

UT examinations of RPV nozzle the safe-end weld VRR-1RD-1A N2H revealed a 7" circumferential indication, characteristic of IGSCC. A detailed report was submitted to the NRC via a letter from G. A. Hunger, JR. (PECO) dated 4/3/89. This Report requested approval to run "as is" with the application of a Crack Advance Verification System (CAVS). NRC granted approval per letter from R. J. Clark (NRC) to G. A. Hunger dated 5/2/89, to run for the third fuel cycle under certain restrictions detailed in the Safety Evaluation attached to the letter. Corrective action plan for ultimate disposition of the indication is to be established by PECO prior to the next refueling outage.

PLANT P, PWR-W

ISI-2, CODE-80W81

EXAM DATE-3/20/89 TO 4/25/89

REPORT DATE-4/28/89

CODE CLASSES-1,2

CODE REPORT REQ MET-yes

COMMENTS:

1. The examination plan was based on the requirements of ASME Section XI, 80W81 Code and Prairie Island's Technical Specification. UT examination procedures for piping welds complied with the requirements of Appendix III of the Winter '81 Addenda. In addition the Safety Injection Accumulator Tanks nozzles were examined as the result of Safety Evaluation 232.
2. UT was used to perform the volumetric examinations, and PT & MT were used to perform the surface examinations. VT examinations were aided, when necessary, with artificial lighting and verified for adequacy with an 18% neutral gray card with a 1/32 inch black line.
3. RESULTS:

The following is a list of anomalies detected:

RHR Pump Suction B	VT-Loose nuts, marker painted, no load markers.
RHR Pump Discharge A	VT, PT-arc strikes, linear, loose clamp, marker painted.
RV Safety Injection Loop A	VT-Thread engage, drawing compliance (2 areas), load markers off.

RV Safety Injection Loop B	VT, PT-Linears, cold lap.
Feedwater A	VT, MT-3 linears, drawing compliance.
RC Pump 21	VT-Drawing compliance.
Steam Generator No. 22	VT, UT-Drawing compliance, inclusions.
Pressurizer Surge	VT-Drawing compliance, bottomed out.
Main Steam B	VT-Arc strikes, drawing compliance, base plate 3/8" away from wall.
Main Steam A	VT-Fluid level.
RHR Take Off Hot A	VT-Flame cut holes, thread engagement.
Aux. Spray to Pressurizer	PT-Rounded & linear.

4. All anomalies were either corrected, or an engineering evaluation was performed to accept "as is" conditions. Rounded linear and arc strike indications were removed by light hand grinding and blending the area smooth. Hangers with drawing non-compliances were found acceptable and drawings are to be revised to reflect the "as found" condition. Loose nuts were tightened; missing load markers on hanger were replaced; the hanger with the load markers off was reset; the painted load markers, loose clamp, thread engagement, flame cut holes and bottom out were evaluated and found acceptable by engineering evaluation. The flange with fluid level was replaced; the hanger with a loose base plate was tightened; some welds with linear or inclusion indications were accepted based on Section XI IWB-3514.2.

PLANT Q, BWR-GE

ISI-2, 80W80

EXAM DATE-2/1/89 THRU 4/7/89

REPORT DATE-6/9/89

CODE CLASSES-1,2

CODE REPORT REQ MET-yes

COMMENTS:

1. Examination procedures were reviewed and approved by Level III personnel and conform to the requirements of Section XI 80W80 except where these are in conflict with Technical Specification requirements.

2. RESULTS:

Safety Class 1

Category B-A, during UT of reactor head circumferential weld A-B, a mid-wall UT reflector was identified. Evaluated and found to be acceptable for continued service.

Category B-G-2, during VT of valve bolting on component V2-53B, 1 nut was identified as having mechanical damage. Evaluated and determined to be installation related and insignificant to proper function of component.

Category B-G-2, during VT of the valve bolting on component V2-80B, 11 nuts are identified as having incomplete thread engagement. Evaluated and determined to be installation related and insignificant to proper function of component.

Category B-J, MT of five welds revealed 14 rejectable linear indications. Removed or reduced to acceptable size by manual surface conditioning. Determined to be seams caused by pipe fabrication, no sample expansion was required. (non-conservative utility interpretation of the Code)

Category B-P, VT of Safety Class 1 system revealed a 1" flow sensing line to the "A" Main Steam Line Flow Element was leaking. Determined to be inadequate welding performed during construction. Repaired, re-examined, accepted. Three other similar connections examined and verified acceptable.

Category F-C, VT of 11 supports revealed 5 nuts with incomplete thread engagement, 1 unbent cotter pin, 1 missing cotter pin, 5 spring can load settings incorrect. The incomplete thread engagement was determined to be installation related and insignificant to proper function of component. One cotter pin installed, missing cotter pin considered insignificant-support was operable. Spring can load settings readjusted.

Safety Class 2

Category C-B, MT of A-RHR Heat exchanger revealed a rejectable linear indication. Removed by manual surface conditioning. Determined to be a seam caused by pipe fabrication, no sample expansion was required. (non-conservative utility interpretation of the Code)

Category C-F-2, MT revealed 6 rejectable linear indications in 4 welds. One indication on weld T-33 was evaluated and found to be acceptable for continued service. Other indications were removed by manual surface conditioning. Determined to be a seams caused by pipe fabrication, no sample expansion was required. (non-conservative utility interpretation of the Code)

Category F-C, VT of 13 supports revealed 7 nuts with incomplete thread engagement, 5 loose nuts, and 2 spring can incorrect load settings. VT of another 4 supports revealed 1 support had the rod end bushing clearance incorrect, 1 support had a cracked weld on the base plate, 1 support had a damaged washer, 1 support had cracked grout on the pump base plate. Incomplete thread engagement was determined to be installation related and insignificant to the proper function of the component. Spring can load settings were readjusted. Loose nuts were

tightened. Rod end bushing clearance and damaged washer evaluated acceptable for continued service. Cracked weld and cracked grout were repaired.

PLANT R, PWR-C-E

ISI-2, CODE-80W81

EXAM DATE-1/24/89 TO 4/13/89

REPORT DATE-7/28/89

CODE CLASSES-1,2

CODE REPORT REQ MET-no, 15 days late

COMMENTS:

1. Examinations performed by personnel from Northeast Utilities Service Co., Nuclear Engineering and Operations Group, EBASCO Services, Inc., and Combustion Engineering, Inc.
2. All items in this report are creditable to the second period of the Second Interval ISI except for:

Additional VT examinations required to meet IWF-2430 (a) or (b).

Augmented VT examinations of the pressurizer spray line to meet requirements of NRC Bulletin #88-11.

Augmented VT examinations imposed by the NUPOC ISI coordinator to satisfy requirements of IWF-3400 relative to nonconforming support #SIAH-02.

This support was not scheduled to be examined this refueling outage but was reported to be nonconforming.

PT performed on replaced valve flange bolting to satisfy an "up-grade" requirement and VT to satisfy the preservice requirement.

Since the 1989 refueling outage was close to the end of the first period and the start of the second period, several items noted in Section VI of this report will be creditable to the first period.

3. Examinations performed, as required, by ASME Code Section XI, 80W81 except for the extent of the examinations for Categories B-J, C-F and C-G are determined by the 74S75 as required/permitted by 10CFR50.55a.

4. RESULTS:

Class 1 and Class 2 indications evaluated and determined to be acceptable.

Category IWF-11 supports were determined unacceptable. All were corrected in accordance with standard component maintenance procedures.

PLANT S, BWR-GE

ISI-2, CODE-80W81

EXAM DATE-11/5/88 TO 4/10/89

REPORT DATE-6/26/89

CODE CLASSES-1,2,3(Class 3 Snubbers)

CODE REPORT REQ MET-yes

COMMENTS:

1. Examinations were performed to satisfy requirements of:

ASME Section XI, 80W81

NUREG 0313, Revision 2

NRC Generic Letter 88-01

NUREG 0737

Inspection and Enforcement Notice 84-41

Inspection and Enforcement Bulletin 80-13

Vendor Recommendations

Brunswick Steam Electric Plant (BSEP) Technical Specifications

Other

2. Total of 328 Class 1,2,3 supports examined.

3. RESULTS:

UT examinations on nine components revealed 42 IGSCC indications. Full structural inconel overlay applied and evaluated as acceptable for additional fuel cycle.

VT-3 on Feedwater spargers revealed multiple linear indications. Flow hole cracking present on each sparger. Evaluated as acceptable for an additional fuel cycle without repair.

VT-3 on Steam Dryer revealed multiple linear indications. Evaluated as acceptable (in non-critical areas) for an additional fuel cycle without repair.

VT-3 of valve internal surfaces revealed erosion/corrosion on two, one was acceptable for an additional fuel cycle. Three areas of erosion were ground out and the weld repaired on the other one. Linear indications in backseat on three valves were corrected by replacing the backseat. Gouges on three valves were acceptable without repair for continued service. UT revealed minimum wall thickness on one valve which was evaluated as acceptable. UT revealed a planar indication on one valve which was accepted as is.

VT-1 of CRD Bolting revealed pitting/corrosion; accepted as is.

UT of 10 piping welds revealed crevice corrosion cracking in all ten RCR inlet thermal sleeve attachment weld areas-leak barrier overlays applied to safe ends; evaluated as acceptable for one additional fuel cycle.

VT-3 on two valves revealed several shallow linear indications caused by dry stroking; accepted as is.

VT-1 revealed 3 indications of corrosion and one hole in end of one stud; accepted as is.

UT of 2 piping welds revealed planar indications-did not exceed acceptance standards; accepted as is.

UT of RECIRC piping weld revealed previously detected IGSCC 2" long-insignificant growth since 1985; accepted for an additional fuel cycle without repair.

UT of 5 piping welds revealed IGSCC under overlay material; accepted for continued service.

VT-2 on Reactor Coolant Pressure Boundary reveal leakage from various mechanical connections; documented on a Work Request.

VT-2 revealed a thru-wall leak on a valve drain line during hydro; section of pipe replaced.

UT of RECIRC piping weld detected 5 IGSCC indications under weld overlay-2 were previously recorded; accepted for an additional fuel cycle.

UT of 2 piping welds revealed 1 IGSCC indication under the weld overlay and 2 lack of fusion indications in the weld overlay material; accepted for continued service.

UT of 2 piping welds revealed 31 interbead lack of fusion indications in the weld overlay and 7 axial IGSCC indications under the overlay; acceptable for an additional fuel cycle.

UT of 2 piping welds revealed 6 interbead lack of fusion indications, and 14 lack of bond indications in the weld overlay, and 2 IGSCC indications under the weld overlay; acceptable for an additional fuel cycle.

UT of 3 piping welds revealed 21 lack of fusion indications, and 3 lack of bond indications in the weld overlay, and 6 IGSCC indications under the overlay; accepted for an additional fuel cycle.

PT of weld revealed a rounded 1/16" indication; evaluated as an acceptable size.

UT revealed an area of reduced wall thickness; evaluated for continued service with monitoring during next period.

UT of 2 RECIRC piping welds revealed 54 indications of interbead lack of fusion and 16 indications of lack of bond in the overlay material and 14 IGSCC indications under the overlay material; evaluated as acceptable for an additional fuel cycle.

UT found 2 areas of reduced wall thickness; evaluated as acceptable for continued use without repair, but monitored during next period.

UT/VT revealed prepping of eroded area for a weld repair resulted in a thru-wall violation of the valves's pressure retaining boundary; repaired by welding and evaluated as acceptable for an additional fuel cycle.

UT of another valve's pressure boundary (examined because of condition on above valve) revealed wall thickness below the minimum required by design; repaired by welding and evaluated as acceptable for an additional fuel cycle.

VT performed on valve weld (examined because of conditions on other valves) revealed erosion/corrosion; repaired by flapping/grinding and acceptable for another fuel cycle but monitored.

VT-2 revealed leakage from various mechanical connections on FW, MS, RHR, Standby Liquid Control and Reactor Bldg Closed Cooling Water Systems; documented on a Work Request.

Helium leak test revealed leakage from various mechanical connections in

the Standby Gas Treatment System; documented on a Work Request.

VT-2 detected thru-wall leakage from flex hose in the Containment Atmosphere Control System; flex hose was replaced and re-examined satisfactorily.

VT-4 revealed incorrect setting on 2 supports; evaluated as acceptable after repair for continued service.

VT-3/VT-4 on Class 1,2,3 supports and Technical Specification snubbers found 2 supports to have inoperable conditions that resulted in sample expansions that revealed loose locking devices/parts, missing/leaking fluid (snubbers), hot/cold setting adjustments out of/near tolerance limits, misalignment, mechanical interferences, rust, paint, debris, etc., missing I.D. tags, bound spherical bearings. These were evaluated and/or corrected in accordance with plant procedures and returned to service.

UT Wall Thickness measurement of fitting of reheater drain tank to FW heater revealed erosion/corrosion, wall below acceptable minimum. Fitting was replaced.

UT Wall Thickness measurement of 2 fittings and adjacent piping of high pressure steam drain from MS stop valves to condenser revealed erosion/corrosion, wall below acceptable minimum. Fittings and piping were replaced.

VT-2 on Service Water System revealed leakage from various mechanical connections; documented on Work Order (hydrostatic makeup test requirement).

Visual on Service Water System revealed thru-wall leakage on valve; weld repaired, hydro test performed, accepted for continued service.

PLANT T, PWR-W

ISI-1, CODE 80W81

EXAM DATE- TO 6/9/89

REPORT DATE-8/30/89

CODE CLASSES-1,2

CODE REPORT REQ MET=yes

COMMENTS:

1. End-of-cycle 2 refueling outage ended 5/9/89
2. Augmented examinations consisted of Reactor Coolant Pump Flywheel, Steam Generator Tubing, Pipe Rupture Protection, and Thermal Stress Piping examinations.
3. Babcock and Wilcox performed examinations.
4. RESULTS:

Class 1

UT examined 4 outlet nozzle to Reactor Vessel shell welds and inside radius-no reportable indications.

UT/PT adjoining safe-end to nozzle welds-no reportable indications.

UT examined 15 stud hole threads in the RV flange-no reportable indications.

VT examined 58 partial penetration incore instrument tube to RV lower head welds-no reportable indications.

VT examined 78 partial penetration CRDM tube to RV upper head welds-no reportable indications.

UT examined pressurizer upper head-to-shell welds, pressurizer spray nozzle to upper head weld, nozzle inside radius, pressurizer relief nozzle to upper head weld, nozzle inside radius-no reportable indications.

UT/PT examined pressurizer spray nozzle to safe-end weld and pressurizer relief nozzle to safe-end weld-no reportable indications.

MT examined 3 pressurizer support bracket welds-no reportable indications.

VT examined 78 pressurizer heater penetrations in lower head-no reportable indications.

VT examined 32 SG bolts-no reportable indications.

UT/VT examined 24 RC pump main flange bolts. VT examined 12 RC pump seal gland bolts and 12 RC pump seal housing bolts-no reportable indications.

UT/PT 4 RC dissimilar metal welds, 37 similar metal welds, and PT 6 socket welds-no reportable indications.

VT 7 flange bolting, 39 supports-no reportable indications.

VT bolting on 8 valves, internal surfaces of 1 valve-no reportable indications.

System leakage test on Class 1 pressure boundary-no reportable indications.

Class 2

UT examined RHR heat exchanger flange-to-shell and shell to lower head welds-no reportable indications.

UT examined SG tube sheet to stub barrel weld-no reportable indications.

PT examined RHR heat exchanger inlet nozzle and outlet nozzle with reinforcing pads-no reportable indications

MT examined 26 welds , PT examined 46 welds all 1/2" and less nominal wall thickness-no reportable indications.

UT/MT examined 6 welds, UT/PT 11 welds, RT/MT 2 welds, RT 1 weld (Sur could not be performed due to access RR CNS-002) all >1/2" nominal wall thickness-no reportable indications.

MT 4 MS integrally welded attachments-no reportable indications.

PT valve body-to-bonnet weld-no reportable indications.

VT examined 77 supports-no reportable indications.

Class 2 functional test was performed-no reportable indications.

Augmented Examinations

UT Reactor Coolant Pump Flywheels-no reportable indications.

UT/MT 3 welds on MS Pipe Rupture Protection-no reportable indications.

UT examined 9 RC welds and 7 bends-no reportable indications.

PLANT U, PWR-C-E

ISI-2, CODE-80W80

EXAM DATE-9/2/88 TO 1/31/89

REPORT DATE-4/14/89

CODE CLASSES-1,2,3

CODE REPORT REQ MET-yes

COMMENTS:

1. Supplementary examinations were performed at the request of Omaha Public Power District (OPPD) and include examinations to meet Technical Specifications.

2. Augmented Examinations

Nondestructive examinations performed to meet specific OPPD commitments to the NRC. Included are responses to NRC Bulletin 88-11 and NRC Letter 88-097 of 4/7/88.

3. RESULTS:

Relevant Indication Summary (summary or tables usually did not say what was wrong or what the indications were).

UT on head-to-flange weld revealed spot indications which were evaluated as acceptable.

VT-3 on 3 pipe restraints-2 accepted after repair, 1 accepted as is

VT-4 on 6 pipe restraints-4 accepted after repair, 1 accepted as is, 1 accepted after nut was tightened.

PT on pipe to valve weld-repaired and accepted.

VT-4 on 3 restraints-2 accepted as is, nut was tightened on the other and accepted.

PT on elbow-pipe weld revealed 3/32 indication-accepted after minor repair.

VT-4 on 2 snubbers-accepted as is.

VT-4 on 1 pipe support and 3 restraints-repaired and accepted.

VT-4 on 1 pipe support-repaired, line still not filled, re-examine when filled.

VT-4 on 1 pipe support-re-examine after repair.

VT-4 on 4 pipe supports-repaired and accepted.

VT-3 on 3 restraints-repaired and accepted.

VT-4 on 3 restraints-repaired and accepted.

VT-1 on studs-supplemental exam for Tech Specs.

PLANT V, PWR-W

ISI-2, CODE-83S83

EXAM DATE-3/31/89 TO 5/17/89

REPORT DATE- 7/24/89

CODE CLASSES-1,2

CODE REPORT REQ MET-yes

COMMENTS:

1. Report included: examiners' eye test results, examiners' certification

test results, transducer certifications, instrument calibrations, NDE procedures, isometrics, and the Material Safety Data Sheets (MSDS) for the penetrant examination materials.

2. AUGMENTED EXAMINATIONS:

B & C Reactor Coolant Pump flywheels.

3. ADDITIONAL EXAMINATIONS:

Leak testing of the Class 1 Reactor Coolant System Pressure Boundary was performed prior to startup following the refueling outage.

Hydrostatic tests of Class 1 and 2 systems were performed.

UT examination of the feedwater nozzle-to-reducer welds on Steam Generators A, B, and C.

Volumetric and Surface examinations of the pressurizer surge line welds (including the branch connection to the RCS loop B hot leg).

VT examinations on two additional reactor vessel conoseal bolting assemblies.

Surface and visual examinations of RCP "C" seal housing bolts.

Verification of constant and variable spring supports and hangers was performed.

4. RESULTS:

Class 1 Summary of Indications

Volumetric Examinations

A geometric indication identified in pressurizer spray line weld-acceptable.

Surface Examinations

No recordable indications.

Visual Examinations

4 primary manway studs ("C" Steam Generator) had minor thread damage and were accepted.

1 primary manway stud had a flat area ≥ 1 " long. It was rejected and replaced.

4 valves had boric acid residue on the exterior. They were cleaned, re-examined, and accepted.

2 spring hangers were found out of design tolerance. They were re-set to within their acceptance criteria, new settings verified, accepted.

2 hydraulic snubbers showed evidence of leakage. The Mechanical Maintenance Snubber investigation group found no anomalies.

2 hangers had cracks in the concrete at the base plates; The cracks were determined to be in the grout and do not affect the integrity of the attachment to the building structure, since anchor bolt embedment is still adequate.

3 hangers had parts missing. A nut missing from 1 hanger was not needed; a bushing was replaced on another hanger; and the retaining clip was replaced and the pivot pin pushed back to proper position on the third hanger.

1 hanger had the base plate separated from the ceiling (1 1/8" max) and the spring cans were off scale on the low end. Hanger was replaced.

Class 2 Summary of Indications

Volumetric Examinations

2 welds had geometric reflectors-accepted.

1 weld had a valid flaw reflector which was deemed acceptable after a supplemental examination.

Surface Examinations

1 support had an acceptable linear indication.

Visual Examinations

Evidence of hydraulic fluid leakage. Investigation by the Mechanical Maintenance snubber inspection group revealed no anomalies.

Augmented Examinations

No recordable indications found in the B and C RCP flywheels.

Additional Examinations

3 spring hangers found to be out of acceptance criteria. One was replaced, and two were adjusted to be within the acceptance criteria.

PLANT W, PWR-W

ISI-2, CODE-80W80

EXAM DATE-12/2/86 TO 9/19/89

REPORT DATE-12/15/89

CODE CLASSES-1,2

CODE REPORT REQ MET-yes

COMMENTS

1. Refueling Outage, 2nd Interval, 2nd Period-Inservice examinations were conducted from December 2, 1986 to September 19, 1989. Inspections, witnessing and surveillance of the examinations and related activities were conducted by personnel from the Hartford Steam Boiler Inspection and Insurance Company, Surry Quality Assurance Department, and Surry technical staff.

A total of 142 NIS-2 forms was submitted in this summary report.

2. LIMITATIONS

Some of the piping system and components were designed before the requirements of the 1974 Code were applied; consequently some examinations are limited or not practical due to geometric configuration or accessibility.

Examinations were conducted to review as much of the examination zones as was practical within geometric, metallurgical, and physical limitations. When the required UT volume or area could not be examined 100%, the examination was considered a partial (PAR) and so noted on the report. Generally PARs are noted at fitting to fitting assemblies and in areas where integrally welded supports preclude access to some part of the examination.

3. RESULTS

The examinations resulted in a total of 53 components being reported on the basis of procedure recording criteria, which generally are more critical than the ASME Section XI Acceptance Standards.

Bolting on three flanges revealed an accumulation of boric acid. Bolting was cleaned, reexamined, and accepted.

An integral welded attachment was rejected due to a linear indication. The indication was ground out and repaired by welding. Additional integral attachments were inspected as required by ASME Section XI, IWC-2430. No other deficiencies were found.

On 35 spring can supports the spring can settings were out of tolerance. This condition was corrected.

The following conditions were found on supports. These were corrected.

- 1 support-1/2" bolt not fully engaged.
- 2 supports-loose locking nuts.
- 3 supports-rust and dirt inside spring can.
- 1 support-weld missing for brace and gauge on support member.
- 1 support-5/8" gap around top of wall mounted support plate.
- 1 support-hanger not in tension (not supporting pipe).
- 1 support-support bracket broken; U-bolt fastening nuts missing.
- 1 support-bent rod.

Two piping welds were rejected due to flaw sizes in excess of the NDE procedure acceptance criteria. The scope of the examinations was expanded as required by ASME Section XI, IWB-2430.

PLANT X, PWR-W

ISI-1, CODE-83S83

EXAM DATE-8/25/88 TO 10/19/89

REPORT DATE-1/16/90

CODE CLASSES-1,2,3

CODE REPORT REQ MET-yes

COMMENTS:

1. Report was for ISI of selected Class 1, 2, & 3 components performed during the time period between the start of commercial operation on

8/25/88 and the completion of the first refueling outage on 10/19/89.

2. Report includes steam generator tubing examination results.
3. First Inspection period extends to August 25, 1998.
4. Examinations were performed on 92 Class 1 and Class 2 components, 43 Class 1, 2, 3, component supports, 34 piping supports, and 9 equipment supports.
5. RESULTS:

UT revealed Code-allowable flaws in Main Steam Piping weld and Regenerative Heat Exchanger weld. These flaws were also detected in preservice examinations. Following evaluation accepted "as is".

No recordable indications detected by PT and MT examinations.

VT examination revealed a plastic wire tie on the RPV seal surface. Tie was removed during a debris removal operation.

RC pipe support had a loose jam nut. Nut was tightened.

Two equipment supports had relevant conditions previously detected and accepted.

One pipe guide was found to have zero clearance, was dispositioned "use as is".

Two pipe guides were found to be corroded in the area of the floor plates. Dispositioned as acceptable and work order initiated to be recoated for corrosion protection.

6. LIMITED EXAMINATIONS

B-D, B3.110, (2 components), 69% & 71% UT

B-F, B5.40, (2 components), 91% & 99% UT

B-J, B9.11, (1 component), 97% UT, 100% PT

C-A, C1.10, (1 component), 75% UT

C-B, C2.21, (4 components), 84%, 85%, 66%, 66% UT, 100% PT

C-C, C3.20, (1 component), 82% UT, 61% MT

C-C, C3.20, (1 component), 88% UT, 55% MT

C-F-2, C5.51, (1 component), 78% UT, 100% MT

C-F-2, C5.52, (4 components), 91%, 99%, 53%, 31% UT, 91%, 96%, 53%,
31% MT

The percentage of UT examination was averaged by using the formula

$$c = \frac{a + 2b}{2}$$

2

These limited examinations did not reference relief requests. Review of the facility's TER revealed only two relief requests neither of which was for any of these limited examinations.

SUMMARY OF INSERVICE INSPECTIONS

CODE CATEGORY	CODE ITEM	DESCRIPTION	NO. OF METHODS EXAMS	NO. OF INDICATION TYPES INDI- CATIONS	DISPOSITIONS
		PLANT A, BWR-GE	0	0	
ISI-2, W-B1	1987 OUTAGE	CODE CLASSES-1,2,3	0	0	REPORT WAS LATE
B-A	B1.21,30,40	PR RET RV WLDS	3 UT,MT	0	
B-D	B3.90,100	NOZZLE WLDS	2 UT	0	
B-F	B5.130	DIS METAL WLDS	5 UT,PT	5 GEOM	
B-G-1	B6.10,20,30	BOLTING >2"dia	92 UT	1 GEOM	
	,40				
B-G-1	B6.180	PUMP BOLTING	1 UT	0	
B-G-2	B7.50,70	BOLTING 2"dia	4 VT-1	0	
B-G-2	B7.80	BOLTING 2"dia	766 VT-1	29	REJECTED
B-J	B9.11	PIPING WLDS	1 UT,MT	0	
B-J	B9.11,12,31	PIPING WLDS	89 UT,MT,PT	35 GEOM	
	,40				
B-J	B9.40	PIPING WLDS	2 PT	2 RECOR	ACC
B-K-1	B10.10	INR-WLD ATTS	6 MT	0	
B-K-1	B10.20	PUMP INR-WLD ATTS	1 PT	0	
B-M-2	B12.50	VALVE BODY >4"NPS	2 VT-3	0	
B-N-1	B13.10	RV INTERIOR	23 VT-3	4 RECOR	ACC
B-N-1	B13.10	RV INTERIOR	20 VT-3	4 RECOR	3ACC. 1 REJ
B-N-2	B13.20	RV INTERIOR ATTS	20 VT-1	0	
B-N-2	B13.21	RV INTERIOR ATTS	16 VT-1	0	
C-A	C1.10	CIRC SHELL WLDS	1 UT,MT	1 GEOM	
C-B	C2.31	VESSEL NOZZLE WLDS	1 MT	0	
C-B	C2.32	VESSEL NOZZLE WLDS	1 VT-2	0	
C-C	C3.10	INR-WLD ATTS	1 MT	0	
C-F	F5.11	PIPING WLDS	1 MT,PT	1 RECOR	REPAIR-ACC
C-F	F5.11	PIPING WLDS	20 MT	2 RECOR	REPAIR-ACC
C-F	F5.11,21,22	PIPING WLDS	10 UT,MT	9 1 RECOR, 8 GEOM	ACC NON-GEOM
C-H		PR RET COMPONENTS	3 HYDRD	3 RECOR	
C-H		PR RET COMPONENTS	2 FUNC	2 RECOR	
D-B	D2.10	PR RET COMPONENTS	3 FUNC	2 1 RECOR, 1 REPOR	REPAIR-ACC
D-B	D2.10	PR RET COMPONENTS	2 HYDRD	2 RECOR	
D-B	D2.20,40	INR-WLD ATTS	57 VT-3	0	
F-A		SUPPORTS	29 VT-3,4	2 1 REPOR, 1 RECOR	REPAIR-ACC
F-A		SUPPORTS	115 VT-3	8 1 REPOR, 7 RECOR	REPAIR-ACC
F-A,B,C		SUPPORTS	16 VT-3,4	0	
F-A,B,C		SUPPORTS	7 VT-3	1 RECOR	
			0	0	
	1988 OUTAGE		0	0	
B-A	B1.22	PR RET RV WLDS	1 UT	0	
B-D	B3.90,100	NOZZLE WLDS	26 UT	42 10 RECOR, 32 GEOM	
B-E	B4.11	VSL PR RET WLDS	1 VT-2	0	
B-F	B5.10	DIS METAL WLDS	7 UT,PT	25 9 RECOR, 16 GEOM	
B-F	B5.140	DIS METAL WLDS	1 PT	0	
B-G-1	B6.200	BOLTING >2"dia	1 VT-1	0	
B-G-1	B6.50	BOLTING >2"dia	62 VT-1	0	
B-G-2	B7.50,70	BOLTING 2"dia	96 VT-1	0	
B-H	B8.10	RV INR-WLD ATTS	1 MT	0	
B-J	B9.11	PIPING WLDS	1 UT,PT	1 GEOM	

SUMMARY OF INSERVICE INSPECTIONS

CODE CATEGORY	CODE ITEM	DESCRIPTION	NO. OF METHODS EXAMS	NO. OF INDICATION TYPES INDI- CATIONS	DISPOSITIONS
B-J	B9.40	PIPING WLDS	3 PT	0	
B-K-1	B10.10	INR-WLD ATTS	2 PT	0	
B-M-2	B12.50	VALVE BODY >4"NPS	3 VT-3	0	
B-P	B15.50,51	PR RET COMPONENTS	3 VT-2	3 2 RECOR, 1 REPOR	REPAIR-ACC
C-C	C3.20,30	INR-WLD ATTS	4 MT	1 REPOR	REPAIR-ACC
C-F	C5.11	PIPING WLDS	15 MT	0	
C-F	C5.21	PIPING WLDS	1 UT,MT	0	
C-H		PR RET COMPONENTS	1 HYDRO	1 RECOR	
D-B	D2.10	PR RET COMPONENTS	1 FUNC	1 RECOR	
D-B	D2.10	PR RET COMPONENTS	1 HYDRO	1 RECOR	
D-B	D2.20	INR-WLD ATTS	20 VT-3	1 RECOR	ACC
F-A,B,C		SUPPORTS	13 VT-3	1 RECOR	ACC
F-A,B,C		SUPPORTS	16 VT-3,4	1 REPOR	REPAIR-ACC
F-A,B,C		SUPPORTS	4 VT-3	0	
F-A,B,C		SUPPORTS	5 VT-3,4	0	
F-A,B,C		SUPPORTS	46 VT-3	4 2 RECOR, 2 REPOR	2 REPAIR-1 AS IS-ACC
F-A,B,C		SUPPORTS	5 VT-3,4	1 REPOR	REPAIR-ACC
			0	0	
		PLANT B, BWR-GE	0	0	
ISI-2, S-79	1983 OUTAGE	CODE CLASSES-1,2,3	0	0	REPORT DATE MET CODE
B-A	B1.12,21.22	RV WLDS	3 UT	0	
B-A	B1.40	RV HEAD-TO-FLANGE	1 UT,MT	0	
B-D	B3.10,20	RV NOZZLES	4 UT	0	
B-E	B4.11,13	PR RET VSL WLDS	10 VT-2	0	
B-F	B5.10	RV NZL-TO-SAFE END	3 UT,PT	0	
B-G-2	B7.70	VALVE BOLTING	32 VT-1	0	
B-H	B8.10	RV INR-WLD ATTS	2 MT	0	
B-H	B8.10	RV INR-WLD ATTS	2 MT	0	
B-J	B9.11	PIPING WLDS	12 UT,PT	11 GEOM	
B-J	B9.11	PIPING WLDS	16 UT,MT	23 22 GEOM, 1 WLD INCL	
B-J	B9.12	PIPING WLDS	1 UT,PT	1 MODE CONVERSION	
B-K-1	B10.10	PIPING INR-WLD ATTS	8 PT	0	
B-K-1	B10.10	PIPING INR-WLD ATTS	2 MT	0	
B-M-2	B12.40	VALVE BODY >4"NPS	6 VT-1	0	
B-N-1	B13.10	RV INTERIOR	1 VT-1,3	0	
B-P	B15.50,51	CLASS 1 PIPING	0 HYDRO	0	
C-C	C3.10	INR-WLD ATTS	0 MT	0	
C-F	C5.31	PIPING WLDS	16 MT	0	
F-A		SUPPORTS	0 VT-3	0	
F-B		SUPPORTS	1 VT-3	0	
F-C		SUPPORTS	14 VT-3	0	
			0	0	
	1986 OUTAGE		0	0	
B-A	B1.12	LONG SHELL WLDS	1 UT	0	
B-A	B1.21	RV HEAD WLDS	1 UT	0	
B-A	B1.22	RV HEAD WLDS	1 UT	0	
B-A	B1.30	SHELL-TO-FLANGE WLD	1 UT	0	
B-A	B1.40	HEAD-TO-FLANGE WLD	1 UT,MT	0	
B-D	B3.100	NZL INSIDE RADIUS	5 UT	0 NON-REVELANT IND	

SUMMARY OF INSERVICE INSPECTIONS

CODE CATEGORY	CODE ITEM	DESCRIPTION	NO. OF METHODS EXAMS	NO. OF INDICATION TYPES INDI- CATIONS	DISPOSITIONS
B-D	B3.90	NZL-TQ-VSL WLDS	5 UT	0	
B-E	B4.11	RV WLDS	3 VT-2	0	
B-E	B4.13	CRD NOZZLES	8 VT-2	0	
B-F	B5.10	RV NZL-TQ-SAFE END	6 UT,PT	2 GEOM	
B-F	B5.50	SAFE END WLDS	3 UT,PT	0	
B-G-1	B6.40	BOLTING >2"dia	46 UT	0	
B-G-1	B6.50	BOLTING >2"dia	184 VT-1	0	
B-G-2	B7.10	BOLTING 2" < dia	59 VT-1	0	
B-H	B8.10	RV INR-WLD ATTS	3 MT	0	
B-J	B9.10	PIPING WLDS	24 UT,MT	57 GEOM	
B-J	B9.10	PIPING WLDS	3 UT,PT	2 GEOM	
B-J	B9.32	PIPING WLDS	2 MT	0	
B-K-1	B10.10	INR-WLD ATTS	6 PT	0	
B-K-1	B10.10	INR-WLD ATTS	16 MT	0	
B-M-2	B12.40	VAL BODY >4"NPS	4 VT-1	0	
B-N-1	B13.10	RV INTERIOR	1 VT-1	0	
B-N-1	B13.20	RV INTERIOR ATTS	1 VT-1	1	REPAIR-ACC
B-D	B14.10	CRD HOUSING WLDS	4 UT	0	
B-P	B15.10	PR RET COMPONENTS	1 VT-2	0	
C-B		PR RET COMPONENTS	0 HYDRO	0	
C-B	C2.10	NZL WLDS IN VESSELS	2 MT	0	
C-C	C3.10	INR-WLD ATTS	1 MT	0	
C-F	C5.21	PIPING WLDS	8 UT,PT	11 GEOM	
C-F	C5.31	PIPING WLDS	8 MT	0	
F-A	F-2	SUPPORTS	1 VT-3	0	
F-B	F-3	SUPPORTS	1 VT-3	0	
F-C		SUPPORTS	48 VT-3	6	5 REPAIR, 1 REPLACE-ACC
F-C		SUPPORTS	81 VT-3.4	12	
			0	0	
		PLANT C, BWR-GE	0	0	
ISI-2, W-B1	1988 OUTAGE	CODE CLASSES-1,2,3	0	0	REPORT DATE MET CODE
B-A	B1.11	RV CIRC SHELL WLDS	4 UT	0	
B-A	B1.12	RV LONG SHELL WLDS	12 UT	0	
B-A	B1.40	HEAD-TQ-FLANGE WLD	1 UT,MT	2 OTHER	ACC AS IS
B-D	B3.100	NZL INSIDE RADIUS	4 UT	0	
B-D	B3.90	RV NZL-TQ-VSL WLDS	5 UT	1 LAMINAR	ACC AS IS
B-F	B5.10	RV NZL-TQ-SAFE END	2 UT,PT	2 GEOM	
B-F	B5.10	RV NZL-TQ-SAFE END	2 UT,PT	2 GEOM	
B-F	B5.50	PIR NZL-TQ-SAFE END	5 UT,PT	6 5 GEOM, 1 OTHER	ACC AS IS
B-G-1	B6.10	BOLTING >2"dia	19 MT	0	
B-G-1	B6.180	PHP BOLTING	1 UT	0	
B-G-1	B6.200	PHP BOLTING	1 VT	0	
B-G-1	B6.30	BOLTING >2"dia	19 UT	0	
B-G-1	B6.40	BOLTING >2"dia	18 UT	0	
B-G-1	B6.50	BOLTING >2"dia	19 VT	0	
B-G-2	B7.50	BOLTING 2" < dia	9 VT	0	
B-J	B9.11	PIPING WLDS	32 UT,PT	21 18 GEOM, 3 OTHER-ACC	
B-J	B9.11	PIPING	4 UT,MT	3 1 GEOM, 2 LINEAR	ACC AS IS

SUMMARY OF INSERVICE INSPECTIONS

CODE CATEGORY	CODE ITEM	DESCRIPTION	NO. OF METHODS EXAMS	NO. OF INDICATION TYPES INDI- CATIONS	DISPOSITIONS
B-J	B9.12	PIPING WLDS	16 UT,PT	2 GEOM	
B-J	B9.31	PIPING WLDS	2 UT,MT	0	
B-K-1	B10.10	INR-WLD ATTS	18 MT	2 LINEAR	REPAIR-ACC
B-K-1	B10.20	INR-WLD ATTS	5 PT	0	
B-M-2	B12.50	VAL BODY >4"NPS	2 VT	0	
B-N-1	B13.10	RV INTERIOR	1 VT	2 CRACKS, EROSION	ACC AS IS
B-N-2	B13.20	RV INTERIOR ATTS	1 VT	0	
B-N-2	B13.21	RV INTERIOR ATTS	1 VT	0	
B-N-2	B13.22	CORE SUPPORT	1 VT	0	
B-P	B15.10	PR RET COMPONENTS	1 VT	0	
C-C	C3.40	INR-WLD ATTS	1 VT	0	INACCESSIBLE FOR SUR
C-C	C3.40	INR-WLDS ATTS	46 MT	6 LINEAR	REPAIR-ACC
C-F	C5.11	PIPING WLDS	11 MT	3 1 GEOM, 2 LINEAR	REPAIR-ACC
C-F	C5.21	PIPING WLDS	3 UT,MT	2 2 GEOM	
C-F	C5.31	PIPING WLDS	1 UT,MT	0	
C-G	C6.10	PMP CASING WLDS	4 MT	0	
			0	0	
		PLANT D, BWR-GE	0	0	
ISI-2, 5-78	1989 OUTAGE	CODE CLASSES-1,2,3	0	0	REPORT DATE MET CODE
B-D	B3.130	NZL-TO-SHELL WLDS	6 UT	0	1 DEFERRED
B-G-1	B6.90	MANWAY BOLTING	0	0	DEFERRED
B-F	B5.50	NZL-TO-FLANGE	0	0	DEFERRED
B-J	B9.40	PIPE-TO-VALVE	2 PT	2 ROUNDED	REMOVED-ACC
B-G-2	B7.70	VALVE BOLTING	3 VT-1	1 DAMAGED THREADS	REPLACED
B-B	B2.51	SHELL WLDS	2 UT	0	
B-J	B9.40	PIPE-TO-ELBOW	2 PT	0	
B-J	B9.21	TEE-TO-CK VALVE	1 PT	0	
B-J	B9.21	CK VALVE-TO-ELBOW	1 PT	0	
B-J	B9.21	CK VALVE-TO-PIPE	2 PT	0	
B-K-2	B11.10	PIPE RESTRAINT	1 VT-3	1 BENT ROD	ACC AS IS
B-J	B9.31	BRANCH CONNECTION	1 UT, PT	0	
B-J	B9.31	BRANCH CONNECTION	2 PT	0	
B-J	B9.11	VALVE-TO-ELBOW	1 UT, PT	0	
B-J	B9.11	ELBOW-TO-PIPE	3 UT, PT	0	
B-J	B9.11	PIPE-TO-BR CONNECT	2 UT, PT	0	
B-K-2	B11.10	PIPE RESTRAINT	1 VT-3	0	
B-K-2	B11.10	PIPE RESTRAINT	1 VT-3, VT-4	0	
B-D	B3.150	NZL-TO-VESSEL	2 UT	0	
B-G-2	B7.40	BOLTING	1 VT-1	1 INSUFFICIENT THREADS	REPLACED STUDS-ACC
B-K-1	B10.10	WLD PIPE LUG	1 PT	1 MULTIPLE INDICATIONS	REMOVED-ACC
B-K-2	B11.10	RESTRAINT	2 VT-3, VT-4	0	
B-K-2	B11.10	SNUBBER	2 VT-3,4 FUNC	0	
B-J	B9.40	PIPE-TO-CK VALVE	2 PT	0	
B-J	B9.40	PIPE-TO-ELBOW	3 PT	0	
B-M-2	B12.40	VALVE BODY >4"NPS	1 VT-1	0	
B-J	B9.11	ELBOW-TO-PIPE	1 UT, PT	1 MULTIPLE INDICATIONS	REMOVED-ACC
B-J	B9.11	PIPE-TO-TEE	1 UT, PT	0	
B-J	B9.11	TEE-TO-PIPE	1 UT, PT	1 LINEAR	REMOVED-ACC
B-J	B9.11	TEE-TO-PIPE	1 UT, PT	1 MULTIPLE INDICATIONS	REMOVED-ACC

SUMMARY OF INSERVICE INSPECTIONS

CODE CATEGORY	CODE ITEM	DESCRIPTION	NO. OF METHODS EXAMS	NO. OF INDICATION TYPES INDI- CATIONS	DISPOSITIONS
B-6-2	B7.40	BOLTING	1 VT-1	1 INSUFFICIENT THREADS	REPLACED STUDS-ACC
B-K-1	B10.10	WLD PIPE LUG	1 PT	0	
B-B	B2.51	HEAD-TO-SPOOL	1 UT	0	
B-D	B3.150	NZL WLDS	2 UT	0	
B-D	B3.150	NZL WLDS	2	0	DEFERRED
B-H	B8.40	INNER SUPPRT	1	0	DEFERRED
B-K-1	B10.10	SUPPORT	8 PT	8 LINEAR	ACC AS IS
B-F	B5.30	NZL-TO-SAFE END	2 UT, PT	0	
B-K-2	B11.10	PIPE RESTRAINT	1 VT-3	1 BENT ROD	REPLACED ROD-ACC
B-J	B9.11, 12	PIPING WLDS	3 UT, PT	0	
B-K-2	B11.10	RESTRAINT	1 VT-3	0	
B-K-2	B11.10	RESTRAINT	1 VT-3, VT-4	0	
B-K-2	B11.10	RESTRAINT	1	0	DEFERRED
B-6-2	B7.50	FLANGE BOLTING	1 VT-1	0	
B-J	B9.21	PIPING WLDS	5 PT	0	
B-J	B9.40	PIPING WLDS	2 PT	0	
B-K-2	B11.10	SUPPORTS	2 VT-3, VT-4	0	
B-B	B2.52	HX LONG WLD	1 UT	0	
B-D	B3.150	NZL-TO-SHELL WLDS	2 UT	0	
B-6-2	B7.40	FLANGE BOLTING	1 VT-1	0	
B-H	B8.40	VSL SUPPORT	1 PT	0	
B-K-1	B10.10	SUPPORT	1 PT	0	
B-J	B9.40	PIPING WLDS	4 PT	0	
B-6-2	B7.70	VALVE BOLTING	1 VT-1	1 INSUFFICIENT THREADS	ADJUSTED STUDS
B-K-2	B11.10	RESTRAINTS	2 VT-3, VT-4	0	
C-E	C3.50	RESTRAINT	1 VT-3	0	
C-C	C3.10	VSL SUPPORT	1 PT, VT-3	0	
B-6-2	B7.50	FLANGE BOLTING	1 VT-1	0	
B-J	B9.11	PIPING WLDS	2 UT, PT	0	
B-J	B9.11	PIPING WLD	1 PT	0	
C-F	C5.21	PIPING WLDS	2 UT, PT	0	
C-E	C3.50	RESTRAINTS	2 VT-3	0	
C-F	C5.10, 11	PIPING WLDS	2 PT, VT-1	0	
B-E	B4.13	CRD WLDS	3 VT-2	0	
C-H	C7.11, 21, 31	CRD SYSTEM	1 HYDRD	0	
	, 41				
C-H	C7.11, 21, 41	FW SYSTEM	1 HYDRD	0	
C-H	C7.21, 41	CONDENSATE SYSTEM	1 HYDRD	0	
C-H	C7.21, 41	CLEANUP SYSTEM	1 HYDRD	0	
D-C	D3.1	CRD SYSTEM	1 HYDRD	0	
D-C	D3.1	FW SYSTEM	1 HYDRD	0	
D-C	D3.1	CONDENSATE SYSTEM	1 HYDRD	0	
D-C	D3.1	CLEANUP SYSTEM	1 HYDRD	0	
			0	0	
		PLANT E. BWR-6E	0	0	
151-1, 5-83 1989 OUTAGE	CODE CLASSES-1, 2, 3		0	0	REPORT 16 DAYS LATE
AUGMENTED	CORE SUPPORT		4 VT-3	0	
	STRUCTURE				
AUGMENTED	CROSS-TO-REDUCER		1 UT	0	

SUMMARY OF INSERVICE INSPECTIONS

CODE CATEGORY	CODE ITEM	DESCRIPTION	NO. OF METHODS EXAMS	NO. OF INDICATION TYPES INDI- CATIONS	DISPOSISTIONS
AUGMENTED		ELBOW-TO-PIPE	1 UT,PT	1 GEOM	ACCEPTABLE, SAME AS IN PSI
AUGMENTED		FITTING-TO-PROCESS PIPE	1 UT	0	
AUGMENTED		INR-WLD ATTS	1 UT	1 GEOM	ACCEPTABLE, SAME AS IN PSI
AUGMENTED		INSTRUMENT DRY TUBES	8 VT-3	0	
AUGMENTED		INSTRUMENT DRY TUBES	4 VT-3	1 OTHER	USE AS IS
AUGMENTED		JET PMP BRACKET WLDS	6 VT-3	0	
AUGMENTED		JET PMP INSTR NZL	2 UT	0	
AUGMENTED		JET PMP TACK WLDS	20 VT-3	0	
AUGMENTED		MOISTURE SEPARATOR ASSY	1 VT-3	0	
AUGMENTED		NEUTRON SOURCE HOLDERS	11 VT-3	0	
AUGMENTED		PIPE-TO-CONTOUR NZL	1 UT	0	
AUGMENTED		PIPE-TO-ELBOW	1 PT	0	
AUGMENTED		PIPE-TO-FLANGE	1 UT,PT	1 GEOM	ACCEPTABLE, SAME AS IN PSI
AUGMENTED		PIPE-TO-PENETRATION	1 UT,PT	1 GEOM	ACCEPTABLE, SAME AS IN PSI
AUGMENTED		PIPE-TO-REDUCER	1 UT,PT	1 2 GEOM, 1 OTHER	1/8" INCLUSION, ACCEPTABLE
AUGMENTED		PIPE-TO-TEE	1 PT	0	
AUGMENTED		PIPE-TO-VALVE	1 UT,PT	0	
AUGMENTED		PIPE-TO-VALVE	1 PT	0	
AUGMENTED		PIPE-TO-VALVE	1 PT	0	
AUGMENTED		PIPE-TO-VALVE	1 UT,PT	1 GEOM	ACCEPTABLE, SAME AS IN PSI
AUGMENTED		PIPING WLD	1 PT	0	
AUGMENTED		PIPING WLDS	2 UT,PT	1 GEOM	ACCEPTABLE, SAME AS IN PSI
AUGMENTED		RPV FW SPARGER BRACKET	1 VT-3	0	
AUGMENTED		RPV STEAM DRYER	1 VT-1,VT-3	2 OTHER	NOT ASME COMPONENT, USE AS IS
AUGMENTED		SHROUD HD STUD BOLTS	32 VT-3	4 OTHER	ACCEPTABLE, USE AS IS
AUGMENTED		SURVN SAMPLE SPECIMEN	3 VT-3	0	
AUGMENTED		VALVE COUPLING	1 PT	0	
AUGMENTED		VALVE-TO-PIPE	1 UT,PT	0	
AUGMENTED		VALVE-TO-PIPE	2 PT	0	
AUGMENTED		VALVE-TO-PIPE	1 UT,PT	0	
AUGMENTED		VALVE-TO-PIPE	2 PT	0	
AUGMENTED		VALVE-TO-PIPE	1 PT	0	
AUGMENTED		VALVE-TO-PIPE	1 UT,PT	0	
AUGMENTED		VSL HOLD DOWN BRACKET	2 VT-3	0	

SUMMARY OF INSERVICE INSPECTIONS

CODE CATEGORY	CODE ITEM	DESCRIPTION	NO. OF METHODS EXAMS	NO. OF INDICATION TYPES INDI- CATIONS	DISPOSITIONS
AUGMENTED		VSL SUPPORT BRACKET	1 VT-3	0	
B-A	B1.21	CIRC HEAD WLDS	1 UT	1 GEOM	ACCEPTABLE
B-A	B1.30	SHELL-TO-FLANGE WLD	1 UT	1 GEOM	ACCEPTABLE
B-D	B3.100	NZL INSIDE RADIUS	3 UT	0	
B-D	B3.90	NZL-TO-VSL WLDS	3 UT	0	
B-F	B5.10	PIPING WLDS ≥ 4 "NPS	1 UT,PT	0	
B-F	B5.130	DIS MTL WLDS ≥ 4 "NPS	2 UT,PT	0	
B-6-1	B6.10	RPV CLOSURE HEAD NUT	4 UT,MT	0	
B-6-1	B6.10	RPV CLOSURE HD NUT	6 UT,MT	0	
B-6-1	B6.210	VALVE BOLTING	198 UT	140	140 REPLACED, 58 ACC AS IS
B-6-1	B6.220	FLANGE SURFACE	1 VT-1	1 NOT RECORDABLE	SM TOOL MARKS. ACCEPTABLE
B-6-1	B6.230	VALVE BOLTING	18 VT-1	0	
B-6-1	B6.30	RPV CLOSURE HD STUD	6 UT,MT	0	
B-6-1	B6.30	RPV CLOSURE HD STUD	4 UT,MT	0	
B-6-1	B6.40	RV THREADS IN FLANGE	4 UT	0	
B-6-1	B6.40	RV THREADS IN FLANGE	6 UT	0	
B-6-1	B6.50	RPV CLOSURE HD WASHERS	4 VT-1	0	
B-6-1	B6.50	RPV CLOSURE HD WASHERS	6 VT-1	0	
B-6-2	B7.10	RV BOLTING	24 VT-1	0 NOT RECORDABLE	USED REPLACEMENT BOLTING (?)
B-6-2	B7.50	BOLTING	12 VT-1	0	
B-6-2	B7.50	PIPING BOLTING	228 VT-1	0	
B-6-2	B7.50	BOLTING	1 VT-1	0	
B-6-2	B7.50	FLANGE BOLTING	16 VT-1	0	
B-6-2	B7.70	VALVE BOLTING	24 VT-1	0	
B-6-2	B7.80	FLANGE BOLTING	64 VT-1	2 REPORTABLE	BOLTS REPLACED
B-J	B9.11	CIRC WLDS ≥ 4 "NPS	2 UT,PT	2 GEOM	ACCEPTABLE, SAME AS IN PSI
B-J	B9.11	CIRC WLDS ≥ 4 "NPS	3 UT,PT	1 GEOM	ACCEPTABLE, SAME AS IN PSI
B-J	B9.11	CIRC WLDS ≥ 4 "NPS	6 UT,PT	5 GEOM	ACCEPTABLE, SAME AS IN PSI
B-J	B9.11	CIRC WLDS ≥ 4 "NPS	9 UT,PT	9 GEOM	ACCEPTABLE, SAME AS IN PSI
B-J	B9.11	CIRC WLDS ≥ 4 "NPS	2 UT,PT	1 GEOM	ACCEPTABLE, SAME AS IN PSI
B-J	B9.11	CIRC WLDS ≥ 4 "NPS	2 UT,PT	1 GEOM	ACCEPTABLE, SAME AS IN PSI
B-J	B9.11	CIRC WLDS ≥ 4 "NPS	1 PT	0	
B-J	B9.11	CIRC WLDS ≥ 4 "NPS	2 UT,PT	2 GEOM	ACCEPTABLE, SAME AS IN PSI
B-J	B9.11	CIRC WLDS ≥ 4 "NPS	4 UT,PT	0	
B-J	B9.11	CIRC WLDS ≥ 4 "NPS	4 UT,PT	3 GEOM	ACCEPTABLE, SAME AS IN PSI
B-J	B9.12	LONG WLDS ≥ 4 "NPS	3 UT,PT	1 GEOM	ACCEPTABLE, SAME AS IN PSI

SUMMARY OF INSERVICE INSPECTIONS

CODE CATEGORY	CODE ITEM	DESCRIPTION	NO. OF METHODS EXAMS	NO. OF INDICATION TYPES INDI- CATIONS	DISPOSITIONS
B-J	B9.12	LONG WLDS >=4"NPS	1 PT	0	
B-J	B9.12	LONG WLDS >=4"NPS	5 UT,PT	1 GEOM	ACCEPTABLE, SAME AS IN PSI
B-J	B9.21	CIRC WLDS <4"NPS	1 PT	0	
B-J	B9.21	CIRC WLDS <4"NPS	2 PT	0	
B-J	B9.21	PIPE-TO-ELBOW	1 PT	0	
B-J	B9.31	BR CONN >=4"NPS	1 UT,PT	1 GEOM	ACCEPTABLE, SAME AS IN PSI
B-J	B9.31	BR CONN WLDS >=4"NPS	2 UT,PT	0	
B-J	B9.32	BR CONN WLDS <4"NPS	1 PT	0	
B-J	B9.40	SOCKET WLDS	2 PT	0	
B-J	B9.40	SOCKET WLDS	2 PT	0	
B-J	B9.40	SOCKET WLDS	1 PT	0	
B-J	B9.40	SOCKET WLDS	6 PT	0	
B-K-1	B10.10	INR-WLD ATTS	1 PT	0	
B-K-1	B10.10	INR-WLD ATTS	1 PT	0	
B-K-1	B10.10	PIPING INR-WLD ATTS	1 PT	0	
B-K-1	B10.10	INR-WLD ATTS	1 PT	0	
B-M-2	B12.50	VALVE BODY >4"NPS	1 VT-3	0	
B-M-2	B12.50	VALVE BODY >4"NPS	1 VT-3	0	
B-N-1	B13.10	RV INTERIOR	1 VT-3	0	
B-N-2	B13.30	INR-WLD SUPPORTS	1 VT-3	0	
B-N-2	B13.40	CORE SUPPORT STRUCTURE	4 VT-3	1 NOT RECORDABLE	ACCEPTABLE
B-O	B14.10	CRD HOUSING WLDS	2 PT	0	
B-P	B15.10	RV PR RET BOUNDARY	1 HYDRO,VT-2	0	
B-P	B15.50	PIPING PR BOUNDARY	1 HYDRO,VT-2	0	ALL CLASS 1 SYSTEMS CLASS 1 PUMPS
B-P	B15.60	PMP PR BOUNDARY	1 HYDRO,VT-2	0	
B-P	B15.70	VAL PR RET BOUNDARY	1 HYDRO,VT-2	0	
C-C	C3.10	INR-WLD ATTS	2 MT	0	
C-C	C3.20	INR-WLD ATTS	1 PT	0	
C-C	C3.20	INR-WLD ATTS	3 PT OR MT	0	
C-C	C3.20	INR-WLD ATTS	12 PT	0	
C-C	C3.20	INR-WLD ATTS	1 PT	0	
C-C	C3.20	INR-WLD ATTS	16 MT	0	
C-C	C3.20	INR-WLD ATTS	2 PT	0	
C-C	C3.20	INR-WLD ATTS	1 PT	0	
C-F-2	C5.51	CIRC WLDS >4"NPS	1 UT,PT	1 GEOM	ACCEPTABLE, SAME AS IN PSI
C-F-2	C5.51	CIRC WLDS >4"NPS	1 UT,PT	1 GEOM	ACCEPTABLE. SAME AS IN PSI
C-F-2	C5.51	PIPING WLDS	1 UT,PT	3 2 GEOM, 1 OTHER	1/8" INCLUSION, ACCEPTABLE
C-F-2	C5.51	PIPING WLDS	5 UT,PT	2 GEOM	ACCEPTABLE. SAME AS IN PSI
C-F-2	C5.51	CIRC WLDS >4"NPS	3 UT,PT	2 GEOM	ACCEPTABLE. SAME AS IN PSI
C-F-2	C5.81	CIRC WLDS >=2"NPS	1 PT	0	
C-F-2	C5.81	CIRC WLD >=2"NPS	1 PT	0	

SUMMARY OF INSERVICE INSPECTIONS

CODE CATEGORY	CODE ITEM	DESCRIPTION	NO. OF METHODS EXAMS	NO. OF INDICATION TYPES INDI- CATIONS	DISPOSITIONS
C-6	C6.10	PHP CASING WLDS	1 PT	0	
C-6	C6.10	PHP CASING WLDS	4 PT	0	
D-B	D2.20	INR-WLD ATTS	6 VT-3	3 OTHER	THREE INACCESSIBLE
D-B	D2.20	INR-WLD ATTS	3 VT-3	0	
D-B	D2.20	INR-WLD ATTS	1 VT-3	0	
D-B	D2.20	INR-WLD ATTS	5 VT-3	0	
D-B	D2.20	INR-WLD ATTS	2 VT-3	0	
D-B	D2.20	INR-WLD ATTS	8 VT-3	1 OTHER	LIMITED-EMBEDDED IN BROUT
D-B	D2.20	INR-WLD ATTS	6 VT-3	0	
D-B	D2.30	INR-WLD ATTS	3 VT-3	0	
D-B	D2.30	INR-WLD ATTS	2 VT-3	0	
D-B	D2.40	INR-WLD ATTS	2 VT-3	0	
D-B	D2.40	INR-WLD ATTS	1 VT-3	0	
D-B	D2.40	INR-WLD ATTS	3 VT-3	0	
D-B	D3.30	INR-WLD ATTS	1 VT-3	0	
D-B	F2.20	INR-WLD ATTS	5 VT-3	1 OTHER	ONE WAS INACCESSIBLE
D-B	F2.20	INR-WLD ATTS	2 VT-3	0	LIMITED-2 LUGS EMBEDDED
F-A	F1.10	SUPPORTS	4 VT-3	0	
F-A	F1.10	SUPPORTS	1 VT-3	0	
F-A	F1.10	SUPPORTS	2 VT-3	0	
F-A	F1.10	SUPPORTS	1 VT-3	0	
F-A	F1.10	SUPPORTS	3 VT-3	1 OTHER	THREAD ENGAGEMENT, ACCEPTABLE
F-A	F1.10	SUPPORTS	8 VT-3	0	
F-A	F1.10	SUPPORTS	3 VT-3	0	
F-A	F1.10	SUPPORT	1 VT-3	0	
F-A	F1.10	SUPPORTS	4 VT-3	0	
F-A	F1.10	SUPPORTS	4 VT-3	0	
F-A	F1.10	SUPPORT	1 VT-3	0	
F-A	F1.10	SUPPORTS	10 VT-3	1 OTHER	LOOSE LOCKNUT, TIGHTENED, ACC
F-A	F1.10	SNUBBERS	3 VT-3	0	
F-A	F1.10	SUPPORTS	9 VT-3	0	
F-A	F1.10	SUPPORTS	4 VT-3	0	
F-A	F2.10	SUPPORTS	16 VT-3	1 OTHER (LOOSE LOCKNUT)	TIGHTENED, ACCEPTED
F-A	F2.10	SUPPORTS	12 VT-3	0	
F-A	F2.10	SUPPORTS	15 VT-3	0	
F-A	F2.10	SUPPORTS	15 VT-3	0	
F-A	F2.10	SUPPORTS	6 VT-3	0	
F-A	F2.10	SUPPORTS	16 VT-3	2 OTHER (DEFORMATION)	& COTTER PIN PROB, REPAIRED
F-A	F2.10	SUPPORTS	4 VT-3	0	
F-A	F2.10	SUPPORTS	14 VT-3	0	
F-A	F2.10	SUPPORTS	10 VT-3	0	
F-A	F2.10	SUPPORTS	3 VT-3	0	
F-A	F2.10	SUPPORTS	13 VT-3	0	
F-A	F3.10	SUPPORTS	8 VT-3	0	

SUMMARY OF INSERVICE INSPECTIONS

CODE CATEGORY	CODE ITEM	DESCRIPTION	NO. OF METHODS EXAMS	NO. OF INDICATION TYPES INDI- CATIONS	DISPOSITIONS
F-A	F3.10	SUPPORTS	3 VT-3	0	
F-A	F3.10	SUPPORTS	5 VT-3	0	
F-A	F3.10	SUPPORTS	9 VT-3	0	
F-A	F3.10	SUPPORTS	10 VT-3	6 OTHER	SIX INACCESSIBLE
F-A	F3.10	PIPE SUPPORT	2 VT-3	0	
F-A	F3.10	PIPE SUPPORT	5 VT-3	1 OTHER	ONE WAS INACCESSIBLE
F-A	F3.10	SUPPORTS	6 VT-3	0	
F-A	F3.10	SUPPORTS	2 VT-3	0	
F-A	F3.10	SUPPORTS	2 VT-3	0	LIMITED-2 LUGS EMBEDDED
F-A	F1.10	SUPPORT	1 VT-3	0	
			0	0	
		PLANT F, PWR-W	0	0	
ISI-1, W-80	1989 OUTAGE	CODE CLASSES-1,2	0	0	REPORT DATE MET CODE
B-B	B2.40	TUBESHEET-TO-HEAD WLD	1 UT	0	
B-F	B5.30	SG NZL-TO-SAFE END WLDs	2 UT,PT	0	
B-F	B5.50	DIS MTL WLDs >4"NPS	2 UT,PT	0	
B-6-1	B6.40	THREADS IN FLANGE	18 UT	0	
B-6-2	B7.60	PMP BOLTING	36 VT-1	0	
B-J	B9.11	CIRC PIPE WLDs >4"NPS	16 UT,PT	0	
B-J	B9.40	SOCKET WLDs	10 PT	0	
B-M-2	B12.40	VAL INTERNAL SURFACES	3 VT-3	1 RECORDABLE	ACCEPTABLE
B-P	B15.10	RV PR RET BOUNDARY	1 LEAK,VT-2	0	
B-P	B15.20	PZR PR RET BOUNDARY	1 LEAK,VT-2	0	
B-P	B15.30	SG PR RET BOUNDARY	4 LEAK,VT-2	0	
B-P	B15.50	PIPING PR RET BOUNDARY	11 LEAK,VT-2	0	
B-P	B15.60	PMP PR RET BOUNDARY	4 LEAK,VT-2	0	
B-Q	B16.20	SG TUBING	1795 ET	173 REPORTABLE	REMOVED FROM SERVICE
C-B	C2.21	NZL-TO-SHELL WLDs	1 UT,MT	0	
C-C	C3.40	INR-WLD ATTS	1 MT	0	
C-F	C5.11	CIRC WLDs <=1/2"THK	24 PT	0	
C-F	C5.11	CIRC WLDs <=1/2"THK	2 MT	0	
C-F	C5.12	LONG WLDs <=1/2"THK	7 PT	0	
C-F	C5.21	CIRC WLDs >1/2"THK	1 RT	0	
C-F	C5.21	CIRC WLDs >1/2"THK	3 RT,MT	0	
C-F	C5.21	CIRC WLDs >1/2"THK	5 UT,MT	0	
C-F	C5.21	CIRC WLDs >1/2"THK	3 UT,PT	0	
C-F	C5.21	CIRC WLDs >1/2"THK	4 RT,MT	0	
C-F	C5.21	CIRC WLDs >1/2"THK	1 RT,PT	0	
D-B	D2.11	PR RET COMPONENTS	2 FUNC, VT-2	0	
D-B	D2.12	PR RET COMPONENTS	2 HYDRO, VT-2	0	
AUGMENTED	E1.10	RC PUMPS	1 UT,MT	0	
AUGMENTED	E1.10	RC PUMPS	1 UT	0	
AUGMENTED	E4.10	SG FEEDWATER MOD	1 VT-1	0	

SUMMARY OF INSERVICE INSPECTIONS

CODE CATEGORY	CODE ITEM	DESCRIPTION	NO. OF METHODS EXAMS	NO. OF INDICATION TYPES INDI- CATIONS	DISPOSISTIONS
NRC 88-08	E6.10	PIPING EXAMINATIONS	15 UT	0	
F-A	F1.10	SNUBBERS	4 VT	0	
F-A	F1.10	RIGID SUPPORTS	8 VT	0	
F-A	F1.10	SPRING HANGERS	2 VT	0	
F-A	F1.20	SUPPORTS	3 VT	0	
F-A	F1.20	SNUBBERS	23 VT	5 RECORDABLE	
F-A	F1.20	RIGID SUPPORTS	26 VT	5 RECORDABLE	
F-A	F1.20	SPRING HANGERS	5 VT	1 RECORDABLE	
F-A	F1.30	SPRING HANGERS	1 VT	0	
F-A	F1.30	RIGID SUPPORTS	11 VT	2 RECORDABLE	
			0	0	
		PLANT 6, PWR-W	0	0	
ISI-2, S-83	1989 OUTAGE	CODE CLASSES-1,2	0	0	
B-A	B1.22	MERIDIONAL WLD	1 UT	0	
B-A	B1.40	HEAD-TO-FLANGE	1 UT,MT	5 OTHER	CODE ALLOWABLE, ACCEPTABLE
B-B	B2.11	LOWER HEAD-TO-SHELL	1 UT	0	
B-F	B5.130	NZL-TO-PIPE	1 UT,PT	0	
B-6-1	B6.10	CLOSURE NUTS	18 MT	0	
B-6-1	B6.18	PMP BOLTING	7 UT	0	
B-6-1	B6.30	CLOSURE STUDS	18 UT,MT	0	
B-6-1	B6.50	CLOSURE WASHERS	18 VT-1	0	
B-H	B8.20	LWR HD-TO-SUPT SKIRT	1 UT	0	
B-J	B9.11	PIPING WLDS	24 UT,PT	5 GEOM	ACCEPTABLE
B-J	B9.11	PIPE-TO-PIPE	4 UT,PT	2 GEOM	ACCEPTABLE
B-J	B9.11	PIPE-TO-ELBOW	1 UT,PT	1 GEOM	ACCEPTABLE
B-J	B9.21	PIPING WLDS	2 PT	0	
B-J	B9.21	TEE-TO-PIPE	2 PT	0	
B-J	B9.21	PIPING WLDS	3 UT,PT	0	
B-J	B9.32	BR CONN	1 PT	0	
B-J	B9.40	PIPING WLDS	1 UT,PT	0	
B-J	B9.40	PIPING WLDS	4 PT	0	
B-J	B9.40	PIPING WLDS	3 PT	0	
B-J	B9.40	PIPING WLDS	35 PT	0	
B-J	BP.40	PIPING WLDS	15 UT,PT	0	
B-J	B9.32	PIPE-TO-BR CONN	1 UT,PT	1 GEOM	ACCEPTABLE
B-K-1	B10.10	PIPING WLDS	1 PT	0	
B-K-1	B10.10	CAP-TO-PIPE	1 PT	0	
B-K-1	B10.20	PMP LUGS	3 PT	0	
B-D	B14.10	CRD HOUSING WLDS	1 PT	0	
C-A	C1.10	FLANGE-TO-SHELL	2 UT	3 GEOM	ACCEPTABLE
C-A	C1.10	SHELL WLDS	1 UT	3 GEOM	ACCEPTABLE
C-A	C1.20	UPPER HD-TO-SHELL	1 UT	1 GEOM	ACCEPTABLE
C-B	C2.21	NZL-TO-SHELL	1 UT,PT	0	
C-B	C2.21	NZL-TO-SHELL	1 UT,MT	0	
C-C	C3.20	PIPE LUGS	30 MT	0	
C-C	C3.20	INR-WLD ATTS	4 PT	0	
C-C	C3.40	VAL INR-WLD ATTS	4 MT	0	
C-D	C4.40	VAL BOLTING	2 UT	0	

SUMMARY OF INSERVICE INSPECTIONS

CODE CATEGORY	CODE ITEM	DESCRIPTION	NO. OF METHODS EXAMS	NO. OF INDICATION TYPES INDI- CATIONS	DISPOSISTIONS
C-F-1	CS.11	PIPING WLDS	3 PT	0	
C-F-1	CS.11	PIPING WLDS	3 UT,PT	0	
C-F-1	CS.21	PIPING WLDS	5 UT,PT	1 GEOM	ACCEPTABLE
C-F-1	CS.21	PIPING WLDS	12 UT,PT	2 1 GEOM, 1 OTHER	REPAIRED, BOTH ACCEPTABLE
C-F-1	CS.30	PIPING WLDS	5 PT	0	
C-F-1	CS.30	PIPING WLDS	16 PT	0	
C-F-2	CS.51	PIPING WLDS	3 UT,MT	0	
			0	0	
		PLANT H, PWR-W	0	0	
ISI-1, S-75	1988 OUTAGE	CODE CLASSES-1,2	0	0	REPORT DATE MET CODE
B-B	B1.2	RV MERIDONAL WLDS	2 UT	0	
B-B	B2.1.2	PRESSURIZER WLDS	4 UT	0	
B-C	B1.3	HEAD TO FLANGE WLD	1 UT	0	
B-F	B4.1	SAFE-END WLDS	3 UT,PT	3 GEOM	
B-6-1	B1.10	BOLTING	54 VT	0	
B-6-1	B1.8	BOLTING	108 UT,MT	0	
B-6-1	B1.8	BOLTING	325 VT	2 OTHER	ACC AS IS
B-6-1	B1.9	BOLTING	54 UT	0	
B-6-2	B2.11	BOLTING	16 VT	0	
B-6-2	B3.10	BOLTING	8 MT	0	
B-6-2	B4.12	PR RET BOLTING	3 VT	0	
B-6-2	B4.9	PR RET BOLTING	27 VT	4 OTHER	REPAIR-ACC
B-J	B4.5	PIPING WLDS	2 UT,PT	4 GEOM	
B-J	B4.5	PIPING WLDS	49 UT	59 GEOM	
B-J	B4.5	PIPING WLDS	1 PT	0	
B-J	B4.7	PIPING WLDS	1 PT	0	
B-J	B4.8	SOCKET WLDS	27 PT	1 OTHER	REPAIR-ACC
B-J	B4.8	SOCKET WLDS	17 UT,PT	0	
B-K-1	B4.9	INR-WLD SUPPORTS	3 UT	1 GEOM	
B-K-1	B4.9	INR-WLD SUPPORTS	4 UT,PT	1 GEOM	
B-D	B1.18	CRD HOUSINGS	5 RT,PT	0	
B-D	B2.2	CRD HOUSINGS	1 UT	0	
C-A	C1.1	PR RET VSL WLDS	4 UT	7 GEOM	
C-D	C2.4	PR RET BOLTING	2 VT	0	
C-E-1	C2.5	INR-WLD SUPPORTS	4 PT	0	
C-E-1	C2.5	INR-WLD SUPPORTS	5 MT	0	
C-F	C2.1	PIPING WLDS	28 UT	14 GEOM	
C-G	C2.1	PIPING WLDS	4 UT,MT	8 GEOM	
C-G	C2.1,2	PIPING WLDS	12 UT	16 15 GEOM, 1 OTHER	ACC AS IS
			0	0	
		PLANT 1, PWR-W	0	0	
ISI-2, S-83	1989 OUTAGE	CODE CLASSES-1,2,3	0	0	REPORT DATE MET CODE
AUGMENTED		FLYWHEEL	4 UT	0	
B-A	B1.30	SHELL-TO-FLANGE WLD	1 UT	0	
B-A	B1.40	HEAD-TO-FLANGE	1 UT, MT	0	
B-B	B2.11	PZR CIRC WLDS	2 UT	2 REPORTABLE	FRACTURE ANALYSIS-ACC
B-B	B2.12	PZR LONG WLDS	2 UT	0	

SUMMARY OF INSERVICE INSPECTIONS

CODE CATEGORY	CODE ITEM	DESCRIPTION	NO. OF METHODS EXAMS	NO. OF INDICATION TYPES INDI- CATIONS	DISPOSITIONS
B-D	B1.110	NZL-TO-VSL WLDS	4 UT	0	
B-D	B3.100	NZL INSIDE RADIUS	4 UT	0	
B-D	B3.120	NZL INSIDE RADIUS	3 UT	0	
B-D	B3.140	NZL INSIDE RADIUS	4 VT	0	
B-D	B3.90	NZL-TO-VESSEL WLDS	4 UT	1 REPORTABLE	WITHIN CODE STANDARDS
B-F	B5.10	NZL-TO-SAFE END WLDS	3 UT, PT	0	
B-F	B5.10	NZL-TO-SAFE END WLDS	1 UT, PT	0	
B-F	B5.70	NZL-TO-SAFE END WLDS	2 UT, PT	1 NON-REPORTABLE	
B-B-1	B6.10	RV CLOSURE HEAD NUTS	18 MT	0	
B-B-1	B6.180	BOLTING >2" DIA	24 UT	0	
B-B-1	B6.30	RV CLOSURE STUDS	18 UT, MT	0	
B-B-1	B6.50	WASHERS, BUSHINGS	18 VT-1	0	
B-B-2	B7.30	SB BOLTING <=2" DIA	32 VT	0	
B-B-2	B7.30	SB BOLTING <=2" DIA	32 VT	0	
B-B-2	B7.50	BOLTING <=2" DIA	8 VT-1	0	
B-B-2	B7.70	BOLTING <=2" DIA	6 VT-1	0	
B-H	B8.20	PZR INR-WLD ATTS	1 UT	0	
B-J	B9.11	CIRC WLDS	4 UT, PT	0	
B-J	B9.11	CIRC WLDS >=4"NPS	1 PT	0	UT SCHEDULED 1990
B-J	B9.11	CIRC WLD	1 UT, PT	0	
B-J	B9.11	CIRC WLDS >=4"NPS	14 UT, PT	2 NON-REPORTABLE	
B-J	B9.11	PIPING >=4" NPS	5 UT,PT	1 REPORTABLE,ALLOWABLE	LIGHT SUR PREP-REMOVED
B-J	B9.11	CIRC WLDS >=4"NPS	4 UT,PT	0	
B-J	B9.11	CIRC WLDS	5 UT, PT	0	
B-J	B9.32	PIPING WLD <4"NPS	1 PT	0	
B-J	B9.40	SOCKET WLDS	3 PT	0	
B-K-1	B10.10	INR-WLD ATTS	2 PT	0	
B-K-1	B10.10	INR-WLD ATTS	2 PT	0	
B-K-1	B10.10	INR-WLD ATTS	1 PT	0	
B-N-1	B13.10	RV INTERIOR	1 VT-3	0	
C-A	C1.10	SHELL CIRC WLD	1 PT	0	
C-A	C1.20	HEAD CIRC WLD	1 PT	0	
C-B	C2.21	NZL-TO-SHELL WLD	1 UT,PT	1 REPORTABLE	ROUNDED IND-REWORKED
C-C	C3.10	INR-WLD ATTS	2 PT	0	
C-C	C3.20	INR-WLD ATTS	2 PT	1 REPORTABLE-USE AS IS	
C-C	C3.20	INR-WLD ATTS	3 PT	0	
C-C	C3.20	INR-WLD ATTS	2 PT	0	
C-C	C3.20	INR-WLD ATTS	2 PT	0	
C-C	C3.20	INR-WLD ATTS	2 PT	0	
C-C	C3.30	INR-WLD ATTS	2 PT	0	
C-F	C5.11	CIRC PIPING WLDS	2 PT	0	
C-F	C5.11	CIRC PIPING WLDS	8 PT	0	
C-F	C5.11	CIRC PIPING WLDS	9 PT	1 REPORTABLE,ALLOWABLE	
C-F	C5.11	LONG PIPING WLDS	4 PT	0	
C-F	C5.11	CIRC PIPING WLDS	6 PT	1 REPORTABLE	ACCEPTABLE
C-F	C5.21	CIRC PIPING WLD	2 UT,PT	0	
C-F	C5.21	CIRC PIPING WLDS	13 UT,PT	2 NON-REPORTABLE	

SUMMARY OF INSERVICE INSPECTIONS

CODE CATEGORY	CODE ITEM	DESCRIPTION	NO. OF METHODS EXAMS	NO. OF INDICATION TYPES INDI- CATIONS	DISPOSISTIONS
C-F	C5.21	CIRC PIPING WLDS	5 UT,PT	9 NON-REPORTABLE	
C-F	C5.21	CIRC PIPING WLD	1 UT,PT	1 REPORTABLE,ALLOWABLE	LIGHT SUR PREP-REMOVED
C-F	C5.21	CIRC PIPING WLDS	6 UT,PT	1 REPORTABLE,ALLOWABLE	REMOVED
C-F	C5.21	CIRC PIPING WLD	1 UT,PT	3 NON-REPORTABLE	
C-F	C5.21	CIRC PIPING WLD	1 UT,PT	1 REPORTABLE,ALLOWABLE	USE AS IS
C-F	C5.21	CIRC PIPING WLDS	1 PT	0	
C-F	C5.22	LONG PIPING WLD	1 UT,PT	0	
D-A	D1.20	INR-WLD ATTS	3 VT-3	1 REPORTABLE,ALLOWABLE	USE AS IS
D-B	D2.20	INR-WLD ATTS	12 VT-3	0	
D-B	D2.20	INR-WLD ATTS	2 VT-3	1 REPORTABLE	IMPROPER THREAD ENGAGE
D-B	D2.20	INR-WLS ATTS	13 VT-3	0	
D-B	D2.20	INR-WLD ATTS	3 VT-3	3 REPORTABLE	HEAVY RUST-USE AS IS
D-B	D2.20	INR-WLD ATTS	2 VT-3	1 REPORTABLE,ALLOWABLE	IMPROPER ENGAGE-USE AS IS
D-B	D2.20	INR-WLD ATTS	5 VT-3	1 REPORTABLE	HEAVY RUST-USE AS IS
D-B	D2.20	INR-WLD ATTS	2 VT-3	0	
F-A	F1.10	SUPPORTS	2 VT-3	0	
F-A	F1.10	SUPPORTS	3 VT-3	3 REPORTABLE	REWORKED-REINSPECTED
F-A	F1.10	SUPPORTS	6 VT-3	2 REPORTABLE	USE AS IS
F-B	F2.10	SUPPORTS	1 VT-3	0	
F-B	F2.10	SUPPORTS	2 VT-3	1 REPORTABLE,ALLOWABLE	LOOSE NUTS, BOLTS-USE AS IS
F-B	F2.10	SUPPORTS	1 VT-3	0	
F-B	F2.10	SUPPORTS	1 VT-3	0	
F-B	F2.10	SUPPORTS	2 VT-3	0	
F-B	F2.10	SUPPORTS	1 VT-3	0	
F-C	F3.10	SUPPORTS	1 VT-3	1 REPORTABLE	NUT TIGHTENED-REINSPECTE D
F-C	F3.10	SUPPORTS	1 VT-3	1 REPORTABLE	NUT TIGHTENED REINSPECTE D
F-C	F3.10	SUPPORTS	1 VT-3	1 REPORTABLE	REWORKED-REINSPECTED
F-C	F3.10	SUPPORTS	16 VT-3	1 REPORTABLE	HEAVY RUST-USE AS IS
F-C	F3.10	SUPPORTS	3 VT-3	3 REPORTABLE	USE AS IS
F-C	F3.10	SUPPORTS	1 VT-3	1 REPORTABLE	SHORT THREAD ENGAGE-USE AS IS
F-C	F3.10	SUPPORTS	6 VT-3	0	
F-C	F3.10	SUPPORTS	1 VT-3	1 REPORTABLE	SHORT THREAD ENGAGE-USE AS IS
F-C	F3.10	SUPPORTS	1 VT-3	1 REPORTABLE	GALLING-USE AS IS
F-C	F3.10	SUPPORTS	5 VT-3	1 REPORTABLE,ALLOWABLE	THREAD EXPOSURE-USE AS IS
F-C	F3.10	SUPPORTS	1 VT-3	0	
F-C	F3.10	SUPPORTS	3 VT-3	1 REPORTABLE,ALLOWABLE	REWORKED-REINSPECTED
F-C	F3.10	SUPPORTS	1 VT-3	1 REPORTABLE	REWORKED-REINSPECTED
F-C	F3.10	SUPPORTS	2 VT-3	1 REPORTABLE,ALLOWABLE	WASHER MISSING-USE AS IS

SUMMARY OF INSERVICE INSPECTIONS

CODE CATEGORY	CODE ITEM	DESCRIPTION	NO. OF METHODS EXAMS	NO. OF INDICATION TYPES INDICATIONS	DISPOSITIONS
F-C	F3.10	SUPPORTS	1 VT-3	0	
F-C	F3.10	SUPPORTS	5 VT-3	1 REPORTABLE,ALLOWABLE	REWORKED-REINSPECTED
F-C	F3.10	SUPPORTS	2 VT-3	1 REPORTABLE	IMPROPER ENGAGE-USE AS IS
F-C	F3.10	SUPPORTS	19 VT-3	1 REPORTABLE,ALLOWABLE	CHEMICAL RESIDUE-USE AS IS
F-C	F3.10	SUPPORTS	9 VT-3	0	
F-C	F3.10	SUPPORTS	3 VT-3	1 REPORTABLE,ALLOWABLE	1 STOP PIN MISSING-USE AS IS
F-C	F3.10	SUPPORTS	1 VT-3	1 REPORTABLE,ALLOWABLE	HEAVY RUST
F-C	F3.10	SUPPORTS	4 VT-3	1 REPORTABLE,ALLOWABLE	REWORKED-REINSPECTED
F-C	F3.10	SUPPORTS	1 VT-3	1 REPORTABLE	REWORKED-REINSPECTED
F-C	F3.10	SUPPORTS	6 VT-3	0	
F-C	F3.10	SUPPORTS	11 VT-3	2 REPORTABLE,ALLOWABLE	REWORKED-REINSPECTED
F-C	F3.10	SUPPORTS	3 VT-3	1 REPORTABLE,ALLOWABLE	USE AS IS
F-C	F3.10	SUPPORTS	1 VT-3	0	
			0	0	
		PLANT J, PWR-W	0	0	
ISI-1, 5-75	1988	OUTAGE CODE CLASSES-1,2,3	0	0	REPORT DATE MET CODE
B-C	B1.3	RV CIRC WLDS	2 UT	1 REPORTABLE,ALLOWABLE	ACCEPTABLE
B-A	B1.1	RV CORE WLDS	2 UT	0	
B-B	B1.2	RV SHELL WLDS	5 UT	0	
B-D	B1.4	RV NZL WLDS	7 UT	2 REPORTABLE,ALLOWABLE	ACCEPTABLE
B-G-1	B1.9	RV LIGAMENTS	20 UT	0	
B-W-3	B1.17	CORE SUPPORTS	1 VT-1	1	ACCEPTABLE, USE AS IS
B-E	B1.5	RV PENETRATIONS	1 VT-2	0	
B-B	B2.1	PZR LONG & CIRC WLDS	4 UT	0	
B-H	B2.8	INR-WLD SUPPORTS	1 UT	0	
B-D	B2.2	PZR NZL WLDS	1 UT	0	
B-D	B2.2	PZR NZL WLDS	7 VT-2	0	
B-B	B3.1	HX LONG & CIRC WLDS	3 UT	0	
B-D	B3.2	HX NZL WLDS	6 VT-1	0	
B-F	B1.6	RV NZL-TO-SAFE END	4 UT,PT	0	
B-F	B4.1	PIPING WLDS	6 UT,PT	0	
B-F	B3.3	HX NZL-TO-SAFE END	2 UT,PT	0	
B-J	B4.8	PIPING SOCKET WLDS	13 PT	0	
B-J	B4.5	PIPING CIRC WLDS	4 UT,PT	0	
B-J	B4.5	PIPING CIRC WLDS	4 UT	0	
B-G-2	B5.9	PR RET BOLTING	3 VT-1	0	
B-L-1	B5.6	PMP CASING WLDS	1 PT	0	
B-L-1	B5.6	PMP CASING WLDS	1 VT-1	0	
B-G-1	B5.2	PR RET BOLTING	24 UT,VT-1	0	
B-G-1	B5.2	PR RET BOLTING	12 UT,PT,VT-1	0	
B-G-1	B6.1	PR RET BOLTING	72 UT,VT-1	0	
B-M-2	B6.7	VALVE BODIES	1 VT-3	0	
B-G-2	B6.9	PR RET BOLTING	8 VT-1	0	
C-D	C1.4	PR VSL PR RET BOLTING	125 VT-1	0	

SUMMARY OF INSERVICE INSPECTIONS

CODE CATEGORY	CODE ITEM	DESCRIPTION	NO. OF METHODS EXAMS	NO. OF INDICATION TYPES INDI- CATIONS	DISPOSITIONS
C-D	C1.4	PR VSL PR RET BOLTING	16 UT	0	
C-A	C1.1	PR VSL CIRC WLDS	3 UT	0	
C-C	C1.3	INR-WLD SUPPORTS	1 MT	0	
C-B	C1.2	NZL-TO-VSL WLDS	2 UT	0	
C-E-1	C2.5	INR-WLD SUPPORTS	12 MT	1	ACCEPTABLE, USE AS IS
C-F	C2.1	PIPING CIRC WLDS	6 UT	0	
C-E-1	C2.5	INR-WLD SUPPPORTS	15 PT	0	
C-D	C2.4	PIPING PR RET BOLTING	1 MT,VT-1	0	
C-D	C3.2	PMP PR RET BOLTING	4 VT-1	0	
C-D	C3.2	PMP PR RET BOLTING	6 UT	0	
C-F	C3.1	PMP CASING WLDS	4 PT	0	
C-D	C4.2	VAL PR RET BOLTING	10 VT-1	0	
B-K-2	B4.10	SUPPORTS	51 VT-3	2	ACCEPTABLE, USE AS IS
B-K-2	B4.10	SUPPORTS	3 VT-3	0	
B-K-2	B4.10	SUPPORTS	5 VT-3	0	
B-K-2	B5.5	SUPPORTS	3 VT-3	0	
C-E-2	C2.6	SUPPORTS	20 VT-3	2	ACCEPTABLE, 1 REPAIRED
C-E-2	C2.6	SUPPORTS	12 VT-3	1	ACCEPTABLE, USE AS IS
C-E-2	C2.6	SUPPORTS	17 VT-3	3	ACCEPTABLE, USE AS IS
C-E-2	C2.6	SUPPORTS	19 VT-3	3	ACCEPTABLE
D-B	IWD-2600	SUPPORTS	24 VT-3	3	ACCEPTABLE, 1 REPAIRED
D-B	IWD-2600	SUPPORTS	19 VT-3	4	ACCEPTABLE, 3 REPAIRED
D-B	IWD-2600	SUPPORTS	14 VT-3	1	ACCEPTABLE
D-B	IWD-2600	SUPPORTS	11 VT-3	0	
			0	0	
			0	0	
ISI-2, S-B3 1988 OUTAGE					
B-A	B1.30	SHELL-TO-FLANGE WLD	1 UT	0	
B-A	B1.40	HEAD-TO-FLANGE WLD	1 UT,MT	0	
B-B	2.40	SB WLDS	1 UT	0	
B-B	B2.11	PRESSURIZER CIRC WLD	2 UT	0	
B-B	B2.12	PRESSURIZER LONG WLD	2 UT	0	
B-D	B3.100	NZL INSIDE RADIUS	3 UT	0	
B-D	B3.11	RV WLDS	1 UT	0	
B-D	B3.90	NZL-TO-VSL WLDS	3 UT	0	
B-F	B5.10	PIPING WLDS >=4"NPS	3 UT	0	
B-G-1	B6.40	THREADS IN FLANGE	4 UT	0	
B-H	B8.20	PR INR-WLD ATTS	1 UT	0	
B-J	B9.11	PIPING WLDS >=4"NPS	3 UT	0	
B-J	B9.11	PIPING WLDS >=4"NPS	3 UT,PT	0	
C-A	C1.20	PR VSL HEAD CIRC WLD	1 UT	0	

SUMMARY OF INSERVICE INSPECTIONS

CODE CATEGORY	CODE ITEM	DESCRIPTION	NO. OF METHODS EXAMS	NO. OF INDICATION TYPES INDI- CATIONS	DISPOSITIONS
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*** Total ***

24292

1029

APPENDIX C
PROPOSED CODE CHANGES

C-2

ARTICLE IWA-6000

RECORDS AND REPORTS

IWA-6100 SCOPE

The requirements for retention of records and reports (IWA-6300) also apply to those records and reports of Section III, Divisions 1 and 2 as identified by IWA-6310.

IWA-6200 REQUIREMENTS

IWA-6210 OWNER'S RESPONSIBILITY

(a) The Owner shall prepare plans and schedules for preservice and inservice examinations and tests to meet the requirements of this Division.

(b) The Owner shall prepare records of the examinations, tests, replacements, and repairs.

(c) The Owner shall prepare preservice and inservice inspection summary reports for Class 1 and 2 pressure retaining components and their supports.

and summary reports of the preservice and inservice
IWA-6220 PREPARATION

(a) Examination, test, replacement, and repair records shall be prepared in accordance with the requirements of respective Articles of this Division.

(b) A preservice inspection summary report shall be prepared prior to commercial service.

(c) Inservice inspection summary reports shall be prepared at the completion of each inspection conducted during a refueling outage. Examinations, tests, replacements, and repairs conducted since the preceding summary report shall be included.

(d) Each summary report required by (b) and (c) above shall contain the following information:

(1) refueling outage number (when applicable);

(2) Owner's Report for Inservice Inspections, Form NIS-1, as shown in Appendix II; and

(3) Owner's Report for Repair or Replacements, Form NIS-2, as shown in Appendix II.

(e) Plans, schedules, records, and summary reports

shall have a cover sheet providing the following information:

(1) date of document completion

(2) name and address of Owner

(3) name and address of generating plant

(4) name or number designation of the unit

(5) commercial service date for the unit

IWA-6230 SUMMARY REPORT SUBMITTAL

Prior to commercial service, the Owner shall file a preservice inspection summary report, and within 90 days of the completion of the inservice inspection conducted during each refueling outage, the Owner shall file inservice inspection summary reports with the enforcement and regulatory authorities having jurisdiction at the plant site.

IWA-6300 RETENTION

IWA-6310 MAINTENANCE OF RECORDS

The Owner shall retain records and reports identified in IWA-6330 and IWA-6340 as a minimum. The records and reports shall be filed and maintained in a manner which will allow access by the Inspector. The Owner shall provide suitable protection from deterioration and damage for all records and reports, in accordance with the Owner's Quality Assurance Program, for the service lifetime of the component or system. Storage shall be either at the plant site or at another location that will meet the access and Quality Assurance Program requirements.

IWA-6320 REPRODUCTION AND MICROFILMING

Records and reports shall be either the original or a reproduced, legible copy. Radiographs may be micro-

APPENDIX D
CODE CASE N-460 & INQUIRY

CASES OF ASME BOILER AND PRESSURE VESSEL CODE

Approval Date: July 27, 1988

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

Case N-460

**Alternative Examination Coverage for Class 1 and
Class 2 Welds**

Section XI, Division 1

Inquiry: What alternative rules may be used for Section XI, Division 1, examination of Class 1 welds (IWB-2500) or Class 2 welds (IWC-2500) when the entire examination volume or area cannot be examined due to interference by another component or part geometry?

Reply: It is the opinion of the Committee that when the entire examination volume or area cannot be examined due to interference by another component or part geometry, a reduction in examination coverage on any Class 1 or Class 2 weld may be accepted provided the reduction in coverage for that weld is less than 10%. The applicable examination records shall identify both the cause and percentage of reduced examination coverage.

January 26, 1990

Forrest T. Rhodes
Wolf Creek
Engrg & Tech Services
PO Box 411
Burlington, KS 66839

Subject: Section XI, Code Case N-460, 1974 Edition, and later Editions and
Addenda through the 1987 Addenda, Alternative Examination
Coverage for Welds

Item: IN89-026

Reference: December 29, 1989

Dear Sir:

Our understanding of the question in your inquiry, and our reply, are as
follows:

Question: When utilizing Section XI, Code Case N-460 for volumetric
examination of a Class 1 or Class 2 piping weld where interferences preclude
performing the complete Section XI examination, is it a requirement that at
least 90% of the required volume be examined in each of the four required scan
directions (i.e. two required directions perpendicular to the weld seam and
two required directions parallel to the weld seam)?

Reply: The total volume of weld permitted to be excluded by Code Case N-460
shall not exceed 10% when the exclusions from all required scans are combined
additively.

Very truly yours,

Steve Weinman
Assistant Secretary, Boiler and
Pressure Vessel Committee
(212) 705-7025
FAX # (212) 705-7533

SW/adt

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(See instructions on the reverse)

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Office of Nuclear Regulatory Research (RES)
Division of Engineering (DE)
U.S. Nuclear Regulatory Commission
Washington, DC 20555

10. SUPPLEMENTARY NOTES

11. ABSTRACT (200 words or less)

In order to evaluate the effectiveness of Section XI, Division 1, "Rules for Inservice Inspection of Nuclear Power Plant Components," of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code examinations, 26 inservice inspection (ISI) summary reports from 24 facilities were reviewed. It was found that these ASME Code examinations and tests are instrumental in revealing indications and defects in welds and plant components. In addition, this study uncovered the fact that some of the Section XI requirements are apparently not clear and are misunderstood by some of the facilities. Also, the need for more stringent requirements was evaluated and some Code changes are recommended.

12. KEY WORDS DESCRIPTORS (List words or phrases that will assist researchers in locating the report.)

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