U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 85-19

Docket No. 50-443

License No. CPPR-135 Priority - Category C

Licensee: Public Service of New Hampshire

1000 Elm Street

Manchester, New Hampshire 03105

Facility Name: Seabrook Unit 1

Inspection At: Seabrook New Hampshire

Inspection Conducted: July 1 thru 26, 1985

Inspectors: H. W. Kerch, Lead Reactor Engineer — date 8/29/85

R. H. Harris, NDE Technician — date 8/29/85

R. M. Campbell, NDE Technician — date 8/22/85

Approved by: J. T. Wiggins, Chief, Materials and Processes Section, DRS — date 9/3/85

Inspection Summary: Inspection on July 1 Thru 26, 1985 (Inspection Report No. 50-443/85-19)

Areas Inspected: A routine, announced NRC independent measurements inspection was conducted at the utility construction site using the NRC Mobile Non-destructive Examination (NDE) laboratory. Selected safety related piping, structural and support weldments fabricated to ASME Code, Section III, Classes 1, 2 and 3 and American Welding Society (AWS) Code D1.1 requirements were inspected. Three regional based inspection personnel assisted by two contracted NDE personnel were utilized during this inspection. The inspection involved 497 onsite hours and 157 offsite hours.

Results: No violations were identified.

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DETAILS

1.0 Persons Contacted

New Hampshire Yankee (NHY)

*J. W. Singleton, Assistant QA Manager
*G. F. McDonald, Construction QA Manager
*J. G. Tefft, Start-up Engineer
*C. M. Wiley, Manager, Owners Construction Department
*J. A. Vail, PSI Start-up Coordinator
*J. Marchi, Site QC Manager
*B. Sanchez, Licensing Engineer
*W. Middleton, QA Staff Engineer
R. Anderson, Start-up Engineer

Yankee Atomic Electric Company (YAEC)

R. A. Jeffrey, PSI Supervisor
R. C. Julian, NDE Supervisor
B. J. McNeal, Jr., QA Inspector
R. P. Grippardi, Asst. QA Manager
R. White, QA Auditor
P. A. Oikle, Audit Manager

Pullman-Higgins Company (PH)

R. G. Davis, QA Manager
D. Clark, NDE Supervisor

U.S. Nuclear Regulatory Commission (US NRC)

J. M. Grant, Reactor Engineer
*R. S. Barkley, Reactor Engineer
*A. C. Cerne, Senior Resident Inspector
*D. G. Ruscitto, Resident Inspector

2.0 Independent Measurements - NRC Nondestructive Examination and Quality Records Review of Safety Related Systems

During the period July 1 through 12, 1985, quality records received from Seabrook Unit 1 were reviewed in the regional office for completeness and compliance to the licensee's FSAR commitments to applicable codes, standards and specifications. Subsequently, an onsite independent verification inspection was conducted during the weeks of July 15, through July 26, 1985 using the NRC Mobile Nondestructive Examination (NDE) Laboratory. This inspection was conducted by region based personnel in conjunction with NRC contracted personnel.

The purpose of this examination was to verify the adequacy of the licensee's welding and nondestructive examination quality control pro-

grams. This examination was accomplished by duplicating as close as possible those examinations required of the licensee and by then evaluating the results. In addition to the required examinations, several other confirmatory examinations designed to verify conformance with material specifications were performed and compared to quality assurance records.

An NRC inspector made a random selection of shop and field weldments fabricated to AWS D1.1 and to ASME Class 1, 2 and 3 codes. These weldments were intended to provide a representative sample of piping systems, components, and pipe size. Fabrication of the items selected had been previously accepted by the licensee based on vendor shop and onsite QA/QC records.

2.1 Quality Documents Review

Fifty safety related piping system document packages covering the items shown in Attachment 3 were reviewed for compliance with licensee procedures, applicable codes, standards and regulatory requirements. The following documents were reviewed:

Document	Attributes Reviewed
Material Certifications (Base)	Material chemical and physical properties compared to standards and Code requirements.
NDE Records	Examinations met codes and standards, licensee procedures and other commitments. Personnel properly qualified. Appropriate examinations performed.
Fabrication Records	A review of fabricator's traveler and fabrication record was performed and compared against other corresponding records and sign off sheets.
Drawings (isometrics)	Drawings were reviewed for proper designation of weldments, location and classification.
Procedures	Procedures were reviewed for completeness, and to verify the implementation of the licensee's commitments to Code requirements.
Welding Material	Material certifications for welding materials were reviewed to determine if physical and chemical properties were as required by licensee's commitments to Code and Industry Standards.

Results: No violations were identified.

2.2 Nondestructive Examinations

Nondestructive examinations were performed using NRC procedures with addenda written specifically to comply with the licensee's PSAR commitment to the ASME B&PV Code. The intent was to duplicate, to the extent practicable, the techniques and methods of the original examinations.

The following examinations were performed:

Radiographic Examination

Thirty-seven pipe weldments were radiographed using an Iridium-192 source per NRC procedure NDE-5-Rev.0 addenda SB-1-5-1. The weldments examined were ASME class 1, 2, and 3. The resulting radiographs were evaluated per applicable Code requirements and compared to the licensee's radiographs.

Results: No violations were identified.

Socket Welds

Twenty-four socket welds were visually examined and radiographed to ascertain minimum gap required during fit-up prior to welding.

Results: No violations were identified.

Penetrant Examination

Thirty-two safety related pipe weldments and adjacent base material (½" either side of weld) were examined using liquid penetrant techniques per NRC procedure NDE-9, Rev. 0 addenda SB-1-9-1. Samples included ASME Class 1 and 2 weldments.

Results: No violations were identified.

Visual Examination

Sixty-eight weldments and adjacent base material (½" either side of weld) were visually inspected for weld reinforcement, rejectable visual indications, surface condition and overall workmanship per NRC procedure NDE 14, Rev. 0.

Results: No violations were identified.

Magnetic Particle Examination

Twenty-three safety related pipe weldments and adjacent base material (½" either side of weld) were examined by the magnetic particle method per NRC

procedure NDE 6 Rev. 0 addenda SB-1-6-1. Samples included ASME Class 1, 2, and 3 materials.

Results: No violations were identified.

Ultrasonic Examination

Six ASME Class 1 austenitic stainless steel weldments were ultrasonically inspected using a Sonic Mark I ultrasonic flaw detector. Equipment calibration was performed per NRC procedure NDE-1 Rev. 0 and site procedure 80A6462 Rev. 1. A distance amplitude curve (DAC) was constructed using Calibration Block Nos. SB-4-160-SS and SB-8-160-SS. Instrument settings, transducers and DAC were made to reflect as close as possible the original examination performed by site personnel.

Five weldments examined could not be properly evaluated due to the different transducers used by the site and the NRC. One weldment identified as RC-21-1 weld 7 was inspected and indications confirmed by the inspector. Confirmed were two indications numbered 1 and 2 as geometric reflectors due to the below described condition.

Sometimes, because of grain growth in austenitic stainless steel weldments, ultrasonic sound waves may be redirected along grain boundaries which act as a wave guide. To confirm that this condition resulted in the identified geometric reflectors, the NRC inspector placed the transducer on the weld crown to obtain maximum indication then turned the transducer 180° from the original direction.

The same indication appeared, therefore, the inspector determined that the indications achieved using the above technique were generally consistent with difficulties that result from the transmission of ultrasonic wares in austenitic materials.

Results: No violations were identified.

Hardness Measurements

Eleven weldments and adjacent base metal were checked for hardness using the Equo-tip hardness tester per NRC procedure NDE-12, Rev. 0. Hardness numbers were converted to Brinnell values and approximate tensile strength was determined by use of conversion tables.

Results: No violations were identified.

Thickness Measurements

Forty-four weldments and adjacent pipe material were examined to determine minimum wall thickness per NRC procedure NDE-11, Rev. 0. Measurements were performed using a NOVA-D 100 thickness gauge. Minimum wall thickness

was determined by use of ASTM standard pipe size and nominal thickness chart.

Results: No violations were identified.

Ferrite Measurements

Twenty-four pipe welds were checked for delta ferrite content using a Type II Ferrite Indicator (Severn Gauge). This test was to verify that welding filler metal compositions achieved as deposited microstructures with delta ferrite content adequate to eliminate possible hot cracking.

Results: No violations were identified.

Alloy Analyzers

Five stainless steel pipe welds and adjacent base materials were examined using a Texas Nuclear Alloy Analyzer. The alloy analyzer is capable of making selected quantitative and qualitative nondestructive analysis of metal alloys and verifying material types.

Results: No violations were identified.

2.3 Review of Procedures

The following procedures were reviewed for compliance with NRC and industry Code requirements. They also provided the basic acceptance criteria and background information for this inspection.

NONDESTRUCTIVE EXAMINATION PROCEDURES

A. PULLMAN HIGGINS

Magnetic Particle	1X-MT3-W77	Rev. 06
	1X-MT4-AWS76	Rev. 03
	1X-MT5-AWS77	Rev. 02
Liquid Penetrent	1X-PT-1-W77	Rev. 07
	1X-LP-3-AWS76	Rev. 02
Radiographic	1X-RT-1-W77/R7-1	Rev. 07
	1X-RT-6-W77	Rev. 03
	1X-RT-7-AWS-76	Rev. 01
Ultrasonic	1X-UT-1-W77	Rev. 0
Visual	X 11	Rev. 03
In-process	X 9	Rev. 15

B. PERINI POWER

Magnetic Particle	MT-QCP-9.1	Rev. A

C. DRAVO

Magnetic Particle	ASME-III-MP	Rev. 06
Liquid Penetrent	ASME-III-DP	Rev. 05
Radiographic	ASME-III RT	Rev. 10
Ultrasonic	ESM-UT-4 ESM-UT-1	Rev. 01 Rev. 06
Visual	ES-VE-1	Rev. 01

Results: No violations were identified.

3.0 Radiographic Review

A sampling of the licensee's radiographs were reviewed to verify compliance of the nondestructive examination program to ASME III Code requirements. The inspector reviewed seventeen field welds and one hundred, thirty-nine shop welds to verify the adequacy of the licensee's radiographic program. Also twenty-five welds were re-radiographed by the NRC and these radiographs were compared to site file films in order to independently verify the correct radioigraphic file film was on hand.

Results: No violations were identified.

4.0 Preservice Inspection (PSI) Program

During this inspection a review of PSI data was performed and the following items were identified by the inspector as concerns:

(a) As reported by the site PSI contractor, weld surface preparations do not provide for satisfactory transducer contact. Example: see ultrasonic data sheets 6462-61, 6462-62, 6462-76, 6462-72, 6422-74, 6462-63, 6462-75.

(b) Main reactor coolant cast elbow welds have not been ultrasonically examined and it was not clear as to what the licensee intended to do regarding these welds. No calibration block existed for the examination of these cast elbows at the site.

(c) The inspector could not determine if the calibration block for the main reactor coolant piping welds (material ASME SA 376-TYP 304) met ASME Section XI requirements.

(d) Site PSI ultrasonic data did not cross-reference previous ultrasonic examinations of the same weld.

(e) Ultrasonic data for weld 1-RH-158-5-6 indicated a support obstruction and prevented full examination of this weld. A walkdown of this piping weld revealed no obstruction existed.

(f) A reverification of the as-built weld seam location on the reactor, using as built drawing 10873-161-003-03 was compared against the location shown on Nuclear Energy Service (NES) Preservice Inspection (PSI) document 80A6401 reactor weld seam location. A discrepancy of 45° was revealed as to the long seam locations for the reactor closure head.

(g) A review of the PSI ultrasonic procedure for the reactor vessel revealed an inconsistency between site vessel procedures. For example, reactor procedure 80A6483 references several documents and applicable drawings. However, the weld seam as-built drawing E-10873-161-003 Rev. 3 was not included within these references. Additionally, other PSI ultrasonic vessel procedures 80A6965, 80A6466 reference 80A6461, the general ultrasonic requirements and the PSI program, but neither weld seam as-built drawings nor any other applicable drawings were listed in these procedures.

(h) Document YA-SB1S1-1 Rev. 2 states that the contractor will advise the Engineering Supervisor of interferences created by construction as they are determined. Notifications have been accomplished verbally. No formal system existed to assure customer notification for the report of limitations to the examinations, surface problems and obstructions, as they are encountered in the field and subsequently referenced on the applicable ultrasonic examination reports.

(i) Preservice Inspection Document 80A8984, page 12, Figure D-02, "R.H. System Line Nos. 155 and 162 Weld and hanger Map" had erroneous elevation data for weld RH 155-5. The inspector reviewed site control drawing 9763-800155 Rev. 18 and observed that this drawing contained the correct information.

(j) Preservice Ultrasonic data sheet 6462-171 indicated that the site was experiencing difficulty in the ultrasonic examination of 6" diameter stainless steel welds. Also the valve sides of the 6" piping welds were not being examined. It was not clear to the inspector as to what type of examination the licensee plans for these welds.

Results: The above items are considered unresolved pending licensee action and NRC review (UNR 50-443/85-19-01).

5.0 NDE Personnel Qualifications

NDE qualification and certification records for seven Pullman Higgins (site NDE contractor) personnel, and eight Nuclear Energy Service (site

preservice contractor) personnel were reviewed for compliance to ASNT-TC-1A and ASME criteria. The inspector noted that records for two Pullman Higgins corporate NDE level III personnel reflected their NDE certification had expired. Pullman Higgins site personnel contacted their corporate office and a current copy of their NDE certifications were faxed to the site. The inspector reviewed the faxed copies and had no further concern with site NDE qualification and certification records.

Results: No violations were identified.

6.0 Other Confirmatory Examinations

6.1 Ultrasonic Examination (Anchor Bolts)

Fifty-six anchor bolts for installations in the Reactor Building Unit 1, Elevation 0' level were randomly selected and ultrasonically examined for length using NRC Procedure NDE-18, Rev. 0.

Results: No violations were identified.

6.2 Visual Examination ("J" TUBE WELDMENTS)

The NRC inspector completed visual examinations on eight "J" Tube weldments replaced on Westinghouse Steam Generator "A", per Westinghouse visual procedure D110.

Results: No violations were identified.

6.3 Confirmatory Coatings Inspection

A confirmatory inspection was performed on the containment liner in the Reactor Building for coating thickness requirements. Readings were taken at three locations, ten readings at each location. The inspection was performed using site procedure, IP-103 Rev. 0. A Zormco 2002 paint thickness gauge was used to perform the inspection utilizing the dry film thickness method (DFT). On average, the results indicated thicknesses in the 15 to 25 mil range.

Results: No violations were identified.

7.0 Attachments

Attachment No. 1 is a tabulation of the specific items examined and the results.

Attachment No. 2 is a list of specific radiographs reviewed.

Attachment No. 3 is a list of specific documentation packages reviewed.

8.0 Unresolved Items

An Unresolved Item is that for which more information is necessary for the NRC to determine whether the item is acceptable or a violation or deviation. An unresolved item is contained in paragraph 4.

9.0 Exit Interview

An exit interview was held on July 26, 1985 with members of the licensee's staff. The inspector summarized the scope and findings of this inspection. No written material was provided to the licensee during the course of inspection.

INDEPENDENT MEASUREMENT PROGRAM

15 July-26 July 1985 SITE: SEABROOK NO. 1

WELD NUMBER LINE/ISO	CLASS	ALLOY ANAL.	FERRITE	THICK	M.T.	R.T.	U.T.	P.T.	HARDNESS	VISUAL	REMARKS
RC-49 F0103	1	ACC	ACC	ACC	N/A	ACC	N/A	ACC	N/A	ACC	ITEM # 1
RC-13 F0605	1	ACC	ACC	ACC	N/A	ACC	N/A	ACC	N/A	ACC	ITEM # 5
RC-13-06 SW-D	1	ACC	ACC	ACC	N/A	ACC	N/A	ACC	N/A	ACC	ITEM # 6
RC-48 F0401	1	N/A	ACC	ACC	N/A	ACC	N/A	ACC	N/A	ACC	ITEM # 7
RC-48 SW-F	1	N/A	ACC	ACC	N/A	ACC	N/A	ACC	N/A	ACC	ITEM # 8
RC-121 F0302	2	N/A	N/A	N/A	N/A	N/A	N/A	ACC	N/A	ACC	ITEM # 16
RC-121 F0301	2	N/A	N/A	N/A	N/A	N/A	N/A	ACC	N/A	ACC	ITEM # 15
RC-121 SW-W	2	N/A	N/A	N/A	N/A	N/A	N/A	ACC	N/A	ACC	ITEM # 17
SI-201 F0201	1	ACC	ACC	ACC	N/A	ACC	N/A	ACC	ACC	ACC	ITEM # 2
SI-201-02 SW-B	1	ACC	ACC	ACC	N/A	ACC	N/A	ACC	ACC	ACC	ITEM # 3
SI-251 F1107	2	N/A	N/A	ACC	N/A	ACC	N/A	ACC	N/A	ACC	ITEM # 12
RH-155 F0601 R/1	2	N/A	ACC	ACC	N/A	ACC	N/A	N/A	ACC	ACC	ITEM # 10
RH-155-06 SW-J	2	N/A	ACC	ACC	N/A	ACC	N/A	N/A	ACC	ACC	ITEM # 11

Attachment #1

WELD NUMBER LINE/ISO	CLASS	ALLOY ANAL.	FERRITE	THICK	M.T.	R.T.	U.T.	P.T.	HARDNESS	VISUAL	REMARKS
CS-350 F0104	2	N/A	N/A	N/A	N/A	N/A	N/A	ACC	N/A	ACC	ITEM # 27
CS-0541 F0921	2	N/A	N/A	N/A	N/A	N/A	N/A	ACC	N/A	ACC	ITEM # 29
DG-4419 F0307	3	N/A	N/A	N/A	N/A	N/A	N/A	ACC	N/A	ACC	ITEM # 30
DG-4421 F0406	3	N/A	N/A	N/A	N/A	N/A	N/A	ACC	N/A	ACC	ITEM # 31
RH-160 F0408	2	N/A	ACC	ACC	N/A	ACC	N/A	ACC	ACC	ACC	ITEM # 33
RH-160-04 SW-F	2	N/A	ACC	ACC	N/A	ACC	N/A	ACC	ACC	ACC	ITEM # 34
RH-160-04 SW-E	2	N/A	ACC	ACC	N/A	ACC	N/A	ACC	ACC	ACC	ITEM # 35
RH-159-03 SW-E	2	N/A	ACC	ACC	N/A	ACC	N/A	ACC	ACC	ACC	ITEM # 36
RH-159-03 SW-F	2	N/A	ACC	ACC	N/A	ACC	N/A	ACC	ACC	ACC	ITEM # 37
RH-158 F0301	2	N/A	ACC	ACC	N/A	ACC	N/A	ACC	ACC	ACC	ITEM # 45
RH-158 SW-D	2	N/A	ACC	ACC	N/A	ACC	N/A	ACC	ACC	ACC	ITEM # 46
CS-360 F0805	2	N/A	ACC	ACC	N/A	ACC	N/A	N/A	N/A	ACC	ITEM # 13
CS-360 SW-E	2	N/A	ACC	ACC	N/A	ACC	N/A	N/A	N/A	ACC	ITEM # 14

WELD NUMBER LINE/ISO	CLASS	ALLOY ANAL.	FERRITE	THICK	M.T.	R.T.	U.T.	P.T.	HARDNESS	VISUAL	REMARKS
FW-4614 SW-B	3	N/A	N/A	N/A	ACC	N/A	N/A	N/A	N/A	ACC	ITEM # 24
FW-4609-18 F1802	3	N/A	N/A	ACC	ACC	ACC	N/A	N/A	N/A	ACC	ITEM # 43
FW-4614 F0201	3	N/A	N/A	N/A	ACC	N/A	N/A	N/A	N/A	ACC	ITEM # 23
FW-4609-18 SW-C	2	N/A	N/A	ACC	ACC	ACC	N/A	N/A	N/A	ACC	ITEM # 44
MS-4000-5 SW-F	2	N/A	N/A	ACC	ACC	ACC	N/A	N/A	N/A	ACC	ITEM # 42
CC-817 F012	3	N/A	N/A	ACC	N/A	ACC	N/A	N/A	N/A	ACC	ITEM # 20
MS-4000-5 F0502	2	N/A	N/A	ACC	ACC	ACC	N/A	N/A	N/A	ACC	ITEM # 41
CC-798 F0315	3	N/A	N/A	ACC	ACC	N/A	N/A	N/A	N/A	ACC	ITEM # 21
CC-798 F0516	3	N/A	N/A	ACC	ACC	N/A	N/A	N/A	N/A	ACC	ITEM # 22
SL-X13-01 F0101	2	N/A	ACC	N/A	N/A	N/A	N/A	ACC	N/A	ACC	ITEM # 38
203-RM-9 FW-1	1	N/A	N/A	N/A	ACC	N/A	N/A	N/A	N/A	ACC	PIPE SUPPORT ITEM # 49
M/S-1808-RG-2 FW-18	3	N/A	N/A	N/A	ACC	N/A	N/A	N/A	N/A	ACC	ITEM # 50
KNIFE PLATE 3C299B	A.W.S D1.1	N/A	N/A	N/A	ACC	N/A	N/A	N/A	N/A	ACC	ITEM # 47
KNIFE PLATE 4D168B	A.W.S D1.1	N/A	N/A	N/A	ACC	N/A	N/A	N/A	N/A	ACC	ITEM # 48

WELD NUMBER LINE/ISO	CLASS	ALLOY ANAL.	FERRITE	THICK	M.T.	R.T.	U.T.	P.T.	HARDNESS	VISUAL	REMARKS
DG-4405-02 FO201	3	N/A	N/A	ACC	N/A	N/A	N/A	ACC	N/A	ACC	ITEM # 64
RC-48-04 FW0402	1	N/A	ACC	ACC	N/A	ACC	N/A	ACC	N/A	ACC	ITEM # 51
RC-48 SW-B	1	N/A	ACC	ACC	N/A	ACC	N/A	ACC	N/A	ACC	ITEM # 52
RC-48 SW-C	1	N/A	ACC	ACC	N/A	ACC	N/A	ACC	N/A	ACC	ITEM # 53
RC-48 SW-D	1	N/A	ACC	ACC	N/A	ACC	N/A	ACC	N/A	ACC	ITEM # 54
RC-48 SW-E	1	N/A	ACC	ACC	N/A	ACC	N/A	ACC	N/A	ACC	ITEM # 55
MS-4000-05 FW0501	2	N/A	N/A	ACC	ACC	ACC	N/A	N/A	N/A	ACC	ITEM # 56
FW-4609-19 FW1909	2	N/A	N/A	ACC	ACC	ACC	N/A	N/A	N/A	ACC	ITEM # 58
FW-4609-19 FW1910	2	N/A	N/A	ACC	ACC	ACC	N/A	N/A	N/A	ACC	ITEM # 57
FW-4609-19 FW1901	2	N/A	N/A	ACC	ACC	ACC	N/A	N/A	N/A	ACC	ITEM # 59
M/S-1808-RG-2 FW19	3	N/A	N/A	N/A	ACC	N/A	N/A	N/A	N/A	ACC	PIPE SUPPORT SERVICE WATER
M/S-1808-RG-2 FW20	3	N/A	N/A	N/A	ACC	N/A	N/A	N/A	N/A	ACC	PIPE SUPPORT SERVICE WATER
M/S-1808-RG-2 FW17	3	N/A	N/A	N/A	ACC	N/A	N/A	N/A	N/A	ACC	PIPE SUPPORT SERVICE WATER
M/S-1808-RG-2 FW29	3	N/A	N/A	N/A	ACC	N/A	N/A	N/A	N/A	ACC	PIPE SUPPORT SERVICE WATER

INDEPENDENT MEASUREMENT PROGRAM

15 July-26 July 1985 SITE: SEABROOK NO. 1

WELD NUMBER LINE/ISO	CLASS	ALLOY ANAL.	FERRITE	THICK	M.T.	R.T.	U.T.	P.T.	HARDNESS	VISUAL	REMARKS
M/S-1808 RG-2 FW30	3	N/A	N/A	N/A	ACC	N/A	N/A	N/A	N/A	ACC	PIPE SUPPORT SERVICE WATER
M/S-1808-RG-2 FW31	3	N/A	N/A	N/A	ACC	N/A	N/A	N/A	N/A	ACC	PIPE SUPPORT SERVICE WATER
M/S-1808-RG-2 FW111	3	N/A	N/A	N/A	ACC	N/A	N/A	N/A	N/A	ACC	PIPE SUPPORT SERVICE WATER
RC-121 F0303	2	N/A	N/A	N/A	N/A	N/A	N/A	ACC	N/A	ACC	3/4 IN. S.W. FILLET
RH-162-01 FW0109	2	N/A	N/A	ACC	N/A	ACC	N/A	ACC	N/A	ACC	ITEM # 60
RH-155-06 FW0606	2	N/A	N/A	ACC	N/A	ACC	N/A	ACC	N/A	ACC	ITEM # 61
RH-155-06 FW0605	2	N/A	N/A	ACC	N/A	ACC	N/A	N/A	N/A	ACC	ITEM # 62
RH-155 SW-K	2	N/A	N/A	ACC	N/A	ACC	N/A	N/A	N/A	ACC	ITEM # 63
RC-74-1 WELD 4	1	N/A	N/A	ACC	N/A	N/A	SEE PARA 2.2	N/A	N/A	ACC	PSI WELDS PARA 2.2 IN REPORT
RC-74-1 WELD 2	1	N/A	N/A	ACC	N/A	N/A	SEE PARA 2.2	N/A	N/A	ACC	PSI WELDS PARA 2.2 IN REPORT
RC-74-1 WELD 1	1	N/A	N/A	ACC	N/A	N/A	SEE PARA 2.2	N/A	N/A	ACC	PSI WELDS PARA 2.2 IN REPORT
RC-75-1 WELD 4	1	N/A	N/A	ACC	N/A	N/A	SEE PARA 2.2	N/A	N/A	ACC	PSI WELDS PARA 2.2 IN REPORT
RC-21-1 WELD 7	1	N/A	N/A	N/A	N/A	N/A	SEE PARA 2.2	N/A	N/A	ACC	PSI WELDS PARA 2.2 IN REPORT
RH-155-5 WELD 9	1	N/A	N/A	N/A	N/A	N/A	SEE PARA 2.2	N/A	N/A	ACC	PSI WELDS PARA 2.2 IN REPORT

Attachment #1

C - CRACK
SL - SLAG
P - POROSITY
T - TUNGSTEN

LF - LACK FUSION
IP - INADEQUATE PENETRATION
LI - LINEAR INDICATION
UI - UNFUSED INSERT

A - ARTIFACTS
S - SURFACE
CC - CONCAVITY
CV - CONVEXITY

SYSTEM/LINE	WELD ID	ACC	REJ	C	SL	P	T	LF	IP	LI	UI	A	S	CC	CV	COMMENTS
										D	R	A	V	O		
1-MS-4012-01-B1-24-1	1226A	✓														
1-MS-4012-01-B1-24-1	1226B	✓														
1-CO-4059-03-B2-36-1	1321C	✓														
1-MS-4015-01-B1-24-3	1598D	✓														
1-MS-4015-01-B1-24-3	1598E	✓														
1-FW-4601-07-D2-16-1	1794E	✓														
1-FW-4604-01-D2-24-1	1815C	✓														
1-FW-4604-01-D2-24-1	1815D	✓														
1-FW-4609-02-D2-18-1	1823D	✓														
1-CO-4068-05-B2-20-3	1898G	✓														
1-CO-4040-05-A1-30-2	2108C	✓														
1-CO-4040-01-A1-24-1	2507D	✓														
1-CO-4041-01-A1-24-1	2510D	✓														
1-MS-4005-07-D1-8-3	2785A	✓														
DJB	1H1	✓		Pittsburgh Des Moines (PDM)												
DYB	1H2	✓														
EBB	2H2	✓														
EBB	2H3	✓														
DJB	1H1	✓														
DJB	1H2	✓														
DJB	1H3	✓														¼"SL
DJB	1V1	✓														
DJB	1V2	✓														
DJB	1V3	✓														
EBB	2V1	✓														
1-CBS-1205-1-151-8-1	574B	✓														

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SYSTEM/LINE	WELD ID	ACC	REJ	C	SL	P	T	LF	IP	LI	UI	A	S	CC	CV	COMMENTS
						D	R	A	V	O						
1-CBS-1205-1-151-8-1	574C	✓														
1-CBS-1206-1-151-8-1	581B	✓														
1-CBS-1206-1-151-8-1	581C	✓														
1-S1-203-2-2501-10-2	1141-F	✓														
1-S1-203-2-2501-10-4	1143C	✓	.													
1-S1-204-2-2501-10-4	1151C	✓														
1-FW-4606-04-1506-16-3	1184A	✓														
1-FW-4606-04-1506-16-3	1184E	✓														
1-FW-4607-04-1506-16-3	1190D	✓														
1-MS-4000-02-907-30-1	1242B	✓														
1-MS-4002-36-906-30-4	1248D	✓														
1-MS-4001-39-906-30-3	1254A	✓														
1-MS-4001-39-906-30-3	1254G	✓														
1-MS-4001-02-907-30-1	1255B	✓														
1-MS-4003-36-906-30-2	1258D	✓														
1-MS-4003-36-906-30-2	1259D	✓														
1-COP-9312-2-158-8-4	1499C	✓														
1-FW-4608-03-1506-18-5	1537B	✓														
1-DG-4415-01-152-10-5	1572D	✓														
I-SI-204-1-601-10-3	1871D	✓														

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SYSTEM/LINE	WELD ID	ACC	REJ	C	SL	P	T	LF	IP	LI	UI	A	S	CC	CV	COMMENTS
							D	R	A	V	O					
1-CBS-1201-1-151-14-6	120C	✓														
1-CBS-1202-1-151-14-5	132D	✓														
1-CBS-1202-1-151-14-7	133B	✓														
1-CBS-1202-3-301-12-2	140C	✓														
1-CBS-1202-3-301-12-2	140F	✓														
1-CBS-1203-1-151-8-4	146-D	✓														
1-CBS-1203-1-151-8-6	148-B	✓														
1-CBS-1203-1-151-8-6	148-C	✓														
1-CBS-1203-1-151-8-6	148-D	✓														
1-RH-158-2-601-8-7	155-D	✓														
1-RH-155-2-601-8-3	158-A	✓														
1-RH-158-2-601-8-8	220-B	✓														
1-RH-179-1-601-8-1	225-C	✓														
1-RH-179-1-601-8-1	225-D	✓														
1-RHR-179-1-601-8-1	225-G	✓														
1-RH-167-2-301-8-2	250-C	✓														
1-CBS-1216-2-301-8-3	256-E	✓														
1-CBS-1214-2-301-8-2	262-C	✓														
1-CBS-1214-2-301-8-2	262-D	✓														
1-CBS-1204-1-151-8-2	314C	✓														
1-CBS-1204-1-151-8-2	314D	✓														
1-CBS-1204-1-151-8-3	315-F	✓														
1-CBS-1204-1-151-8-5	317B	✓														

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SYSTEM/LINE	WELD ID	ACC	REJ	C	SL	P	T	LF	IP	LI	UI	A	S	CC	CV	COMMENTS
1-CBS-1204-1-151-8-5	317-C	✓						D	R	A	V	O				
1-CBS-1215-2-301-8-2	332-C	✓														
1-CBS-1215-2-301-8-2	332-F	✓														
1-CBS-1215-2-301-8-2	332-E	✓														
615-B	B151	✓					P	X								ENGINEERING
615-B	B152	✓														
615-B	B153	✓														wrong size shims used
1-SI-202-2-2501-10-4	1207-E	✓					D	R	A	V	O					
EBB	2V2	✓														
EBB	2V3	✓														
ECB	3V1	✓														
ECB	3V2	✓														
ECB	3V3	✓														
PJB	IH3	✓														
T23-02-0006	F-FF	✓														Breda Funcine Meridionali
T23-02-0006	A-B	✓														
T23-02-0006	B-F	✓														
T23-02-0006	E-FF	✓														
T23-02-0006	B-C	✓														
T23-02-0006	C-D	✓														
T23-02-0006	C-F	✓														
1-RH-159-1-601-8-2	240B	✓							D	R	A	V	O			
1-RH-159-1-601-8-2	240D	✓														
1-CS-360-1-2501-3-3	831C	✓														
1-CS-360-1-2501-3-3	831D	✓														
1-CS-360-1-2501-3-3	831E	✓														

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SYSTEM/LINE	WELD ID	ACC	REJ	C	SL	P	T	LF	IP	LI	UI	A	S	CC	CV	COMMENTS
								D	R	A	V	O				
1-CS-360-1-2501-3-3	831G	✓														
1-CS-360-1-2501-3-3	831H	✓														
1-CS-360-4-601-3-1	832A	✓														
1-CS-360-4-601-3-1	832B	✓														
1-CS-360-4-601-3-1	832D	✓														
1-CS-360-4-601-3-1	832E	✓														
1-CS-360-4-601-3-1	831G	✓														
1-CS-360-4-601-3-1	831H	✓														
1-CS-360-4-601-3-1	832A	✓														
1-CS-360-4-601-3-1	832B	✓														
1-CS-360-4-601-3-1	832D	✓														
1-CS-360-4-601-3-1	832E	✓														
1-CS-360-4-601-3-1	832G	✓														
1-CS-360-4-601-3-1	832J	✓														
1-CS-360-4-601-3-2	833M	✓														
1-SI-272-2-2501-4-10	982D	✓														
1-RC-80-1-2501-6-1	1118C	✓														
1-RC-80-1-2501-6-1	1118F	✓														
1-CS-366-1-2501-3-3	1226H	✓														
1-CS-366-1-2501-3-3	1226J	✓														
1-CS-366-1-2501-3-3	1226L	✓														
1-CS-368-1-2501-3-8	1348D	✓														
1-CS-368-1-2501-3-8	1348F	✓														
1-CBS-1201-1-151-14-8	122C	✓														
1-CBS-1202-1-151-14-11	137C	✓														

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SYSTEM/LINE	WELD ID	ACC	REJ	C	SL	P	T	LF	IP	LI	UI	A	S	CC	CV	COMMENTS
								D	R	A	V	O				
1-RC-13-2-601-12-9	153D															
1-CBS-1216-2-301-8-7	260E															
1-CBS-1216-2-301-8-7	260F															
1-RH-159-1-601-8-3	241C															
1-RH-157-1-601-8-3	236-C	✓														
1-RH-151-1-601-8-3	171-B	✓														
1-CBS-1216-2-301-8-8	261D	✓														
1-CBS-1216-2-301-8-8	261E	✓														
1-CBS-1216-2-301-8-8	261G	✓														
1-CBS-1216-2-301-8-8	261H	✓														
1-CBS-1216-2-301-8-8	261J	✓														
1-RH-157-1-601-8-6	243L	✓														
1-SI-201-2-2501-10-4	1135C	✓														
1-SI-203-1-601-10-2	1139C	✓														
1-SI-202-2-2501-10-4	1207A	✓														

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SYSTEM/LINE	WELD ID	ACC	REJ	C	SL	P	T	LF	IP	LI	UI	A	S	CC	CV	COMMENTS
RADIOGRAPHS, COMPARED TO SITE RADIOGRAPHS.																
SI-201-02	F0201	✓										✓				
SI-201-02	SW-B	✓										✓				
RH-160-04	SW-E	✓														
RH-160-03	F0408	✓														
RH-160-04	SW-F	✓														
RH-159-03	SW-E	✓														
RH-159-03	SW-F	✓														
RH-158-	F0301	✓														
RH-158-	SW-D	✓														
CS-360	F0805	✓														
CS-360	SW-E	✓														
CC-817	F012	✓														
RC-48-04	F0402	✓				✓										
RC-48-04	F0401	✓				✓										
RC-48	SW-B	✓														
RC-48	SW-C	✓														
RC-48	SW-D	✓			✓								✓	✓		IN CODE
RC-48	SW-E	✓														
MS-4000	F0502	✓														
MS-4000	SW-F	✓												✓		
FW 4609-18	F1802	✓												✓		
FW 4609-18	SW C	✓														
RC-13-06	F0605	✓												✓		
RH-155-06	F0601	✓			✓								✓			IN CODE
RH-155-06	SW-J	✓														

SITE: SEABROOK NO. 1
DOCKET NO. 50-443

REVIEW OF DOCUMENTATION PACKAGES

LINE NO.	WELD NO.	REVIEW	COMMENTS
RC-49	F103	ACCEPT	ITEM # 1
SI-201	F0201		ITEM # 2
SI-201	SW-B		ITEM # 3
SI-251	F1202		ITEM # 4
RC-13	F0605		ITEM # 5
RC-13	SW-D		ITEM # 6
RC-48	F0401		ITEM # 7
RC-48	SW-F		ITEM # 8
CS-365	F0401		ITEM # 9
RH-155	F0601		ITEM # 10
RH-155	SW-J		ITEM # 11
SI-251	F1107		ITEM # 12
CS-360	F0805		ITEM # 13
CS-360	SW-E		ITEM # 14
RC-121	F0301		ITEM # 15
RC-121	F0302		ITEM # 16
RC-121	SW-W		ITEM # 17
CC-742	F013		ITEM # 18
CC-742	SW-E		ITEM # 19
CC-817	F012		ITEM # 20
CC-798	F0315		ITEM # 21
CC-798	F0516		ITEM # 22
FW-4614	F0201		ITEM # 23
FW-4614	SW-B		ITEM # 24
RH-155	F0313	ACCEPT	ITEM # 25

Attachment #3

SITE: SEABROOK NO. 1
DOCKET NO. 50-443

REVIEW OF DOCUMENTATION PACKAGES

LINE NO.	WELD NO.	REVIEW	COMMENTS
SI-244	F0203	ACCEPT	ITEM # 26
CS-350	F0104		ITEM # 27
CS-465	F0101		ITEM # 28
CS-0541	F0921		ITEM # 29
DG-4419	F0307		ITEM # 30
DG-4421	F0406		ITEM # 31
DG-4405	F0113		ITEM # 32
RH-160	F0408		ITEM # 33
RH-160	SW-F		ITEM # 34
RH-160	SW-E		ITEM # 35
RH-159	SW-E		ITEM # 36
RH-159	SW-F		ITEM # 37
SL-X13-01	F0101		ITEM # 38
SL-X35-01	F0110		ITEM # 39
SI-248	F0107		ITEM # 40
MS-4000	F0502		ITEM # 41
MS-4000	SW-F		ITEM # 42
FW-4609	F1802		ITEM # 43
FW-4609	SW-C		ITEM # 44
RH-158	F0301		ITEM # 45
RH-158	SW-D		ITEM # 46
3C299B	BM3C299B		ITEM # 47
4D168B	BM4D168B		ITEM # 48
203-RM-9	FILLET WELDS		ITEM # 49
M/S-1808-RG-02	FILLET WELDS	ACCEPT	ITEM # 50

Attachment #3