JUN 06 1985

Docket No.: 50-412

APPLICANT: Duquesne Light Company (DLC)

FACILITY: Beaver Valley Power Station, Unit 2

SUBJECT: MEETING SUMMARY - PRESERVICE INSPECTION PROGRAM

On December 12, 1985, NRC and applicant representatives met in Bethesda, Maryland to discuss Preservice Inspection (PSI) Program. A meeting notice is enclosed as Enclosure 1. A summary of the major topics of discussion is provided in Enclosure 2 which also contains agenda and attendance list.

The applicant is still preparing the PSI program. At the meeting, the staff agreed to provide written comments (Enclosure 3) on the preliminary PSI program that was submitted on June 29, 1984. The staff is prepared to discuss the review with the applicant at his convenience.

B. K. Singh, Project Manager
Licensing Branch No. 3
Division of Licensing

Enclosures:
As stated

cc: See next page

DISTRIBUTION
Docket File
LB#3 Reading
BKSingh
JLee
GWKnighton

DL:LB#3
BKSingh
05/30/85

DL:LB#3
GWKnighton
05/30/85

Mr. John J. Carey
Vice President, Nuclear
Duquesne Light Company
Robinson Plaza Building, No. 2, Suite 110
PA Route 60
Pittsburgh, Pennsylvania 15205

Gerald Charnoff, Esq.
Jay E. Silberg, Esq.
Shaw, Pittman, Potts & Trowbridge
1800 M Street, N.W.
Washington, DC 20036

Mr. C. W. Ewing, Quality Assurance Manager
Quality Assurance Department
Duquense Light Company
P. O. Box 186
Shippingport, Pennsylvania 15077

Mr. John J. Carey
Vice President, Nuclear
Duquense Light Company
P. O. Box 4
Pittsburgh, Pennsylvania 15205

Mr. T. J. Lex
Westinghouse Electric Corporation
Power Systems
P. O. Box 355
Pittsburgh, Pennsylvania 15230

Mr. P. RaySircar
Stone & Webster Engineering Corporation
P. O. Box 2325
Boston, Massachusetts 02107

Mr. Glenn Walton
U. S. NRC
P. O. 181
Shippingport, Pennsylvania 15077

Mr. Thomas E. Murley, Regional Admin.
U. S. NRC, Region I
631 Park Avenue
King of Prussia, Pennsylvania 15229

Mr. R. E. Martin, Manager Engineering
Beaver Valley Two Project
Duquesne Light Company
Robinson Plaza Building No. 2, Suite 110
PA Route 60
Pittsburgh, Pennsylvania 15205

Zori Ferkin
Assistant Counsel
Governor Energy Council
1625 N. Front Street
Harrisburg, PA 15105

Director, Pennsylvania Emergency Management Agency
Room B-151
Transportation & Safety Building
Harrisburg, Pennsylvania 17120

Mr. Thomas Gerusky
Bureau of Radiation Protection
PA Department of Environmental Resources
P. O. Box 2063
Harrisburg, Pennsylvania 17120

BVPS-2 Records Management Supervisor
Duquesne Light Company
Post Office Box 4
Shippingport, Pennsylvania 15077

John A. Lee, Esq.
Duquesne Light Company
1 Oxford Centre
301 Grant Street
Pittsburgh, Pennsylvania 15279

Mr. E. F. Kurtz, Jr., Manager
Regulatory Affairs
Beaver Valley Two Project
Duquense Light Company
Robinson Plaza Buidling No. 2
Suite #210
PA Route 60
Pittsburgh, Pennsylvania 15205

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

Enclosure 1

Docket No. 50-412

MEMORANDUM FOR: George W. Knighton, Chief
Licensing Branch No. 3
Division of Licensing

FROM: B. K. Singh, Project Manager
Licensing Branch No. 3,
Division of Licensing

SUBJECT: FORTHCOMING MEETING BETWEEN THE NRC AND DUQUESNE LIGHT COMPANY

DATE & TIME: December 12, 1984
9:00 AM

LOCATION: AR-2242
Air Rights Building
Bethesda, Maryland

PURPOSE: To discuss Preservice Inspection Program.

PARTICIPANTS*: NRC

B. Singh
M. Hum
C. Cheng
et. al.

Duquesne Light Company

J. Szyslowski
et. al.

B. K. Singh, Project Manager
Licensing Branch No. 3
Division of Licensing

cc: See next page

*Meetings between NRC technical staff and applicants for licenses are open for interested members of the public, petitioners, intervenors, or other parties to attend as observers pursuant to "Open Meeting Statement of NRC Staff Policy", 43 Federal Register 28058, 6/28/78. Those interested in attending this meeting should make their intentions known to the Project Manager, B. K. Singh, at (301) 492-8423, by no later than December 11, 1984.

Enclosure 2

MEETING SUMMARY - BEAVER VALLEY UNIT 2
PRESERVICE INSPECTION PROGRAM

This summary was prepared with the technical assistance of DOE Contractors from the Idaho National Engineering Laboratory.

A public meeting was held in Bethesda, MD on December 12, 1984. Attachment 1 is the agenda that was followed. Attachment 2 lists the meeting attendees.

Under agenda item 1, Objectives of Review, the joint responsibilities of the region and NRR were explained. A summary of the NRR review was presented and the information required to complete the staff review was described. The applicant and the staff agreed that no decision would be made at the meeting regarding acceptability of weld selections for PSI.

Under agenda item 2, Schedule and Status of PSI, a handout (Attachment 3) was provided. The Applicant stated that the examination procedures are being updated to the W-80 Addenda. The staff agreed to transmit to the Applicant written comments on the PSI program submitted on June 29, 1984 including procedures.

For agenda item 3, Class 2 Piping Weld Selection 83 Code, Winter 83 Addenda, the Applicant docketed a proposal to utilize the W-83 Addenda in a letter dated October 19, 1984. The information in that letter was not current. The Applicant stated that work on Class 2 weld preparation for PSI had been stopped and that walkdowns of the Class 2 piping systems in January 1985 were planned if agreement on the piping weld selection approach could be obtained. The Applicant's detailed analysis of applying the W-83 Addenda was then presented and a handout (Attachment 4) was provided. Use of the W-83 Addenda was desired to make the PSI weld selection more compatible with anticipated ISI requirements. This is important to assure that the required welds are profiled during the preservice examination. Preparation of welds for inservice examination before plant operation is desirable because radiation exposure is not a problem. Other advantages of the W-83 Addenda is that all surface only

examination requirements are deleted (except for socket weld and branch connections), and volumetric examination is applied to pipe with wall thicknesses 3/8 inch and greater, instead of only pipe with wall thickness greater than 1/2 inch.

The Stainless Steel Systems Summary Table, in Attachment 4, shows the total number of welds to be examined dropping from 467 to 133 when comparing the 80W80 Code with the 74S75 Code for weld selection (10 CFR 50.55a(b)(2)(iv) requirement) with the requested use of the 83W83 Code. Also the QSS and RSS systems (ECCS systems) are totally exempt in the 74S75 Code selection. This is not compatible with NRC Question 250.1 which states in part:

> "Paragraph 50.55a(b)(2)(iv) requires that ASME Code Class 2 piping welds in the Residual Heat Removal Systems, Emergency Core Cooling Systems and Containment Heat Removal Systems shall be examined. These systems should not be completely exempted from preservice volumetric examination based on Section XI exclusion criteria contained in IWC-1220. To satisfy the inspection requirements of General Design Criteria 36, 39, 42, and 45, the preservice inspection program must include volumetric examination of a representative sample of welds in the RHR, ECCS and Containment Heat Removal System."

Additions to the austenitic Class 2 volumetric and surface examination list were discussed. Sampling plans of 7.5% and 10% were included in PSI Programs submitted by other applicants and described in these SERs. The Applicant agreed to consider these areas further.

The Carbon Steel Systems Summary Table, Attachment 4, contains half as many welds for examination with the 83W83 Code rules as with the 80W80 Code rules. The Applicant was not planning to perform a preservice volumetric examination of the high energy fluid system subject to augmented ISI based on SRP Section 3.6.2. Use of radiography for the augmented ISI and the possible use of

fabrication radiographs for "baseline" information were discussed. Paragraph IWA-2100 of Section XI defines inservice inspection to include preservice inspection requirements unless a distinction is made in the text. Other Applicants have performed a baseline examination of welds subject to augmented ISI. The staff will provide the Applicant with a letter to this subject. Problems with the effectiveness of radiography for detection of service-induced flaws were discussed.

For agenda item 4, Review of PSI Plan, the staff has prepared an SER that defines the information required to complete the review. The Applicant expects to have their PSI plan issued around April 1, 1985. Examinations are scheduled to begin in June 1985.

For agenda item 5, Examination Selection Criteria for Class 1 Piping Welds, the Applicant explained that the Class 1 piping do not have longitudinal seam welds and that static cast fittings are used. Exclusion from examination criteria based on make-up capacity and chemistry control are not being used in the PSI program.

For agenda item 6, Piping System Examinations, centrifugally cast pipe and statically cast fittings are used in the primary coolant loop. The number of calibration blocks for the centrifugally cast and statically cast materials was discussed. Significant differences in acoustical properties between statically cast, centrifugally cast and ferritic components have been observed and calibration blocks should be fabricated for each type of material.

Many of the Class 2 welds which may be scheduled for ultrasonic examination have an overlay weld deposit applied during fabrication to meet dimensional requirements. The Applicant is evaluating the volumetric examination requirements for this piping.

The basic calibration blocks and examination process should take this cladding into account. The Applicant plans to identify the location of the overlaid welds during the system walkdowns.

For agenda item 7, Reactor Vessel Examination, the areas to receive special near surface examination were shown. Limitations to examination will be submitted as relief requests.

For examination of other vessels, the use of notes in the PSI plan covering impractical Code requirements was discussed. One note indicates that surface examination will be used in lieu of volumetric examination for thin wall vessels. Ultrasonic examination of thin wall vessels can be effective if higher frequency, smaller size search units are selected. The staff does not expect to review alternatives to Code requirements as noted in the PSI Program.

For agenda item 8, Steam Generator and Pressurizer Nozzle Examinations, the Applicant expects that relief from Code requirements would be requested.

For agenda item 9, UT of Bolts and Studs, the use of a flat bottom hole for calibration reflectors may not be effective for the detection of flaws. Improvements of Appendix VI of Section XI (W-83 Addenda) were discussed. The Applicant agreed to submit the examination procedures for bolting with the PSI plan.

For agenda item 10, Relief Requests, the format and the necessary technical justification for relief requests were discussed.

The Applicant provided a specification to be used by the vendor for the 100% eddy current examination of steam generator tubing.

Attachment 1

AGENDA FOR BEAVER VALLEY UNIT 2
MEETING PRESERVICE INSPECTION PROGRAM
DECEMBER 12, 1984
9:00 a.m.

Topics for Discussion:

1. Objectives of Review (NRC Staff Presentation)
2. Overview of Schedule and Status of PSI (Applicant Presentation)
3. Class 2 83 Winter 83 Addenda Piping Weld Selection (Applicant Presentation and Discussion)
4. Review of PSI Plan (NRC Staff Presentation)
5. Examination Selection Criteria for Class 1 Piping Welds and Exemptions Based on IWB-1220 and IWC-1220 (Discussion)
6. Piping System Examinations--Procedures, Examination Coverage, Weld Build-up, Practice with One-Sided Access, Practice with Limitations to Examination, and Results (Discussion)
7. Reactor Vessel Examination -- Calibration blocks, procedures, results, areas that are impractical to examine, Regulatory Guide 1.150, and examination for surface defects (Discussion)

8. Steam Generator and Pressurizer Nozzle Examinations (Discussion)
9. UT of Bolts and Studs (Discussion)
10. Relief Requests (Discussion)
11. Questions and Summary

Attachment 2

ATTENDANCE LIST
BEAVER VALLEY, UNIT 2
PRESERVICE INSPECTION PROGRAM
December 12, 1984

B. K. Singh, NRC/NRR/DL/LB#3
R. A. McBrearty, NRC/RI
J. F. Cook, EG&G Idaho
A. F. Mosso, DLC/QA
J. J. Szyslowski, DLC
M. A. Zaki, DLC
D. C. Adamonis, Westinghouse
M. R. Hum, NRC
G. W. Martin, DLC
M. A. Weaver, Westinghouse
J. R. Houghton, DLC-NCD Engineering
B. Lefebvre, Westinghouse
W. A. Weis, SwRI
J. J. Hayden, DLC/SQC
R. M. Reba, DLC
W. H. Sikorski, DLC
C. Cheng, NRC/NRR

ASME XI PRESERVICE INSPECTION (PSI PROGRAM

- **PSI PROGRAM OVERALL STATUS**
  - Transmitted PSI Program to NRC for approval: 6/84
  - Development of Class 2 Weld Selection Criteria (BJWBJ) to reduce required examination: 12/84
- **PSI PROGRAM PLANS STATUS**
  - Class 1 and 2 Pressure Retaining Components Exam.
    - Plan and procedures complete: 4/85
    - Examination schedule to start: 6/85
    - Reactor vessel examination: 1/86
  - Steam Generator Tubing Examination
    - Specification out for bid: 12/84
    - Contract award 3/85
    - Examination scheduled to start: TBD
  - Class 3 Pressure Retaining Components Exam.
    - Plan and procedures Complete: 4/85
    - Examination scheduled to start: 6/85
  - Class 1, 2 and 3 Component Supports Exam.
    - Plan and procedures complete 4/85
    - Examination scheduled to start: 6/85
  - Snubber Examination
    - Plan and procedures complete: 5/85
    - Examination scheduled to start: TBD
    - Thermal movement exam. Not Function
  - Pump and Valve Testing (IST)
    - Plan complete: 4/85
    - IST procedures complete: Prior to Specific System Testing
  - Repair/Replacement Plan
    - Plan and procedures complete: 9/84
    - Implementation On-Going

METHODOLOGY

1. Line Designation Table:

   a) Determine lines ≧ 6", and ≧ 2" in HHSI.

   b) Exempt systems by line size.

   c) Exempt systems by temperature and pressure if applicable.

2. Remaining Systems:

   a) List all lines in nonexempt size range.

   b) Identify lines on Flow Diagram.

   c) Apply IWC-1220 exemptions on a line-by-line basis.

   d) Identify remaining nonexempt lines.

3. Nonexempt Lines:

   a) Compare Iso to Flow Diagram.

   b) Count welds on Iso.

   c) Tabulate by type:
   butt, branch, term. end, etc.

   d) Identify required examinations.

   e) Tally welds and examination methods.

4. Independent review of 1, 2, and 3.

5. Record tallies on Summary Sheets.

6. Apply Section XI calculations for required exams.

STONE & WEBSTER ENGINEERING CORPORATION
POWER DIVISION

LINE DESIGNATION TABLE
SORT BY CODE CLASS / SYSTEM & NUMBER

JOB ORDER NO 12241
DUQUESNE LIGHT COMPANY - BEAVER VALLEY UNIT 2

ISSUED DATE 11/20/72
REVISED DATE 08/20/84 REVISION NO 34

BY E.L
BY H.G.

REV	LINE NUMBER	FLUID	FROM--------	TO----------	LINE CLASS	PIPE SCHED.	--OPERATING-- PRESS SEE	TEMP REFERENCE		---DESIGN----- PRESS PSIG	TEMP DEGF	HTP - & SYS.NO	INSUL---- TH INCH	TYPE	QUAL. ASSU-RANCE
	2HSS003907402	STEAM	2HSS03217102	2HSS-S0V105F	601	XS	SI-	RH	41	1085.	560	21A	2.0	C	I
	2PAS37503102	BOR HTR	2RSS75003002	2PAS37503304	TNSS	STD	SI-	RH	99	225.0	250	14C	1.5	P	I
	2PAS37503202	BOR HTR	2RSS75003202	2PAS37503404	TNSS	STD	SI-	RH	99	225.0	250	14C	1.5	P	I
*	2PAS37503402	COOLANT	2PAS37503504	2CHS50092402	TNSS	STD	SI-	RH	99	150.	255	14C	1.5	P	I
*	2PAS37504402	CONT ATM	2PAS37505104	2PAS37504704	TNSS	STD	SI-	RH	99	75.	295	14C	1.5	H	I
*	2QSS01200102	BOR-MTR	2QSS*TK21	2QSS01020202	153	40S	SI-	RH	85	30.0	120	13B	2.0	H	I
*	2QSS01200202	BOR-MTR	2QSS*TK21	2QSS01020302	153	40S	SI-	RH	85	30.0	120	13B	2.0	H	I
	2QSS01006302	BOR-MTR	2QSS00820402	2QSS01006402	153	40S	SI-	RH	85	225.0	267	13B		S	I
	2QSS01000402	BOR-MTR	2QSS00820502	2QSS01006402	153	40S	SI-	RH	85	225.0	267	13B		S	I
*	2QSS00600502	BOR-MTR	2QSS01000302	2QSS00603404	153	40S	SI-	RH	85	225.0	120	13B		S	I
*	2QSS00600402	BOR-MTR	2QSS01000402	2QSS00603504	153	40S	SI-	RH	85	225.0	120	13B		S	I
* *	2QSS00607002	CAUSTIC	2QSS00607102	2QSS00210902	153	40S	SI-	RH	85	30.0	120	13B		S	I
	2QSS75003002	BOR-MTR	2QSS01000302	2QSS-V13	153	40S	SI-	RH	85	225.0	120	13B		S	I
	2QSS75003902	BOR-MTR	2QSS01000402	2QSS*V14	153	40S	SI-	RH	85	225.0	120	13B		S	I
*	2QSS00100402	CAUSTIC	2QSS00210802	2QSS*V34	153	40S	SI-	RH	85	30.0	120	13B		S	I
*	2QSS00100102	CAUSTIC	2QSS00210902	2QSS*V35	153	40S	SI-	RH	85	30.0	120	13B		S	I
	2QSS01000402	BOR-MTR	2QSS01000302	2QSS01000402	153	40S	SI-	RH	85	225.0	267	13B		S	I
	2QSS00206802	CAUSTIC	2QSS00607102	2QSS00202804	153	40S	SI-	RH	85	30.0	104	13B	1.5	H	I
*	2QSS00607102	CAUSTIC	2QSS-TK22	2QSS00210802	153	40S	SI-	RH	85	30.0	104	13B	1.5	H	I
	2QSS00007202	BOR MTR	2QSS01000302	2QSS*V60	153	40S	SI-	RH	85	225.0	120	13B		S	I
	2QSS00007302	BOR MTR	2QSS01000402	2QSS*V62	153	40S	SI-	RH	85	225.0	120	13B		S	I
	2QSS00007402	BOR MTR	2QSS01000302	2QSS*V61	153	40S	SI-	RH	85	225.0	120	13B		S	I
	2QSS00007502	BOR MTR	2QSS01000402	2QSS*V63	153	40S	SI-	RH	85	225.0	120	13B		S	I

LINE SIZE

Post Accident Sampling System

STONE & WEBSTER ENGINEERING CORPORATION
POWER DIVISION

LINE DESIGNATION TABLE
SORT BY CODE CLASS / SYSTEM & NUMBER

JOB ORDER NO 12241
DUQUESNE LIGHT COMPANY - BEAVER VALLEY UNIT 2

ISSUED DATE 11/20/72
REVISED DATE 08/20/84 REVISION NO 34

BY E.L
BY M.G.

REV	LINE NUMBER	FLUID	FROM--------	TO----------	LINE CLASS	PIPE SCHED.	--OPERATING-- PRESS SEE	REFERENCE	TEMP	---DESIGN----- PRESS PSIG	TEMP DEGF	MTP - & SYS.NO	INSUL---- TH INCH	TYPE	QUAL. ASSU-RANCE
	2BDG00S26402	WATER	AOV101C2	2BDG00325102	1502	160	SI-	RH	100	1100.	567	25	3.	X	I
	2BDG75090002	WATER	2BDG02501102	DRAIN	1502	160	SI-	RH	100	1100.	567	25	2.	X	I
	2BDG75090102	WATER	2BDG02501002	DRAIN	1502	160	SI-	RH	100	1100.	567	25	2.	X	I
	2BDG75090202	WATER	2BDG02500902	DRAIN	1502	160	SI-	RH	100	1100.	567	25	2.	X	I
	2BDG75090302	WATER	2BDG02500902	VENT	1502	160	SI-	RH	100	1100.	567	25	2.	X	I
	2BDG75090402	WATER	2BDG02500902	DRAIN	1502	160	SI-	RH	100	1100.	567	25	2.	X	I
	2BDG79990802	WATER	2BDG02500902	VENT	1502	160	SI-	RH	100	1100.	567	25	2.	X	I
	2CCP01803002	COMPCOOL	2CCP01803203	2CCP01803103	151	STD	SI-	RH	77	150.	150	15A		S	I
	2CCP01803302	COMPCOOL	2CCP01802903	2CCP01872203	151	STD	SI-	RH	77	150.	150	15A		S	I
	2CCP01803402	COMPCOOL	2CCP01803703	2CCP01803503	151	STD	SI-	RH	77	150.	150	15A		S	I
	2CCP01803902	COMPCOOL	2CCP01872303	2CCP01803803	151	STD	SI-	RH	77	150.	150	15A		S	I
	2CCP75079102	COMPCOOL	2CCP01803602	2CCP*V694	151	80	SI-	RH	77	150.	150	15A			
	2CCP75079402	COMPCOOL	2CCP01803902	2CCP*V695	151	80	SI-	RH	77	150.	150	15A		S	I
	2CCP75093002	COMPCOOL	2CCP01803602	2CCP*RV104	151	80	SI-	RH	77	150.	150	15A		S	I
	2CCP75093102	COMPCOOL	2CCP01803902	2CCP*RV105	151	80	SI-	RH	77	150.	150	15A		S	I
	2CCP75093202	COMPCOOL	2CCP01803002	2CCP*RV102A	151	XS	SI-	RH	77	150.	150	15A		S	I
	2CCP75093302	COMPCOOL	2CCP01803302	2CCP*RV103	151	80	SI-	RH	77	150.	150	15A		S	I
	2CHS00200202	RX COOL	*A0V200C	2CHS*E22	602	40S	SI-	RH	79	600.0	400	7	2.0	M	I
	2CHS00200302	RX COOL	*A0V200A	2CHS00200202	602	40S	SI-	RH	79	600.0	400	7	2.0	M	I
	2CHS00200402	RX COOL	*A0V200B	2CHS00200302	602	40S	SI-	RH	79	600.0	400	7	2.0	M	I
	2CHS00300602	RX COOL	2CHS00313302	2CHS00264802	153	40S	SI-	RH	79	200.0	250	7		S	I
	2CHS00300702	RX COOL	2CHS00264902	*LCV115A	153	40S	SI-	RH	79	200.0	250	7		S	I
	2CHS00301102	RX COOL	*RV209	2CHS00326702	153	40S	SI-	RH	79	75.0	250	7		S	I

Exempt by line size

Primary Plant Component Cool.. Water System

Exempt by temp. & pressure

CLASS 2 EXEMPT PIPING WELD EXAMINATION SUMMARY SHEET
Sect. XI, Table IWC-2500-1, Exam. Cat. C-F-1
(Sheet 1 of 2)

STAINLESS STEEL SYSTEMS:

System	80W80 Sect. XI Rules	83W83 Sect. XI Rules
BDG	---------- Exempt IWC - 1220 (c) ----------	---------- Exempt IWC - 1222 (a) ----------
CVS	---------- Exempt IWC - 1220 (c) ----------	---------- Exempt IWC - 1222 (a) ----------
DAS	---------- Exempt IWC - 1220 (b) (c) ------	---------- Exempt IWC - 1222 (a) (c) ------
DGS	---------- Exempt IWC - 1220 (c) ----------	---------- Exempt IWC - 1222 (a) ----------
FNC	---------- Exempt IWC - 1220 (b) ----------	---------- Exempt IWC - 1222 (c) ----------
GHS	---------- Exempt IWC - 1220 (c) ----------	---------- Exempt IWC - 1222 (a) ----------
HCS	---------- Exempt IWC - 1220 (c) ----------	---------- Exempt IWC - 1222 (a) ----------
IAC	---------- Exempt IWC - 1220 (b) (c) ------	---------- Exempt IWC - 1222 (a) (c) ------
LMS	---------- Exempt IWC - 1220 (c) ----------	---------- Exempt IWC - 1222 (a) ----------
PAS	---------- Exempt IWC - 1220 (c) ----------	---------- Exempt IWC - 1222 (a) ----------
RCS	---------- Exempt IWC - 1220 (c) ----------	---------- Exempt IWC - 1222 (a) ----------
SSR	---------- Exempt IWC - 1220 (c) ----------	---------- Exempt IWC - 1222 (a) ----------
VRS	---------- Exempt IWC - 1220 (c) ----------	---------- Exempt IWC - 1222 (a) ----------

IWC-1220 (b): Components of systems, or portions of systems, other than Residual Heat Removal Systems and Emergency Core Cooling Systems, that are not required to operate above a pressure of 275 psig or above a temperature of 200° F.

IWC-1220 (c): Component connections (including nozzles in vessels and pumps), piping and associated valves, and vessels and their attachments that are 4" nominal pipe size and smaller.

IWC-1222: Components within systems, or portions of systems, other than the RHR, ECC, and CHR Systems.

IWC-1222 (a): Vessels, piping, pumps, valves and other components NPS 4 and smaller.

IWC-1222 (c): Vessels, piping, pumps, valves and other components of any size in systems or portions of systems that operate (when the system function is required) at a pressure equal to or less than 275 psig and at a temperature equal to or less than 200° F.

CLASS 2 EXEMPT PIPING WELD EXAMINATION SUMMARY SHEET
Sect. XI, Table IWC-2500-1, Exam. Cat. C-F-1
(Sheet 2 of 2)

CARBON STEEL SYSTEMS:

System	80W80 Sect. XI Rules	83W83 Sect. XI Rules
BDG	---------- Exempt IWC - 1220 (c) ----------	---------- Exempt IWC - 1222 (a) ----------
CCP	---------- Exempt IWC - 1220 (b) ----------	---------- Exempt IWC - 1222 (c) ----------
CVS	---------- Exempt IWC - 1220 (b) ----------	---------- Exempt IWC - 1222 (c) ----------
FPW	---------- Exempt IWC - 1220 (b) ----------	---------- Exempt IWC - 1222 (c) ----------
FWE	---------- Exempt IWC - 1220 (c) ----------	---------- Exempt IWC - 1222 (a) ----------
GNS	---------- Exempt IWC - 1220 (c) ----------	---------- Exempt IWC - 1222 (a) ----------
HCS	---------- Exempt IWC - 1220 (c) ----------	---------- Exempt IWC - 1222 (a) ----------
HVR	---------- Exempt IWC - 1220 (b) ----------	---------- Exempt IWC - 1222 (c) ----------
RCS	---------- Exempt IWC - 1220 (b) (c) ------	---------- Exempt IWC - 1222 (a) (c) ------
SAS	---------- Exempt IWC - 1220 (b) (c) ------	---------- Exempt IWC - 1222 (a) (c) ------
SNS	---------- Exempt IWC - 1220 (c) ----------	---------- Exempt IWC - 1222 (a) ----------
SWS	---------- Exempt IWC - 1220 (b) ----------	---------- Exempt IWC - 1222 (c) ----------

IWC-1220 (b): Components of systems, or portions of systems, other than Residual Heat Removal Systems and Emergency Core Cooling Systems, that are not required to operate above a pressure of 275 psig or above a temperature of 200° F.

IWC-1220 (c): Component connections (including nozzles in vessels and pumps), piping and associated valves, and vessels and their attachments that are 4" nominal pipe size and smaller.

IWC-1222: Components within systems, or portions of systems, other than the RHR, ECC, and CHR Systems.

IWC-1222 (a): Vessels, piping, pumps, valves and other components NPS 4 and smaller.

IWC-1222 (c): Vessels, piping, pumps, valves and other components of any size in systems or portions of systems that operate (when the system function is required) at a pressure equal to or less than 275 psig and at a temperature equal to or less than 200° F.

CL. 2 PIPING SYSTEM EXEMPTION SUMMARY SHEET SHT 1 o

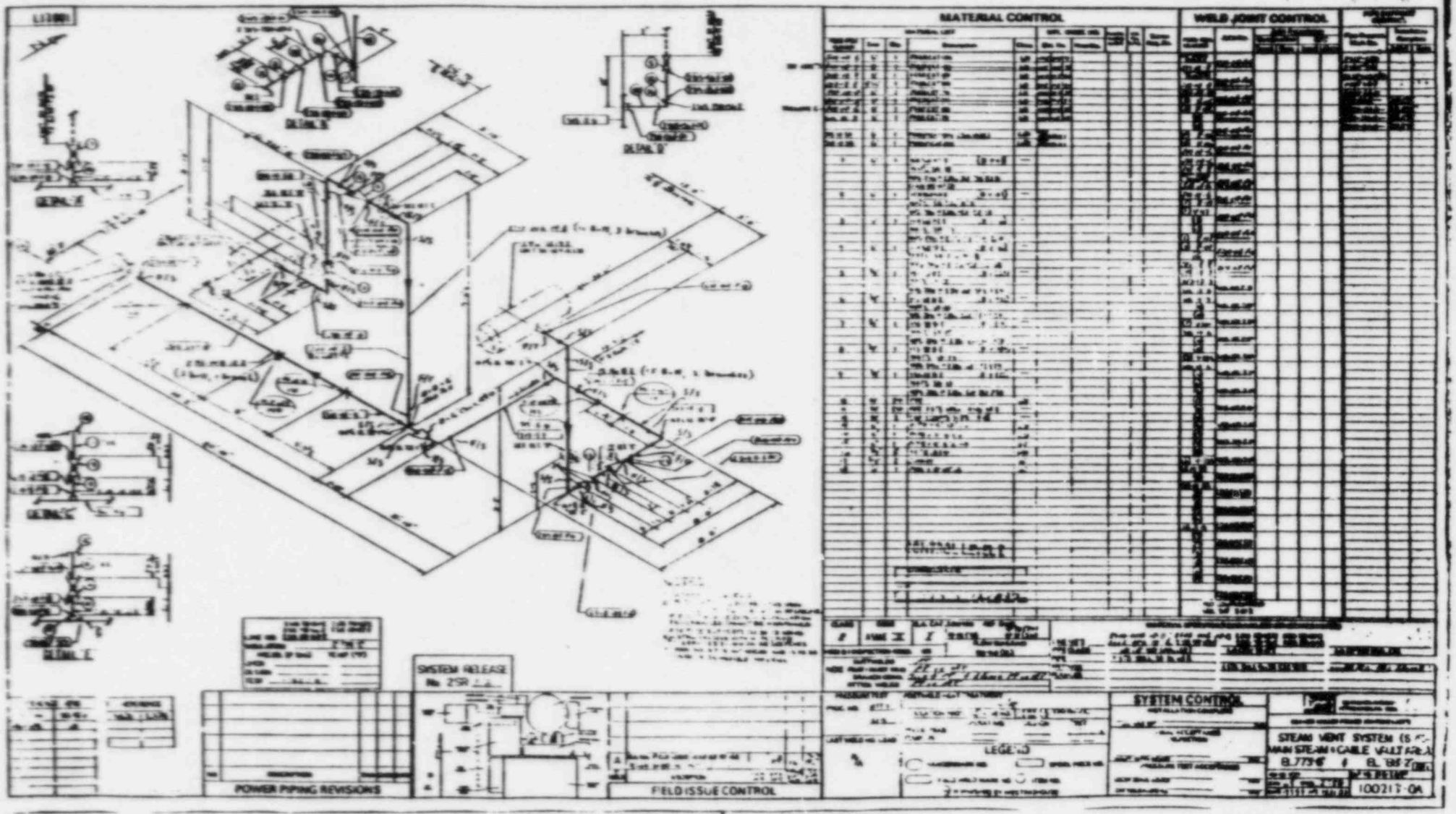
SYSTEM: SVS

LINE NO.	WALL	PSIG	°F	W80	W83
6" LINES					
2SVS-006-011	.432	1085	560	NON EXEMPT	NON-EXEM
2SVS-006-014	↓	↓	↓	↓	↓
2SVS-006-015					
8" LINE					
2SVS-008-012	.500	1085	560	NON-EXEMPT	NON-EXEM
2SVS-008-150	↓	↓	↓	↓	↓
10" LINES					
2SVS-010-170	.500	1085	560	NON-EXEMPT	NON-EXEM
2SVS-010-171		690	515		IWC-1222 (
2SVS-010-172		1085	560		NON-EXEM
2SVS-010-173		690	515		IWC-1222 (
2SVS-010-174		1085	560		NON-EXEM
2SVS-010-175		690	515		IWC-1222 (
2SVS-010-177		1085	560		NON-EXEM
2SVS-010-178	↓	690	515	↓	IWC-1222 (

IWC-1222(d): Piping and other components of any system beyond the last shutoff valve in open ended portions of systems that do not contain water during normal plant operating conditions.

SHT 1/1/84

NOTE: WORK WITH FLOW DIAGRAM WHEN DETERMINING EXEMPTIONS


MATERIAL CONTROL
WELD JOINT CONTROL
SYSTEM RELEASE
POWER PIPING REVISIONS
FIELD ISSUE CONTROL
SYSTEM CONTROL
LEGEND
STEAM VENT SYSTEM
MAIN STEAM CABLE VAULT AREA
100217-0A

CL 2 NONEXEMPT WELD DETERMINATION WORKSHEET

SYSTEM: STEAM VENT SYSTEM

MATERIAL: [illegible] C.S.; LINES 170-175 GRC

LINE NO	WALL INCHES	DESIGN PRESS PSIG	DESIGN TEMP °F	INSULATION SIZE	INSULATION TYPE	ISOMETRIC NO.	ISOMETRIC REV.	FLOW DIAG NO.	FLOW DIAG REV	TRAIN A/B/C	TOTAL FIELD WELDS S	T	O	O	TOTAL SHOP WELDS S	T	D	O	ASME XI 80W80 CODE TOTAL WELDS NON EXEMPT	REQ'D FOR EXAM	NDE METHOD	ASME XI 83W83 CODE TOTAL WELDS NON-EXEMPT	REQ'D FOR EXAM	NDE METHOD
2305-006-001	432	1085	540	2.5	C	100216	06	RM-41A	4A	A	5	2	–	2	4	–	–	–	13		SURF.	13		SURF./UT
															3	(2304-130-152) (2304-130-153) (2304-130-153)			0			0		
2305-006-019						100217	CA			B	6	2	–	–	3	–	–	–	11		SURF.	11		SURF./UT
															3	(2304-130-154) (2304-150-159) (2304-150-155)			0			0		
2305-006-05						100217	CA			C	6	1	–	1	7	–	–	–	15		SURF.	15		SURF./UT
											1 (2305-150-[illegible])				1 (2305-150-15[illegible])				0			0		
2305-T-014						100216	GB			2	3	–	–	–	11	–	–	–	14		SURF.	14		SURF./UT
												0 (2305-006-[illegible] see above)			1	(2305-001-0[illegible])			0			0		
						100217	DA				1	–	–	–	2	–	–	–	3		SURF.	3		SURF./UT
												0 (2305-006-[illegible])			see above				0			0		
2305-008-150						100216	C3				2	–	–	–	–	–	–	–	2		SURF.	2		SURF./UT
010-173						100214	2C				2	–	–	–	–	–	–	–	2		SURF.	2		SURF./UT
010-170		690	515	–	–	100221	CA				6	–	–	–	–	–	–	–	6		SURF.	IWC-1222(a)		
											1	(4" tee to 4" cap on 2305-150-110)							0					
010-172		1085	560	2.5	C	100203	2C			B	2	–	–	–	–	–	–	–	2		SURF.	2		SURF./UT
010-175		690	515	–	–	100221	CA				6	–	–	–	–	–	–	–	6		SURF.	IWC-1222(d)		
											1	(4" tee to 4" cap on 2305-150-111)							0					
010-174		1085	560	2.5	C	100204	2C			C	2	–	–	–	–	–	–	–	2		SURF.	2		SURF./UT
010-175		690	515	–	–	100221	CA				6	–	–	–	–	–	–	–	6		SURF.	IWC-1222(d)		
											1	(4" tee to 4" cap on 2305-150-114)							0					
008-177		1085	560	2.5	C	100216	C3			2	2	–	–	–	–	–	–	–	2		SURF.	2		SURF./UT
008-179		690	515	–	–	100221	CA				15	–	–	–	–	–	–	–	15		SURF.	IWC-1222(a)		
110-113		690	515	–	–	100221	DA				–	(2) tee to 10" cap on 2305-150-11[illegible]; 1 (1" cap to 2305-150-113)							1		SURF.			
																			0					
																			100 - ALL SURFACE		TOTAL:	66 - ALL SURFACE/UT SET		

CLASS 2 PIPING WELD EXAMINATION SUMMARY SHEET
Sect. XI, Table IWC-2500-1, Exam. Cat. C-F-1
(Sheet 1 of 2)

STAINLESS STEEL SYSTEMS:

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	74S75 Sect. XI Rules						83W83 Sect. XI Rules							
	Nonexempt Welds			ISI Req'd Exams			Nonexempt Welds				ISI Req'd Exams			
System	Surf Only	+ Vol and Surf	= Total	Surf Only	+ Vol and Surf	= Total	Surf Only	+ Vol and Surf	+ Exam N/A	= Total	As % of SS Welds	7.5% Prorata Share	= Surf Only	+ Vol and Surf
CHS	110	0	110	54	0	54	526	431	110	1067	40.192	80	44	36
QSS	------- Exempt IWC - 1220 (b) ---------						0	47	125	172	6.595	13	0	13
RHS	214	0	214	108	0	108	0	64	203	267	10.238	20	0	20
RSS	------- Exempt IWC - 1220 (b) ---------						0	126	28	154	5.905	12	0	12
SIS	341	152	493	216	89	305	176	494	278	948	36.350	71	19	52
Total	665	152	817	378	89	467	702	1162	744	2608	100	196	63	133

NOTES: A. 10CFR50.55a(b)(2)(iv) invokes requirements to use the 74S75 Code for the above systems to determine only exemption criteria (IWC-1220) and selection criteria (IWC-2411 and Table IWC-2520, Cat. C-F and C-G). The preservice requirement and the specific required examination method remain in accordance with the Code of choice, namely 80W80.

B. The high number of welds in the CHS and SIS Systems which are candidates for surface and not volumetric examinations under the 83W83 Code is due largely to the fact that 2" NPS lines in these systems are of socket weld construction.

C. Exemption IWC-1220(b): Components in systems or portions of systems, other than emergency core cooling systems, which do not function during normal reactor operation.

Advantages of Utilizing the 83W83 Code for SS Systems:

- An increase of 44 welds which are required to be volumetrically examined is realized in both the PSI and ISI populations by moving to the 83W83 Code (columns 5 and 14).

  Selection criteria for 74S75 rules is based upon Title 10 invocation of 74S75, IWC-2411: multiple stream selection criteria. The 74S75 preservice requirement (IWC-2100) was not invoked by Title 10. Therefore the 80W80 preservice requirement (IWC-2200) applies to the 89 SIS welds selected in accordance with the above.

- Under 83W83 rules, a larger population of welds are candidates for volumetric examination due to revised wall criteria and inclusion of 2-4" NPS high pressure safety injection lines.

- Previously, 100% of the volumetric examinations were concentrated into one (SIS) system. Under 83W83 rules, the volumetric examinations are applied to only 7.5% of the candidates, but with a net increase in the number of required examinations as above, and the examinations would then be spread out over five systems. While a lower percentage of SIS weld candidates are examined volumetrically, this latter distribution of examinations provides a more uniform, and therefore better sampling method to detect service induced flaws in all of these systems of critical concern.

- Two systems which were previously exempt would now be included in the nonexempt population subject to volumetric examination under 83W83 rules.

- Adoption of the 83W83 Code for PSI would make our Program compatable with the ISI Program. Code Case N-408; or the equivalent 83W83 Code for Class 2 piping components, or an essentially unchanged later addenda thereof is anticipated to be the mandatory ISI Code in effect 12 months prior to the issuance of BVPS-2 Operating License as dictated by 10CFR50.55a(g)(4)(i).

CLASS 2 PIPING WELD EXAMINATION SUMMARY SHEET
Sect. XI, Table IWC-2500-1, Exam. Cat. C-F-2
(Sheet 2 of 2)

CARBON STEEL SYSTEMS:

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	80W80 Sect. XI Rules						83W83 Sect. XI Rules							
	Nonexempt Welds			ISI Req'd Exams			Nonexempt Welds				ISI Req'd Exams			
System	Surf Only	+ Vol and Surf	= Total	Surf Only	+ Vol and Surf	= Total	Surf Only	+ Vol and Surf	+ Exam N/A	= Total	As % of CS Welds	7.5% Prorata Share	= Surf Only	+ Vol and Surf
FWS	0	49	49	0	12	12	0	49	0	49	25.926	7	0	7
MSS	3	71	74	1	16	17	3	71	0	74	39.153	11	1	10
SVS	100	0	100	25	0	25	0	66	0	66	34.921	10	0	10
Total	103	120	223	26	28	54	3	186	0	189	100	28	1	27

NOTE: A decrease of one weld which is required to be volumetrically examined is realized by moving to the 83W83 Code (columns 5 and 14). However this is offset by the fact that the major portion of the nonexempt weld candidates are located in the "break exclusion zone" which is subject to an augmented volumetric examination program during the operating phase of the plant. Therefore, additional welds will be volumetrically examined during each inservice inspection interval.

Advantage of Utilizing the 83W83 Code for CS Systems:

- SVS is now included in the population subject to volumetric examination due to inclusion of 3/8" through 1/2" wall under this examination requirement.
- PSI compatability with the ISI Program.

Enclosure 3

BEAVER VALLEY UNIT 2
COMMENTS ON THE PRESERVICE INSPECTION (PSI) PROGRAM

These comments were prepared with the technical assistance of DOE contractors from the Idaho National Engineering Laboratory.

The following comments apply to the preliminary PSI Program submitted by the Applicant in a letter dated June 29, 1984. The staff anticipates that these comments will be considered during the preparation of the final PSI Program and a specific response from the Applicant is not requested.

A. Paragraph 1.0. The Materials Engineering Branch, Division of Engineering, is not responsible for the review of the containment leakage test requirements described in 10 CFR 50, Appendix J.

B. Paragraph 6.1.8. This section states that all recordable indications will be recorded and investigated by a Level II or Level III examiner. Recording requirements also apply to ultrasonic indications of geometric or metallurgical origin determined by IWB-3514.5.

Procedure DWM-ISI-206 "Manual Ultrasonic Examination of Welds" states in paragraph 8.2 that the examiner shall determine if the indications are valid or non-valid based on his evaluation of test conditions and data. Valid indications are reflectors caused by flaws. Non-valid indications are reflectors from sources other than flaws. Paragraph 9.2 states that valid flaw indications that produce a response equal to or exceeding 50% of the primary DAC curve shall be recorded and dimensioned.

Staff Comments:

The PSI Program and the examination procedure are not consistent. Section XI does not make a distinction regarding recordable ultrasonic indications. Geometric and metallurgical indications do not have to be compared with the acceptance standards as provided by IWB-3514.5.

Ultrasonic indications determined to be flaws should not be recorded and dimensioned based on amplitude criteria as stated in the examination procedure. This subject was addressed in staff 250.3 which states in part:

"Any crack-like indication, regardless of ultrasonic amplitude, discovered during examination of piping welds or adjacent base metal materials should be recorded and investigated by a Level II or Level III examiner to the extent necessary to determine the shape, identity, and location of the reflector."

Suggested recording requirements shown below were obtained from recent ASME Code Section XI action.

4.5.1 Recording Requirements

4.5.1.1. Flaw Indications

(a) Any indication of a suspected flaw shall be recorded regardless of amplitude.

(b) Any other indications that are not determined to be of geometrical or metallurgical origin shall be recorded if they are 20 percent of DAC or greater and originate in the HAZ or adjacent base metal or if they are 50 percent of DAC or greater and originate in the weld.

4.5.1.2 Indications Determined to be of Geometric or Metallurgical Origin

(a) The following steps shall be applied in order to classify an indication to be of geometric or metallurgical origin:

1) Plotting and verifying coordinates,
2) Reviewing fabrication or weld preparation drawing,
3) As an option, applying other NDE methods or techniques (for example, alternate UT beam angles, radiography, ID and/or OD profiling),
4) Interpreting the area containing the reflector in accordance with the applicable procedure.

(b) For baseline or preservice examinations of new or replaced piping, indications 20 percent of DAC or greater shall be recorded.

(c) For inservice examinations, indications 50 percent of DAC or greater shall be recorded. For indications evaluated and recorded in accordance with (a) and (b) above, the evaluation and recording does not have to be repeated for subsequent examinations.

The discussions regarding valid and non-valid indications are applicable to most of the manual ultrasonic testing procedures.

C. Paragraph 6.1.10.2 of Procedures 2.13 states that calibration standards/ calibration blocks shall comply with the appropriate Code Article to the extent practical. When DLC encounters problems in Code compliance regarding material availability or physical size, etc., the actual or as-built calibration standard shall be demonstrated acceptable in accordance with IWA-2240.

Staff Comment:

Paragraph III-3410 and III-3411 of Section XI define specific requirements for the number, dimensions and material specifications for the basic calibration blocks for piping. The reactor coolant pressure boundary piping is fabricated from cast stainless steel pipe and elbows and the Class 2 piping systems contains many stainless steel welds with overlays.

Calibration blocks should be provided to meet the requirements of Section XI and should be of the same material specification and metallurgical structure as the material on that side of the weld joint being examined.

D. Paragraph 3.8 of the piping procedure (ISI-206) requires establishing sensitivity from a side-drilled-hole at the 3/4 wall-thickness location in lieu of the Code required notch.

Staff Comments:

Detection of notches and/or known inside diameter surface flaws should be verified in calibration blocks representing the material for each side of the welds being examined.

E. Paragraph 7.7.4 of procedure ISI-206, requires only a single scan path in two directions.

Staff Comment:

This may not be adequate for austenitic materials and Supplement 7 or Code Case N-335 should be considered.

F. Procedures ISI-147, ISI-47, and ISI-206 all require a minimum scan overlap of 10% of the transducer.

Staff Comments:

The increased scan overlap provisions from later editions of the Code and Code Case N-335 should be considered.

G. Standard Radiography.

Staff Comments:

Standard radiography may not be capable of detecting and characterizing service-induced flaws because the detection of cracks normally requires the central axis of the radiation beam to be within 10° from the normal of the predominate crack plane. If radiography is to be applied for preservice examinations a technical justification should be provided, including qualification and special procedure requirements, to demonstrate that radiography is an effective volumetric examination technique for detection of service-induced flaws.

H. Paragraph 6.4.6 of Procedure 2.13 indicates that the volumetric examination procedure for bolting is being prepared.

Staff Comment:

The use of flat bottom holes as calibration reflectors may not be effective for the ultrasonic examination of large diameter, long bolts.

I. Note 8 to the DMW-PSI-100 Table states that ultrasonic examination is not feasible due to material thickness and surface examination will be substituted. This note is applied to the Seal Water Heat Exchanger.

Staff Comments:

Limitations to required examinations and alternatives to ASME Code requirements should not be addressed by footnotes in the PSI Program. The Applicant should identify specific requests for relief from impractical requirements and provide a technical justification.

J. Paragraph 6.7.1 of Procedure 2.13 states that both NF and Non-NF supports receive a preservice examination in accordance with Subsection IWF. At DLC discretion, the construction Code may be utilized for final acceptance of Non-NF supports.

Staff Comment:

Paragraph IWF-2200 (b) of Section XI requires that the preservice examination of supports, that are constructed in accordance with NF, shall be performed following the initiation of hot functional tests.

JAN 06

MEETING SUMMARY DISTRIBUTION

Docket No(s): 50-412
NRC PDR
Local PDR
NSIC
PRC System
LB3 Reading
Attorney, OELD
GWKnighton
Project Manager BKSingh
JLee

NRC PARTICIPANTS

B. K. Singh
R. A. McBrearty
M. R. Hum
C. Cheng

bcc: Applicant & Service List