REACTOR COOLANT LOOP PIPING INSTALLATION AND INSPECTION

FIELD INSTRUCTION 132

1.0 SCOPE

1.1 This instruction shall provide all pertinent information, and make specific reference to additional documents where necessary, in order to achieve acceptable installation and inspection criteria for the primary reactor coolant piping.

2.0 REFERENCE

2.1 PO# NSS-140

FP#	DESCRIPTION	PH ISOMETRIC
54060	LPI-HL	RC-1-01
54061	LPI-ECI	RC-2-01
54062	LPI-EC2	RC-2-01
54063	LPI-CL	RC-3-01
54064	LP2-HL	RC-4-01
54065	LP2-ECI	RC-5-01
54066	LP2-EC2	RC-5-01
54067	LP2-CL	RC-6-01
54068	LP3-HL	RC-7-01
54069	LP3-ECI	RC-8-01
54070	LP3-EC2	RC-8-01
54071	LP3-CL	RC-9-01
54072	LP4-HL	RC-10-01
54073	LP4-EC1	RC-11-01
54074	LP4-EC2	RC-11-01
54075	LP4-CL	RC-12-01

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DATE 3/31
BY 6-26-81

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REF. DWGS. [illegible] OTHER CAL'S
UE & C PLAN
UE & C ISO
DRAVO ISO
P.P.P. "A" SHEET

JOB NO. 7035
SYSTEM
ISO

DESCRIPTION | DRAWN | CHK'D | APPR'D

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ISOMETRIC DRAWING

2.1 (cont'd)

FP#	DESCRIPTION	P-H ISOMETRIC	COMMENT
52702	31" ID 40° ELL	RC-2-01	Loop 1
52702	31" ID 40° ELL	RC-5-01	Loop 2
52702	31" ID 40° ELL	RC-8-01	Loop 3
52702	31" ID 40° ELL	RC-11-01	Loop 4
50277	WESTINGHOUSE FABRICATION SPECIFICATION		

2.2 UE&C GENERAL ARRANGEMENT DRAWING 9763-F-805554

UE&C P & ID 9763-F-805002

UE&C Major NSSS Equipment Setting As-Built 9763-F-815199

2.3 PO #NSS-120

FP#	DESCRIPTION
52618	Steam Generator Outline Model "F"
52619	Details Model "F"

2.4 PO #NSS-125

FP#	DESCRIPTION
50218	RCP Outline (7 sheets)
50274	RCP Final Casing Machining (2 sheets)

2.5 PO #NSS-105

FP#	DESCRIPTION
50594	General Arrangement of Reactor Vessel
53621	General Arrangement of Reactor Vessel

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REV.	DATE	BY	E	QA	DESCRIPTION
4	4-15-81	EMK			REVISED SHEET 7 & 9
3	2-11-81				REVISED SHEET 7
2	1-9-81	EMK			REVISED SHEET 7
1	1-6-81	DW			ISSUED SHEETS 1, 2, 3 & 10

REF. DWGS. SEE ABOVE, SHEET 2
UE & C PLAN
UE & C ISO
DRAVO ISO
OTHER FCA'S 19/222A 08/1241A
P.P.P. "A" SHEET

DRAWN	CHK'D	APPR'D
DW	DRJ	
4-8-81	6-26-81	6-26-81

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ISOMETRIC DRAWING

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FIELD INSTRUCTION 132

2.6 PULLMAN PROJECT PROCEDURE IX-39

P-H Instruction Checklist Packages For:

VERTICAL STEAM GENERATORS (SETTING REQUIREMENTS)

1-RC-E11A

1-RC-E11B

1-RC-E11C

1-RC-E11D

REACTOR COOLANT PUMPS (SETTING REQUIREMENTS)

1-RC-P-1A

1-RC-P-1B

1-RC-P-1C

1-RC-P-1D

2.7 ASME SECTION III SUBSECTION NB

2.8 FI-126 PULLMAN FIELD INSTRUCTION FOR AUTOMATIC WELDING

3.0 RESPONSIBILITIES

3.1 The implementation of this instruction shall be the responsibility of the P-H Construction Superintendent.

3.2 The alignment of the primary loop piping shall be the responsibility of the P-H Containment Superintendent.

3.3 The alignment and final set of the Steam Generators, Reactor Coolant Pumps, and Reactor Pressure Vessel shall be the responsibility of the P-H Mechanical Superintendent.

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REV.	DATE	BY	E	QA	DESCRIPTION
4	4-15-81	EMK	E		REVISED SHEETS 7&9
3	3-27-81	[illegible]	E		REVISED SHEET 7
2	1-26-81	[illegible]	E		REVISED SHEET 7
1	1-7-81	DW	E		ADDED SHEETS 12, 13, & 14

REF. DWGS. SEE ABOVE, SHTS 1&2 OTHER CA'S PWR/ZA CP/ZNA
UE & C PLAN
UE & C ISO
DRAVO ISO
P.P.P. "A" SHEET

DRAWN	CHK'D	APP'D
LWW	DEJ	[illegible]
[illegible]	GEORGE	[illegible]

JOB NO. 7035
SYSTEM FIELD DISTRIBUTION
ISO [illegible] SHT 14 REV. 4

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ISOMETRIC DRAWING

3.4 Implementation of the welding procedures and notification to QA/QC and/or ANI for inspection hold points as well as non-destructive testing shall be the responsibility of the P-H Containment Superintendent and Production Welding Superintendent.

3.5 Implementation of the inspection program is the responsibility of the QA Manager through his assigned inspection personnel.

4.0 GENERAL REQUIREMENTS

4.1 The setting of the steam generators and subsequent fit-up of the primary reactor coolant hot leg piping to the reactor vessel may proceed independently from setting and fit-up operations of the reactor coolant pumps and associated cold leg piping.

4.2 When practical, the actual counter-bore and min. wall verification measurements of each component to be joined shall be taken in a minimum of four locations and recorded on a field weld end preparation instruction sheet (Attachment A) prior to fit-up for each weld joint in the primary reactor coolant loop piping. This practice may be abandoned if determined unnecessary as a result of no deficiencies being found in the first 6 joints checked.

4.3 The loop pipe OD should be protected from foreign debris, and where possible, it should be wrapped with a protective covering such as polyethelyne. The internal surface of the steam generators, reactor coolant pump casings, and primary coolant piping shall be kept clean by removing all debris and dust as necessary, until system is sealed up. Refer to project Procedure XIII-4.

4.4 Prior to final alignment of primary reactor coolant piping all weld end preparations on pipe, fittings and nozzles shall be liquid penetrant examined. PT preparation shall include grinding and wire brushing of all foreign materials a minimum of one inch back from weld edge preparation on the OD and through the counterbore region on the ID.

4.5 All weld joint bevels, when not being fitted prior to welding, shall be covered and protected from dirt, oil, grease, etc. in a manner acceptable to P-H quality control and in compliance with project Procedure XIII-4.

4.6 All loop piping shall be adequately supported in a manner which will facilitate fit-up and subsequently allow movement to accommodate weld shrinkage, thus eliminating any possible undue stress in the weld joints.

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REV.	DATE	BY	E	QA	DESCRIPTION
4	4-15-81	EMK			REVISED SHEETS 7&9
3	3-17-81	EMK			REVISED SHEET 7
2	2-23-81	AMA			REVISED SHEET 7
1	12-21	DW			ADDED SHEETS 12, 13, & 14

REF. DWGS. SEE SHTS. 1, 2, & 3 OTHER ECA'S 19/222A CR/17A1A
UE & C PLAN
UE & C ISO
DRAVO ISO
P.P.P. "A" SHEET

DRAWN	CHK'D	APPR'D
DW	DED	
1-21-81	6-26-81	

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ISOMETRIC DRAWING

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SYSTEM FIELD INSTRUCTION
ISO FI-132 SHEET 4 OF 16 REV. 4

4.7 All operations and processes performed during the installation of the primary reactor coolant loop piping which encompasses handling, rigging, fitting, welding inspection, etc. shall be done per Pullman Power Products Quality Assurance Program. UE&C RCE shall submit applicable Pullman welding procedures to Westinghouse for review. Westinghouse shall have access to all records.

4.8 Each weld shall be preliminarily fit-up in such a manner that will facilitate the establishment of a Base Material Acceptable Discontinuities Profile through Radiographic examination. The intent is to orient end preparation with respect to each other as close to final fit-up conditions as practical, preferable without consumeables. The ID and OD of parts to be joined shall be marked for panoramic base line R.T. The base line R.T. results shall be used as a comparison to subsequent informational and final RTs using ID and OD marks for consistency of source and film placement. This operation will preclude the unnecessary removal of acceptable base metal discontinuities which would otherwise be undiscernable as to location with respect to the weld deposited.

5.0 TRAM MARK PLACING AND WELD SHRINKAGE HISTORY

5.1 Just prior to welding, but after final fit-up, shallow tram punch marks shall be applied to the components utilizing a dual low stress center punch tool. Refer to Attachment B for tool sketch. Placement of the marks shall be as follows:

5.1.1 Place punch tool parallel to the axis of the pipe and perpendicular to the weld joint. Center tram so that the resultant punch marks will be approximately equidistance from the weld edge preps(centered across weld.) The tram tool when centered, should result in punch marks approximately (1) one inch from the edges of weld preps.

5.1.2 For all 5G position welds, (pipe axis horizontal) weld shrinkage measurement tram punch marks shall be placed at 12:00 top center, 3:00, 6:00 and 9:00. From 12:00 to 3:00 shall be established by facing toward the nearest vessel the pipe is being connected to and rotating clockwise 90° from 12:00 to 3:00.

5.1.3 For all other welding positions, weld shrinkage measurement tram punch marks shall be placed due North, South, East and West 90° apart.

5.1.4 Punch marks, once applied, shall be precisely measured from center to center across the weld joint after the joint is final fit-up and prior to welding and recorded on "weld shrinkage history record" Attachment C. Measurements shall be repeated and recorded as follows:

5.1.4.1 After removal of blocks (when used per 6.0)- and completion of hot pass.

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REV.	DATE	BY	E	QA	DESCRIPTION
4	7-15-81	EMK		A	REVISED SHEETS 7 & 9
3	9-17-81				REVISED SHEET 7
2	7-6-81				REVISED SHEET 9
1	12-81	DW			ISSUED SHEETS 1, 2, 3, & 4

REF. DWGS. SEE DWG. 1242
UE & C PLAN
UE & C ISO
DRAVO ISO
OTHER ECN'S 7777A 08/1777A
P.P.P. "A" SHEET

DRAWN	CHK'D	APPR'D
DW	DCD	
7-15-81	6-26-81	6-26-81

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SYSTEM FIELD INSTRUCTION
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FIELD INSTRUCTION 132

5.1.4.2 After completion of root pass plus (5) five additional weld layers or approximate denosit of 5/16" to 3/8".

5.1.4.3 After completion of deposit to T/2 level (approximate)

5.1.4.4 After completion of deposit to 3/4 T level (approximate)

5.1.4.5 After completion of final deposit, but before any grinding for flushing of weld reinforcement.

5.1.5 The recorded measurements shall be reviewed by the Welding Superintendent to verify that axial shrinkage is being maintained. Ajdustments within the welding program parameters may be made to compensate for lateral movement and additional measurements for information taken to assure adequate compensation methods are being employed.

6.0 FIT-UP AND WELDING

6.1 The use of temporary blocks in weld joints is permissible. When used, they shall consist of compatable material with the base material(s) and shall be made of small diameter sch. 80 pipe traceable to a certificate of compliance as a minimum.Four (4) blocks approximately two (2) inches long shall be placed lengthwise in the weld joint groove at approximately 90° apart.

6.1.1 Preheat shall be established prior to any welding operation being performed including tack welding at fit-up. Preheat shall be a minimum of 60°F and controlled in accordance with the applicable field welo process sheet, field isometric and project procedures.

6.1.2 Blocks shall be tacked in place at the time of fit-up utilizing a manual GTAW weld process. Tacks shall not exceed one (1) inch in length with no less than 1/16" between successive tacks.

6.1.3 Upon completion of root and hot pass in the accessible areas blocks shall be removed by grinding.(The use of hammer blows is strictly prohibited.) Root and hot pass shall be properly prepared by grinding at stops & starts, to facilitate continuance of welding.

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REV.	DATE	BY	E	QA	DESCRIPTION
4	6/26/81	EMK			REVISED SHEET TO 7&9
3	4-17-81	[illegible]			REVISED SHEET 7
2	1-7-81	DEW			REVISED SHEETS 12, 13, & 14
1	7-7-81	DWT			ISSUED

REF. DWGS. SEE SHTS. 1, 2 & 3
UE & C PLAN
UE & C ISO
DRAVO ISO
OTHER ECA'S 19172A 08/12/81A
P.P.P. "A" SHEET

DRAWN	CHK'D	APPR'D
DWT	DEW	
6-26-81	6-26-81	6-26-81

JOB NO. 7035
SYSTEM FIELD INSTRUCTION
ISO FI-132 REV. 4

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FIELD INSTRUCTION 132

6.1.4 Temporary block removal areas shall be liquid penetrant examined per applicable process sheets.

⟨3⟩

6.2 When used, backing rings may be of more than one piece to facilitate fit-up. Splits need not be welded. Upon completion of weld, backing rings shall be removed, removal area visually inspected, and liquid penetrant tested.

6.3 Sequencing of fitting and welding the primary reactor coolant individual loop piping shall normally be as follows:

6.3.1 Hot leg - steam generator to RPV

6.3.2 Cold leg - reactor coolant pump to the RPV

6.3.3 Steam Generator 40° ELL (must be preceeded by hot leg ref. to para. 6.5.4.1)

6.3.3.1 After completion of hot leg, cold leg, and 40° ELL, measurements for the closure pieces shall be taken. The center of the RCP inlet nozzle and the outlet of the 40° ELL shall be precisely loc'ed, East-West and North-South coordinate an elevation to within 1/16". Horizontal variance across the weld prep end shall also be checked to within 1/32" on both the 40° ELL and the RCP suction nozzle.

REV.	DATE	BY	E	QA	DESCRIPTION
4	9-15-81	CMK			REVISED SHEETS 7 & 9
3	8-7-81			JS	REVISED PARA. 6.1.4
2					REVISED SHEET 9
1		DW			ADDED SHEETS 12, 13, & 14

REF. DWGS. SEE SHTS. 1, 2 & 3 OTHER ECA'S 19/222A 08/1241A
UE & C PLAN
UE & C ISO
DRAVO ISO
P.P.P. "A" SHEET

DRAWN	CHK'D	APPR'D
DW		
6-26-81	6-26-81	6-26-81

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SYSTEM FIELD INSTRUCTION
ISO FI-132 SHEET 7 OF 14 REV. 4

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6.3.3.2 The Chief Field Engineer, through the Containment Field Engineer, shall be responsible to submit measurements to Westinghouse NCD Site Personnel. No weld shrinkage allowance shall be included in As-Built measurements. Excess material for shrinkage is to be addressed separately by Contractor, UE&C Welding Department and Westinghouse NCD Site Personnel.

6.3.4 Cross-over Leg (closure spools)

6.3.5 Paragraphs 6.3.1 and 6.3.2 hot leg and cold leg work may be interchanged. These installations are independent of one another, however, other work must follow the sequence given above.

6.4 The individual loops (1,2,3, & 4) may be sequenced independent of one another and worked individually or simultaneously at the discretion of the Mechanical Superintendent and the Piping Superintendent.

6.5 SEQUENCING OF WELDS

6.5.1 All fit-ups and tacks shall be performed in accordance with applicable Pullman welding procedures and other instructions as assigned to the field weld process sheet and field drawings (isometrics.) A minimum 1/32" gap shall be maintained prior to weld out on all joints or that specified by the assigned welding procedure whichever is greater.

6.5.2 Hot Leg

6.5.2.1 The hot leg pipe spool shall be temporarily fit-up to the RPV in a level plumb condition. The steam generator shall then be drifted into place, under the direction of the Mechanical Superintendent, thus enabling SG to hot leg weld fit-up to commence. Once fit-up is made, utilizing slight elbow roll if necessary, the RPV-Hot leg fit-up may be finalized maintaining hot leg in a level condition utilizing shims on the temporary support system if necessary.

6.5.2.2 Tram points shall now be applied per section 5.0 and initial measurements taken and recorded for each weld, as assigned on the applicable isometric.

6.5.2.3 Welding may now proceed per applicable weld procedure(s) with both welds being welded simultaneously and weld shrinkage measurements being taken, observed for possible problems, and recorded in accordance with Section 5.0. If welding for any reason cannot be maintained on both joints simultaneously, then welding will cease until such time as repairs to equipment can be made and both welds can continue.

FOR INFORMATION ONLY QA APPROVED DATE 6-26-91 BY

REV.	DATE	BY	E	QA	DESCRIPTION
4	6-18-91	CMK			REVISED SHEET 7 & 9
3	8-17-91				REVISED SHEET 7
2	7/1/91				
1	4-4-91	DW			ADDED SHEET 12, 13 & 14

REF. DWGS. SEE SHTS. 1, 2 & 3 OTHER ECA'S 19722 A, 08/1291 A
UE & C PLAN
UE & C ISO
DRAVO ISO
P.P.P. "A" SHEET

DRAWN	CHK'D	APPR'D
LXV 6/26/91	DCD 6-26-91	

JOB NO. 7035
SYSTEM FIELD INSTRUCTION
ISO SHEET 2 OF 14 REV. 4

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6.5.2.3 (Cont'd)
Simultaneous welding will continue until both deposit levels are out to root plus (5) five weld layers and shrinkage recorded. Welding may then proceed with little regard in attempting to maintain both joints at the same weld pass layer or for that matter simultaneous. The steam generator will be free to move for weld shrinkage compensation throughout the welding process.

6.5.2.4 Radiographic examinations for information shall be performed periodically during the erection cycle. (As a minimum at the following stages.)

A. Base-line per paragraph 4.8 above at pre fit-up (approximate ¼" root gap and 1/8" hi-low or better fit.)

B. Root plus (5) five weld layers (minimum). Maximum dependent upon end of shift. (See note below.)

C. T/2 (Minimum)

D. 3/4 T (Minimum)

E. Final for ASME Section III, Subsection NB acceptance. This is a Mandatory R.T.

NOTE: Amount of weld deposit is approximate for subparagraphs B,C & D above; therefore, in order to maintain production continuity, welding may proceed until such time as R.T. can be performed, but shall not extend beyond the end of the same day night shift.

F. Base-line radiographs at the RPV and S.G. are required at fit-up of the hot leg spool piece per paragraph 6.5.2.1 and 6.5.2.2 above. The same R.T action shall take place at cold leg fit-up and cross-over fit-up.

6.5.3 COLD LEG

6.5.3.1 Same as 6.5.2.1 exception substitute reactor coolant pump for steam generator.

6.5.3.2 Same as 6.5.2.2

6.5.3.3 Same as 6.5.2.3

6.5.3.4 Same as 6.5.2.4

6.5.4 40° ELLS

6.5.4.1 Upon completion of the two (2) hot leg welds (initially capped off) within a particular loop, the corresponding 40° ELL may be fit-up and tacked, independent upon corresponding cold leg status. Care must be taken to plumb this fitting in such a manner that the outlet side is as close to perfect horizontal as possible. Horizontal variance....

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BY

REV.	DATE	BY	E	QA	DESCRIPTION
4	5/5/81	MK			REVISED SHEETS 7 & 9
3	4/1/81				REVISED SHEET 7
2	5/5/81				REVISED SHEET 7
1	1/1/81	UW	Y		ADDED SHEETS 10, 11, & 14

REF. DWGS.: UE & C PLAN; UE & C ISO; DRAVO ISO
OTHER ECA's 19777 A, 20129 A
P.P.P. "A" SHEET

DRAWN	CHK'D	APPR'D
UW	DEO	
6-26-81	6-26-81	

JOB NO. 7035
SYSTEM RC INSTRUMENT
ISO [illegible] REV. 4

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6.5.4.1 (cont'd)
across the outlet weld prep exceeding 1/16" must be reported to the P-H Chief Field Engineer for his concurrence to commence welding.

6.5.4.2 Once proper fit-up and tack is completed in accordance with the assigned weld procedure the tram points shall be applied per Section 5.0 and initial measurements shall be taken and recorded.

6.5.4.3 Welding may now proceed per applicable weld procedure and field weld process sheet with weld shrinkage measurement being taken, observed for possible problems, and recorded per Section 5.0

6.5.4.4 Same as 6.5.2.4

6.5.5 CROSS OVER PIPING (CLOSURE PIECES)

6.5.5.1 The crossover closure consists of two pieces, one from the 40° ELL, the other to the reactor coolant pump suction nozzle. For the purpose of identification, only within this instruction, the first piece from the (40° ELL) shall be known as Piece "A" the other as Piece "B".

6.5.5.2 Fit-up and tack Piece "A" to the 40° ELL in a permanent manner per applicable field weld process sheet, but do not weld. Fit-up and tack Piece "A" to Piece "B", same as above, but do not weld. Align Piece "B" to RCP suction nozzle vertically. The horizontal alignment will be beyond the RCP the theoretical shrinkage amount to be incurred at the weld from Piece "A" to Piece "B".

6.5.5.3 Temporary supports shall allow for shrinkage incurred while making weld berween Piece "A" to Piece "B". Apply tram points to the weld between Pieces "A" and "B". Take and record measurements per Section 5.0 Commence welding Piece "A" to Piece "B". Weld shrinkage measurements shall be taken, observed for possible problems and recorded in accordance with Section 5.0 RT as required on field weld process sheet.

6.5.5.4 When alignment is reasonable at the weld from Piece "B" to the RCP suction nozzle, cease welding at weld from Piece "A" to Piece "B". Fit-up and tack weld from Piece "B" to the RCP. Check fit-up and tack at weld from Piece "A" to the 40° ELL. If acceptable, apply tram punch marks at both welds, Piece "A" to 40° ELL and Piece "B" to RCP. Record measurements in accordance with Section 5.0

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DATE 6/26/81
BY

REV.	DATE	BY	E	QA	DESCRIPTION
4	7/15/81	TMK			REVISED SHEETS 7&9
3	3/17/81				REVISED SHEET 7
2	1/14/81				REVISED SHEET 7
1	1/7/81	LNW			ISSUED SHEETS 12, 13, & 14

REF. DWGS. SEE SHTS. 1,2 & 3 OTHER RCA'S 14777 A 08178 A
UE & C PLAN
UE & C ISO
DRAVO ISO
P.P.P. "A" SHEET

JOB NO. 7035
SYSTEM FIELD
ISO SHEET 10 OF 14 REV. 4

	DRAWN	CHK'D	APPR'D
	DW	DEJ	
	6-26-81	6-26-81	

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FIELD INSTRUCTION 132

6.5.5.5 Commence welding on two new welds and resume welding on weld from Piece "A" to Piece "B". Take weld shrinkage measuremnets, observe for possible problems and record in accordance with Section 5.0 RT as required by applicable field weld process sheets.

7.0 INSPECTION

7.1 All operations and inspections shall be controlled through utilization of Process Sheets per Project Procedure VI-5. Weld location and identification shall be depicted on field drawings (isometric) per Project Procedure III-5.

7.2 Those inspections that are deemed mandatory will be designated as hold points on the applicable process sheets.

7.3 Attachments A and C will accompany the applicable process sheets and utilized as required by this instruction

8.0 RECORDS

8.1 Completed process sheets and attachments thereto shall be controlled and maintained in accordance with Pullman Procedure XVII-3.

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DATE 6-30-81
BY

FOR INFORMATION ONLY

REV.	DATE	BY	E	QA	DESCRIPTION
4	7-15-81	EMK			REVISED SHEETS 7 & 9
3	7-17-81				REVISED SHEET 7
2	7/15/81	MW			REVISED SHEET 9
1	7/8/81	TMN			REVISED SHEETS 12, 13, & 14

REF. DWGS. SEE SHTS. 1, 2 & 3 OTHER ECA'S 19172ZA (81179A)
UE & C PLAN
UE & C ISO
DRAVO ISO
P.P.P. "A" SHEET

DRAWN	CHK'D	APPR'D
DW	DEO	
6-26-81	6-26-81	6-26-81

JOB NO. 7035
SYSTEM FW INSTRUCTION
ISO MS-FW-132-III REV. 4

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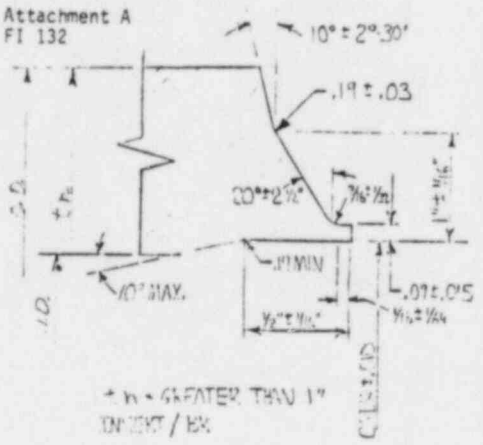
ISOMETRIC DRAWING

85-70-185

Attachment A
FI 132

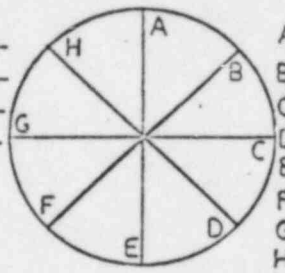


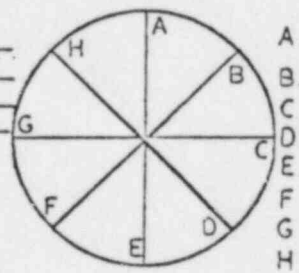
FIELD WELD END PREPARATION INSTRUCTION

FW NO. F001
ISO NO. SC-10-01
NPS 29" ISI ____
NOM THK (tn) 2.45 MIN THK (tm) ____
°C DIM 29.20 (AS APPLICABLE)
PREP BY ____ DATE ____
APPR BY ____ DATE ____

COUNTERBORE AND MINIMUM WALL VERIFICATION

C-BORE		MIN WALL	C-BORE		MIN WALL
A-E		A	A-E		A
B-F		B	B-F		B
C-G		C	C-G		C
D-H		D	D-H		D
		E			E
		F			F
		G			G
		H			H





____ SIDE OF WELD

INSTRUMENT USED: TYPE ____ SER# ____ | INSTRUMENT USED TYPE ____ SER ____

____ SIDE OF WELD

INSTRUMENT USED TYPE ____ SER# ____ | INSTRUMENT USED TYPE ____ SER# ____

QC INSPECTION VERIFICATION	INSPECTOR	DATE
1. COUNTERBORE WITHIN TOLERANCE		
2. MIN WALL WITHIN TOLERANCE		
3. BEVEL ANGLE WITHIN TOLERANCE		

QC INSPECTION VERIFICATION	INSPECTOR	DATE
1. COUNTERBORE WITHIN TOLERANCE		
2. MIN WALL WITHIN TOLERANCE		
3. BEVEL ANGLE WITHIN TOLERANCE		

FULL DATA VALIDATION APPROVED
DATE 7-2-81
BY [illegible]

REV.	DATE	BY	E	QA	DESCRIPTION
4	[illegible]	DMK	[illegible]		REVISED SHEETS 7&9
3	[illegible]	[illegible]	[illegible]		REVISED SHEET 7
2	[illegible]	[illegible]	[illegible]		REVISED SHEET 1

REF. DWGS. [illegible]
UE & C PLAN
UE & C ISO
DRAVO ISO
OTHER ECA'S 19/222 A 08/12/81
P.P.P. "A" SHEET

JOB NO. 7035
SYSTEM FW001
ISO FI 132 SHEET 12 OF [illegible] REV. 4

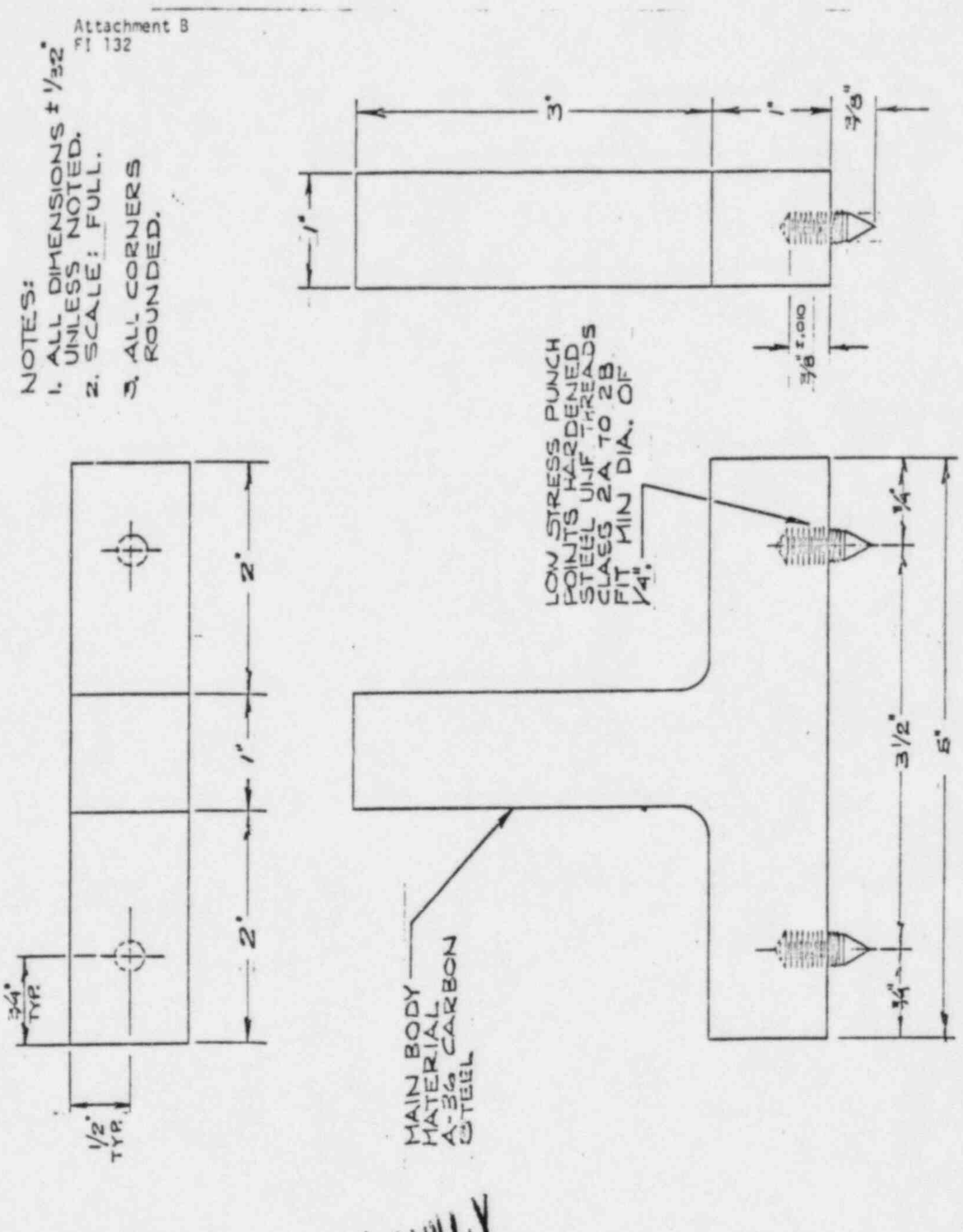
DRAWN	CHK'D	APPR'D
LJW	[illegible]	[illegible]
7-2-81	7-7-81	7-7-81

SEABROOK STATION
PUBLIC SERVICE of NEW HAMPSHIRE

Pullman Power Products
Division of Pullman Incorporated
ISOMETRIC DRAWING

85 70 185

Attachment B
FI 132



FOR INFORMATION ONLY

QA APPROVED
DATE 7-2-91
BY

4		FMK			REVISED SHEETS 7 & 9
3					REVISED SHEET 7
2					REVISED SHEET
REV.	DATE	BY	E	QA	DESCRIPTION

REF. DWGS. SEE SHTS. 1, 2, & 3
UE & C PLAN
UE & C ISO
DRAVO ISO

OTHER ECA'S 19/222A 08/1211A
P.P.P. "A" SHEET

JOB NO. 7035
SYSTEM FIELD INSTRUCTION
ISO FI-132 REV. 4

DRAWN	CHK'D	APPR'D
JW		
7-2-91	7-2-91	7-2-91

SEABROOK STATION
PUBLIC SERVICE of NEW HAMPSHIRE

Pullman Power Products
Division of Pullman Incorporated
ISOMETRIC DRAWING

Boston Blue Print

85-70-185

ATTACHMENT C

FIELD INSTRUCTION

WELD SHRINKAGE HISTORY RECORD

SYSTEM/LINE/ISO NO. _____ FIELD WELD NO._____

After initial setting, fit-up, and ready to weld.
Base Metal Temperature_____ °F
Tram Mark Location
12:00_____ 3:00_____ 6:00_____ 9:00_____ Logged by_____

N_____ S_____ E_____ W_____ Date_____

After melting the consumable insert or depositing root pass over backing ring.
Base Metal Temperature _____ °F
Tram Mark Location:
12:00_____ 3:00_____ 6:00_____ 9:00_____ Logged by_____

N_____ S_____ E_____ W_____ Date_____

After completion of root portion plus 5 passes. Base Metal Temperature _____ °F
Tram Mark Location:
12:00_____ 3:00_____ 6:00_____ 9:00_____ Logged by_____

N_____ S_____ E_____ W_____ Date_____

After completion of t/2 deposit (approximate) Base Metal Temperature _____ °F
Tram Mark Location:
12:00_____ 3:00_____ 6:00_____ 9:00_____ Logged by_____

N_____ S_____ E_____ W_____ Date_____

After completion of 3/4t deposit (approximate) Base Metal Temperature _____ °F
Tram Mark Location:
12:00_____ 3:00_____ 6:00_____ 9:00_____ Logged by_____

N_____ S_____ E_____ W_____ Date_____

After completion of final weld deposit. Base Metal Temperature_____ °F
Tram Mark Location:
12:00_____ 3:00_____ 6:00_____ 9:00_____ Logged by_____

N_____ S_____ E_____ W_____ Date_____

FOR INFORMATION ONLY

QA APPROVED
DATE 7-7-81
BY

REV.	DATE	BY	E	QA	DESCRIPTION
4	1/5/81	EMK			REVISED SHEETS 7&9
3	6/17/81	[illegible]			REVISED SHEET 7
2	[illegible]	[illegible]			REVISED SHEET 4

REF. DWGS. UE SHEETS 1, 2, 3 OTHER
UE & C PLAN
UE & C ISO
DRAVO ISO
P.P.P. "A" SHEET

JOB NO. 7035
SYSTEM FIELD INSTRUMENT
ISO [illegible] REV. 4

DRAWN	CHK'D	APPR'D
DW		
7/7/81		

SEABROOK STATION
PUBLIC SERVICE of NEW HAMPSHIRE

Pullman Power Products
Division of Pullman Incorporated
ISOMETRIC DRAWING

UE; C

FIELD GENERAL CONSTRUCTION PROCEDURE

1. FGCP-1 - Development and Preparation of Field Construction Procedure
2. FGCP-2 - Drawing, Specification and Document Control
3. FGCP-3 - Receiving, Inspection and Storage of Nuclear and Safety-Related Equipment and Mat'l
4. FGCP-6 - General Preventive Maintenance and Minimum Storage Requirements for In-Place Storage of Permanent Plant Equipment
5. FGCP-8 - General Housekeeping During Construction of Nuclear Plants
6. FGCP-9 - Preventive Maintenance and Protection of Nuclear or Safety-Related Equipment
7. FGCP-10- Maintenance, Inspection, Testing and Operation of Construction Lifting Equipment
8. FGCP-12- Interface Tagging Procedure
9. FGCP-13- The Indoctrination of Construction Supervisory Personnel
10. FGCP-14- Concrete Scheduling and Placement Checklist Procedure for Tunnel and Marine Contrac
11. FGCP-16- Handling of Nuclear and Safety Related Material and Equipment
12. FGCP-17- Control of Welding and Brazing Filler Materials Nuclear, Safety Related and Non-Safety Related
13. FGCP-18- Special Cleaning Processes for Preventive Maintenance
14. FGCP-19- Security System Drawings and Documents
15. FGCP-20- Field Foreign Printing Procedure
16. FGCP-21- Transferring of UE&C Equipment Tag Numbers
17. FGCP-22- The Construction Report for Concrete Containments per ASME Sect. III, Div. 2 Work
18. FGCP-23- Installing and Reading Rod Extensometers in Cooling Water Tunnels Seabrook Station
19. FGCP-26- Controlled Access to Level "D" Storage Areas for Seabrook Station
20. FGCP-27- UE&C/Contractor Interface on Releasing Equipment and Tanks
21. FGCP-28- Turnover of Instrumentation From Construction to Start-up
22. FGCP-31- Area Interfacing
23. FGCP-32- Load Testing Kroll K-10000 Crane
24. FGCP-33- Load Testing Kroll K-10000 Crane (Modified)

FIELD ADMINISTRATION CONSTRUCTION PROCEDURE

UE&C

1. FACP-1 - Project Instruction for Handling Contractor Nonconformance Reports
2. FACP-2 - Handling of "Contractor Incident Interface Reports"
3. FACP-3 - Handling Contractor Engineering Documents on Westinghouse NSSS Material, Equipment and/or Components for Required Interface with Westinghouse Site Representative
4. FACP-4 - Construction Interface Requirements for Release of Material from UE&C FQA
5. FACP-5 - Initiating and Handling of Construction Non-Safety Notifications
6. FACP-6 - Handling of Contractor Material Deficiency Reports

1. AP-15 - Changes to Project Documents, Engineering Change Authorization (ECA) and Request For Information (RFI)
2. AP-39 - As-Built Documents

UE&C

3. EQ-1 - Class IE Equipment Qualification Requirements
4. MPS-1 - Material and Processing Requirements for Nuclear Power Plant Components
5. MPS-2 - Material and Processing Requirements for Non-Nuclear Components
6. MPS-3 - Material and Processing Requirements for Bending of Welded Studs, Reinforcing Bars and Anchor Bolts
7. QAS-1 - Administrative and System Requirements for Nuclear Safety Class Items
8. QAS-2 - Quality Assurance Administrative & System Requirements
9. QAS-3 - Quality Assurance Administrative and System Requirements for Safety-Related Electrical Equipment
10. QAS-4 - Quality Assurance Administrative & System Requirements for Site Contracts
11. QAS-5 - Quality Assurance Administrative and System Requirements for Installation of Non-Safety Related Components in Seismic Category I Buildings
12. RM-1 - Instructions for Site Records Management System
13. WS-1 - Requirements for Welding and Nondestructive Examination for Nuclear Pressure Components and Nuclear Power Piping
14. WS-1-NE - Requirements for Welding and Nondestructive Examination for Nuclear Class MC Components
15. WS-1-NF - Requirements for Welding and Nondestructive Examination for Nuclear Components Supports
16. WS-2 - Requirements for Welding and Nondestructive Examination for Non-Nuclear Pressure Components and Non-Nuclear Power Piping
17. WS-3 - Requirements for Welding and Nondestructive Examination for Structural Steel
18. WS-4A - Requirements for Welding and Nondestructive Examination for Nuclear Containment Structure Liner
19. WS-4B - Requirements for Stud Welding and Nondestructive Examination for Nuclear Containmer Structure Liner
20. WS-4C - Requirements for Mechanical Splicing and Nondestructive Examination of the Reinforcing Bars Spliced by the Cadweld Method
21. WS-4D - Requirements for Mechanical Splicing and Nondestructive Examination of Reinforcing Bars Spliced by Swage Method
22. WS-5 - Requirements for Brazing and Nondestructive Examination and Test Methods for Nuclea Pressure Components
23. WS-6 - Requirements for Thermit Welding of Rails
24. WS-7 - Visual Inspection Guidelines for Nuclear Power Plant Components

05/27/82

CARBON STEEL

Doc. Desc.	Rev.	Rev. Date
GWS-1	04	07/24/80
1-I-1-KI-12	04	07/21/81
8-I-1-BR-2	03	06/02/81
10-I-1-OB-1	02	06-02-81
11-I-1-OB-2	01	06-02-81
12-I-1-OB-12	02	06-02-81
150-I-1-KI-A1	06	03-01-82
151-I-1-BR-A1	04	03-01-82

STAINLESS STEEL

24-I-8-KI-12	01	01-19-79
26-I-8-OB-2	01	06-05-79
27-I-8-OB-12	02	02-17-81
29-I-8-OB-1	01	06-21-79
39-I-8-BR-2	01	04-02-79
250-I-8-KI-A1	03	12-02-81
251-I-8-BR-A1	03	12-08-81
505-I-45-KI-1	01	04-16-82
510-I-45-OB-1	01	04/28/82
PQR 505	00	03-04-82
PQR 510	00	03/16/82

CARPENTER

408-I-CARP-20-OB-1	01	06-25-79
409-I-34-OB-1	00	06-18-79
27-A-I-OB-12	00	09-15-80
29A-I-8-OB-1	00	12-19-80
412-I-34-BR-1	01	12-19-81

CHROME	REV.	REV. DATE
44-I-4-KI-12	01	07-25-79
48-I-5-KI-12	01	07-25-79
50-I-5-BR-2	02	06-02-80
61-I-5-OB-12	02	12-11-80
59-I-4-BR-2	01	06-02-80
43.1-I-4-OB-12	00	07-07-80
PQR 204	01	05-30-80
PQR 208A	00	04-06-78
PQR 210	00	04-06-78
PQR 218	01	06-02-80
PQR 217	00	04-06-78
PQR 204.1	00	06-02-80
PQR 206.1	00	06-02-80
PQR 203	00	07-07-80
DISSIMILAR METALS		
71-I-4/1-KI-12	02	06-02-80
73-I-4/1-OB-1	01	07-25-79
74-I-5/1-KI-12	01	07-25-79
336-I-4/GE-OB-12	01	5-11-82
337-I-4/GE-BR-12	01	5-11-82
PQR 336	01	5-11-82
77-I-8/1-KI-12	01	01-19-79
79-I-8/1-OB-1	01	01-19-79
80-I-8/1-OB-2	01	06-05-79
81-I-8/1-OB-12	01	01-19-79
84-I-8/1-K-12-F43	01	07-25-79
100-I-8/45-OB-1	00	02-18-81

331-I-1/GE-OB-12	02	05/11/82
332-I-1/GE-BR-12	01	05-11-82
PQR 302	00	04-06-78
PQR 304	00	04-06-78
PQR 305	00	04-06-78
PQR 331A	00	02-10-82
PQR 331B	01	05-11-82
PQR 340	00	04-16-79

CARBON STEEL

Doc. Desc.	Rev.	Date
GWS-III	04	02-12-82
IT1-III-1-KI-12	04	05-28-81
IT8-III-1-BR-2	05	05-28-81
IT10-III-1-OB-1	03	05-28-81
IT11-III-1-OB-2	03	05-28-81
IT12-III-1-OB-12	03	05-28-81
150-III-1-KI-A1	06	03-01-82
151-III-1-BR-A1	04	03-01-82
PQR 016A & B	00	04-14-78
PQR 017A & B	00	04-14-78
PQR 019A & B	00	04-14-78
PQR 020A & B	00	04-14-78
PQR 021A & B	00	04-14-78
PQR 028A & B	00	04-28-78
PQR 029A & B	00	09-08-78
PQR 047A & B	01	04-13-81

STAINLESS STEEL

24-III-8-KI-12	04	05-26-81
26-III-8-OB-2	03	06-16-81
27-III-8-OB-12	06	06-16-81
29-III-8-OB-1	03	06-21-79
250-III-8-KI-A1	03	12-02-81
251-III-8-BR-A1	04	12-08-81
PQR 126	01	04-13-81
PQR 104A	00	05-21-81
PQR 106	01	02-08-79
PQR 109	00	04-06-78
PQR 110	01	02-08-79

STAINLESS STEEL CONTINUED	Rev.	Rev. Date
PQR 121	00	06-14-78
PQR 120	00	06-19-78
PQR 114	00	04-02-79
CARPENTER		
408-III-CARP-20-OB-1	01	06-25-79
409-III-34-OB-1	00	06-18-79
PQR 508	00	02-06-79
PQR 509	00	05-09-79
DISSIMILLAR METAL		
77-III-8/1-KI-12	03	06-05-81
79-III-8/1-OB-1	02	06-05-81
81-III-8/1-OB-12	03	06-05-81
84-III-8/1-K-12-F43	02	07-25-79
653-III-3-CL-2	01	04/30/82
PQR 308	02	05-21-81
PQR 309	00	04-06-78
PQR 310	00	04-06-78
PQR 311	00	04-06-78
PQR 313	00	04-06-78
PQR 324	00	05-21-81
PQR 653	00	04-30-82
CEMENT LINED		
GWS-CS-CL	03	11-07-80
CL1-1-BR-2	02	01-26-82
PQR 13A	00	03-27-78
CL2-1-OB-2	00	08-14-78
PQR 010	00	03-27-78
AWS-I-1	04	10-13-81
AWS-I-2	03	10-13-81
AWS-SW-1	03	12-30-80
BRAZING		
B1-P107-F102-H101	00	03-17-81
B2-P107-F103-H101	00	09-20-78
B3-P107-F103-H101	00	03-23-79

Pullman Power

DOCUMENT INDEX

05-28-82

DOC. NO.	REV. NO.	REV. DATE	TITLE
II-2	04	10/23/81	NDE Personnel Control and Admin. Examination, Quals, and Certification
II-3	02	01/07/80	Control and Admin. of Examination , Qual, and Certification of NDE Level III Personnel
II-4	05	10/15/81	Inspec. and Testing Personnel Control and Admi Training Exam, Qual, and Certification
II-5	05	07/31/81	QA Engineering Personnel Control and Admin. of Training Exam. Qual. and Certification
II-8	05	06/17/81	Welder Performance Qualification
II-8BR	00	11/09/81	Brazing Performance Qualification
III-4	10	02/24/81	Drawing and Design Control
III-5	01	12/01/78	Field Installation ISO, Preparation
III-6	00	01/30/79	Field Installation Pipe Support Dwg. Prep.
IV-14	02	01/30/79	Central Purchasing
IV-5.18.1MC	01	01/26/82	Purchasing Specification
V-2	01	07/17/80	Safety Tagging of Equipment
VI-1	04	06/26/81	Document Control
VI-4	02	07/10/80	Pipe Support Dwg. and Doc. Control
VI-5	10	02/07/82	Control of Process Sheets and Weld Stores Req.
VI-8	01	04/07/81	Use of DSR
VII-1	05	03/05/82	Vendor Qualification
VIII-1	06	08/25/81	Identification of Materials, Parts, Components
VIII-2	03	03/13/80	Material and Sub-Assembly Withdrawal Proc.
JS-VIII-3	08	03/10/81	Control of Weld Material
VIII-8	01	12/14/81	Hanger Interface Procedure
IX-1	09	10/26/81	Installation of Inspection of Concrete Expansion Anchors and Wedge Anchors

DOCUMENT INDEX

05/28/82

DOC. NO.	REV. NO.	REV. DATE	TITLE
IX-3	01	9/22/78	Fabrication and Field Installation Specs, for Nuclear Power Plant Components, Piping Sys. and Appurtenances ASME Section III
IX-5	08	08/03/81	Installation and Inspection of ASME III and ANSI Bel.1 Threaded Fasteners for Mech. Flanged Joints
JS-IX-6	05	02/18/82	Instll. & Insp. Sect. III Comp. Sup. (NNS)
JS-IX-14	06	01/30/81	Defect Removal and Repair by Welding
IX-16	03	02/02/82	Field Bending of 2" and Smaller Nuclear and B31.1 Pipe
IX-27	03	05/21/80	Coal Tar Protective Coating and Lining for Steel Water Pipe Lines Enamel and Tape
IX-29	05	04/10/80	Specification for Purge Dams
IX-30	07	12/15/81	Cment Lining Repair and Grouting
IX-31	00	08/03/78	Application of X-Pando to Pipe Joints
IX-39	01	04/07/81	Handling, Installation, testing and Inspec. of Safety Related Equipment
IX-43	05	01/29/82	Preheat, Interpass, and Post Weld Heat Treatment
IX-46	02	01/08/81	Ultrasonic Thickness Measurement of Material
IX-47	00	02/28/80	Procedure for Core Drilling
IX-49	00	06/06/80	Hornflex Sealant of Joints
IX-54	04	02/04/82	Installation and Insection of Non-Safety Equipment
IX-55	01	01/27/81	Disassembly/Reassembly of Valves
IX-57	01	08/11/81	Contr. Incident Interface Report
IX-60	00	07/02/81	Thermocouple Attach. by Capacitive Discharge
IX-61	01	09/08/81	Condenser Install. and Erection
IX-63	02	02/19/82	Instl. of ANSI B31.1 Noncritical, Nonseismic Pipe Supports
IX-67	01	05/05/82	Temper Bead Repair
X-4	04	11/18/80	Final Inspection Procedure (Field)
X-5	07	06/26/81	Field Receiving Inspection Procedure
X-9	06	03/24/82	In-Process Field Inspection Procedure

DOCUMENT INDEX

05/28/82

DOC. NO.	REV. NO.	REV. DATE	TITLE
X-10	06	08/07/81	Weld Monitoring
X-11	01	02/16/81	Visual Examination (General)
X-21	01	08/11/81	Prep. of Code Data Reports
XI-1	06	02/04/82	Field Leak Testing, Hydro and Pneumatic
XII-2	09	12/03/81	Calibration of Tools, Measurement & Test
XIII-4	06	04/05/82	Cleaning Procedure (Field)
XIII-5	02	01/18/80	Field Storage Procedure
XIII-9	06	02/10/82	Field Handling of Materials and Equipment
XIII-11	01	01/18/82	Standard Method of Protecting Ends of Fabricated Pipe for Nuclear Service
JS-XIII-16	02	02/24/81	Sand Blast Cleaning of Carbon Steel Pipe
XV-2	12	12/15/81	Handling of Non-Conformances (Field)
XV-3	04	08/11/81	Reporting of Defects and Non-Compliance to 10CFR Part 21
XV-4	05	02/09/82	Hold Tag Usage
XVI-2	04	10/30/81	Corrective Action
XVII-3	08	01/29/82	Records Management
XVIII-1	03	03/26/82	Internal Auditing Proc. of Field QA Program by QEG
XVIII-4	00	01/21/82	Site Internal Audit Program
IX-RT-1-W77	05	09/01/81	Radiographic Proc. IR-192 Butt Weld Pipe IR-192
PQR-RT-1	01	07/17/81	NDE Proc. Qual. Record Butt/Weld Pipe IR-192
IX-RT-3-W77	03	06/18/80	Nozzle Welds Winter Addenda 1977
PQR-RT-3	00	08/30/78	Nozzle Welds Winter Addenda 1977, (Proc. Qual.)
IX-PT-1-W77	03	10/30/80	Liquid Penetrant Exam. to ASME Sect. III
PQR-PT-1	00	09/06/78	Proc. Qual. for Liquid Penetrant Exam. to ASME Sect. III
PQR-PT-2	00	10/14/80	Liquid Penetrant PQR

DOCUMENT CONTROL

05/18/82

DOC. NO.	REV. NO.	REV. DATE	TITLE
IX-MT-1-W77	06	02/17/82	Mag. Particle Dry Powd. Continuous Prod. Method
PQR-MT-1	00	09/06/78	Proc. Qual. for Mag. Particle Dry Powd. Continuous Prod. Method
IX-MT-3-W77	02	12/09/81	Mag. Particle Dry Powd. Con. Method Yoke Technique
IX-UT-1-W77	01	10/24/79	Ultrasonic Exam. of Weldment
PQR-UT-1	00	09/07/78	Proc. Qual. Ultrasonic Exam. of Weldment
IX-UT-2-W77	01	10/24/79	Ultrasonic Exam of Weldment of Seamless & Weld Tubular Material Winter Addenda
PQR-UT-2	00	09/07/78	Proc. Qual. for Above UT-2 Title
IX-UT-3-W77	00	07/18/78	Ultra Thickness Measurement Winter Addenda
PQR-UT-3	00	09/07/78	Proc. Qual. Ultra Thickness Measurement
PQR-MT-2	00	10/28/80	Supporting Proc. Qual. Rec.
IX-UT-1-PCR	00	12/01/80	Ultrasonic Exam, ot Thermite Butt Welds in Rail
IX-RT-6-W77	00	4/13/82	RT Exam. of Class 1 Supports
PQR-PT-6	00	4/7/82	PQR NF Supports IR-192

Is the Site being effectively managed

what audits have been done
who did the audits
have the audits covered the 18 criteria
are the audit team members qualified
was the audit mearly a paper shuffle
are source inspection personnel qualified
who finds the problems field engrg or QA
design control of welding changes
how many NCR's are initiated by FWE

UE&C and Const Mgr should be the most effective audito
Is there a general trending procedure
How use trending

qualification of inspector

How does each subcontractor

Const Mgr (YAEC) - John Herrin
Const Mgr (UE&C) - Rebel

What about Reg Guides implementation
How are field changes carried out

Do not perform 'Quality' inspections

welder

Does training include actual reading and understanding of General and Specific Welding Procedures

Verify Dwg Revision # to Dwg's in field and on Sticks for original and field change

Training for small diameter socket fillet welds

What is QA System for Storage and Issuance and further Storage of Materials and Filler Metal

How does the Shop work order actually work ~~system~~ activated by Pullman

How is work re-instituted following a Shop work order

How does document X-10 relate to other ~~methods~~ documenting compliance to welding procedures

How does WS interface with the UE&C, PPC and YHEC

what is the procedure for trending analysis of welding defect data

Who is the Engineer per D1.1

How does you process a change or interpretation that required the Engineer to make pronounce next. How is the Engineer id.

what is the relationship of the ANI to welder qualification

what QA system identifies the welder while he is welding a test assembly

What QA document identifies those supervisory personnel who witness the welding of a test assembly

Ass. & Eve

UE&C 9763-006-248-51 Rev 6 3/5/80

21 ECA's incorporated

YAEC

↓

UE+C

↓

PPC

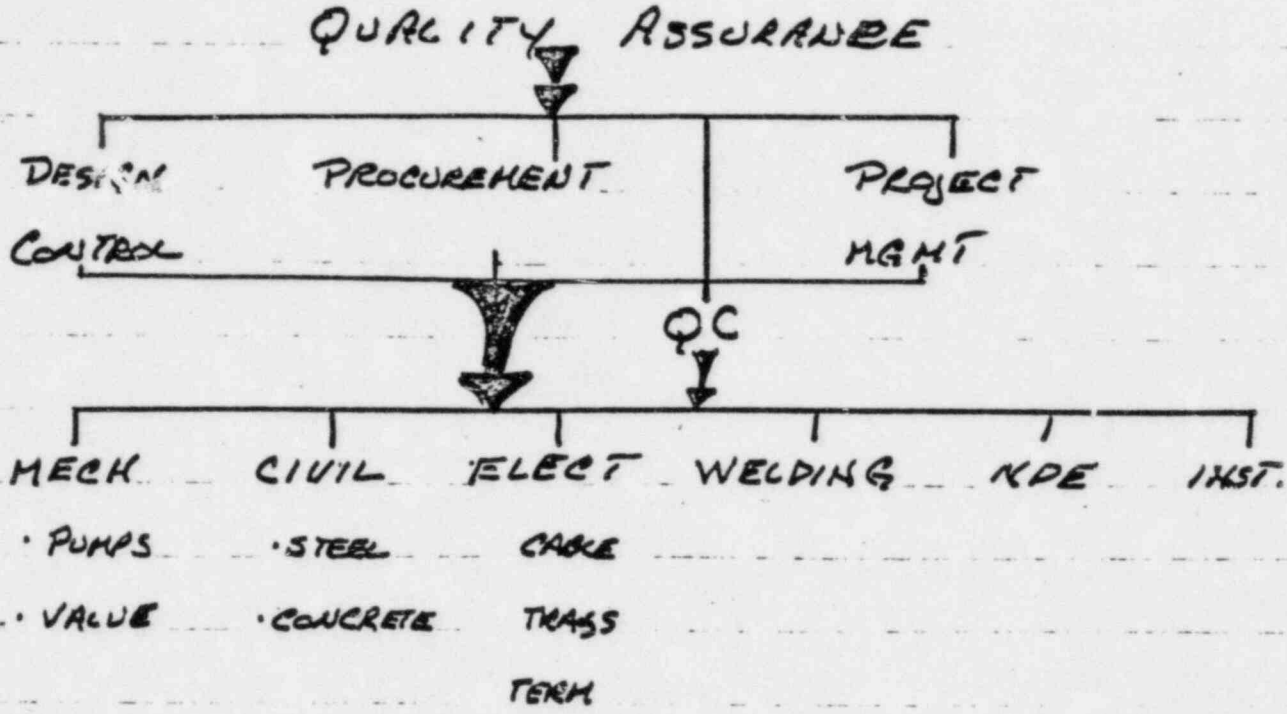
YAEC

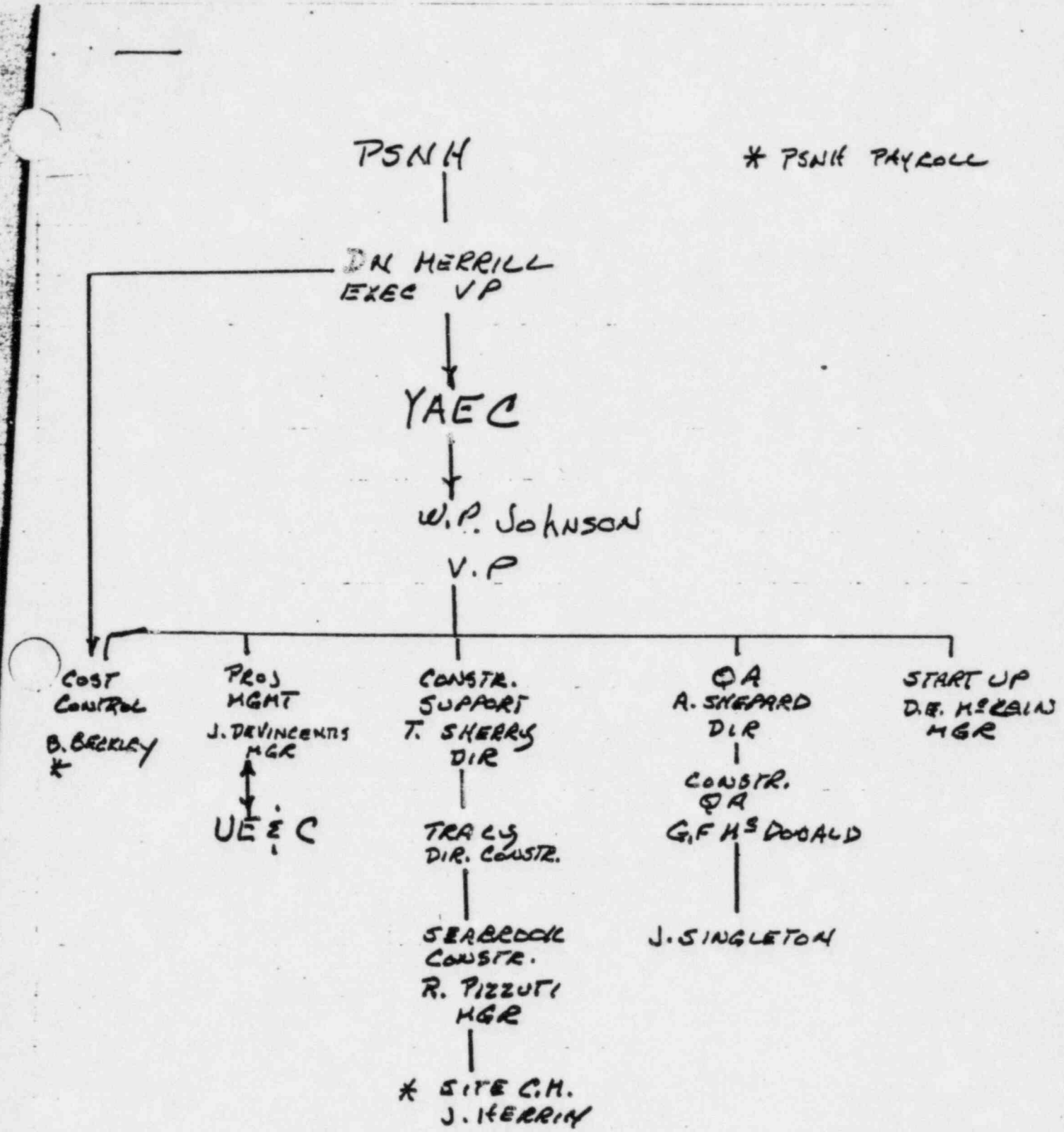
↓

W

↓

PPC


QUALITY ASSURANCE
DESIGN CONTROL
PROCUREMENT
PROJECT MGMT
QC
MECH
CIVIL
ELECT
WELDING
NDE
INST.
· PUMPS
· VALVE
· STEEL
· CONCRETE
CABLE TRAYS TERM


PSNH
* PSNH PAYROLL
DN HERRILL
EXEC VP
YAEC
W.P. JOHNSON
V.P
COST CONTROL
B. BECKLEY
*
PROJ MGMT
J. DEVINCENTIS
MGR
UE & C
CONSTR. SUPPORT
T. SHERRY
DIR
TRACY
DIR. CONSTR.
SEABROOK CONSTR.
R. PIZZUTI
MGR
* SITE C.M.
J. HERRIN
QA
A. SHEPARD
DIR
CONSTR. QA
G.F. McDONALD
J. SINGLETON
START UP
D.E. McCAIN
MGR

TOTALS

YAEC - QA

2ND LEVEL SURV. EXCEPT PDH & PERRY
3rd " OF ALL UE&C + YAEC

UE&C - QA

2ND LEVEL PDH - PERRY
1ST " RECEIVING / STORAGE

CONTRACTORS

1ST LEVEL Q.C.

TOTALS

Format

1. Persons Contacted

2. Statement of overall objective

3. Quality Assurance
   - Statement of areas inspected.
   - organization
   - } Findings
   - }
   - Conclusions
   - Documents reviewed

4. Design Control
   - Statement
   - Organization
   - Findings
   - Conclusions
   - Documents Reviewed

5. ....

6. ....

(X) Overall Conclusions.

Pullman Power

... ASME SCIII welding

.. Observation of Welding and Review of Records

- Method of providing "direction to welders
- Training and qualification of welders — ANI/PPC/UE&C/PSNH interfacing in this area, Method of identification of welder conducting ~~test~~ assembly welding
- Review of procurement QA to meet Code and Reg Guide Commitments for filler metals and base metals
- Review of QA system for welds that initially fail to meet fit up and deadlines requirements.

.. - Review of procedures and implementation of heat input for austenitic welds to meet ~~NF~~ and FSAR requirements

.. Audits of Welding Operations (PPC)

- Audit ~~program~~ and frequency
- Training and qualification of auditors (including # of auditors)
- Review Audit Report Records
- Review Audit Report Analysis (Findings and Report of Findings

- Review of Corrective Action Implementation
- Review of Trending Analysis from Audit Findings
- Review of Upper Level Review of Audits

.. VEA Audits for PPC welding and PPC Audit Findings

... TAEC Overview Audit of PPC welding.

J. Durr
Pullman

... QA
.. Audits
. Followup
. Disposition
. qualification (Initial and Retention
. Training

.. QC
. Procedures
. Trends
. qualification of procedures
. qualification of personnel
. Training

.. Implementation
. Specification
. Drawings
. Procedures
. Work In Accordance with Above
. Work Rules
. Control of Cold Spring

- Identification of PPC Problems
  - Analysis of Problems
  - Design Control
  - Interaction with UE&C, W and YAEC on identified problems

- Identification of Multi Discipline Problems
  - Interaction with UE&C, W

- Design Control
  - Field changes Integration into Design Drawing Red Line System

- Material Documentation for Components; Pumps Valves Etc

- Control of off Site Training and qualification of Welders.

- Control of Site Built Spool Pieces and Supports

PPC

① How many welders are currently working on ASME Section III work

② How many welders are currently working on AWS D1.1 safety related work

③

OFF SITE! WELDER TRAINING AND QUALIFICATION BY THE UNION (FITTERS)

XRAY WELDERS LIST — TO BE ON LIST MUST BE <20%. IF YOU WANT TO WORK OT YOU MUST BE ON XRAY WELDERS LIST

MACHINE WELDING
MOVED OFF LOOP PIPING

1.125 WALL

12" PIPE, Allegation — 5 shop welds RC13 LOOP OFF HOT LEG OF LOOP #1 SPOOL PIECE, DRAWO SUPPLIED.

USING MACHINE WELDING ON NON-SAFETY

(CONTACT)
JADWISKI (STEVE) — LAST WELDING ON LOOP PIPING. W REPAIR OF BASE METAL. MEL MONKERS. INTERFACE BETWEEN W/PPC/UE&C/YAEC

SEE HAROLD ABOUT UT/RT
- QUESTION DAUB TO SINGLETON

STATUS OF DEFECT TRENDING
AND RELATIONSHIP TO WELDOR
QUALIFICATION

DRAUO / UE&C RELATIONSHIP ON
CHANGES TO PIPING SPOOL
PIECE. HOW ARE UE&C APPROVALS HANDLED
FOR CHANGES

WELD ROD — REG GUIDE DELTA-
FERRITE — HOW HANDLED
SECTION 1.8 OF FSAR

CROSSOVER LOOP PIPING - W DWGS SHOWED
PRECISE LENGTHS, DWGS CHANGED
BASED ON FIELD DIMENSIONS, CHANGES
MADE BY MEMO OR PHONE. NOT
A FORMAL METHOD

5281
1281

HOW DO FIELD CHANGES MADE ON W2 APPARATUS GET ADAQUETE INTO AND REVIEW TO ASSURE ALL BASIC DESIGN QUESTIONS ARE SATISFIED. HOW IS THE INPUT VERIFIED. (E.G. SEISMIC)

Recommended CAT Inspection Outline

I. Quality Assurance Program

A. Separate and diverse contractor QA programs
   1. consistency with UE&C specifications
   2. application of prerogatives (eg: choice of Hold Points)
   3. adequacy of control

B. Adequacy of coverage
   1. suggestion that optimistic FLD(11/83) is subjugating QA authority to construction expediency
   2. multishift operation with 6000+ workers
   3. division of second level surveillance responsibilities between YAEC & UE&C

II. Design Controls (Ref: IE Module 37055B)

A. Site Engineering reorganization
   1. site design authority
   2. site design verification

B. Design change control
   1. numerous Engineering Change Authorizations (ECA)
   2. new UE&C Administrative Procedure AP-15
   3. control of drawing revisions when mods are not ECA based

C. Programmatic Issues
   1. construction tolerances vs. design bases
   2. cookbook support options-HVAC, electrical, instrumentation
   3. ASME Code boundary changes & questions

III. Project Management

A. Control of multi contractors
   1. Interface Controls - UE&C Procedure FGCP-31
   2. assignment of responsibility for future work (eg: ECA changes)

B. Problem identification and solution
   1. consideration of interdiscipline generic implications
   2. relationship with QA/QC

IV. Construction Controls

Specific Issues

1. As-Built program (Ref: IE Module 37051B) & (UE&C Procedure AP ~~[illegible]~~-39), particularly electrical contractor
2. Trending of pipe weld repairs and piping contractor problems
3. Qualification and training of ASME welders
4. UE&C Beam Verification Program - structural adequacy of beams to carry supported loads

V. Procurement Controls

A. Scope of Supply
   1. test data and purchase requirements scope installed configurations (eg: cable tray)
   2. approval and documentation of all material substitutions

B. Adequacy of receipt inspection
   1. qualification of receipt inspectors to check technically oriented criteria
   2. availability of current procurement data at time of receipt inspection
   3. effectiveness of corrective action for identified vendor inspection failures

Source Inspection and Auditing of Source Inspection in components and Piping

Seabrook Station QA Manual YAEC
↓ (18 Criteria)
YAEC FQA Manual
Training, Records, Qual of Personnel, Surveillance
↓
UE&C Corp QA Manual
(All Sites)
↓
UE&C SEABROOK Sta QA Procedures
includes Criteria 2, 4, 7, 9, 10, 12, 13, 17
other criteria in Corp QAM
↓
UE&C Seabrook Sta FQA Manual
↓ (includes QCP's)

Comment IX-3 para 1.2 - is Mn-Mo considered to be the same as Carbon 1/2 Mo

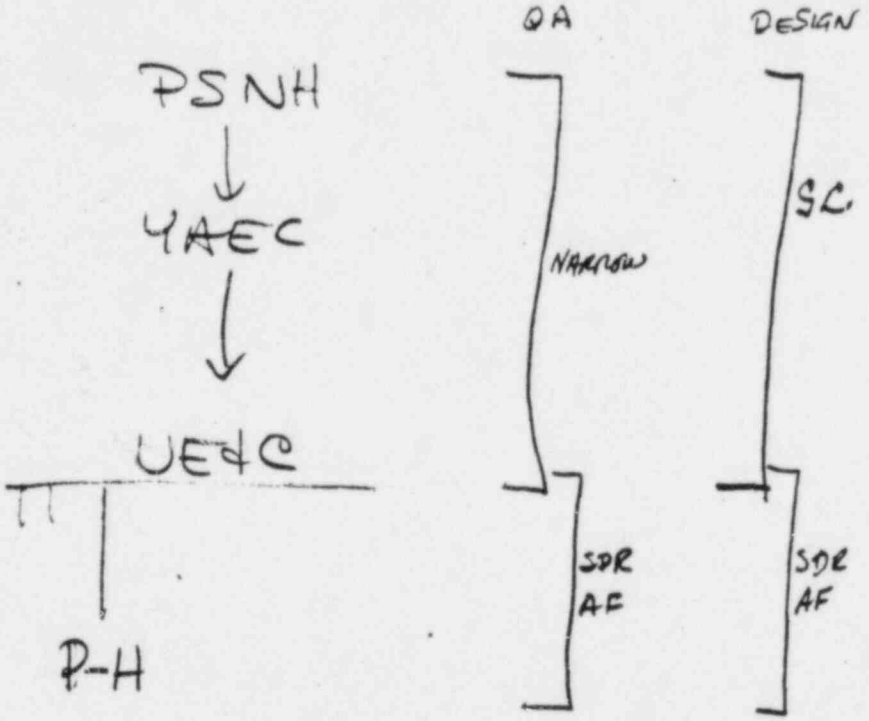
para 2.2 - is this not written backwards. The ASTM spec must meet all of the ASME (e.g. - SA XXX) requirements. There are many specs where the ASME requirements are more restrictive.

Table 2-1 where is Mn-Mo

Pullman Power Products

General Welding Standard GWS-III Rev4

Approved by UE&C



P-H identifies need for field required change

NCR - Initiated by anyone but controlled and issued by QA Mgr.

Field Drawing - initiated by Company Field Engineering Dept which gives specific details for fabrication

QA Manual (PPC)

(1) The QEG regularly reviews the QA Manual for possible changes
   a. How often has this been done

   b. Are there reviews conducted that do not result in QA Manual change

   c. The responsible QEG is _____

(2) The Project QA Manual meets the Corporate QA Manual and variations from the Corporate Manual will be on yellow sheets
QA Manager is responsible for the Project QA Manual

(3) The Welding Engineer (assigned by the QA Manager) shall certify the WPQR

2.5.6
(4) Are there any cases where it was determined individual did not demonstrate competency and was not permitted to work in his assigned area

3.2.1 The Company (PPC) will not perform design work

3.3.1 The Chief Field Engineer is responsible for compliance with design requirements.

3.5 Field Drawings
made by Piping Detailer _____

Checked by Field Engineer _____
or other Piping Detailers _____

3.6 Deviations from Designs
Chief Field Engr or Field Engr review changes for Code Compliance, prepare ECA (Form S-3)

3.7 Revised customer drawings are reviewed by the Chief Field Engr to see if Fab. is in progress or completed to earlier revisions. If so he will issue a Stop Work Order to discontinue work (CFE)

QA/QC By Contractor 6-9-82

	QA	QC	TOTAL
Pirni	19	84	103
FBM	10 QC	42 INSP	52
Johnson Control	6	9	15
United Eng.	28		28
Yankee CFQA	23		23
H.O. audit	2		2
PDM	4		4
PTL	2	31	33
NESL	1	8	9
HAH	1	9	10
P-H	60	68	128

407

Called in to L. Narrow on 6/9/82:

Seabrook 1 – 66%

Seabrook 2 – 14%

Total – 49%

Work Force (minus QA/QC) = 7200

QA/QC = 405 < Licensee (YAEC) = 2
Contractors = 38

~ 2 de

Effective QA Program

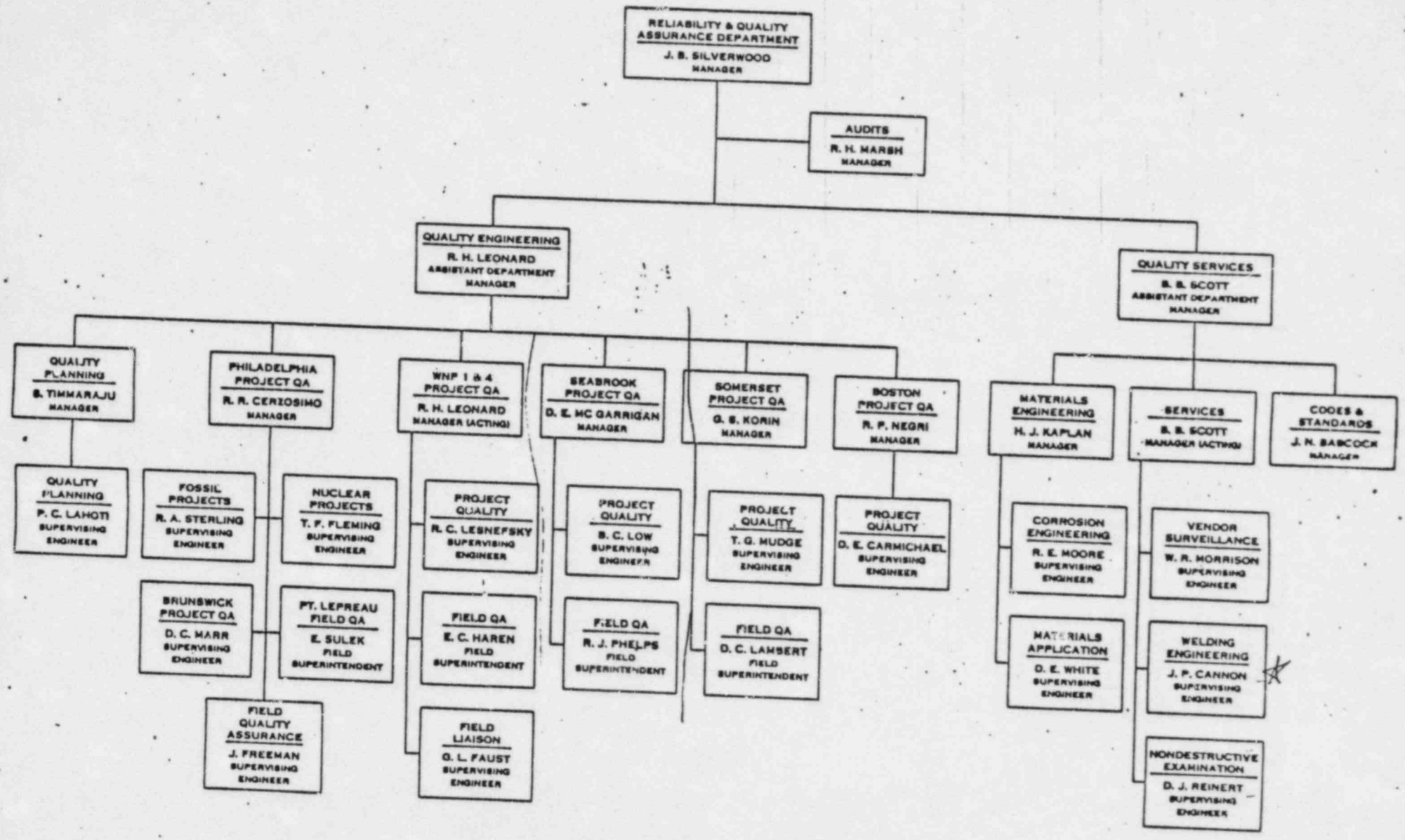
- Findings
  - Substantive
  - Appropriate disposition
  - Trend analysis
  - Followup
  - Timely corrective actions

- Organizational Structure
  - Staffing level vs work load
  - Qualified personnel
  - access to authority

- Interfaces
  - Included in major decision process
  - asserts QA position on identified problems (always overridden?)
- Comprehensive Audit / Surveillance program
  - Meaningful findings
  - " checklists

- Construction IRW codes, specs, etc.

NRC



QUALITY ASSURANCE PLAN OF ORGANIZATION

APPROVED BY: J. S. SILVERWOOD

J. S. SILVERWOOD MGR. R&QA

EFFECTIVE DATE: SEPTEMBER 15, 1980

united engineers & constructors inc

T. C FRUIE

UE&C FIELD QU[illegible]SSURANCE GROUP

Field Superintendent - QA
D. C. Lambert (2160)

Administrative Assistant
B. E. O'Connor (2209)

Secretary
K. J. Heath (2166)

QA Supervisor - R&S
C. D. Hanson (2087)

QA Supervisor-Records & D.S.
A. H. Ayers (2163)

QA Supervisor - C/S
R. D. Tancibok (2157)
R. S. Lentz (2161)

QA Engineers

*C. O. Long (2162)
J. Bodell (2163/2164)
W. L. Chapman (2165)
T. J. DeArmit (2162)
J. C. Gries (2162)
H. I. Jones (2165)
G. P. Monette (2165)
F. G. Tilson (2166)

QA Engineers

*R. H. Beaumont (2164)
W. D. St. John (2164)
C. S. Waitkus (2164)
J. E. Boscoe (2163/2164)

K. E. Price (Clerk-2163)

QA Engineers

N. A. Chambers (2167)
P. E. Couchman (3008)
N. G. Hargrave-Thomas (3008)
R. E. Herman (2169)
C. H. Jameson (3008)
J. P. Jensen (2169)
H. E. Shellehamer (2169)
M. A. Zelepsky (2169)

Assigned to YAEC QA.

J. O. Azzopardi
J. Briasco
J. Brooks
D. Horton
H. Lupton
B. J. Mizzau
A. Neilson
W. T. O'Brien
(On site 4/5/82)
R. J. Roellig

*Responsible in the absence of the QAS

March 24, 1982

EXIT INTERVIEW

CAT/NDE Van Inspection 82-06 Unit #1
Period: June 21 - July 2, 1982

Scope and Purpose: Determine the effectiveness of the licensees project management through examination of project, design, construction, and procurement control and quality assurance. Assess the welding and NDE program by independent nondestructive examinations.

Findings:

1. P-H audits identified weld monitoring as a deficient area in two successive audits. The next audit failed to follow-up in that area due to a lack of time.
2. (Engineering) (V) The ECA review/approved cycle was not in accordance with AP-15 in that one individual issued, dispositioned and approved NCR's on more than one occasion.
3. (III) NCR's containing design change information (accept as is/repair) are not reviewed by original design group. (This awaits any mitigation)
4. (VI) ECA change log 8, dated June 3, 1982, was in use at the control drawing section. The June 23 edition was issued but not in use.
5. CIIR's are not tracked to assure that design/NCR documents are issued as dispositioned.
6. Engineers responsible for NCR/CDR review are not aware of 10CFR 50.55(e) criteria for reportability (This may be considered violation on further review).
7. (V) The water stop specification is inadequate in that it does not.
8. (XVI) NCR 1322 was initiated on 3/3/82 and identified nonconforming conditions with equipment stored in place in the Control Room. The conditions were not corrected by 6/29/82.
9. P-H (IX) Welders are not knowledgeable nor are they trained in the welding procedure specification.
10. (V) QA engineers for surveillance and visual inspection are not certified in accordance with the procedure. VT--------SNT TC-1A Surveillance----------45.2.6 not defined.

11. Foreman are permitted to assure duties before completing the indoctrination training.

12. YAEC Audits identified management problems in P-H and did not effectively resolve the problem.

. The NRB only reviews NCR's for the preceding month for trends.

14. It does not appear that the FSAR commitments are being implemented for the control of sensitization of stainless steel RG 1.44.

15. (IX) Weld----------was accepted with code rejectable indications.

15A Stud Welding/Construction

16. Comment: YAEC management audits were focused in only one area per year. This did not provide an adequate over view of the program implementation.

17. Comment: - Organization is personality dependent

- Communications

  •Area Spt.
  •PM's

- YAEC QA integrated look

18. Comment: Engineering design change control.

9. Positive Comment: - Welding Program: Voluntary and paid upgrade
  Trend analysis (goals, variables)

- YAEC •Audits are well done

•Audit and surveillance personnel well qual.

•Forethought to review 50.55(e)

INDICATES EFFECTIVE CODE DATES

3.0 APPLICABLE DOCUMENTS

3.1 CODES AND STANDARDS

3.1.1 American Society of Mechanical Engineers
United Engineering Center
345 East 47th Street
New York, New York 10017

ASME B&PV Code: The following sections of the ASME B&PV Code form a part of this Design Specification. For design and analysis of piping systems the applicable issue of the Code is the 1971 issue including all addenda up to and including the Winter, 1972 addenda.

For purchase of components, the applicable issue of the Code is the issue in effect on the date the purchase order is let.

For design of pipe supports, the applicable issue of Subsection NF is the one included in the Winter, 1973 addenda to Section III.

For inservice inspection, the applicable issue of Section XI is the 1977 Edition with addenda up to and including Summer, 1978 for all systems except RHR and ECCS systems. The applicable issue for RHR and ECCS systems is the 1974 edition with addenda up to and including Summer, 1975.

For erection of piping covered by specification 9763-006-248-51 the applicable issue of the Code is the 1977 issue, including addenda up to and including Winter, 1977.

For erection of piping covered by specification 9763-006-248-3 the applicable issue of the Code is the 1974 issue with addenda up to and including Summer, 1975.

Section II - Material Specifications

Part A - Ferrous Materials

Part B - Nonferrous Materials

Part C - Welding Rods, Electrodes and Filler Metals

Section III - Nuclear Power Plant Components

Division 1

Subsection NA - General Requirements

Subsection NB - Class 1 Components

Subsection NC - Class 2 Components

Subsection ND - Class 3 Components

Subsection NF - Component Supports

Division 2 - Concrete Reactor Vessels and Containments

Section V - Nondestructive Examination

Section IX - Welding and Brazing Qualifications

Section XI - Rules for Inservice Inspection of Nuclear Power Plant Components

Code Cases as approved by Regulatory Guides 1.84 & 1.85 may be used as directed by the Engineer.

The following Code Cases have been approved for use on this contract:

1644, 1651, 1683, 1724, 1728, 1729, 1734
N-180, N-192, N-218, N-229, N-228, N-287, N 32.3 (1541-3)

3.1.2 American Society of Mechanical Engineers
United Engineering Center
345 East 47th Street
New York, New York 10017

ANSI Standards: The following American National Standards with the applicability and effective date shown in Table 3.1-1 shall form a part of this Design Specification.

ANSI B31.1	ANSI Code for Pressure Piping, Power Piping
ANSI N18.2	Nuclear Safety Criteria for the Design of Stationary Pressurized Water Reactor Plants
ANSI N176	(Draft) Design basis for protection of nuclear power plants against effects of postulated pipe rupture
ANSI N177	(Draft) Plant Design against missiles

3.1.3 Manufacturer's Standardization Society
of the Valve and Fitting Industry
420 Lexington Avenue
New York, New York 10017

MSS Standards: The following Manufacturers Standardization Society of the Valve and Fittings Industry standards shall form a part of this Design Specification. The applicability and effective data of each standard is listed in Table 3.1.2.

MSS-SP-58	Pipe hangers and supports - Materials and Design
MSS-SP-69	Pipe hangers and supports - Selection and Application

3.1.4 United Engineers & Constructors Inc.
30 South 17th Street
Philadelphia, Pennsylvania 19101

UE&C Project Standard Documents

The following standard documents of the issue in effect on the date of purchase order form a part of this specification.

9763-MPS-1	Material and Processing Requirements (Nuclear)
9763-MPS-2	Material and Processing Requirements (Non-Nuclear)
9763-WS-1	Welding and Nondestructive Examination for Nuclear Pressure Components and Nuclear Power Piping
9763-WS-2	Welding and Nondestructive Examination for Non-Nuclear Components and Non-Nuclear Power Piping
9763-WS-5	Requirements for Brazing and Nondestructive Examination and Test Methods for Nuclear Pressure Components
QAS-1	Quality Assurance Administrative and System Requirements (Nuclear)

MAG/PSNH/001, 002, 003 and 004 Spacing Tables

3.2 DRAWINGS

3.2.1 UE&C Piping System Drawings

3.2.1.1 Nuclear Piping

Drawing 9763-F-805001 P&I Diagrams

(See Table 2.2-5A for a list of isometric drawings)

3.2.1.2 Other Piping

(See Table 2.2-3 for a list of P&I Diagrams and Table 2.2-5B for a list of isometric drawings.)

3.2.1.3 Penetrations

9763-F-805574	Containment Structure Piping Penetrations Sections and Details
9763-F-805575	Containment Structure Piping Penetrations Details
9763-F-805576	Containment Structure Piping Penetrations Plans
9763-F-805577	Containment Structure Piping Penetrations Elevations
9763-F-805578	Containment Structure Piping Penetrations Details

3.2.2 UE&C Standard Drawings

9763-F-300219	Service Environment Chart
9763-M-804998	Weld End Joint Design for Butt Welding After Cement Lining
9763-M-804999	Weld Surface Preparation for Inservice Inspection
9763-F-805000	Weld End Preparation Details - Interface with W Weld End Preparation Valves, Nozzles and Equipment
5000-F-1382	Standard Weld End Preparation Details for Pipe.

UE&C Site Engr QA Auditors — MASTER SURVEILLANCE CHECKPLAN LEW NARROW 7/82 through 12/

	ACTIVITY	FREQUENCY OF SURVEILLANCE	JULY				AUGUST					SEPTEMBER				OCTOBER				NOVEMBER					DECEMBER			
			1	2	3	4	1	2	3	4	5	1	2	3	4	1	2	3	4	1	2	3	4	5	1	2	3	4
1.0	Document changes Per AP-15																											
1.1	Pipe Supports	Once Quarterly						X										X					X					
1.2	Mechanical Serv. Supports	"							X										X									
1.3	Elect. Supports	"								X											X							
1.4	I & C Supports	"									X											X						
1.5	Civil/Structura	"										X											X					
1.6	Piping	"	X										X											X				
1.7	Electrical	"		X										X										X				
1.8	Mech. Services	"			X										X										X			
1.9	Mech./Nuclear	"				X										X										X		
1.10	I & C	"					X										X										X	
2.0	Project change System - -change classification	Once a month			X				X					X				X				X					X	
3.0	Revision of affected documents	Once a month		X				X					X				X				X					X		
4.0	Control of calculations	Once Quarterly								X										X								
5.0	Cutting Rebar In Permanent Concrete Structures	Once Quarterly				X													X									

~~JJS~~, JFN

PSNH PUBLIC SERVICE
Company of New Hampshire

SEABROOK STATION
Engineering Office:
1671 Worcester Road
Framingham, Massachusetts 01701
(617) - 872 - 8100

February 16, 1982
SB- 12827
Q2.1.1

Mr. A. M. Ebner
United Engineers and Constructors, Inc.
30 South 17th Street
P. O. Box 8223
Philadelphia, PA 19101

Mr. P. L. Evans
Pullman-Higgins
P. O. Box 3308
Williamsport, PA 17701

Dear Messrs. Ebner and Evans:

YAEC SEABROOK AUDIT REPORT
NO. SA573CS188

Attached for your information and use is the subject Audit Report of Pullman-Higgins (P-H) which was conducted at Seabrook Station by our David A. Burbine.

In an effort to expedite the resolution of the items identified in the attached Audit Report, you will note that this letter is being forwarded in parallel to the parties addressed above. The audited organization is requested to respond to the YAEC Project Office and the UE&C Project Office by March 10, 1982. The response should indicate the corrective action that has been/will be taken to resolve and to preclude recurrence of the deficiencies, and the date by which such corrective action will be completed. Prior to the formal response to the audit, it is strongly suggested that oral communications be held between the auditor and the auditee to resolve any ambiguities and/or misunderstandings.

The audit resulted in fourteen (14) deficiencies being identified with particular concern by the auditor that there are numerous (six) deficiencies noted within the Corrective Action Report system, that procedural guidelines/requirements/responsibilities within the Nonconformance Report, Corrective Action Report, and trend analysis systems are inadequate, and that implementation by responsible personnel has not been adequate/effective.

Your attention is directed to the attachment section of the Audit Report.

A verification audit will be performed by YAEC in order to verify effective implementation of the corrective action.

If you have any questions or comments, please contact Mr. D. A. Burbine at (617) 872-8100, Extension 2472.

Yours truly,

G. F. McDonald
Quality Assurance Manager

J. DeVincentis
Project Manager

DAB/fsf

Attachments

cc: W. P. Johnson
A. M. Shepard
B. B. Beckley
R. P. Pizzuti
J. W. Singleton
J. H. Herrin
D. E. McGarrigan
D. C. Lambert
R. A. Rebel
R. G. Davis - P-H
F. Cauldwell - P-H
J. P. Cady
W. B. Sturgeon

YAEC SEABROOK AUDIT REPORT
NO. SA573C3188

PLACE: PULLMAN-HIGGINS, SEABROOK STATION, SEABROOK, NEW HAMPSHIRE

DATES: NOVEMBER 24 & 25, DECEMBER 3, 8, & 30, 1981 AND JANUARY 6, 7, & 19, 1982

PURPOSE: TO VERIFY PERSONNEL COMPLIANCE TO, AND SYSTEM ADEQUACY OF, THE QUALITY ASSURANCE PROGRAM AND IMPLEMENTING PROCEDURES, AND TO EVALUATE THE EFFECTIVENESS OF IMPLEMENTATION BY RESPONSIBLE PERSONNEL.

SCOPE: AUDIT/EVALUATION OF PULLMAN-HIGGINS' NONCONFORMANCE REPORT, CORRECTIVE ACTION REPORT, AND TREND ANALYSIS SYSTEMS

AUDITOR: DAVID A. BURBINE, QUALITY ASSURANCE ENGINEER

THOSE CONTACTED:

PULLMAN-HIGGINS	YAEC
* R. G. DAVIS	* P. A. OIKLE
* J. E. GODFREY	* J. F. NAY, JR.
* E. O. WALKER	
* M. W. NEWTON	

* ATTENDED EXIT INTERVIEW

I. SUMMARY:

The audit resulted in fourteen (14) deficiencies, none of which are indicative of a breakdown in the Quality Assurance Program. The auditor offers the following conclusions:

A. Nine (9) of the deficiencies were the result of personnel noncompliance with pertinent requirements of implementing procedures. Six (6) of the nine (9) in this category were related to the Corrective Action Report system; therefore, it is recommended that Corporate awareness and involvement be increased to resolve and to preclude recurrence of the deficiencies.

B. Three (3) of the deficiencies were the result of system inadequacies as defined in the Quality Assurance Program and implementing procedures. It is recommended that an in-depth evaluation and assessment be performed to assure that the QA Program and implementing procedures adequately address project requirements/commitments and provide sufficient definition of responsibilities/requirements/guidelines to assure safety-related activities are satisfactorily accomplished.

C. Two (2) of the deficiencies were the result of ineffective implementation by responsible personnel. The auditor feels that the ineffective implementation is the result of item B above. It is recommended that a comprehensive training program be established for all responsible QA, Construction, and Engineering personnel.

Based on the overall results of the audit, the auditor feels that greater Corporate involvement in field activities is necessary, especially through audits and review of field-generated documentation (i.e., NCR's, CAR's, trend analysis, etc.) to assure more effective management control of the QA Program.

The attachments ot this report outline the details of the deficiencies noted during the audit.

II. DISCUSSION:

The Seabrook Station QA Manual, Procedure 9.1, and supplemental marked-up procedures were utilized as the guidelines in performing the verification phase of the audit. The objective evidence chosen at random to verify program effectiveness is identified on the marked-up procedures and supplemental sheets.

An exit interview was held with the personnel indicated on the first page of this report. The auditor stated the deficiencies and indicated to the attendees that the corrective action should be initiated immediately, and must be completed within thirty (30) days after the exit interview.

III. OUTSTANDING ITEMS:

A. Closed out by this report:

1. None

B. New items requiring QA follow-up:

1. SSCA No. 0500, NCR's not issued as required.
(15-705-2)

2. SSCA No. 0501, "NC Code" not included in the monthly trend analysis summary.
(15-705-2)

3. SSCA No. 0502, Estimated completion dates are not entered on CAR's.
(16-705-2)

4. SSCA No. 0503, Verification of corrective action not performed within 10 working days.
(16-705-2)

5. SSCA No. 0504, Missing/incorrect entries in CAR Log.
(16-705-2)

6. SSCA No. 0505, Missing entries on CAR's.
(16-705-2)

7. SSCA No. 0506, CAR signed by Construction personnel.
(16-705-2)

8. SSCA No. 0507, (1) Nonconformances identified on inprocess documentation not included in the trend analysis program.
(2) Data indicates trend which was not reported to Corporate personnel.
(16-705-2)

9. SSCA No. 0508, CAR's completed using other than black ink.
(16-705-2)

10. SSCA No. 0509, Field Procedure XVI-2 does not require distribution of CAR's to Corporate personnel.
(16-705-1)

11. SSCA No. 0510, (1) Field Procedures XV-2 and XVI-2 are not adequate.
(2) No field procedure defining trend analysis program.
(15-705-1)

12. SSCA No. 0511, Stop Work action by QA personnel not addressed in QA Manual or implementing procedures.
(01-705-1)

13. SSCA No. 0512, Inadequate investigation of "cause" on NCR's and CAR's resulting in incomplete corrective action.
(16-705-2)

14. SSCA No. 0513, Only one (1) "cause code" assigned to NCR's which identify multiple "causes."
(16-705-2)

David A. Burbine 2/9/82
David A. Burbine Date
Quality Assurance Engineer

DAB/fsf
Attachment
cc: W. P. Johnson
A. M. Shepard
B. B. Beckley
R. P. Pizzuti
J. W. Singleton
J. H. Herrin
D. E. McGarrigan
D. C. Lambert
R. A. Rebel
R. G. Davis
F. Cauldwell
J. P. Cady
W. B. Sturgeon

The contents of this report have been reviewed for items which could require reporting by 10CFR21 and 10CFR50.55(e). The report did ____/did not ✓ contain potentially reportable items.

[signature] 2/12/82
Quality Assurance Manager Date

ATTACHMENT
1 of 15
SSCA No. 0500
Report No. SA573CS188
Audit Date: 11/24&25, 12/3, 8, & 30/81, & 1/6,7, & 19/82
Auditor(s): D. A. Burbine

REQUIREMENT:

Field Procedure XVI-2, "Corrective Action," paragraph 3.2 states: "If conditions noted on the CAR warrant, an NCR shall be issued and the CAR closed by referencing the NCR."

DEFICIENCY:

There are several CAR's which identify nonconforming conditions for hardware, but no NCR was issued (i.e., CAR Nos. 44, 40, 38, 33, 12, and 10).

RECOMMENDATION:

Comply with the procedure.

P-H REPLY:

CAR 44 NCR issued

ATTACHMENT
2 of 15
SSCA No. 0501
Report No. SA573CS188
Audit Date: 11/24&25, 12/3, 8, & 30/81, & 1/6,7, & 19/82
Auditor(s): D. A. Burbine

REQUIREMENT:

Corporate Procedure I-2, "Monthly Reporting of QA Activities Required by QA Manual/Procedures," paragraph 4.1 states: "It is the responsibility of the QA Manager to submit a monthly report summarizing . . . nonconformances including trends noted . . . ."

Field Procedure XV-2, "Nonconformances (Field)," Appendix C, Line No. 7, states: "Refer to Appendix A and enter the NC code."

DEFICIENCY:

The monthly report submitted by the Field QA Manager summarizes nonconformances by "cause code" only, but does not include the "NC Code."

RECOMMENDATION:

Assure that the "NC Code" is included in the monthly trend analysis summary.

P-H REPLY:

Not a defic.

ATTACHMENT
3 of 15
SSCA No. 0502
Report No. SA573CS188
Audit Date: 11/24&25, 12/3, 8, & 30/81, & 1/6,7, & 19/82
Auditor(s): D. A. Burbine

REQUIREMENT:

Procedure XVI-2, "Corrective Action," paragraph 5.2 states: "Upon receipt of CAR, an estimated completion date will be established and forwarded to QA Records for control of CAR until closed."

DEFICIENCY:

There is no evidence of any extimated completion dates being established and forwarded to QA Records. There are several CAR's which have been open since January and March, 1981 and the corrective action has not been completed to date.

RECOMMENDATION:

(1) Comply with the procedure.

(2) Review all open CAR's and provide an estimated completion date, as required.

(3) Take action to assure that all open CAR's are closed as soon as possible.

P-H REPLY:

No date required prior to Rev 3
64 CAR's issued - 4 open

ATTACHMENT
4 of 15
SSCA No. 0503
Report No. SA573CS188
Audit Date: 11/24&25, 12/3, 8, & 30/81, & 1/6,7, & 19/82
Auditor(s): D. A. Burbine

REQUIREMENT:

Procedure XVI-2, "Corrective Action," paragraph 6.1, requires that verification of the corrective action, ". . . be accomplished no later than 10 working days after estimated completion date of corrective action."

DEFICIENCY:

There are numerous CAR's which indicate that corrective action has been completed, but the verification was not accomplished within 10 working days. (CAR Nos. 48, 45, 44, 43, 42, 33, 27, 21, 18, 12, and 10)

RECOMMENDATION:

(1) Comply with the procedure.

(2) Review all open CAR's and assure that the verification is accomplished within 10 working days.

P-H REPLY:

ATTACHMENT
5 of 15
SSCA No. 0504
Report No. SA573CS188
Audit Date: 11/24&25, 12/3, 8, & 30/81, & 1/6,7, & 19/82
Auditor(s): D. A. Burbine

REQUIREMENT:

Procedure XVI-2, "Corrective Action," paragraph 8.1, requires that the Corrective Action Report Log "identify the report by number, a brief description, and its current status."

DEFICIENCY:

A review of the Corrective Action Report Log revealed that numerous entries were missing and that the current status of several CAR's were in error. (CAR Nos. 45, 40, and 36)

RECOMMENDATION:

(1) Comply with the procedure.

(2) Review the Corrective Action Report Log and assure that the current status of CAR's is identified.

P-H REPLY:

Review performed

ATTACHMENT
6 of 15
SSCA No. 0505
Report No. SA573CS188
Audit Date: 11/24&25, 12/3, 8, & 30/81, & 1/6,7, & 19/82
Auditor(s): D. A. Burbine

REQUIREMENT:

Procedure XVI-2, "Corrective Action," paragraph 4.2.5 states: "Items 7 and 8 will document finding of follow-up actions taken by the internal auditor."

DEFICIENCY:

There are numerous Corrective Action Reports which have no entries for Items 7 and 8.

RECOMMENDATION:

Either comply with the procedure, or if entries are not required on all CAR's, then provide guidelines/requirements within the text of the procedure which will indicate when Items 7 and 8 are to be completed.

P-H REPLY:

Review Performed

ATTACHMENT
7 of 15
SSCA No. 0506
Report No. SA573CS188
Audit Date: 11/24&25, 12/3, 8, & 30/81, & 1/6,7, & 19/82
Auditor(s): D. A. Burbine

REQUIREMENT:

Procedure XVI-2, "Corrective Action," paragraph 4.2.6 states: "Item 9 will be completed and signed off as designated by the QA Manager after review of documented actions."

DEFICIENCY:

Corrective Action Report No. 25 was signed in the "Corrective Action Verified" by the Construction Superintendent.

RECOMMENDATION:

Assure that CAR's are verified and signed by QA personnel.

P-H REPLY:

No Q def.

ATTACHMENT
8 of 15
SSCA No. 0507
Report No. SA573CS188
Audit Date: 11/24&25, 12/3, 8, & 30/81, & 1/6,7, & 19/82
Auditor(s): D. A. Burbine

REQUIREMENT:

UE&C's QAS-1, "Quality Assurance Administrative and System Requirements for Nuclear Safety Class Items," paragraph 4.14, "Corrective Action," states: "Nonconformances shall be reviewed periodically to identify trending conditions."

DEFICIENCY:

(1) Nonconformances identified on inprocess documentation (i.e., inspection reports, NDE reports, etc.) are not included in the trend analysis program.

(2) The auditor reviewed the monthly trend analysis reports for the period from January to December, 1981, and there are several instances in which the number of "causes" were indicative of a trend; however, this was not reported on the applicable monthly report to Corporate personnel (i.e., Cause Code Numbers 01, 03, 04, 05, 26, and 33).

RECOMMENDATION:

(1) Assure nonconforming conditions identified on inprocess documentation are included in the trending program.

(2) Assure that the responsible personnel are comparing each month's trend data with previous month's data in order to identify adverse trends.

P-H REPLY:

Address after mtg. on trending

ATTACHMENT
9 of 15
SSCA No. 0508
Report No. SA573CS188
Audit Date: 11/24&25, 12/3, 8, & 30/81, & 1/6,7, & 19/82
Auditor(s): D. A. Burbine

REQUIREMENT:

UE&C's RM-1, "Site Records Management System," paragraph 9 states: "It is the responsibility of the contractor to assure that the records are: (Item e) Completed using black ink pens . . . ."

DEFICIENCY:

Two (2) Corrective Action Reports (CAR's) have been completed using other than black ink (No. 24 in red ink and No. 25 in blue ink).

RECOMMENDATION:

(1) Assure that the applicable field implementation procedures address the requirement of UE&C's RM-1.

(2) Correct the discrepant CAR's.

(3) Comply with the procedure. Advise Document Control/Records personnel to return discrepant documentation to the originator.

P-H REPLY:

ATTACHMENT
10 of 15
SSCA No. 0509
Report No. SA573CS188
Audit Date: 11/24&25, 12/3, 8, & 30/81, & 1/6,7, & 19/82
Auditor(s): D. A. Burbine

REQUIREMENT:

ANSI N45.2, "QA Program Requirements for Nuclear Facilities," Section 17, "Corrective Action," states: "The identification of significant conditions adverse to quality, the cause of the condition, and the corrective action taken shall be documented and reported to appropriate levels of management."

DEFICIENCY:

Procedure XVI-2 does not require that CAR's be distributed to Home Office management personnel, or that higher levels of management be notified if corrective action is not effective or implemented in a timely manner.

RECOMMENDATION:

Revise Field Procedure XVI-2 to require that CAR's be distributed to Corporate personnel and that Corporate personnel be notified of ineffective or inadequate implementation of corrective action.

P-H REPLY:

Noted

ATTACHMENT
11 of 15
SSCA No. 0510
Report No. SA573CS188
Audit Date: 11/24&25, 12/3, 8, & 30/81, & 1/6,7, & 19/82
Auditor(s): D. A. Burbine

REQUIREMENT:

ANSI N45.2, "QA Program Requirements for Nuclear Facilities," Section 6, "Instructions, Procedures, and Drawings," states: "Activities affecting quality shall be prescribed by documented instructions, procedures, . . . and shall be accomplished in accordance with these instructions, procedures, or drawings. Instructions, procedures, or drawings shall include appropriate quantitative or qualitative criteria for determining that important activities have been satisfactorily accomplished."

DEFICIENCY:

1. Field Procedure XV-2, "Handling of Nonconformances," and Field Procedure XVI-2, "Corrective Action," do not contain adequate guidelines/requirements for the initiation, processing, follow-up, and close-out of Nonconformance Reports (NCR's) and Corrective Action Reports (CAR's).

   Examples:
   (a) The CAR must be reviewed for applicability to: (1) ASME Code, (2) potential significant deficiency, (3) 10CFR21, and (4) 10CFR 50.55(e).

   (b) Conditions/circumstances which require a CAR.

   (c) Nonconformances and/or corrective action which may warrant stop work action.

   (d) The steps to be taken by responsible personnel if the identification, implementation, or verification of corrective action is not performed in a timely, effective, or acceptable manner.

   (e) Identification of "cause" and "corrective action" on the NCR Form.

2. Field personnel are utilizing Corporate Procedure I-2, "Monthly Reporting of QA Activities Required by QA Manual/Procedures," for guidance in developing the trend analysis reports. This procedure does not adequately define the responsibilities/requirements/guidelines for compiling and analyzing data related to trend analysis, for determining and investigating the cause of adverse trends, for reporting and directing the corrective action, and for evaluating the effectiveness of the corrective action.

ATTACHMENT
12 of 15
SSCA No. 0510 (cont.)
Report No. SA573CS188
Audit Date: 11/24&25, 12/3, 8, & 30/81, & 1/6,7, & 19/82
Auditor(s): D. A. Burbine

RECOMMENDATION:

(1) Review and revise Field Procedures XV-2 and XVI-2 to adequately/accurately define the responsibilities/requirements/guidelines for the initiation, processing, follow-up, and close-out of NCR's and CAR's.

(2) Develop a field procedure for the trend analysis reporting program.

P-H REPLY:

Letters will be jointly agreed upon by

ATTACHMENT
13 of 15
SSCA No. 0511
Report No. SA573CS188
Audit Date: 11/24&25, 12/3, 8, & 30/81, & 1/6,7, & 19/82
Auditor(s): D. A. Burbine

REQUIREMENT:

ANSI N45.2, "QA Program Requirements for Nuclear Facilities," Section 3, "Organization," states: "Persons and organizations performing quality assurance functions shall have sufficient authority and organizational freedom to: (Item 4) control further processing, delivery, or installation of a nonconforming item, deficiency, or unsatisfactory condition until proper dispositioning has occurred."

DEFICIENCY:

Procedures XV-2 and XVI-2 do not address guidelines/requirements for issuance and processing of a Stop Work Order by QA personnel when a specific nonconforming condition is identified or when corrective action is required on a generic basis.

RECOMMENDATION:

Revise Procedures XV-2 and XVI-2 to address guidelines/requirements for issuance of Stop Work Orders by QA personnel.

P-H REPLY:

Procedure revised

ATTACHMENT
14 of 15
SSCA No. 0512
Report No. SA573CS188
Audit Date: 11/24&25, 12/3, 8, & 30/81, & 1/6,7, & 19/82
Auditor(s): D. A. Burbine

REQUIREMENT:

ANSI N45.2, "QA Program Requirements for Nuclear Facilities," Section 17, "Corrective Action," states: "In the case of significant conditions adverse to quality, the measures shall assure that the cause of the condition is determined and corrective action taken to preclude repetition."

Field Procedure XVI-2, "Corrective Action," paragraph 3.2 states: "It shall be the responsibility of the Field QA Manager to evaluate CAR's to specify corrective action required and to verify implementation of corrective action."

DEFICIENCY:

A review of Nonconformance Reports (NCR's) and Corrective Action Reports (CAR's) revealed that the investigation of cause and the resulting corrective action indicated by responsible personnel has not been adequate. There are numerous instances in which the investigation did not determine the root causes, or all of the causes, and therefore, the corrective action taken was not adequate to preclude recurrence of the nonconforming condition.

Example: For investigating the cause, responsible personnel must investigate the following types of questions:

a. Who or what caused the nonconforming condition?

b. How or why did it occur?

c. Where else may it have occurred?

d. When did it occur?

RECOMMENDATION:

(1) Assure that responsible personnel are investigating the cause(s) of nonconforming conditions to the depth necessary to determine the root cause(s), and assure that the corrective action taken will be effective in precluding recurrence.

(2) Consider requiring that a limited number (i.e., one to three) of personnel be responsible for concurring/approving the cause and corrective action of NCR's and CAR's.

P-H REPLY:

Assigned additional personnel to review, track & process NCR/CAR

ATTACHMENT
15 of 15
SSCA No. 0513
Report No. SA573CS188
Audit Date: 11/24&25, 12/3, 8, & 30/81, & 1/6,7, & 19/82
Auditor(s): D. A. Burbine

REQUIREMENT:

ANSI N45.2, "QA Program Requirements for Nuclear Facilities," Section 17, "Corrective Action," states: "The identification of significant conditions adverse to quality, the cause of the condition, and the corrective action taken shall be documented and reported to appropriate levels of management."

UE&C's QAS-1, "Administrative and System Requirements for Nuclear Safety Class Items," paragraph 4.14 states: "Nonconformances shall be reviewed periodically to identify trending conditions."

DEFICIENCY:

There are numerous Nonconformances Reports (NCR's) which identify multiple "causes" (i.e., NCR's 1432, 1459, 1471, 1510, 1532, and 1576); however, only one (1) "cause code" number was assigned to the NCR. This practice does not accurately reflect the actual number of "causes" which are reported monthly in the trend analysis.

RECOMMENDATION:

(1) Instruct the responsible QA personnel to assign a "cause code" number to each identified "cause" on the NCR's, and to accurately account for each "cause" on the monthly trend analysis.

(2) Revise Field Procedure XV-2 to reflect this requirement.

P-H REPLY:

2237

YAEC SEABROOK AUDIT REPORT
NO. SA556CS202

Nov. 24 CLS
Pol 3, P 130
Jan 6, 7, 19 of

PLACE: PULLMAN-POWER PRODUCTS, WILLIAMSPORT, PENNSYLVANIA

DATES: MARCH 8-10, 1982

PURPOSE: QUALITY ASSURANCE AUDIT OF CORPORATE HEADQUARTER ACTIVITIES

AUDITORS: PHILIP A. OIKLE, SENIOR QUALITY ASSURANCE ENGINEER (ATL)
FREDERICK A. DEAKE, SENIOR QUALITY ASSURANCE ENGINEER (AIT)

THOSE CONTACTED. PULLMAN POWER PRODUCTS

A. A. ECK, DIRECTOR QUALITY ASSURANCE
D. R. GESKE, TRAINING ENGINEER
C. M. NEARY, WELDING ENGINEER
L. MCQUILLEN, DOCUMENT CLERK

I. SUMMARY:

The subject audit was performed to evaluate the degree of effectiveness of corporate involvement and support of Pullman's field activities at Seabrook Station and in meeting QA Program requirements. The audit resulted in four areas in which deficiencies were identified.

II. DISCUSSION:

A. Areas covered during the audit included Organization, QA Program, Nonconforming Items, Corrective Action and Audits. The audit was performed with, but not limited to, checklists developed from Pullman QA Manual, Implementing Procedures and Project Requirements. Details of the four identified deficiencies may be found on attachments to this report.

B. The results of YAEC Seabrook Site Audit Report No. SA573CS188 were discussed with Mr. A. Eck, Director of Quality Assurance. The discussion focused on nonconformance and corrective action trend reporting by the field and associated management support.

Although the auditors found more management involvement and support than was expected, the deficiencies as reported in Audit Report No. SA573CS188 are valid and remain unchanged. Those items applying to Corporate activities, however, will not be duplicated in this Report.

C. Discussions were held with Mr. Eck and Mr. Geske, Training Engineer, with regard to a longstanding action item on the subject of Pullman developing and Interim Procedure Change policy and implementing procedure. Mr. Eck agreed that Pullman would develop such a procedure for use at the Seabrook Station.

III. EXIT INTERVIEW.

An exit interview was held with the parties indicated on page 1 of this report at which time the results of the audit were discussed and commitments made for corrective action.

YAEC SEABROOK AUDIT REPORT
NO. SA598CS203

PLACE: PULLMAN-HIGGINS, SEABROOK STATION, SEABROOK, NEW HAMPSHIRE

DATES: APRIL 6-23, 1982

PURPOSE: QUALITY ASSURANCE AUDIT OF PULLMAN-HIGGINS

AUDITORS: YAEC

*PHILIP A. OIKLE, SENIOR QUALITY ASSURANCE ENGINEER
(ATM - SUPERVISING)
*FREDERICK A. BEAKE, SENIOR QUALITY ASSURANCE ENGINEER
(ATL - TRAINING)
*R. E. GUILLETTE, SENIOR QUALITY ASSURANCE ENGINEER
*BRUCE MIZZAU, FIELD QUALITY ASSURANCE ENGINEER
(ATM - TRAINING)

PERSONNEL CONTACTED: PULLMAN-HIGGINS

RICHARD G. DAVIS, QA MANAGER
*F. M. CALDER, RESIDENT MANAGER
C. A. SCANNELL, CHIEF ENGINEER
*R. G. WISE, QC SUPERVISOR
R. P. DONALD, QA SUPERVISOR
*M. W. NEWTON, QA TECHNICIAN
K. A. SWISHER, QA PROCEDURE ENGINEER
DAVID WATERS, QA TECHNICIAN
E. BOWES, NDE SUPERVISOR
*M. S. MACCRAE, NDE TECHNICIAN
*PAUL GRASEWICZ, LEAD HANGER ENGINEER
*B. VOGE, TRAINING OFFICER
L. LANTRY, TRAINING OFFICER

*ATTENDED EXIT INTERVIEW

I. SUMMARY:

The subject audit was performed to verify personnel compliance to, and system adequacy of, the Quality Assurance Program and implementing procedures, and to evaluate the effectiveness of implementaion by responsible personnel. The audit resulted in 20 deficiencies and 2 observations that were identified.

II. RESULTS:

A. The audit was performed in accordance with Procedure 9.1 of the Seabrook Station Quality Assurance Program. Checklists generated from Pullman-Higgins' Seabrook QA Manual, Implementing Procedures and Project Standard Documents were used as a guide by the auditors. Areas covered during this audit were Procurement Document Control; Instructions, Procedures and Drawings; Document Control; Identification and Control of Materials, Parts, and Components; and Control of Special Processes.

YAEC SEABROOK AUDIT REPORT
NO. SA598CS203

PLACE: PULLMAN-HIGGINS, SEABROOK STATION, SEABROOK, NEW HAMPSHIRE

DATES: APRIL 6-23, 1982

PURPOSE: QUALITY ASSURANCE AUDIT OF PULLMAN-HIGGINS

AUDITORS: YAEC

*PHILIP A. OIKLE, SENIOR QUALITY ASSURANCE ENGINEER
(ATM - SUPERVISING)
*FREDERICK A. BEAKE, SENIOR QUALITY ASSURANCE ENGINEER
(ATL - TRAINING)
*R. E. GUILLETTE, SENIOR QUALITY ASSURANCE ENGINEER
*BRUCE MIZZAU, FIELD QUALITY ASSURANCE ENGINEER
(ATM - TRAINING)

PERSONNEL CONTACTED: PULLMAN-HIGGINS

RICHARD G. DAVIS, QA MANAGER
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I. SUMMARY:

The subject audit was performed to verify personnel compliance to, and system adequacy of, the Quality Assurance Program and implementing procedures, and to evaluate the effectiveness of implementaion by responsible personnel. The audit resulted in 20 deficiencies and 2 observations that were identified.

II. RESULTS:

A. The audit was performed in accordance with Procedure 9.1 of the Seabrook Station Quality Assurance Program. Checklists generated from Pullman-Higgins' Seabrook QA Manual, Implementing Procedures and Project Standard Documents were used as a guide by the auditors. Areas covered during this audit were Procurement Document Control; Instructions, Procedures and Drawings; Document Control; Identification and Control of Materials, Parts, and Components; and Control of Special Processes.

ATTACHMENT
19 of 23
SSCA No. 0571
Report No. SA599CS204
Audit Date: 4/20/82
Auditor(s): R. P. Tamm
F. J. Driscoll

REQUIREMENT:

FECP-403, Paragraph 1.2, requires that the procedure be used in conjunction with the applicable WPS.

DEFICIENCY:

Contrary to the above, objective evidence was not available to support that the applicable WPS was actually used in conjunction with FECP-403 nor is the specific WPS referenced via drawings and Inspection Reports. A specific weld application cannot be traced to the WPS used.

RECOMMENDATION:

Change procedure to direct documentation which will allow traceability of a given weld(s) to the appropriate WPS.

FBM REPLY:

SA 59 FCS 207

The audit resulted in the identificaton of 20 deficiencies and 2 observations. The deficiencies were primarily the result of a lack of implementation of the QA Program or impelementing procedures and were in the areas of Instructions, Procedures and Drawings; Control of Materials, Parts, and Components; and Control of Special Processes. The details of the identified deficiencies and observations may be found in the attachment section of this report.

C. Two primary areas of concern as repetitive items became evident as the audit progressed. These areas were 1) material identification and control, and 2) weld monitoring:

1. Material Identification

Previous YAEC audit and surveillance activities have identified material identification problems in Pullman-Higgins Fabrication Shop. Although P-H has taken immediate corrective action in each instance, the recurrence of this problem is indicative of weak training of both craft and QC personnel and inadequate QC enforcement of QA Program requirements regarding material control and identificaton.

2. Weld Monitoring

Again, previous YAEC audit and surveillance activities, as well as P-H internal audits, have repeatedly identified areas of noncompliance with QA Program and implementing procedural requirements. In each instance, it was revealed that all P-H qualified welders were not being monitored within the prescribed frequency; reported weld monitoring data outside the parameters established in the weld procedure showed no evidence of evaluation by QA/QC/Engineering personnel as required to determine impact on weld quality; and no evidence of review of previous month's weld monitoring records by QC Supervisor and QA Manager.

Although P-H has been made aware of these shortcomings, little or no corrective action is apparent as evidenced by a review of the weld moritoring records that were available during the audit. All personnel associated with the weld monitoring program must be made aware of the significance of adhering to program and procedural requirements and of taking necessary corrective action immediately to assure total and effective corrective action.

D. With regard to the attached identified audit deficiencies and observations, Pullman-Higgins is requested to evaluate the extent of the problem within their Program and to identify the proposed corrective action that will be taken to prevent recurrence.

III. EXIT INTERVIEW:

The exit meeting was held at which time the auditors' concerns were made known. Mr. Guillette requested that, in the interest of more timely closeout of audit deficiencies, Pullman begin immediately to prepare

YAEC FQA WEEKLY SURVEILLANCE REPORT

Week Ending February 27, 1982 Page 1 of 1

Organization Pullman-Higgins Report No. 163

	DATE	SURVEILLANCE LIST NO.	AREA	CONTACT	RESULTS
1.	2/22/82	X-5, R-3 #1647	Receiv. Inspection	R. Wise	satisfactory
2.	2/23/82	N45.2, R-1 #1653	Cont. of Proc. Sheet	B. Sautter	unsatisfactory (1)
3.	2/24/82	IX-6, R-3 #1656	Install. Pipe Supp.	P-H	satisfactory
4.	2/25/82	IX-39, R-0 #1664	Hand. Saf. Rel. Equip	P-H	satisfactory
5.	2/24/82	248-51, R-15 #1663	Storage & Housekeep.	P-H	satisfactory
6.	2/25/82	IX-6, R-0 #1665	Hangers & Supports	P. Grasewicz	unsatisfactory (2)
7.	2/25/82	IX-14, R-1 #1667	Defect. Rem. & Rep.	P-H	satisfactory
8.	2/23/82	248-51, R-15 #1669	Welding Operations	P-H	satisfactory
9.	2/24/82	IX-6, R-3 #1674	Whip Restraint. Inst	P-H	satisfactory
10.	2/26/82	N45.2, R-1 #1678	Instruc. Proc., Dwg.	P. Grasewicz	unsatisfactory (3)
11.	2/26/82	248-51, R-15 #1679	Weld Mat. Control	P-H	satisfactory
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REMARKS: NOTE: (1) Process sheet issued to construction with incorrect references. Process sheet reissued with correct references. Item closed.

NOTE: (2) Intermittent fillet welds attaching spring can base plate to support are one inch on two inch centers. P-H RFI #3081 to UE&C has been issued and YAEC QA will follow till deficiency is closed successfully.

NOTE: (3) Unauthorized work in progress, no process sheet and prior to NCR disposition. YAEC DR #145 issued to track till successful completion.

Form 3.3 Dist. List 3.1.6
Revised: 5/27/81

J. W. Singleton, FQA Manager

YAEC FQA WEEKLY SURVEILLANCE REPORT

Week Ending March 6, 1982 Page 1 of 1

Organization Pullman-Higgins Report No. 164

	DATE	SURVEILLANCE LIST NO.	AREA	CONTACT	RESULTS
1.	3/2/82	248-51 R-15#1681	Welding Operation	P-H	Satisfactory
2.	3/3/82	248-51 R-15#1682	Storage & Housekeep.	P-H	Satisfactory
3.	3/4/82	XIII-5 R-0 #1683	Storage	D. Waters	Unsatisfactory(1)
4.	3/5/82	VIII-3 R-2 #1684	Welding Mat. Control	P-H	Satisfactory
5.	3/5/82	IX-9, R-0 #1686	In Process Insp.	P-H	Satisfactory
6.	3/5/82	XII-2 R-0 #1687	Handling Nonconf.	R. Wise	Satisfactory
7.	3/5/82	ANSI N45.2 #1689	Document Review	E. Waldman	Unsatisfactory(2)
8.	3/3/82	18-17 R-1 #1699	Exp. Anchor Install.	P. Grasewicz	Unsatisfactory(3)
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REMARKS: Note: (1) Reactor coolant loop piping in area not identified as level "D" storage area. P-H QA corrected the deficiency as soon as notified.

Note: (2) Nonconformance review board disposition for NCR 1905 referenced NCR 1906 and vice-versa for NCR 1906. P-H and UE&C Engineering notified and appropriate corrective action has been taken.

Note: (3) ASME safety related hangers were installed over abandoned Hilti holes. YAEC DR #146 issued to follow corrective action till successful completion.

Form 3.3 Dist. List 3.1.6
Revised: 5/27/81

J. W. Singleton, FQA Manager

YAEC FQA WEEKLY SURVEILLANCE REPORT

Week Ending March 13, 1982 Page 1 of 1

Organization Pullman-Higgins Report No. 165

	DATE	SURVEILLANCE LIST NO.	AREA	CONTACT	RESULTS
1.	3/8/82	VIII-1 R-1 #1698	Pip. & Erec. Insta.	P-H	Unsatisfactory(1)
2.	3/8/82	248-51 R-15#1701	Piping Install.	J. Martin	Unsatisfactory(2)
3.	3/10/82	XI-1 R-0 #1703	Leak Testing	J. Godfrey	Satisfactory
4.	3/9/82	XIII-4 R-0 #1706	Field Cleaning	P-H QA	Unsatisfactory(3)
5.	3/10/82	ANSI N45.2 #1707	Storage Inspection	P-H	Unsatisfactory(4)
6.	3/11/82	IX-1 R-0 #1708	Leak Testing	J. Godfrey	Satisfactory
7.	3/11/82	VIII-1 R-1 #1709	Ident. of Material	P-H	Satisfactory
8.	3/11/82	X-9 R-0 #1710	In Process Inspection	P-H	Satisfactory
9.	3/12/82	248-51 R-15#1714	Welding	R. Donald	Unsatisfactory(5)
10.	3/12/82	248-51 R-15#1715	Completed Weld Exam	Davis/Frolo	Unsatisfactory(6)
11.	3/12/82	IX-6 R-3 #1719	Pipe Support Install.	P. Grasewicz	Satisfactory
12.	3/12/82	VIII-3 R-2#1776	Surv. Weld Rod Cont.	P-H QA	Satisfactory
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REMARKS: Note (1): Code stamping of NPT symbol was stamped numerous times in different positions on the code data plate. P-H NCR 2037 issued for tracking till satisfactory corrective action is achieved.

Note (2): Excessive grinding on 2" pipe to elbow weld and no welder identification stamp P-H NCR 2042 issued for tracking till satisfactory corrective action is achieved.

Note (3): Care was not taken by craft to block contaminants from entering the valve seat area during cutting operations, pipe to valve. Grindings were vacuumed out immediately, item closed.

Note (4): Three minor deficiencies noted on storage inspection reports (Ex. SIR #148 had wrong year list in dateline) and two minor deficiencies noted on walk through inspection reports. All deficiencies have been corrected; item closed.

Note (5): The portable weld rod oven had been unplugged for a considerable time, consequently the electrodes were cold. P-H QA notified and corrective action has been taken by returning the electrodes to the distribution center. Item closed.

Note (6): Surface condition of Field Weld, F0503, not in conformance with code and P-H NDE procedures to perform magnetic particle examination. P-H NCR 2008 issued for tracking till satisfactory corrective action is achieved.

Form 3.3 Dist. List 3.1.6
Revised: 5/27/81

J. W. Singleton, FQA Manager

YAEC FQA WEEKLY SURVEILLANCE REPORT

Week Ending March 20, 1982 Page 1 of 1

Organization Pullman-Higgins Report No. 166

	DATE	SURVEILLANCE LIST NO.	AREA	CONTACT	RESULTS
1.	3/15/82	FI-156, R-0 #1705	Installation Pipe Whip Restraints	P. Grasewicz	unsatisfactory (1)
2.	3/18/82	FGCP-17,248-51,172	Weld Material Cont.	D. Johnson	unsatisfactory (2)
3.	3/18/82	WS-1, R-0 #1732	Welding	P-H	satisfactory
4.	3/16/82	XV-2, R-0 #1733	Nonconformance Rev.	P-H	satisfactory
5.	3/16/82	248-51, R-15 #1734	Pipe Installation	J. Godfrey	satisfactory
6.	3/16/82	IX-14, R-1 #1735	Repair Welding	P-H	satisfactory
7.	3/19/82	248-51, R-15 #1736	Hand. Mech. Equip.	P-H	satisfactory
8.	3/19/82	248-51, R-15 #1740	Receipt Inspection	P. Grasewicz	unsatisfactory (3)
9.	3/18/82	248-51, R-15 #1743	Hang. & Supp. Inst.	P. Grasewicz	unsatisfactory (4)
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REMARKS: NOTE: (1) Intermittent fillet welds do not conform to AWS A2.4-79 in that end welds are not 2" in length per the drawing. P-H NCR 2006 issued to document the deficiency and to facilitate tracking till successful completion.

NOTE: (2) Two FBM weld rod requisitions were beyond the maximum 3 day reissue period. Weld material had been returned to the distribution center. P-H notified and will monitor more closely.

NOTE: (3) Shop weld J19 is missing. P-H NCR 2083 issued to insure adequate corrective action is accomplished.

NOTE: (4) P-H installed pipe support #157-SH-7 and damaged FBM conduit. P-H has issued CIIR # P-H-22 to document the deficiency and for tracking to insure adequate corrective action. Item closed.

Form 3.3 Dist. List 3.1.6
Revised: 5/27/81

J. W. Singleton, FQA Manager

YAEC FQA WEEKLY SURVEILLANCE REPORT

Week Ending March 27, 1982 Page 1 of 1

Organization Pullman-Higgins Report No. 167

	DATE	SURVEILLANCE LIST NO.	AREA	CONTACT	RESULTS
1.	3/16/82	248-51, R-15 #1742	Penetrations	P-H	satisfactory
2.	3/18/82	248-51, R-15 #1744	Penetrations	P-H	satisfactory
3.	3/19/82	18-17, R-1 #1745	Conc. Exp. Anchors	P. Grasewicz	unsatisfactory (1)
4.	3/23/82	N45.2, R-1 #1747	Weld Mon. & Pres. Mat	P-H	satisfactory
5.	3/22/82	VIII-1, R-1 #1748	Ident. of Material	P-H	satisfactory
6.	3/23/82	248-51, R-15 #1749	Fit-up & Weld. Root	P-H	satisfactory
7.	3/20/82	248-51, R-15 #1750	Weld. Proc. Piping	P-H	satisfactory
8.	3/20/82	248-51, R-15 #1751	Defect Removal	J. Godfrey	unsatisfactory (2)
9.	3/22/82	248-51, R-15 #1753	Storage	J. Godfrey	unsatisfactory (3)
10.	3/26/82	VIII-3, R-2 #1755	Weld Rod Mat. & Stor	P-H	satisfactory
11.	3/25/82	FI-132&136 #1759	Automatic Welding	P-H	satisfactory
12.	3/26/82	248-51, R-15 #1760	Receipt Inspection	P-H	satisfactory
13.	3/26/82	248-51, R-15 #1761	Exam. (Welding)	P-H	satisfactory
14.	3/27/82	248-51, R-15 #1766	Welding	P-H	satisfactory
15.	3/27/82	248-51, R-15 #1767	Base Metal Buildup	P-H	satisfactory
16.	3/27/82	248-51, R-15 #1768	Welding	P-H	satisfactory
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REMARKS: NOTE: (1) Upper and lower left side hilti holes exceed angular deviation specified in UE&C Spec. 18-17, Rev. 1 and bolts exhibit thread damage. P-H initiated NCR 2081 to document deficiencies and to insure adequate corrective action/tracking till completion. Item closed.

NOTE: (2) Field crew working to outdated revision to ISO and violated a visual inspection hold point. P-H QA notified and corrective action taken, item closed.

NOTE: (3) In the storage area, two of three openings on a valve were unprotected and judging by the amount of dirt in the valve; it had been used for a stepstool. P-H notified and adequate corrective action taken. Item closed.

Form 3.3 Dist. List 3.1.6
Revised: 5/27/81

J. W. Singleton, FQA Manager

YAEC FQA WEEKLY SURVEILLANCE REPORT

Week Ending April 3, 1982 Page 1 of 1

Organization Pullman-Higgins Report No. 168

	DATE	SURVEILLANCE LIST NO.	AREA	CONTACT	RESULTS
1.	3/29/82	VIII-1, R-1 #1770	Material Control	P-H	satisfactory
2.	3/29/82	248-51, R-15 #1776	Welding Examination	P-H	satisfactory
3.	3/31/82	Sec. V, R-0 #1777	NDE	C. Walkins	satisfactory
4.	4/01/82	VIII-3, R-2 #1788	Weld Mat. Control	P-H	unsatisfactory (1
5.	4/02/82	248-51, R-15 #1791	Weld. Proc. Piping	P-H	satisfactory
6.	4/02/82	XIII-4, R-0 #1792	Preventative Maint.	J. Hamilton	unsatisfactory (2
7.	4/02/82	XI-1, R-0 #1793	Hydro Static Test.	P-H	satisfactory
8.	3/22-4/2	ASME V, R-0 #1796	Radiography Review	P-H	satisfactory
9.	4/03/82	FI132,126 #1797	Automatic Welding	P-H	satisfactory
10.	4/03/82	248-51, R-15 #1798	Welding	P-H	satisfactory
11.	4/02/82	IX-43, R-1 #1799	Post Weld H.T.	P-H	satisfactory
12.	4/01/82	XIII-5, R-0 #1800	Housekeeping	P-H	satisfactory
13.	4/05/82	X-10, R-0 #1801	Weld Monitoring	P-H	satisfactory
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REMARKS: NOTE: (1) Portable rod oven #1294 was found to be unenergized and the rod cold. The responsible foreman was contacted and he verified that no rod from that oven had been used to weld and instructed the welder to return the cold rod to the rod room. Item closed.

NOTE: (2) Restoration of an end prep in progress without adequate protection for the valve internals. P-H craft foreman notified, valve cleaned thoroughly and internals sealed. Item closed.

Form 3.3 Dist. List 3.1.6
Revised: 5/27/81

J. W. Singleton, FQA Manager

YAEC FQA WEEKLY SURVEILLANCE REPORT

Week Ending April 10, 1982 Page 1 of 1

Organization Pullman-Higgins Report No. 169

	DATE	SURVEILLANCE LIST NO.	AREA	CONTACT	RESULTS
1.	4/5/82	248051 R-15#1804	In Process Welding	P-H	Satisfactory
2.	4/6/82	FI-156 R-0 #1806	Welding	P-H	Satisfactory
3.	4/8/82	248-51 R-15#1814	Welding	P-H	Satisfactory
4.	4/8/82	248-51 R-15#1815	Welding	P-H	Satisfactory
5.	4/9/82	248-51 R-15#1819	Welding	P-H	Satisfactory
6.	4/9/82	IX-6 R-4 #1822	Welding - Pip. Sup.	P-H	Satisfactory
7.	4/8/82	VIII-3 R-3#1823	Weld Mat. Control	P-H	Satisfactory
8.	4/8/82	248-51 R-15#1824	Weld. Process Piping	P-H	Satisfactory
9.	4/9/82	248-51 R-15#1825	Weld. Process Piping	P-H	Satisfactory
10.	4/5/82	248-51&ANSI#1833	Control of Proc. Sheets	D. Johnson	Unsatisfactory(1)
11.	4/9/82	248-51 R-15#1834	Control of Proc. Sheets	D. Johnson	Unsatisfactory(2)
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REMARKS: Note (1): Documentation for installation of hanger ASC-2427-SH-1 was mixed up with documentation for another support. Process sheet for 783-RG-03 did not identify the heat code for the welding electrodes. P-H has returned the documentation to the rod room and inserted it in the correct file and the heat code has been recorded on the process sheets for the rod requisitions. Item closed.

(2) In process sheet for field weld F0103 did not identify the heat code for the consumable insert. Heat code has since been added to the process sheet. Item closed.

Form 3.3 Dist. List 3.1.6
Revised: 5/27/81

J. W. Singleton, FQA Manager

YAEC FQA WEEKLY SURVEILLANCE REPORT

Week Ending April 17, 1982 Page 1 of 1

Organization Pullman-Higgins Report No. 170

	DATE	SURVEILLANCE LIST NO.	AREA	CONTACT	RESULTS
1.	4/6&14/82	VIII-1, R-1 #1805	Mat. I.D.-& Control	F. Toomey	unsatisfactory (1)
2.	4/13/82	248-51, R-15 #1838	Welding Repairs	P-H	satisfactory
3.	4/13/82	248-51, R-15 #1839	Weld. Proc. Piping	P-H	satisfactory
4.	4/13/82	248-51, R-15 #1840	Weld Mat. Control	P-H	satisfactory
5.	4/15/82	248-51, R-15 #1846	Welding	P-H	satisfactory
6.	4/14&15	IX-6, R-4 #1847	Welding Hangers	P-H	satisfactory
7.	4/15/82	VIII-1, R-1 #1850	Identif. of Material	P-H	satisfactory
8.	4/16/82	X-9, R-0 #1853	In Process	P-H	satisfactory
9.	4/15/82	248-51, R-15 #1855	Pipe Sup. Install.	P-H	satisfactory
10.	4/15/82	N45.2, R-1 #1861	Documentation	D.B. Hunt	satisfactory
11.	4/16/82	248-51, R-15 #1862	Weld. Proc. Piping	D. Johnson	unsatisfactory (2)
12.	4/15/82	248-51, R-15 #1866	Weld. Proc. Piping	P-H	satisfactory
13.	4/17/82	248-51, R-15 #1870	Weld. Proc. Piping	P-H	satisfactory
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REMARKS: NOTE: (1) Plate stock had been cut and retained without transferring identification information thereon. Corrective action report #66 was approved and signed on April 9, 1982.

NOTE: (2) The heat code for the consumable insert and the piece to piece identity were not recorded on the field process sheet. P-H QA notified and adequate corrective action has been taken.

Form 3.3 Dist. List 3.1.6
Revised: 5/27/81

J. W. Singleton, FQA Manager

YAEC FQA WEEKLY SURVEILLANCE REPORT

Week Ending April 24, 1982 Page 1 of 1

Organization Pullman-Higgins Report No. 171

	DATE	SURVEILLANCE LIST NO.	AREA	CONTACT	RESULTS
1.	4/19/82	IX-43, R-1 #1865	Preheat & Interpass Temp.	Ellis/Davis	Unsatisfactory(1)
2.	4/20/82	PAXII-5 R-0 #1867	Weld Mont. Housekeep	P-H	Satisfactory
3.	4/20/82	X-9 R-0 #1872	Inprocess Field Insp	P-H	Satisfactory
4.	4/20/82	X-10 R-0 #1873	Weld Monitoring	P-H	Satisfactory
5.	4/22/82	IX-6 R-4 #1877	Inst. of Pipe Supp.	P-H	Satisfactory
6.	4/22/82	248-51 R-15 #1881	Welding	P-H	Satisfactory
7.	4/19/82	VIII-1 R-1 #1882	Ident. of Material	R. Donald	Satisfactory
8.	4/22/82	IX-14, R-1 #1883	Defect Removal/Repair	P-H	Satisfactory
9.	4/22/82	GT-IT-01 R-0#1886	Master Integrity Test	J. Fritsch	Satisfactory
10.	4/20/82	GT-IT-01 R-0#1887	Master Integrity Test	J. Fritsch	Satisfactory
11.	4/19/82	248-51 R-15 #1889	Weld. Elec. Penet.	P-H	Satisfactory
12.	4/23/82	248-51 R-15 #1890	Weld. Elec. Penet.	J. Godfrey	Unsatisfactory(2)
13.	4/20/82	248-51 R-15 #1891	Weld. Process Pip.	D. Johnson	Unsatisfactory(3)
14.	4/23/82	248-51 R-15 #1893	Weld Pipe Support	P-H	Satisfactory
15.	4/21/82	IX-6 R-4 #1899	Support Welding	D. Birch	Satisfactory
16.	4/23/82	IX-6, R-4 #1900	Support Welding	P-H	Satisfactory
17.	4/12-23/82	Sec. V #1903	Radiograph Review	P-H	Satisfactory
18.	4/22/82	248-51 R-15 #1904	Loc. & Installation	D. Daubert	Unsatisfactory(4)
19.	4/23/82	ANSI N45.2 #1905	Document Control	L. DeYoung	Satisfactory
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REMARKS: Note (1): Strip heaters are being used for preheat temperature and QC is not verifying the temperature on the process sheet as required by their procedure IX-43. YAEC DR #167 issued to document deficiencies and for tracking till adequate action is achieved.

Note (2): Excessive weave beyond requirements of the weld procedure and the heat code for weld rod had not been transferred to the process sheet. P-H QA notified, work temporarily suspended pending evaluation and NCR issuance/disposition.

Note (3): The heat code from one of the weld requisitions has not been transferred to the process sheet. P-H QA notified and appropriate corrective action has been taken. Item closed.

Note (4): Small bore piping being supported from safety related calbe tray, supports, contrary to spec. 48-2. P-H area supervisor notified and immediate corrective action was taken, temporary supports removed and craft cautioned about like occurrences in the future. Item closed.

Form 3.3 Dist. List 3.1.6
Revised: 5/27/81

J. W. Singleton, FQA Manager

YAEC FQA WEEKLY SURVEILLANCE REPORT

Week Ending May 1, 1982 Page 1 of 1

Organization Pullman-Higgins Report No. 172

	DATE	SURVEILLANCE LIST NO.	AREA	CONTACT	RESULTS
1.	4/27/82	248-51, R-1 #1906	Examination (Weld.)	P-H	satisfactory
2.	4/27/82	248-51, R-1 #1907	Cont. of Process Sht	D. Johnson	unsatisfactory (1)
3.	4/27/82	XIII-5, R-0 #1909	Storage & Housekeep.	P-H	satisfactory
4.	4/29/82	248-51, R-1 #1916	Welding Proc. Pip.	P-H	satisfactory
5.	4/28/82	248-51, R-15 #1917	Welding Proc. Pip.	P-H	satisfactory
6.	4/28/82	248-51, R-15 #1918	Radiography Review	P-H	satisfactory
7.	4/29/82	FI-156, R-0 #1921	Inst. Pipe Whip Res.	P. Grasewicz-P-H D. Turnquist-UE&C	satisfactory
8.	4/29/82	248-51, R-15 #1922	Welding	P-H	satisfactory
9.	4/29/82	248-51, R-15 #1925	Storage	P-H	unsatisfactory (2)
10.	4/28/82	IX-6, R-4 #1928	Welding Supports	D. Birch	unsatisfactory (3)
11.	4/27/82	248-51, R-15 #1929	Weld. Elec. Penet.	P-H	satisfactory
12.	4/28/82	248-51, R-15 #1930	Inst. Pipe Support	C. Lupoli	unsatisfactory (4)
13.	4/29/82	248-51, R-15 #1931	Document Review	S. Ellis	unsatisfactory (5)
14.	4/29/82	248-51, R-15 #1933	Weld. Proc. Piping	P-H	satisfactory
15.	4/30/82	248-51, R-15 #1943	Cont. of Proc. Sht.	D. Johnson	unsatisfactory (1)
16.	4/30/82	248-51, R-15 #1944	Cont. of Proc. Sht.	D. Johnson	unsatisfactory (1)
17.	5/01/82	IX-14, R-1 #1945	Base Metal Repair	R. Fultz	satisfactory
18.	4/30/82	III-4, R-0 #1947	Dwg. & ECA's Control	P-H	satisfactory
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REMARKS: NOTE: (1) Failure to record the heat/lot/control numbers of the material issued onto the process sheet, violating P-H Procedure VI-5, para. 3.7.7. Yankee D.R. 169 issued to document and track the deficiency till adequate corrective action is achieved.

NOTE: (2) Storage areas had piping laying on the ground, end caps open. Contacted P-H QA and corrective action was taken immediately. Item closed.

NOTE: (3) Support angles (3) weld vertical (2 places each) to main horizontal "I" beam, have undercut on bottom welds with attempt to blend (grinding) of welds into base material, depressions adjacent to welds exceed 1/32". P-H has issued support rework order #1394 to document the deficiency and provide a means of tracking till adequate corrective action is achieved.

NOTE: (4) Welder failed to identify work performed on previous day with his identification symbol. P-H QA notified and adequate corrective action has been taken. Item closed.

NOTE: (5) Documents issued for removal of item 12 of MS-1812-SG-08, specifically field welds 6, 16, 17 and 18 were illegible. P-H QA notified and adequate corrective action has been taken.

Form 3.3 Dist. List 3.1.6
Revised: 5/27/81

J. W. Singleton, FQA Manager

YAEC FQA WEEKLY SURVEILLANCE REPORT

Week Ending May 8, 1982 Page 1 of 1

Organization Pullman-Higgins Report No. 173

	DATE	SURVEILLANCE LIST NO.	AREA	CONTACT	RESULTS
1.	5/4/82	248-51, R-15 #1934	Welding-Piping	P-H	Satisfactory
2.	5/3/82	IX-6 R-3 #1952	Hanger Support	P. Grasewicz	Unsatisfactory(1)
3.	5/3/82	248-51 R-15 #1953	Document Review	P-H	Satisfactory
4.	5/3/82	XIII-4 R-0 #1954	Installation Cleaning	P-H	Satisfactory
5.	5/4/82	FI-156 R-0 #1956	Field Inst. Pipe	P-H	Satisfactory
6.	5/5/82	248-51 R-15 #1957	Welding	P-H	Satisfactory
7.	5/4/82	FGCP-17,VIII-3#1964	Control of Weld Mat.	D. Johnson	Unsatisfactory(2)
8.	5/5/82	5/5/82 R-15 #1968	Weld. Elec. Penet.	P-H	Satisfactory
9.	5/6/82	NDE-1 R-0 #1970	Penet. Examination	P-H	Satisfactory
10.	5/6/82	248-51 R-15 #1975	Weld Process Pip.	D. Hunt	Unsatisfactory(3)
11.	5/7/82	ANSI N45.2 R-1#1976	Mat. Control	P-H	Satisfactory
12.	5/7/82	248-51 R-15 #1978	Inst. of Piping	P-H	Satisfactory
13.	5/8/82	248-51 R-15 #1989	Welding	R. Wise	Unsatisfactory(4)
14.	5/8/82	VI-5 R-0 #1990	Control of Process Sht.	D. Johnson	Unsatisfactory(5)
15.	5/8/82	248-51 R-15 #1992	Storage	R. Donald	Unsatisfactory(6)
16.					
17.					
18.					
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24.					
25.					

REMARKS: Note (1): Deficiencies exist between P-H ISO requiring "I" bean to be nine inches long versus eight and one half inches as installed. P-H NCR #2209 initiated for documentation and tracking of deficiencies till adequate corrective action is achieved.

Note (2): One FBM rod requisition was beyond the maximum three day reissue period. P-H was notified and appropriate corrective action taken.

Note (3): Field Weld Process Sheets had wrong revisions, classes or spec. listed. P-H DCC notified and deficiencies were corrected immediately.

Note (4): Review of process sheet on CBS-1205-03 FW0307 operation #6, visual inspection of root had been accomplished, and signed off. Grinding operations by craft were taking place on I.D. of weld beyond check valve seat, assy was not protected, nor was grinding authorized after visual inspection of root. P-H issued NCR #2236 documenting the deficiencies & providing a means of tracking till adequate corrective action is achieve

Note (5): Process sheet and weld rod requisition had not been up-dated to reflect lates ECA & ISO revision. Required changes to process sheet & weld rod req. were made.

Note (6): Storage laydown area, Unit 1, Containment dome pad; numerous spool pieces are partially on dunnage, portion of spool in contact with pad, end caps open, etc. Immedia corrective action taken to place dunnage and replace end caps. Item closed.

Form 3.3 Dist. List 3.1.6
Revised: 5/27/81

J. W. Singleton, FQA Manager

YAEC FQA WEEKLY SURVEILLANCE REPORT

Week Ending May 15, 1982 Page 1 of 1

Organization Pullman-Higgins Report No. 174

	DATE	SURVEILLANCE LIST NO.	AREA	CONTACT	RESULTS
1.	5/10/82	248-51, R-15 #2011	Welding Electrical Penetration	P-H	satisfactory
2.	5/10/82	248-51, R-15 #2012	Inst. Pipe Support	C. Lupoli	unsatisfactory (1)
3.	5/10-11	248-51, R-15 #2015	Welding	P-H	satisfactory
4.	5/11/82	N45.2, R-1 #2016	Weld Repair	R. Wise	satisfactory
5.	5/10/82	248-51, R-15 #2017	Inst. & Fab. of Pip.	R. Wise	satisfactory
6.	5/12/82	248-51, R-15 #2020	Weld. Elec. Penetr.	D. Johnson	unsatisfactory (2)
7.	5/13/82	248-51, R-15 #2023	Tack Welding	P-H	satisfactory
8.	5/13/82	VIII-1, R-1 #2025	Material Control	D. Waters	unsatisfactory (3)
9.	5/10/82	248-51, R-15 #2027	Storage	P-H	satisfactory
10.	5/11/82	248-51, R-15 #2028	Weld Mat. Control	P-H	satisfactory
11.	5/13/82	248-51, R-15 #2029	Weld. Proc. Piping	P-H	satisfactory
12.	5/14/82	IX-14, R-1 #2031	Repair Welding	P-H	satisfactory
13.	5/14/82	248-51, R-15 #2035	Erection of Piping	P-H	satisfactory
14.	5/13/82	FI-156, R-0 #2036	Doc. of Spec. Proc.	P. Grasewicz	unsatisfactory (4)
15.	5/15/82	248-51, R-15 #2042	Repair Welding	P-H	satisfactory
16.	5/15/82	248-51, R-15 #2043	In Process Welding	P-H	satisfactory
17.	5/14/82	X-9, R-0 #2045	In Process Welding	R. Davis	satisfactory
18.					
19.					
20.					
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REMARKS: NOTE: (1) Weld out of field welds 1 & 2 without preheat violating the requirement of the field process sheet and AWS D1.1, para. 4.2. P-H NCR 2231 issued to document the deficiency and to provide a means of tracking till adequate corrective action is achieved.

NOTE: (2) Failure to record the heat/lot/control number of the weld material issued for field weld F0118 onto the process sheet violating P-H procedure VI-5, para. 3.7.7. P-H QA has been notified and corrective action has been taken. Item closed.

NOTE: (3) Various odd lengths of pipe without identification. P-H QA notified and adequate corrective action taken. Item closed.

NOTE: (4) Work was being performed by P-H craftsmen without the use of field process sheets. Immediate corrective action taken by P-H area superintendent.

Form 3.3 Dist. List 3.1.6
Revised: 5/27/81

J. W. Singleton, FQA Manager

YAEC FQA WEEKLY SURVEILLANCE REPORT

Week Ending May 22, 1982 Page 1 of 2

Organization Pullman-Higgins Report No. 175

	DATE	SURVEILLANCE LIST NO.	AREA	CONTACT	RESULTS
1.	5/17/82	248-51 #2047	Control of Process	R. Wise	Unsatisfactory(1)
2.	5/17/82	248-51 #2048	Welding	P-H	Unsatisfactory(2)
3.	5/17/82	248-51 #2049	Storage	J. Scanlain	Unsatisfactory(3)
4.	5/18/82	GWS-3 #2050	Weld Repair	P-H	Satisfactory
5.	5/18/82	248-51 #2051	Auto. Welding	S. Ellis	Unsatisfactory(4)
6.	5/17/82	248-51 #2052	Weld. Process Piping	R. Lemieux	Satisfactory
7.	5/18/82	NDE #2054	Penetrant	P-H	Satisfactory
8.	5/17/82	248-51 #2056	Welding	P-H	Satisfactory
9.	5/18/82	GT-IT-01 #2055	Leak Test	J. Fritch	Satisfactory
10.	5/17/82	248-51 #2057	Welder Identification	J. Scanlain	Unsatisfactory(5)
11.	5/18/82	248-51 #2058	Welding Pip. Support	P-H	Satisfactory
12.	5/18/82	ANSI N45.2 #2059	Control of Weld Mat.	S. Huntress	Unsatisfactory(6)
13.	5/17/82	248-51 #2061	End Preparations	J. Taylor	Satisfactory
14.	5/19/82	ANSI N45.2 #2063	Material Control	P-H	Satisfactory
15.	5/19/82	248-51 #2065	Repair Weld. Process	B. McCann	Unsatisfactory(7)
16.	5/19/82	Sec. V #2067	Radiography Review	P-H	Satisfactory
17.	5/20/82	ANSI N45.2 #2069	Welding Pipe Support	H. Davis	Unsatisfactory(8)
18.	5/20/82	248-51 #2073	Hanger Welding	P-H	Satisfactory
19.	5/19/82	ANSI N45.2 #2075	Storage	P-H	Satisfactory
20.	5/18/82	248-51 #2081	Pipe Support	J. Scanlain	Unsatisfactory(9)
21.	5/21/82	248-51 #2082	Automatic Welding	B. McCann	Unsatisfactory(10)
22.	5/21/82	X-9, #2084	Weld Repair	R. Davis	Satisfactory
23.	5/21/82	VIII-3 #2085	Weld Mat. Control	R. Wise	Unsatisfactory(11)
24.	5/22/82	FGCP-17 #2092	Document Control	P-H	Unsatisfactory(12)
25.	5/22/82	248-51 #2093	Welding Pipe Supp.	S. Ellis	Unsatisfactory(13)

REMARKS: Note (1): Failure to record piece to piece heat codes onto process sheet after visual inspection hold point had been signed off. QA notified & corrective action taken. Item closed.

Note (2): No welder identification stenciled on the pipe during surveillance of automatic welding of field weld F0102, RC 49-01-R3. Item closed by corrective action take

Note (3): Spool piece in P-H storage had several gouges in the side wall. P-H QA has initiated base metal surveillance report #865. FW, F0102

Note (4): No welder I.D. for the tack root and weld out of spools SL-1 to SL-2 P-H QA.

Note (5): Surveillance of PW-59-1, part #3200 and 3220, found tack welded and no welder identification symbol from previous shift. P-H QA immediately corrected. Item closed.

Note (6): Failure to record the correct amount of weld material returned to the distribution center. P-H has been notified, corrective action has been taken.

Note (7): Process sheet did not indicate welder identification. P-H QA notified and immediately corrected the process sheet.

Note (8): Unsthorized basemetal build up on pipe support. YAEC DR #176 issued to document and track deficiencies till adequate corrective action is achieved.

Note (9): Weld requisition form #26001 did not have WPS revision number. P-H QA notified and J. Scanlain took immediate corrective action.

Note (10): Only one welder I.D. was noted on the process sheet when there had been five welders on the joint. P-H QA notified and B. McCann took immediate corrective actio

Note (11): Stub bucket containing a quantity of E7018 3/32(CC075) 1/8(DD065) was left out by day shift & found by YAEC QA. Problem discussed with P-H QA & was corrected. Responsible individual retrained on P-H Proc. VIII-3.

Form 3.3 Dist. List 3.1.6
Revised: 5/27/81

J. W. Singleton, FQA Manager

YAEC FQA WEEKLY SURVEILLANCE REPORT

Week Ending May 22, 1982.

Organization Pullman-Higgins Report No. 175

	DATE	SURVEILLANCE LIST NO.	AREA	CONTACT	RESULTS
26.	5/22/82	248-51 #2094	Welding Process Pip.	P-H	Satisfactory
27.	5/22/82	248-51 #2095	Disassembly/Assembly	S. Valliere	Unsatisfactory(14)
28.	5/23/82	ANSI N45.2 #2096	Document Control	S. Ellis	Unsatisfactory(15)
29.	5/23/82	ANSI N45.2 #2097	Document Control	S. Ellis	Unsatisfactory(16)
30.	5/23/82	ANSI N45.2 #2098	Dwg. ISO & Doc. Con.	J. Kuntz	Unsatisfactory(17)
31.	5/18/82	ASME Sec. V #2106	NDE/RT	R. Davis	Satisfactory
32.	5/21/82	248-51 #2083	Weld Hang. Supports	P-H	Satisfactory

REMARKS: Note (12): Weld rod requisitions #16407 issued for field welds 1 through 8 did not have correct original issue date resulting in conflicting records between rod requisition & distribution center log. P-H QA took corrective action.
Note (13): No welders symbol on field welds, 1, 2 & 3. Final inspection & sign offs had been completed. P-H QA notified & adequate corrective taken.
Note (14): Violation of two (2) hold points for operation 1 & 3 respectively for the disassembly of valve CS-V-432. P-H QA notified & proper corrective action taken.
Note (15): Field process sheet for field weld F0101 initiated to rework spool in accordance with NCR 2242 did not reflect the repair cycle for the weld. P-H QA notified and proper corrective action taken.
Note (16): Field process sheet for field weld F0302 R1, initiated to rework spool in accordance with NCR 2145, did not reflect the radiograph requirements of the NCR's disposition. P-H QA has taken proper corrective action.
Note (17): P-H ISO did not have all the dimensions required for fabrication. P-H Engineering has been notified and proper corrective action has been taken.

Form 3.3 Dist. List 3.1.6
Revised: 5/27/81

J. W. Singleton, FQA Manager

JOB NO. (1–7)	PURCHASE ORDER COMM. (8–10)	PURCHASE ORDER SEQ. (SUBT NO.) (11–14)	FOREIGN PRINT NO. (15–19)	ISSUE NO (20–21)	ACTION / DISC. (22–23)	STATUS (24–25)	VENDOR DRAWING OR DOCUMENT NO. (26–42)	REV. NO. (43–44)	SIZE (45)	ORIG / DISC (46–47)	ACTION (79)	CODE (80)
9763011	248	005	14342	805	[illegible]	R	X-10	04	Z	19		1

DESCRIPTION LINE 1 (24–42)	LINE 2 (43–63)	VENDOR'S NAME (64–72)	ACTION (79)	CODE (80)
WELD MONITORING	PROCEDU[illegible]	P-H		2

LETTER TO UE&C (24–29)	UE&C LOG-IN DATE (30–35)	CLIENT'S REVIEW TO CLIENT (36–41)	CLIENT'S REVIEW FROM CLIENT (42–47)	UE&C REVIEW TO VENDOR (48–53)	STATUS (54–55)	FINAL DISTRIBUTION DATE (56–61)	ACTION (79)	CODE (80)
35-218	D929	[illegible]394	STF-939	[illegible]3417	Q			3

DISTRIBUT.			CHECK	*
FILE		Q/A		
SQUAD #		ELEC		
CLIENT		MECH S		
VFR		MECH		
FIELD		STRUCT		
P/E	T.C.	INST		
RCM	[illegible]	NUCLEAR		

UNITED ENGINEERS & CONSTRUCTORS INC.

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☒ PROCEED AS PER P.O. OR CONTRACT

☐ SUBMIT REVISED DRAWINGS FOR REVIEW

☐ SEND CORRECTED DRAWINGS FOR RECORD

BY: [illegible]O'Connor / P.J. Phelps DATE 9/3/80

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