



# REACTOR COOLANT LOOP PIPING INSTALLATION AND INSPECTION

Page 1

## 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-EC1	RC-2-01
54062	LPI-EC2	RC-2-01
54063	LPI-CL	RC-3-01
54064	LP2-HL	RC-4-01
54065	LP2-EC1	RC-5-01
54066	LP2-EC2	RC-5-01
54067	LP2-CL	RC-6-01
54068	LP3-HL	RC-7-01
54069	LP3-EC1	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 6/26/81

BY 6-26-81

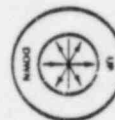
8304080121 830304  
PDR FOIA  
KINDER82-524 PDR

FOR INFORMATION ONLY

REF. DWGS. SEE ABOVE, SHT. 243				OTHER CA'S		JOB NO. 7035	
UE & C PLAN				19/222A		SYSTEM FIELD INSTRUCTION	
UE & C ISO				08/1241A		ISO FI-132	
DRAWING ISO				P.P.P. "A" SHEET		SHEET 1 OF 14	
DRAWN DW				CHK'D	APPR'D	SEABROOK STATION	
DW				6/26/81	6/26/81	PUBLIC SERVICE of NEW HAMPSHIRE	
REV.	DATE	BY	EQA	DESCRIPTION		Pulman Power Products Division of Pulman Incorporated ISOMETRIC DRAWING	
7281		DW		ADDED SHTS 12, 13, & 14			

NOTE: UNLESS OTHERWISE INDICATED WELD ELBOWS ARE LONG RADIUS, FLANGES ARE WELDING NECK, TEES ARE STRAIGHT SIZE, REDUCERS ARE CONCENTRIC, BENDS ARE S.O.A. DIMENSIONS INCLUDE ALLOWANCE FOR RING JOIN

ONLY ISOMETRIC NOT TO SCALE



## FIELD INSTRUCTION 132

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## 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&amp;C GENERAL ARRANGEMENT DRAWING 9763-F-805554

UE&amp;C P &amp; ID 9763-F-805002

UE&amp;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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				REF. DWGS. SEE ABOVE, SHTS. 1 & 3		OTHER ECA'S 19/222A		JOB NO. 7035	
				UE & C PLAN		08/12/81A		SYSTEM INSTRUCTION	
				UE & C ISO		P.P.P. "A" SHEET		ISO FT-132	
				DRAWING ISO				SHEET 2 OF 10	
				DRAWN		CHK'D		APPR'D	
				DW		DQ		BSS	
				6-26-81		6-26-81		6-26-81	
1 7-2-81 DW 15 ADDED SHEETS 12, 13, & 14				SEABROOK STATION					
REV. DATE BY E QA DESCRIPTION				PUBLIC SERVICE of NEW HAMPSHIRE					
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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.

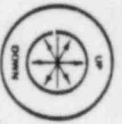
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				REF. DWGS. SEE ABOVE, SHTS 1 & 2		OTHER ECA'S 191222A		JOB NO. 7035	
				UE & C PLAN		08/1241A		SYSTEM FIELD INSTRUCTION	
				UE & C ISO		P.P.P. "A" SHEET		ISO FI-137	
				DRAVO ISO				SHEET 3 OF 14	
				DRAWN		CHK'D		APPR'D	
				DW		DEW		BOS	
				6-26-81		6-26-81		6-26-81	
1 7-2-81 DW				SHADED SHEETS 12, 13, & 14				SEABROOK STATION	
REV. DATE BY E QA				DESCRIPTION				PUBLIC SERVICE of NEW HAMPSHIRE	
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								ISOMETRIC DRAWING	

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## FIELD INSTRUCTION 132

- 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 polyethylene. 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.

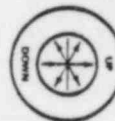
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				REF. DWGS. SEE SHTS. 1, 2, & 3		OTHER ECA'S 19/222A 08/12/1A		JOB NO. 7035	
				UE & C PLAN				SYSTEM <u>FIELD INSTRUCTION</u>	
				UE & C ISO				ISO <u>FI-132</u> REV. <u>1</u>	
				DRAVO ISO		P.P.P. "A" SHEET		SHEET 4 OF 14	
				DRAWN <u>DW</u> CHK'D <u>DES</u> APP'D <u>DES</u>		SEABROOK STATION PUBLIC SERVICE of NEW HAMPSHIRE		Pullman Power Products Division of Pullman Incorporated ISOMETRIC DRAWING	
1 7-2-81 DW <u>W</u> ADDED SHEETS 12, 13, & 14				REV. DATE BY E QA DESCRIPTION					
				6-26-81					

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- 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 consumables. The ID and OD of parts to be joined shall be marked for radiographic 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° 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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				REF. DWGS. SEE SHTS. 1, 2, 4, 3		OTHER ECA'S 19/222A		JOB NO. 7035	
				UE & C PLAN		08/1241A		SYSTEM FIELD INSTRUCTION	
				UE & C ISO		P.P.P. "A" SHEET		REV. 1	
				DRAVO ISO				ISO 5-132 SHEET 5 OF 14	
				DRAWN		CHK'D		APPR'D	
				DW		DEO		SS	
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1 7-2-81 DW 457 ADDED SHEETS 12, 13, & 14				DESCRIPTION		SEABROOK STATION		Pullman Power Products	
REV. DATE BY ECA						PUBLIC SERVICE of		Division of Potomac Incorporated	
						NEW HAMPSHIRE		ISOMETRIC DRAWING	

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## FIELD INSTRUCTION 132

- 5.1.4.2 After completion of root pass plus (5) five additional weld layers or approximate deposit 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. Adjustments 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 compatible 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 weld 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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				REF. DWGS. SEE SHTS. 1, 2 & 3	OTHER ECA'S 19/222A	JOB NO. 7035
				UE & CPLAN	08/1241A	SYSTEM FIELD INSTRUCTION
				UE & CISO	P.P.P. "A" SHEET	REV. 1-132
				DRAVO ISO		SHEET 6 OF 14
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					SEABROOK STATION PUBLIC SERVICE OF NEW HAMPSHIRE	
					Pullman Power Products Division of Pullman Incorporated ISOMETRIC DRAWING	

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- 6.1.4 Temporary block removal areas shall be liquid penetrant examined per applicable process sheets. Upon acceptance of P.T., the remaining unwelded areas shall be completed out to the hot pass stage. Joint weld out may then proceed per applicable process sheet.
- 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
    - 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 located, East-West and North-South coordinate and 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.

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				REF. DWGS. SEE SHTS. 1, 2 & 3		OTHER ECA'S 19/222A 08/12/81A		JOB NO. 7035	
				UE & C PLAN				SYSTEM FIELD INSTRUCTION	
				UE & C ISO				REV. 1	
				DRAVO ISO		P.P.P. "A" SHEET		ISO SHEET 7 OF 14	
				DRAWN		CHK'D		APPR'D	
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1 7-2-81 DW				ADDED SHEETS 12, 13, & 14					
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				SEABROOK STATION PUBLIC SERVICE OF NEW HAMPSHIRE					
				Pullman Power Products Division of Pullman Incorporated ISOMETRIC DRAWING					

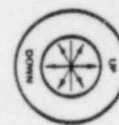
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- 6.3.3.2 The Chief Field Engineer, through the Containment Field Engineer, shall be responsible to submit measurements to Westinghouse NCD Site Personnel. No weld shrinkage allowance shall be included in As-Built measurements. Excess material for 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.

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				REF. DWGS. SEE SHTS. 1, 2 & 3		OTHER EGAS 19/222 A		JOB NO. 7035	
				UE & CPLAN		08/1241 A		SYSTEM FIELD	
				UE & CISO		P.P.P. "A" SHEET		INSTRUTION	
				DRAVO ISO				REV	
				DRAWN		CHK'D		APPR'D	
1 7-2-81 DW BY				ADDED SHEETS 12, 12, & 14		DW		DEC	
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						PUBLIC SERVICE OF		Division of Pullman Incorporated	
						NEW HAMPSHIRE		ISOMETRIC DRAWING	





## FIELD INSTRUCTION 132

## 6.5.2.3 (cont'd)

Simultaneous welding will continue until both deposit levels are out to root plus (5) five weld layers and NDE performed. Welding may then progress 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  $\frac{1}{4}$ " root gap and  $\frac{1}{8}$ " hi-low or better fit.)
- B. Root plus 5 weld layers. The thickness of deposited weld metal should be approx.  $\frac{5}{16}$ " to  $\frac{3}{8}$ ".
- C. T/2 (Approximate)
- D.  $\frac{3}{4}$  T (Approximate)
- E. Final for ASME Section III, Subsection NB acceptance. This is a Mandatory R.T.

NOTE: Amount of weld metal deposited is approximate, dependent upon end of shift scheduling for radiographs at paragraphs B, C, and D above.

- 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 both the hot leg and cold leg welds within a loop, the 40° ELL shall be fit-up and tacked. 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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				REF. DWGS. SEE SHTS 1, 2 & 3	OTHER ECA'S 19/222 A 08/1241 A	JOB NO. 7035
				UE & C PLAN		SYSTEM FIELD INSTRUCTION
				UE & C ISO	P.P.P. "A" SHEET	REV. 1
				ORAVO ISO		ISO SHEET 9 OF 14
				DRAWN CHN'D APPR'D	SEABROOK STATION PUBLIC SERVICE OF NEW HAMPSHIRE	
				DW DEC 85	Pulman Power Products Division of Pulman Incorporated ISOMETRIC DRAWING	
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## FIELD INSTRUCTION 132

- 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 between 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

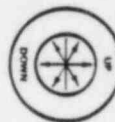
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QA APPROVED

DATE 6-26-81BY 6-26-81

				REF. DWGS. SEE SHTS. 12 & 13		OTHER ECA'S 19/222 A 08/1241 A		JOB NO. 7035	
				UE & C PLAN		P.P.P. "A" SHEET		SYSTEM <u>FIELD INSTRUCTION</u>	
				UE & C ISO				ISO <u>DL-137</u> (REV. 10/74, 1)	
				DRAVO ISO					
				DRAWN <u>DEJ</u> CHK'D <u>BES</u> APP'D <u>BES</u>		6-26-81		6-26-81	
1 22-81 DW <u>ADDED SHEETS 12, 13, &amp; 14</u>				DW <u>DEJ</u> CHK'D <u>BES</u> APP'D <u>BES</u>		6-26-81		6-26-81	
REV.	DATE	BY	EQA	DESCRIPTION		SEABROOK STATION PUBLIC SERVICE OF NEW HAMPSHIRE		Pullman Power Products Division of Pullman Incorporated ISOMETRIC DRAWING	

NOTE: UNLESS OTHERWISE INDICATED, WELD ELBOWS ARE LONG RADIUS, FLANGES ARE WELDING NECK, TEES ARE STRAIGHT SIDE, REDUCERS ARE CONCENTRIC, BENDS ARE 90° DIA. DIMENSIONS INCLUDE ALLOWANCE FOR RING JOINT GASKETS ONLY. ISOMETRIC NOT TO SCALE.



## 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 measurements, 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.

QA APPROVED

DATE 08/12/81BY 6-26-81

FOR INFORMATION ONLY

				REF. DWGS. SEE SHTS. 1, 2 & 3		OTHER ECA'S 19/222A 08/12/81		JOB NO. 7035	
				UE & C PLAN				SYSTEM FIELD INSTRUCTION	
				UE & C ISO				REV. 1	
				DRAVO ISO		P.P.P. "A" SHEET		ISO SHEET 11 OF 41	
				DRAWN		CHK'D		APPR'D	
				DW		D&D		ECC	
				6-26-81		6-26-81		6-26-81	
1 7-2-81 DW				ADDED SHEETS 12, 13, & 14		SEABROOK STATION PUBLIC SERVICE of NEW HAMPSHIRE			
REV. DATE BY E QA				DESCRIPTION		Pullman Power Products Division of Pullman Incorporated ISOMETRIC DRAWING			

NOTE: UNLESS OTHERWISE INDICATED WELD ELBOWS ARE LONG RADIUS, FLANGES ARE WELDING NECK, TEES ARE STRAIGHT SIZE, REDUCE IS ARE CONCENTRIC, BENDS ARE 5 DIA. DIMENSIONS INCLUDE ALLOWANCE FOR RING JOINT GASKETS ONLY. ISOMETRIC NOT TO SCALE.

70.91	72.81	77.71
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NOTE: UNLESS OTHERWISE INDICATED WELD SYMBOLS ARE LONG RADIUS, FLANGES ARE WELDING NECK, TEES ARE STRAIGHT SIZE, REDUCERS ARE CONCENTRIC, BENDS ARE 5 DIA. DIMENSIONS INCLUDE ALLOWANCE FOR RING JOINT GASKETS ONLY. ISOMETRIC NOT TO SCALE.

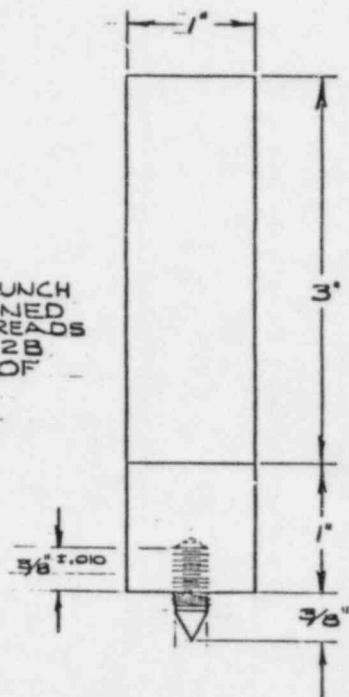
FI 132

- NOTES:

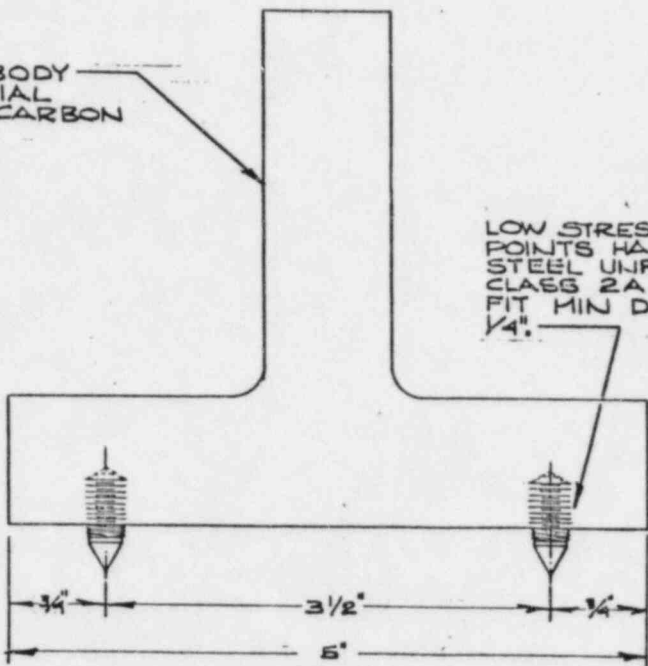
1. ALL DIMENSIONS  $\pm 1/32"$   
UNLESS NOTED.

2. SCALE: FULL.

3. ALL CORNERS  
ROUNDED.



MAIN BODY —  
MATERIAL  
A-36 CARBON  
STEEL



DATE 7-2-81

BY Chadman

HUE &amp; C PLAN

08/1241A

P.P.P. "A" SHEET

## BOOK STATISTICS

COCKEY

HAMPSHIRE

FIELD INSTRUCTION SYSTEM

ET-137	REV
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180 SHEET 13 OF 14 1

2411mm Power Products

Division of Public Health Services

## SOMETRIC DRAWING

NOTE: UNLESS OTHERWISE INDICATED WELD ELBOWS ARE LONG RADIUS, FLANGES ARE WELDING NECK, TEES ARE STRAIGHT SIDE, REDUCERS ARE CONCENTRIC, BENDS ARE 9 DIA. DIMENSIONS INCLUDE ALLOWANCE FOR JOINT BASKETS ONLY. ISOMETRIC NOT TO SCALE.

[illegible]





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 \_\_\_\_\_ of  
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 \_\_\_\_\_ of  
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 \_\_\_\_\_ of

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 \_\_\_\_\_ of

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 \_\_\_\_\_ of

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 \_\_\_\_\_ of

Tram Mark Location:  
12:00 \_\_\_\_\_ 3:00 \_\_\_\_\_ 6:00 \_\_\_\_\_ 9:00 \_\_\_\_\_ Logged by \_\_\_\_\_  
N \_\_\_\_\_ S \_\_\_\_\_ E \_\_\_\_\_ W \_\_\_\_\_ Date \_\_\_\_\_

QA APPROVED

DATE: 7-2-81

BY: *[Signature]*

				REF. DWGS. SEE SHEETS 1, 2, & 3				JOB NO. 7035	
				OTHER				SYSTEM FIELD INSTRUCTION SHEET 14 OF 14 REV. 1	
				P.P.P. "A" SHEET					
				DRAWN CHK'D APP'D					
				DW BGS C				<b>SEABROOK STATION</b> PUBLIC SERVICE OF NEW HAMPSHIRE	
				7-2-81 7-2-81 7-2-81					
REV.	DATE	BY	E QA	DESCRIPTION				Pullman Power Products Division of Pullman Incorporated ISOMETRIC DRAWING	

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