



NUCLEAR ENERGY SERVICES, INC.

DOCUMENT NO. 80A4424

REV. 4

A UNIT OF QUALCORP

PAGE 1 OF 43

PSI PROGRAM PLAN:

HIGH PRESSURE CORE SPRAY SYSTEM

PERRY NUCLEAR POWER PLANT, UNIT 1

Prepared For
CLEVELAND ELECTRIC ILLUMINATING COMPANY**CONTROLLED COPY**
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Project Application 5532		Copy No	Assigned To		
APPROVALS					
TITLE / DEPT. - SIGNATURE - DATE					
REV NO	PREPARED BY	ISI Programs Engineering Mgr.	Project Mgr.	QA Mgr.	
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2					
3	Susan Meyer 10/1/84	<i>[Signature]</i> 10/22/84	<i>[Signature]</i> 10/22/84	ME calling for LCL 10-24-84	
4	<i>[Signature]</i> 3/4/85	<i>[Signature]</i> 3/6/85	<i>[Signature]</i> 3/6/85	ME calling for LCL 3-8-85	
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Q PDR

REVISION LOG

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REV. NO.	DATE	PAGE NO.	DESCRIPTION	APPROVAL
1	1/14/82		CRA 2285	
2	12/7/83	-	Addition of Component Examinations Per CRA No. 3757	<i>[Signature]</i>
3	10/24/84	-	Revised to incorporate field changes and customer comments (FC's 05-01 #1 thru #12, 05-02 #1 thru #3, 05-03 #1 thru #7 and #9 CRA #4683 Added Welded Attachments	<i>[Signature]</i>
4	03/06/85	6, 9 10, 18 29, 33, 37, 38, 40,	Revised to incorporate customer comments. See CRA 5099.	<i>[Signature]</i>

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HIGH PRESSURE CORE SPRAY SYSTEM

1. INTRODUCTION

This document has been prepared to (1) delineate system-specific, itemized Preservice Inspection (PSI) requirements and, (2) present appropriate diagrams locating the areas for examination. All components in the High Pressure Core Spray (HPCS) System required to be examined by ASME BPV Code, Section XI, are included.

The General Reference Text, NES Document 80A4420 presents the development and required procedural information for the PSI Program Plan generic to all systems examined.

2. SYSTEM DESCRIPTION

2.1 EXEMPTIONS

The portions of the HPCS System that are exempted from examination as allowed by ASME BPV Code Section XI, and as described in the General Reference Text, are presented in Table 2.1.

2.2 EXCEPTIONS

Exception may be taken to code requirements of examination where access is not possible due to design limitations. Provision for such exception is presented in the General Reference Text. Exceptions that are taken to required exams of the HPCS System are itemized in Table 2.2, (Later).

2.3 CLASSIFICATIONS

This system's piping and instrumentation diagrams have been reviewed and Quality Group A, B, and C (ASME Code Class 1, 2, and 3) boundaries have been established as required by ASME Code Section XI, IWA-1400. The General Reference Text discusses the basis for these determinations.


Diagrams delineating these boundaries for the HPCS System are presented in Figure B-8. HPCS System classification and boundaries are presented in Table 2.3.

TABLE 2.1
SYSTEM EXEMPTIONS



ASME Code Class	Description	Ref. P&ID	Basis For Exemption
1	All component connection, piping and associated valves of 1" nominal size and smaller	D-302-701/F	Piping 1" nominal size and smaller exempted as per AMSE Section XI Code IWB-1220(b) S '78 Addenda
1	3" D1-1 SLC Intertie including 3" x 1 1/2" Reducer up to 12" D1-1	D-302-701/F	All components less than 2.36" ID for water service are exempt as per "ASME" Section XI, Code IWB-1220(a)
2	All vent, drain, test, sample, fill, by-pass and instrument connections 4" nominal size or smaller	D-302-701/F	All component connections, piping & associated valves, and vessels (and their supports) that are 4" nominal pipe size & smaller are exempted as per ASME Section XI, IWC-1220(d) S '75 Addenda

TABLE 2.3
SYSTEM CLASSIFICATIONS

ASME Code Class	Description	Ref. P&ID	
1	12" D1-1 from and including valve E22-F004 to the reactor pressure vessel	D-302-701/F	
2	24" L1-2 from suppression pool to HPCS pump C001	D-302-701/F	
2	16" D1-2 from HPCS pump C001 up to valve E22-F004	D-302-701/F	
2	12" D1-2 from 16" D1-2 to valve E22-F011 and thru valve E22-F023 into the suppression pool	D-302-701/F	

2.4 CALIBRATION STANDARDS

Table 2.4 lists the Calibration Standards for ultrasonic examinations scheduled for the HPCS System. All calibration standards are to be retained on site.

Design drawing documents are presented in Table 3.5 of the General Reference Text.(Later)

TABLE 2.4

HPCS System: Referenced Calibration Standards

Title	Line Class	Schedule	Material
PY-6-120-CS	6" D1-2	Sch 120	SA106 Grade B
PY-6-XX1-CS-F	6" D1-2	.562" Nom.	SA234 WPB
PY-12-80-CS	12" D1-1	Sch 80	SA106 Grade B
PY-12-100-CS	12" D1-1	Sch 100	SA106 Grade B
PY-12-XX2-CS-F	12" D1-2	.843" Nom.	SA234 WPB
PY-16-100-CS	16" D1-2	Sch 100	SA106 Grade B
PY-24-XX1-CS-F	24" L1-2	.687" Nom.	SA234 WPB
PY-VALVE-XX1-CS	--	2.212"	SA105

2.5 ISOMETRIC FIGURES AND SKETCHES

The piping isometric figures listed in Table 2.5 show the identification and location of areas for the HPCS System requiring examination. Sketches may also be included that illustrate or locate areas of components requiring identification for examination.

TABLE 2.5

HPCS System: Isometric Figures

05-01	Revision 1
05-02	Revision 2
05-03	Revision 1
05-03A	Revision 0

TABLE 2.5 (Cont'd)

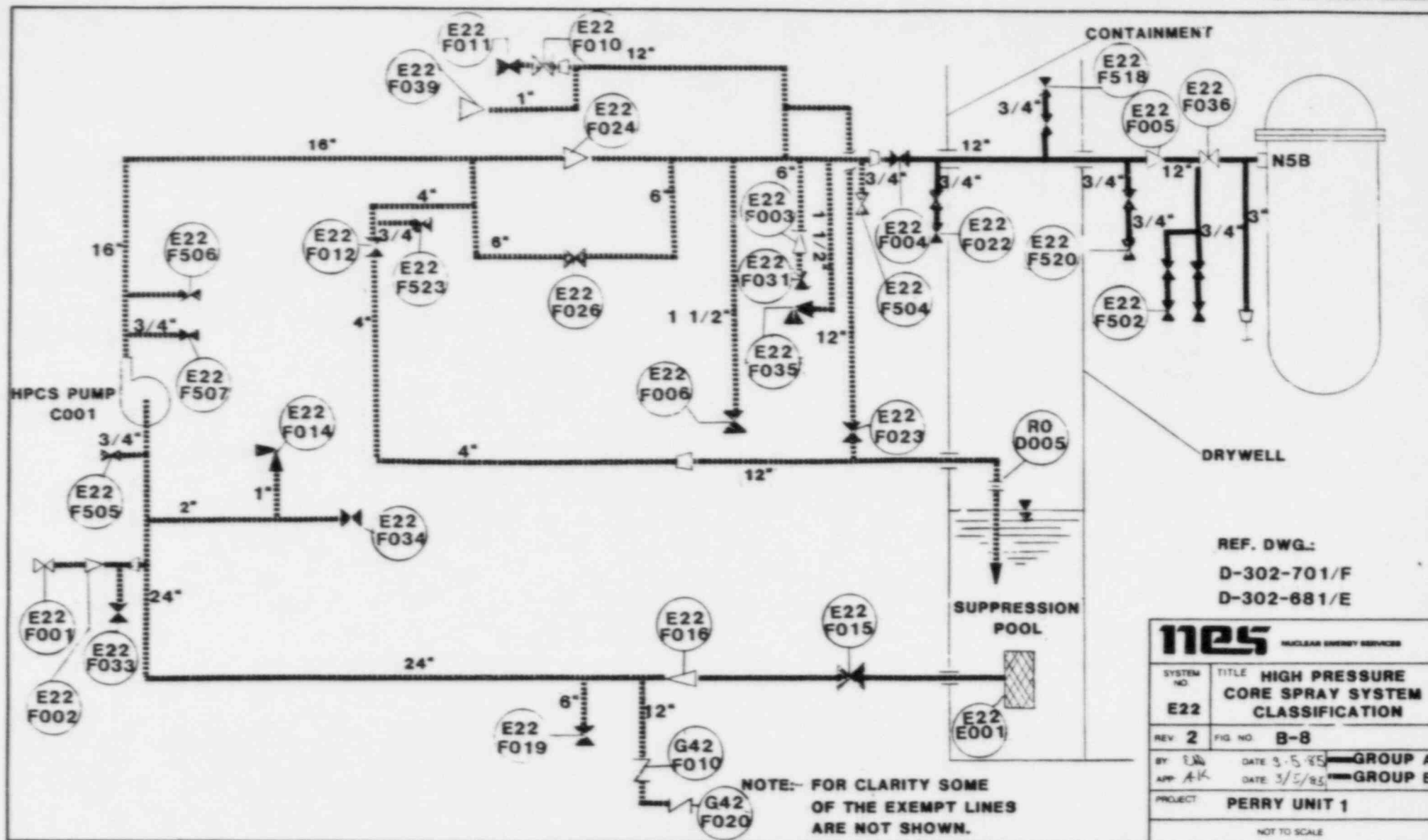
HPCS System: Isometric Figures

05-04	Revision 0
05-05	Revision 0
05-06	Revision 0
05-07	Revision 0

3. PROGRAM PLAN AND SCHEDULE

The specific PSI examination requirements are defined in the PSI Program Plan and its schedule tables. Each weld or other examination area is designated by a unique identification number, and then described. Also identified are applicable examination category, method, procedure number, any calibration standard number referenced for ultrasonic examination, and the zone in which the examination area is located, as described in Section 3 of the General Reference Text.

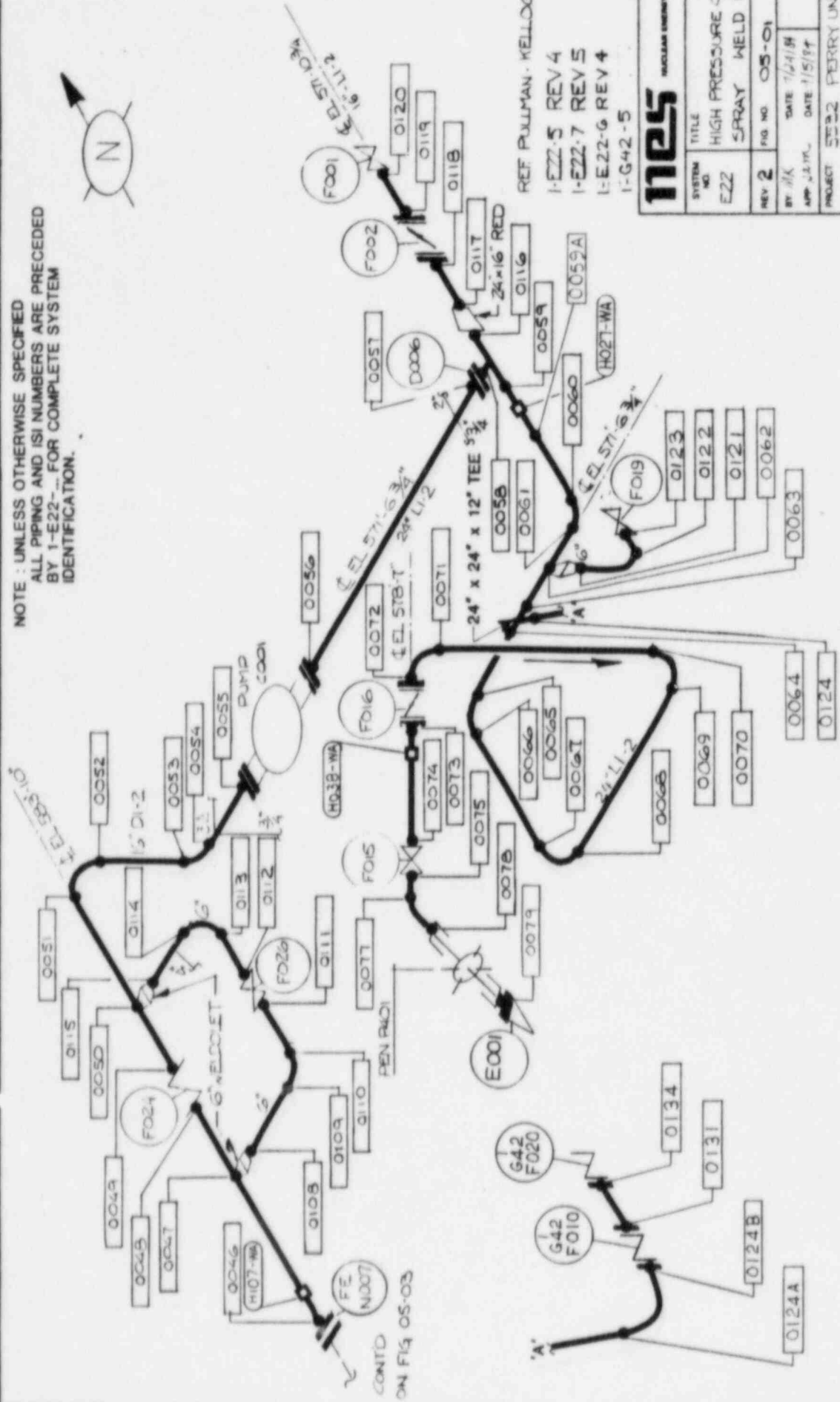
Examination items are first divided according to the weld or hanger figure that they appear on. Multiple examination requirements of the same component are listed separate in the schedule tables. Component examinations or component bolting follow the piping weld examinations for each system. Hanger examinations appear as the next section, followed by the hydrovisual examination requirements.



REF. DWG.:
D-302-701/F
D-302-681/E

nes NUCLEAR ENERGY SERVICES	
SYSTEM NO. E22	TITLE HIGH PRESSURE CORE SPRAY SYSTEM CLASSIFICATION
REV 2	FIG. NO. B-8
BY: BJA	DATE: 3/5/85
APP: AK	DATE: 3/5/85
PROJECT: PERRY UNIT 1	
NOT TO SCALE	

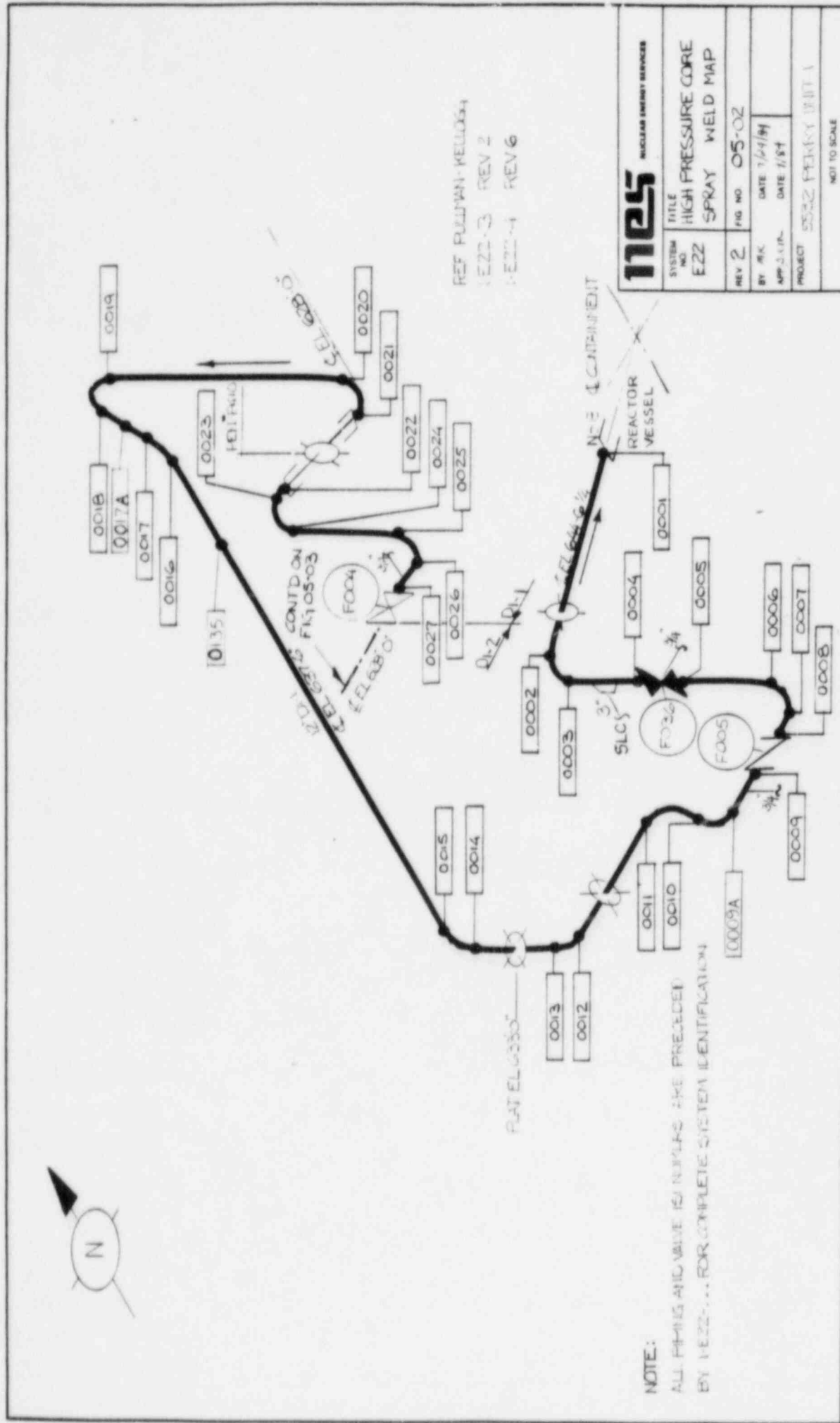
NOTE : UNLESS OTHERWISE SPECIFIED
ALL PIPING AND ISI NUMBERS ARE PRECEDED
BY 1-E22-- FOR COMPLETE SYSTEM
IDENTIFICATION.

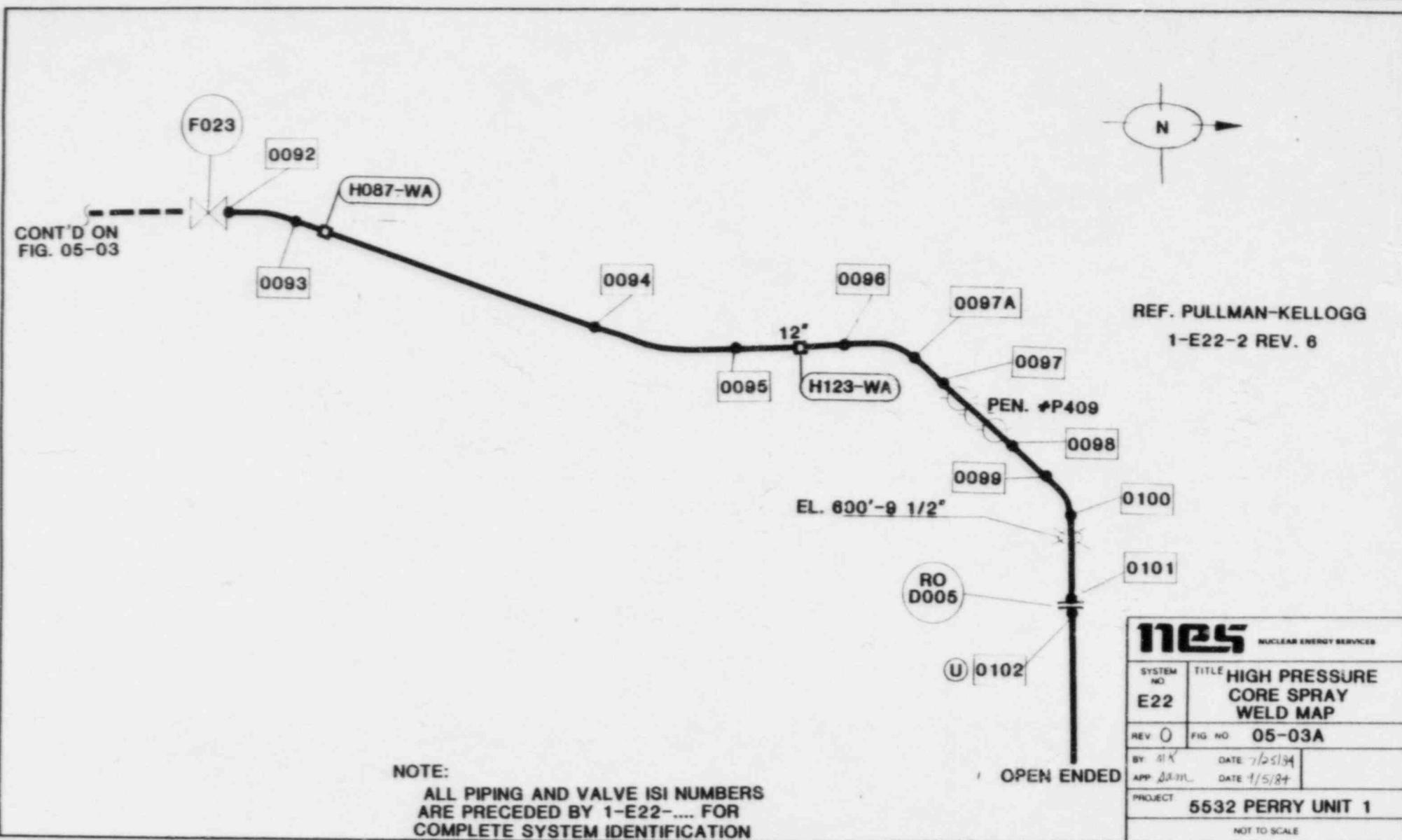


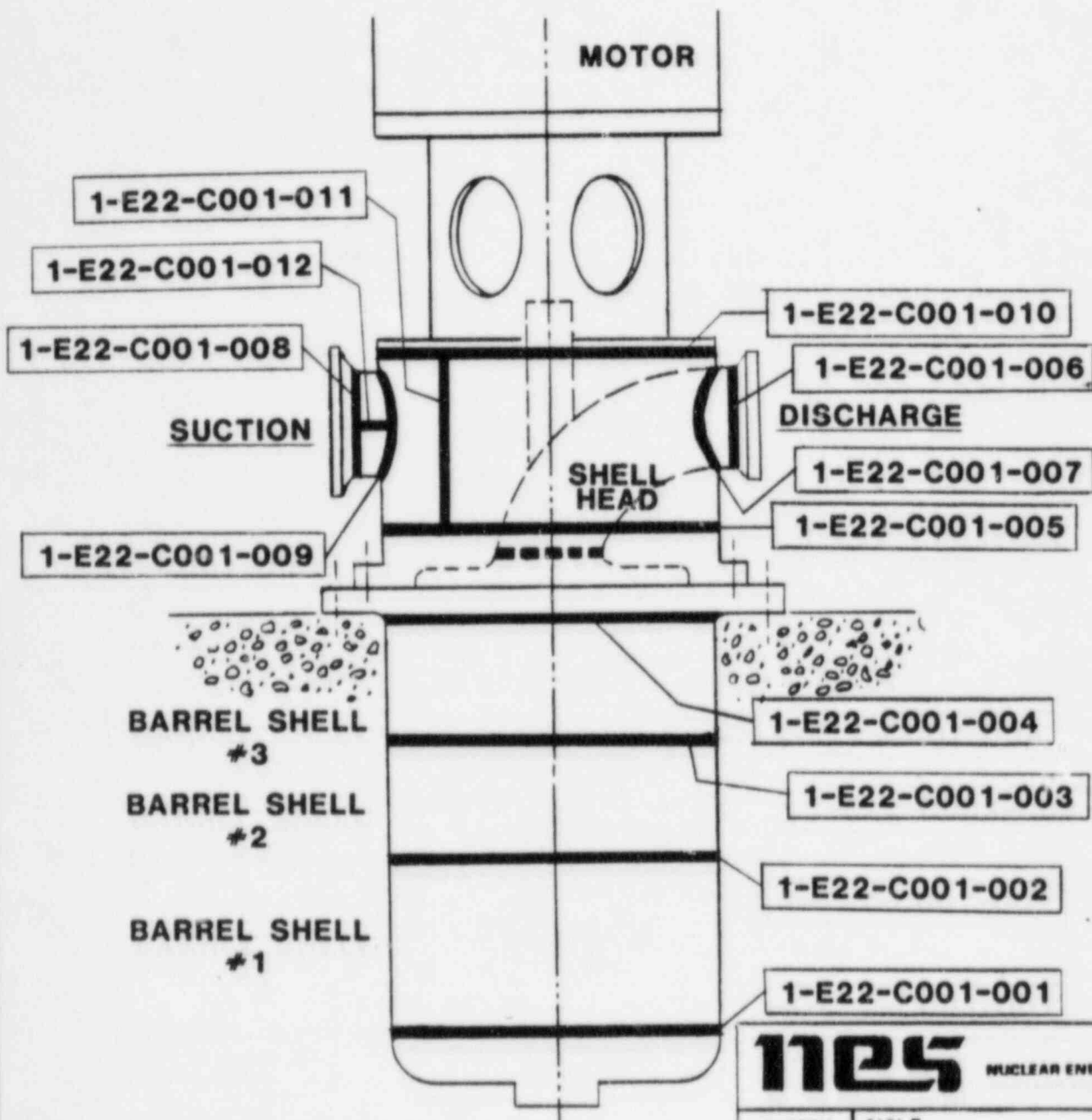
nes

NUCLEAR ENERGY SERVICES

TITLE	
HIGH PRESSURE CORE SPRAY WELD MAP	
FIG NO	05-01
REV	2
DATE	7/24/88
BY	JLK
DATE	1/5/88
APP	J.L.M.
PROJECT	32-2 PERRY UNIT 1
NOT TO SCALE	





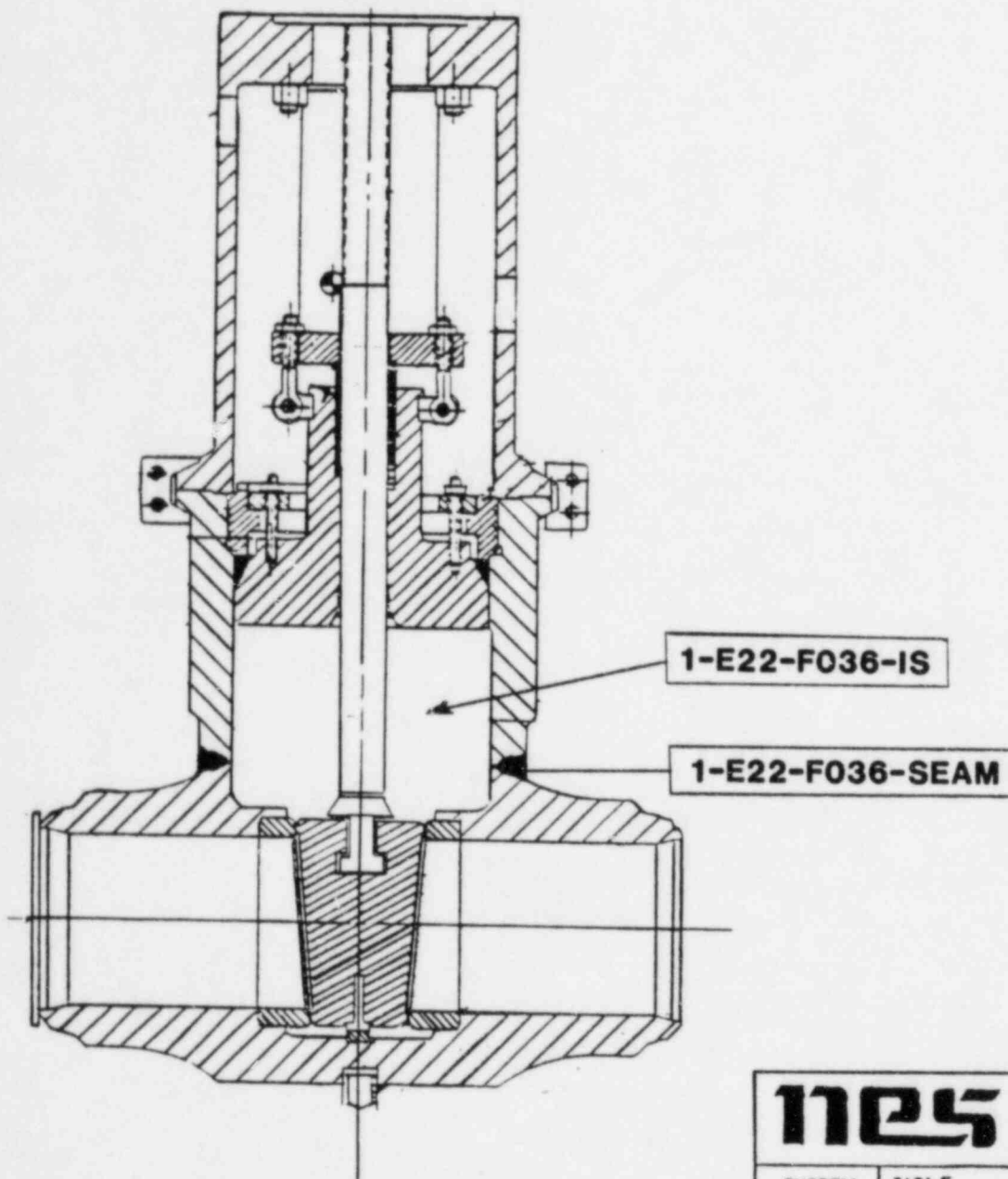


REF. DWGS.
BYRON JACKSON PUMP
SECTIONAL DRAWING
DWG. NO. 1F-7821/B
OUTLINE DWG. NO. 2C-5588/A

nes

NUCLEAR ENERGY SERVICES

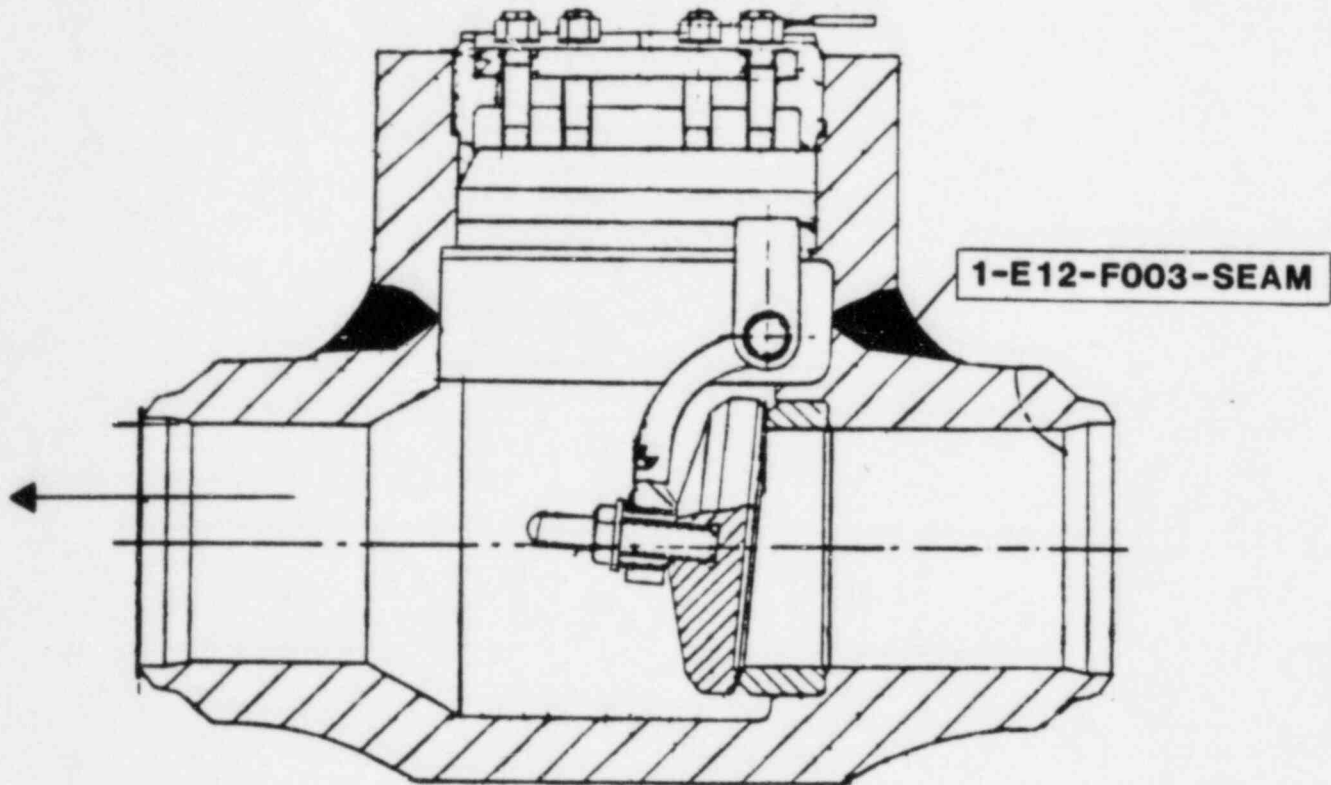
SYSTEM NO. E22	TITLE HPCS PUMP C001 SEAM LOCATION	
REV: 0	FIG. NO. 05-04	
BY: <i>VB</i>	DATE: <i>8/18/83</i>	CLASS 2
APP: <i>AA</i>	DATE: <i>10/10/83</i>	
PROJECT: PERRY UNIT 1		
NOT TO SCALE		



REF. DWGS.

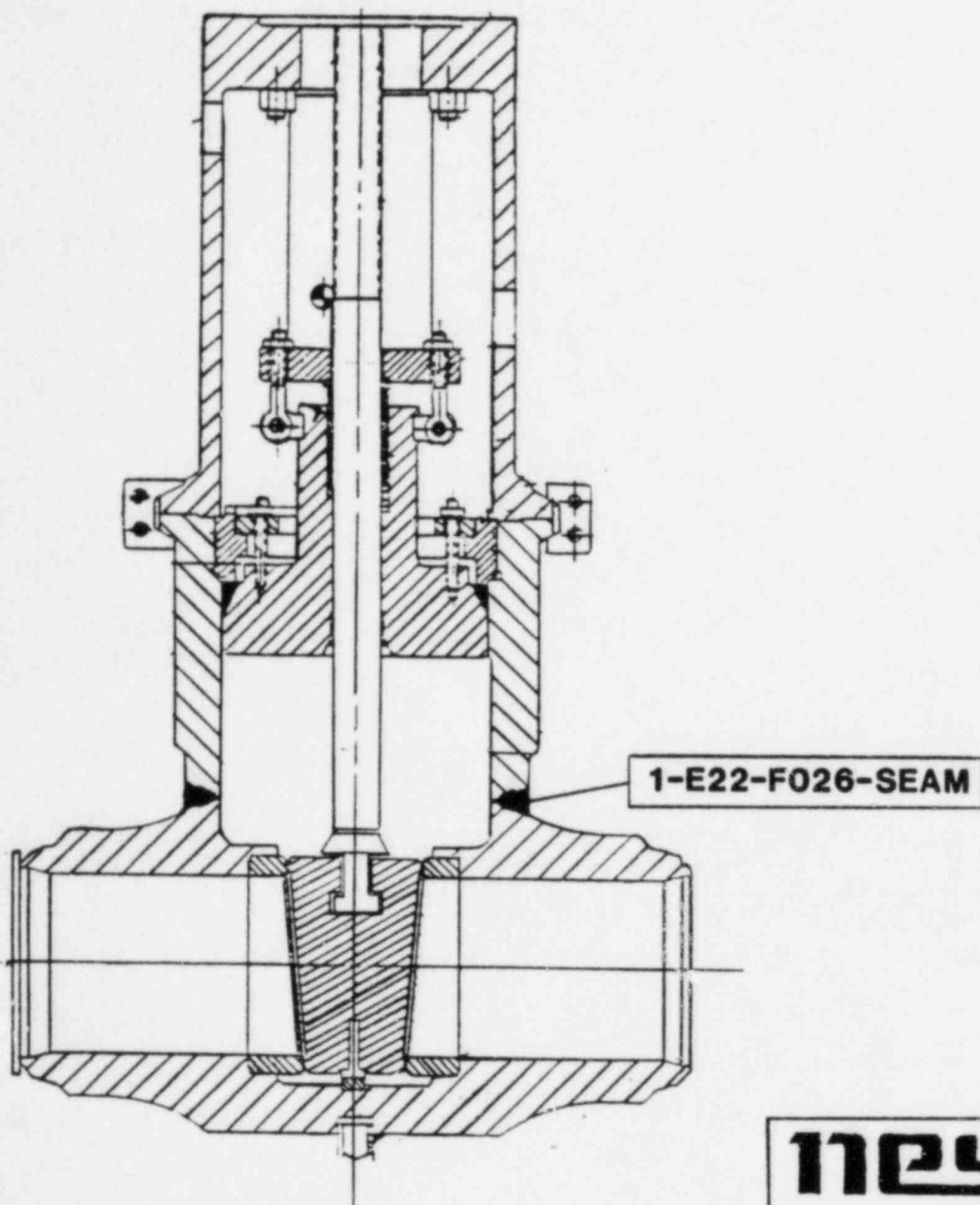
BORG WARNER DWG. NO. 81031-2
GAI DWG. NO. 4549-40-732-1-2

SYSTEM NO. E22	TITLE HPCS 12" GATE VALVE F036 SEAM LOCATION	
REV: 0	FIG. NO. 05-05	
BY: <i>VB</i>	DATE: <i>8/23/83</i>	CLASS 1
APP: <i>AA</i>	DATE: <i>10/06/83</i>	
PROJECT: PERRY UNIT 1		
NOT TO SCALE		



REF. DWG.
BORG WARNER
DWG. NO. 81490-2
GAI DWG. NO. 4549-40-949-1-0

nes NUCLEAR ENERGY SERVICES	
SYSTEM NO. E22	TITLE HPCS 6" CHECK VALVE F003 SEAM LOCATION
REV: 0	FIG. NO. 05-06
BY: <i>VB</i>	DATE: <i>8/17/83</i>
APP: <i>AA</i>	DATE: <i>10/06/83</i>
PROJECT:	PERRY UNIT 1
NOT TO SCALE	



REF. DWGS.

BORG WARNER DWG. NO. 81020


GAI DWG. NO. 4549-40-343-2

SYSTEM NO. E22	TITLE HPCS 6" GATE VALVE F026 SEAM LOCATION	
REV: 0	FIG. NO. 05-07	
BY: <i>VB</i>	DATE: <i>8/23/83</i>	CLASS 2
APP: <i>AA</i>	DATE: <i>10/07/83</i>	
PROJECT: PERRY UNIT 1		
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PROGRAM PLAN AND SCHEDULE
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COMPONENT IDENTIFICATION	COMPONENT DESCRIPTION	PROCEDURE NUMBER	CALIBRATION BLOCK (If applicable)	CODE CATEGORY	CODE EXAM METHOD	ZONE NO.	REMARKS
PIPING WELDS Ref. Dwg. No. 05-01							
1-E22-0079	24" Flange Suction Strainer E-001 to Penetration P-401 Process Pipe	80A0183	N/A	C-F	PT	XVII	
1-E22-0078	24" Penetration P-401 Process Pipe to Elbow	80A0183	N/A	C-F	PT	XVII	
1-E22-0077	24" Elbow to Pipe	80A0183	N/A	C-F	PT	XVII	
1-E22-0075	24" Pipe to Valve F015	80A0183	N/A	C-F	PT	XVII	
1-E22-0074	24" Valve F015 to Pipe	80A0183	N/A	C-F	PT	XIII	
1-E22-0073	24" Pipe to Valve F016	80A0183	N/A	C-F	PT	XIII	
1-E22-0072	24" Valve F016 to Elbow	80A0183	N/A	C-F	PT	XIII	
1-E22-0071	24" Elbow to Pipe	80A0183	N/A	C-F	PT	XIII	



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PIPING WELDS Ref. Dwg. No. 05-01							
1-E22-0070	24" Pipe to Elbow	80A0183	N/A	C-F	PT	XIV	
1-E22-0069	24" Elbow to Pipe	80A0183	N/A	C-F	PT	XIV	
1-E22-0068	24" Pipe to Elbow	80A0183	N/A	C-F	PT	XIV	
1-E22-0067	24" Elbow to Pipe	80A0183	N/A	C-F	PT	XIV	
1-E22-0066	24" Pipe to Elbow	80A0183	N/A	C-F	PT	XIV	
1-E22-0065	24" Elbow to Pipe	80A0183	N/A	C-F	PT	XIV	
1-E22-0064	24" Pipe to 24"x 24"x 12" Tee	80A0183	N/A	C-F	PT	XIV	
1-E22-0124	24"x 24"x 12" Tee to Pipe	80A0183	N/A	C-F	PT	XIV	




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PIPING WELDS Ref. Dwg. No. 05-01							
1-E22-0124A	12" Pipe to Elbow	80A0183	N/A	C-F	PT	XIV	
1-E22-0124B	12" Elbow to Flanged Valve G42-F010	80A0183	N/A	C-F	PT	XIV	
1-E22-0131	Flanged Valve G42-F010 to 12" Pipe	80A0183	N/A	C-F	PT	XIV	
1-E22-0134	12" Pipe to Flanged Valve G42-F020	80A0183	N/A	C-F	PT	XIV	
1-E22-0063	24"x 24"x 12" Tee to 24" Pipe	80A0183	N/A	C-F	PT	XIV	
1-E22-0062	24" Pipe to 6" Weld-o-let	80A0183	N/A	C-F	PT	XIV	
1-E22-0121	6" Weld-o-let to Elbow	80A0183	N/A	C-F	PT	XIV	
1-E22-0122	6" Elbow to Pipe	80A0183	N/A	C-F	PT	XIV	





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PIPING WELDS Ref. Dwg. No. 05-01							
1-E22-0123	6" Pipe to Valve F019	80A0183	N/A	C-F	PT	XIV	
1-E22-0061	24" Pipe to Elbow	80A0183	N/A	C-F	PT	XIV	
1-E22-0060	24" Elbow to Pipe	80A0183	N/A	C-F	PT	XIV	
1-E22-059A	24" Pipe to Pipe	80A0183	N/A	N/A	PT	XIV	Customer request exam 
1-E22-0059	24" Pipe to 24"x 24"x 24" Tee	80A0183	N/A	C-F	PT	XIV	
1-E22-0116	24"x 24"x 24" Tee to 24"x 16" Reducer	80A0183	N/A	C-F	PT	XIV	
1-E22-0117	24"x 16" Reducer to 16" Pipe	80A0183	N/A	C-F	PT	XIV	
1-E22-0118	16" Pipe to Flanged Valve F002	80A0183	N/A	C-F	PT	XIV	




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COMPONENT IDENTIFICATION	COMPONENT DESCRIPTION	PROCEDURE NUMBER	CALIBRATION BLOCK (If applicable)	CODE CATEGORY	CODE EXAM METHOD	ZONE NO.	REMARKS
PIPING WELDS Ref. Dwg. No. 05-01							
1-E22-0119	16" Flanged Valve F002 to Pipe	80A0183	N/A	C-F	PT	XIV	
1-E22-0120	16" Pipe to Valve F001	80A0183	N/A	C-F	PT	XIV	
1-E22-0058	24"x 24"x 24" Tee to Flange D006	80A0183 80A0186	N/A PY-24- XX1-CS-F	C-F	PT UT	XIV	
1-E22-0057	24" Flange D006 to Pipe	80A0183	N/A	C-F	PT	XIV	
1-E22-0056	24" Pipe to Flange	80A0183	N/A	C-F	PT	XIV	
1-E22-0055	16" Flange to Pipe	80A0183 80A0186	N/A PY-16- 100-CS	C-F	PT UT	XIV	
1-E22-0054	16" Pipe to Elbow	80A0183 80A0186	N/A PY-16- 100-CS	C-F	PT UT	XIV	
1-E22-0053	16" Elbow to Pipe	80A0183 80A0186	N/A PY-16- 100-CS	C-F	PT UT	XIV	



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COMPONENT IDENTIFICATION	COMPONENT DESCRIPTION	PROCEDURE NUMBER	CALIBRATION BLOCK (If applicable)	CODE CATEGORY	CODE EXAM METHOD	ZONE NO.	REMARKS
PIPING WELDS Ref. Dwg. No. 05-01							
1-E22-0052	16" Pipe to Elbow	80A0183 80A0186	N/A PY-16- 100-CS	C-F	PT UT	XIII	
1-E22-0051	16" Elbow to Pipe	80A0183 80A0186	N/A PY-16- 100-CS	C-F	PT UT	XIII	
1-E22-0050	16" Pipe to 6" Weld-o-let	80A0183	N/A	C-F	PT	XIII	
1-E22-0115	6" Weld-o-let to 6" x 6" x 4" Reducing Tee	80A0183 83A0802	N/A PY-6- XX1-CS-F	C-F	PT UT	XIII	
1-E22-0114	6" x 6" x 4" Reducing Tee to Elbow	80A0183 80A0186	N/A PY-6- XX1-CS-F	C-F	PT UT	XIII	
1-E22-0113	6" Elbow to Pipe	80A0183 80A0186	N/A PY-6- 120-CS	C-F	PT UT	XIII	
1-E22-0112	6" Pipe to Valve F026	80A0183 80A0186	N/A PY-6- 120-CS	C-F	PT UT	XIII	
1-E22-0111	6" Valve F026 to Pipe	80A0183 80A0186	N/A PY-6- 120-CS	C-F	PT UT	XIII	

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PIPING WELDS Ref. Dwg. No. 05-01							
1-E22-0110	6" Pipe to Elbow	80A0183 80A0186	N/A PY-6- 120-CS	C-F	PT UT	XIII	
1-E22-0109	6" Elbow to Pipe	80A0183 80A0186	N/A PY-6- 120-CS	C-F	PT UT	XIII	
1-E22-0108	6" Pipe to 6" Weld-o-let	80A0183 80A0186	N/A PY-6- 120-CS	C-F	PT UT	XIII	
1-E22-0049	16" Pipe to Valve F024	80A0183 80A0186	N/A PY-16- 100-CS	C-F	PT UT	XIII	
1-E22-0048	16" Valve F024 to Pipe	80A0183 80A0186	N/A PY-16- 100-CS	C-F	PT UT	XIII	
1-E22-0047	16" Pipe to 6" Weld-o-let	80A0183	N/A	C-F	PT	XIII	
1-E22-0046	16" Pipe to Flange FE-N007	80A0183 80A0186	N/A PY-16- 100-CS	C-F	PT UT	XIII	




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WELDED ATTACHMENTS Ref. Dwg. No. 05-01							
1-E22-H107-WA	Pipe Welded Attachment	80A0183	N/A	C-E	PT	XIII	
1-E22-H027-WA	Pipe Welded Attachment	80A0183	N/A	C-E	PT	XIV	
1-E22-H038-WA	Pipe Welded Attachment	80A0183	N/A	C-E	PT	XIII	



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PIPING WELDS Ref. Dwg. No. 05-02							
1-E22-0001	Nozzle to 12" Pipe	80A0183 80A0186	N/A PY-12-80-CS	B-J	PT UT	III	
1-E22-0002	12" Pipe to Elbow	80A0183 80A0186	N/A PY-12-80-CS	B-J	PT UT	III	
1-E22-0003	12" Elbow to Pipe	80A0183 80A0186	N/A PY-12-80-CS	B-J	PT UT	III	
1-E22-0004	12" Pipe to Valve F036	80A0183 80A0186	N/A PY-12-80-CS	B-J	PT UT	III	
1-E22-0005	12" Valve F036 to Pipe	80A0183 80A0186	N/A PY-12-80-CS	B-J	PT UT	III	
1-E22-0006	12" Pipe to Elbow	80A0183 80A0186	N/A PY-12-80-CS	B-J	PT UT	III	
1-E22-0007	12" Elbow to Pipe	80A0183 80A0186	N/A PY-12-80-CS	B-J	PT UT	III	
1-E22-0008	12" Pipe to Valve F005	80A0183 80A0186	N/A PY-12-80-CS	B-J	PT UT	III	




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COMPONENT IDENTIFICATION	COMPONENT DESCRIPTION	PROCEDURE NUMBER	CALIBRATION BLOCK (If applicable)	CODE CATEGORY	CODE EXAM METHOD	ZONE NO.	REMARKS
PIPING WELDS Ref. Dwg. No. 05-02							
1-E22-0009	Valve F005 to Pipe	80A0183 80A0186	N/A PY-12-80-CS	B-J	PT UT	III	
1-E22-0009A	12" Pipe to Pipe	80A0183 80A0186	N/A PY-12-80-CS	B-J	PT UT	III	
1-E22-0010	12" Elbow to Pipe (Bend)	80A0183 80A0186	N/A PY-12-80-CS	B-J	PT UT	III	
1-E22-0011	12" Elbow to Pipe	80A0183 80A0186	N/A PY-12-80-CS	B-J	PT UT	III	
1-E22-0012	12" Pipe to Elbow	80A0183 80A0186	N/A PY-12-80-CS	B-J	PT UT	VIII	
1-E22-0013	12" Elbow to Pipe	80A0183 80A0186	N/A PY-12-80-CS	B-J	PT UT	VIII	
1-E22-0014	12" Pipe to Elbow	80A0183 80A0186	N/A PY-12-80-CS	B-J	PT UT	VIII	
1-E22-0015	12" Elbow to Pipe	80A0183 80A0186	N/A PY-12-80-CS	B-J	PT UT	VIII	






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PIPING WELDS Ref. Dwg. No. 05-02							
1-E22-0135	12" Pipe to Pipe	80A0183 80A0186	N/A PY-12- 80-CS	B-J	PT UT	VIII	
1-E22-0016	12" Pipe to Elbow	80A0183 80A0186	N/A PY-12- 80-CS	B-J	PT UT	VIII	
1-E22-0017	12" Elbow to Pipe	80A0183 80A0186	N/A PY-12- 80-CS	B-J	PT UT	VIII	
1-E22-0017A	12" Pipe to Pipe	80A0183 80A0186	N/A PY-12- 80-CS	B-J	PT UT	VIII	
1-E22-0018	12" Pipe to Elbow	80A0183 80A0186	N/A PY-12- 80-CS	B-J	PT UT	VIII	
1-E22-0019	12" Elbow to Pipe	80A0183 80A0186	N/A PY-12- 80-CS	B-J	PT UT	VIII	
1-E22-0020	12" Pipe to Elbow	80A0183 80A0186	N/A PY-12- 80-CS	B-J	PT UT	VIII	
1-E22-0021	12" Elbow to Penetration P-410 Process Pipe	80A0183 80A0186	N/A PY-12- 80-CS	B-J	PT UT	VIII	

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PIPING WELDS Ref. Dwg. No. 05-02							
1-E22-0022	12" Penetration P-410 Process Pipe to Pipe	80A0183 80A0186	N/A PY-12-80-CS	B-J	PT UT	XI	
1-E22-0023	12" Pipe to Elbow	80A0183 80A0186	N/A PY-12-80-CS	B-J	PT UT	XI	
1-E22-0024	12" Elbow to Pipe	80A0183 80A0186	N/A PY-12-80-CS	B-J	PT UT	XI	
1-E22-0025	12" Pipe to Elbow	80A0183 80A0186	N/A PY-12-80-CS	B-J	PT UT	XI	
1-E22-0026	12" Elbow to Pipe	80A0183 80A0186	N/A PY-12-100-CS	B-J	PT UT	XI	
1-E22-0027	12" Pipe to Valve F004	80A0183 80A0186	N/A PY-12-100-CS	B-J	PT UT	XI	






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PIPING WELDS Ref. Dwg. No. 05-03							
1-E22-0028	12" Valve F004 to Elbow	80A0183 80A0186	N/A PY-12- XX2-CS-F	C-F	PT UT	XI	
1-E22-0029	12" Elbow to 12"x 16" Reducer	80A0183 80A0186	N/A PY-12- XX2-CS-F	C-F	PT UT	XI	
1-E22-0030	12"x 16" Reducer to 16" Pipe	80A0183 80A0186	N/A PY-16- 100-CS	C-F	PT UT	XI	
1-E22-0031	16" Pipe to 6" Weld-o-let	80A0183	N/A	C-F	PT	XI	
1-E22-0104	6" Weld-o-let to 6" Pipe	80A0183 80A0186	N/A PY-6- 120-CS	C-F	PT UT	XI	
1-E22-0105	6" Pipe to Elbow	80A0183 80A0186	N/A PY-6- 120-CS	C-F	PT UT	XI	
1-E22-0106	6" Elbow to Pipe	80A0183 80A0186	N/A PY-6- 120-CS	C-F	PT UT	XI	
1-E22-0107	6" Pipe to Valve F003	80A0183 80A0186	N/A PY-6- 120-CS	C-F	PT UT	XI	






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PIPING WELDS Ref. Dwg. No. 05-03							
1-E22-0127	Valve F003 to 6" Pipe	80A0183 80A0186	N/A PY-6- 120-CS	C-F	PT UT	XI	
1-E22-0128	6" Pipe to Valve F031	80A0183 80A0186	N/A PY-6- 120-CS	C-F	PT UT	XI	
1-E22-0032	16" Pipe to Elbow	80A0183 80A0186	N/A PY-16- 100-CS	C-F	PT UT	XI	
1-E22-0033	16" Elbow to Flange RO-D002	80A0183 83A0802	N/A PY-16-XX1- CS-F	C-F	PT UT	XI	
1-E22-0034	16" Flange RO-D002 to Pipe	80A0183 80A0186	N/A PY-16- 100-CS	C-F	PT UT	XI	
1-E22-0034A	16" Pipe to Pipe	80A0183	N/A	N/A	PT	XI	Customer  request exam
1-E22-0035	16" Pipe to Elbow	80A0183 80A0186	N/A PY-16- 100-CS	C-F	PT UT	XIII	
1-E22-0036	16" Elbow to Pipe	80A0183 80A0186	N/A PY-16- 100-CS	C-F	PT UT	XIII	




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PIPING WELDS Ref. Dwg. No. 05-03							
1-E22-0036A	16" Pipe to Pipe	80A0183 80A0186	N/A PY-16- 100-CS	N/A	PT UT	XIII	Customer request exam 
1-E22-0037	16" Pipe to Elbow	80A0183 80A0186	N/A PY-16- 100-CS	C-F	PT UT	XIII	
1-E22-0038	16" Elbow to Pipe	80A0183 80A0186	N/A PY-16- 100-CS	C-F	PT UT	XIII	
1-E22-0039	16" Pipe to Elbow	80A0183 80A0186	N/A PY-16- 100-CS	C-F	PT UT	XIII	
1-E22-0040	16" Elbow to Pipe	80A0183 80A0186	N/A PY-16- 100-CS	C-F	PT UT	XIII	
1-E22-0041	16" Pipe to 16"x 16"x 12" Tee	80A0183 80A0186	N/A PY-16- 100-CS	C-F	PT UT	XIII	
1-E22-0080	16"x 16"x 12" Tee to 12" Pipe	80A0183 80A0186	N/A PY-12- 100-CS	C-F	PT UT	XIII	
1-E22-0081	12" Pipe to Elbow	80A0183 80A0186	N/A PY-12- 100-CS	C-F	PT UT	XII	

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PIPING WELDS Ref. Dwg. No. 05-03							
1-E22-0082	12" Elbow to Pipe	80A0183 80A0186	N/A PY-12-100-CS	C-F	PT UT	XII	
1-E22-0083	12" Pipe to Elbow	80A0183 80A0186	N/A PY-12-100-CS	C-F	PT UT	XII	
1-E22-0084	12" Elbow to Pipe	80A0183 80A0186	N/A PY-12-100-CS	C-F	PT UT	XII	
1-E22-0085	12" Pipe to 12"x 12"x 12" Tee	80A0183 80A0186	N/A PY-12-100-CS	C-F	PT UT	XII	
1-E22-0125	12"x 12"x 12" Tee to 12"x 10" Reducer	80A0183 80A0186	N/A PY-12-XX2-CS-F	C-F	PT UT	XII	△
1-E22-0126	12"x 10" Reducer to Valve F010	80A0183 83A0802	N/A PY-10-XX1-CS-F	C-F	PT UT	XII	
1-E22-0132	Valve F010 to 10" Pipe	80A0183 80A0186	N/A PY-10-100-CS-	C-F	PT UT	XII	
1-E22-0133	10" Pipe to Valve F011	80A0183 80A0186	N/A PY-10-100-CS	C-F	PT UT	XII	




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PIPING WELDS Ref. Dwg. No. 05-03							
1-E22-0086	12"x 12"x 12" Tee to 12" Pipe	80A0183 80A0186	N/A PY-12-100-CS	C-F	PT UT	XII	
1-E22-0087	12" Pipe to Elbow	80A0183 80A0186	N/A PY-12-100-CS	C-F	PT UT	XII	
1-E22-0088	12" Elbow to Pipe	80A0183 80A0186	N/A PY-12-100-CS	C-F	PT UT	XII	
1-E22-0088A	12" Pipe to Pipe	80A0183 80A0186	N/A PY-12-100-CS	N/A	PT UT	XII	Customer request exam 
1-E22-0089	12" Pipe to Elbow	80A0183 80A0186	N/A PY-12-100-CS	C-F	PT UT	XI	
1-E22-0090	12" Elbow to Pipe	80A0183 80A0186	N/A PY-12-100-CS	C-F	PT UT	XI	
1-E22-0091	12" Pipe to Valve F023	80A0183 80A0186	N/A PY-12-100-CS	C-F	PT UT	XI	
1-E22-0042	16"x 16"x 12" Tee to 16" Pipe	80A0183 80A0186	N/A PY-16-100-CS	C-F	PT UT	XIII	



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PIPING WELDS Ref. Dwg. No. 05-03							
1-E22-0043	16" Pipe to Elbow	80A0183 80A0186	N/A PY-16- 100-CS	C-F	PT UT	XIII	
1-E22-0044	16" Elbow to Pipe	80A0183 80A0186	N/A PY-16- 100-CS	C-F	PT UT	XIII	
1-E22-0045	16" Pipe to Flange FE-N007	80A0183 80A0186	N/A PY-16- 100-CS	C-F	PT UT	XIII	




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WELDED ATTACHMENTS Ref. Dwg. No. 05-03							
I-E22-H085-WA	Pipe Welded Attachment	80A0183	N/A	C-E	PT	XII	
I-E22-H054-WA	Pipe Welded Attachment	80A0183	N/A	C-E	PT	XIII	
I-E22-H062-WA	Pipe Welded Attachment	80A0183	N/A	C-E	PT	XI	



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PIPING WELDS Ref. Dwg. No. 05-03A							
1-E22-0092	12" Valve F023 To Elbow	80A0186	PY-12-XX2-CS-F	C-F	UT	XI	
		80A0183	N/A		PT		
1-E22-0093	12" Elbow To Pipe	80A0183	N/A	C-F	PT	XI	
1-E22-0094	12" Pipe To Elbow	80A0183	N/A	C-F	PT	XI	
1-E22-0095	12" Elbow To Pipe	80A0183	N/A	C-F	PT	XI	
1-E22-0096	12" Pipe To Elbow	80A0183	N/A	C-F	PT	XI	
1-E22-0097A	12" Elbow To Pipe	80A0183	N/A	C-F	PT	XI	
1-E22-0097	12" Pipe to Penetration P409 Process Pipe	80A0183	N/A	C-F	PT	XI	
1-E22-0098	12" Penetration P409 Process Pipe To Pipe	80A1083	N/A	C-F	PT	XI	



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PIPING WELDS Ref. Dwg. No. 05-03A							
1-E22-0099	12" Pipe To Elbow	80A0183	N/A	C-F	PT	XI	
1-E22-0100	12" Elbow To Pipe	80A0183	N/A	C-F	PT	XI	
1-E22-0101	12" Pipe To Flange	80A0183	N/A	C-F	PT	XI	△
1-E22-0102	12" Flange To Pipe	80A0183	NA	C-F	PT	XI	
1-E22-0102D	12" Pipe Long Seam Downstream	80A0183	N/A	C-F	PT	XI	



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WELDED ATTACHMENTS Ref. Dwg. No. 05-03A							
I-E22-H087-WA	Pipe Welded Attachment	80A0183	N/A	C-E	PT	XI	3
I-E22-H123-WA	Pipe Welded Attachment	80A0183	N/A	C-E	PT	XI	

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COMPONENT EXAMINATIONS Ref. Dwg. No. 05-02, 05-05							
1-E22-F036-SEAM	12" Valve E22-F036 Body Weld	80A0193	PY-VALVE	B-M-1	UT	III	
		80A0183	XXI-CS N/A		PT		
1-E22-F036-IS	12" Valve E22-F036 Internal Surface	80A0184	N/A	B-M-2	VT-1	III	
1-E22-F005-IS	12" Valve E22-F005 Internal Surface	80A0184	N/A	B-M-2	VT-1	III	
1-E22-F004-IS	12" Valve E22-F004 Internal Surface	80A0184	N/A	B-M-2	VT-1	XI	
1-E22-F004-B	12" Valve E22-F004 Bolting	80A0184	N/A	B-G-2	VT-1	XI	



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COMPONENT EXAMINATIONS Ref. Dwg. No. 05-06, 05-07							
1-E22-F003-SEAM	6" Check Valve E22-F003 Body Weld	80A0183	N/A	C-G	PT	XI	
1-E22-F026-SEAM	6" Gate Valve E22-F026 Body Weld	80A0183	N/A	C-G	PT	XI	



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HPCS PUMP C001 Ref. Dwg. No. 05-04							
1-E22-C001-001	Dished Head to Barrel Shell #1	80A0183	N/A	C-G	PT	XIV	
1-E22-C001-002	Barrel Shell #1 to Barrel Shell #2	80A0183	N/A	C-G	PT	XIV	
1-E22-C001-003	Barrel Shell #2 to Barrel Shell #3	80A0183	N/A	C-G	PT	XIV	
1-E22-C001-004	Barrel Shell #3 to Shell Flange	80A0183	N/A	C-G	PT	XIV	
1-E22-C001-005	Head Flange to Head Shell	80A0183	N/A	C-G	PT	XIV	
1-E22-C001-006	16" Discharge Flange to 16" Discharge Pipe	80A0183	N/A	C-G	PT	XIV	
1-E22-C001-007	16" Discharge Pipe to Head Shell	80A0183	N/A	C-G	PT	XIV	

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	HPCS PUMP C001 Ref. Dwg. No. 05-04						
1-E22-C001-008	24" Suction Flange to 24" Suction Pipe	80A0183	N/A	C-G	PT	XIV	
1-E22-C001-012	24" Suction Pipe Longitudinal Seam	80A0183	N/A	C-G	PT	XIV	
1-E22-C001-009	24" Suction Pipe to Head Shell	80A0183	N/A	C-G	PT	XIV	
1-E22-C001-010	Head Shell to Head Cover	80A0183	N/A	C-G	PT	XIV	
1-E22-C001-011	Head Shell Longitudinal Seam	80A0183	N/A	C-G	PT	XIV	