

DUANE ARNOLD ENERGY CENTER

UNIT #1 PALO, IOWA

Commercial Service Date: February 1, 1975

INSERVICE INSPECTION REPORT

June 30, 1987 through December 27, 1988

Date:

March 15, 1989

OWNER:

Iowa Electric Light and Power Company  
P.O. Box 351  
Cedar Rapids, Iowa 52406

Prepared by:

*K. Muhl* *KMA 3-2-89*  
ASME Section XI Group

Date: 3-3-89

Reviewed by:

*K. Muhl* *KMA 3-2-89*  
ASME Section XI Administrator

Date: 3-3-89

Concurred by:

*S. A. Jensen* *SPK 31 MAR 89*  
Supervising Engineer,

Date: 3-13-89

Approved by:

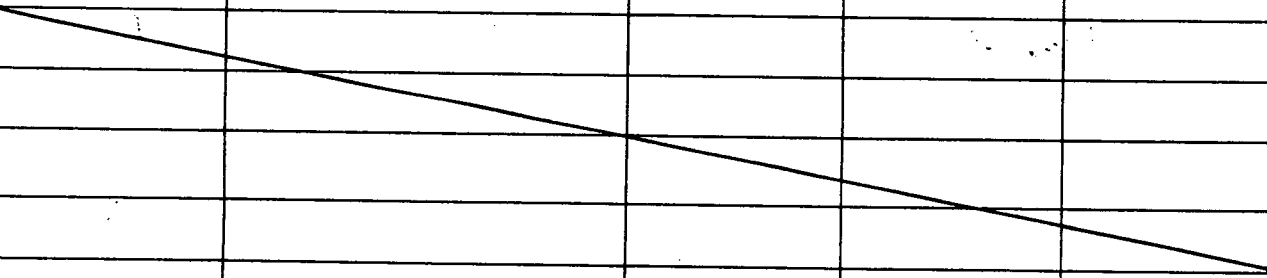
*Robert Hestby* *RH 3/15/89*  
Manager, Design Engineering

Date: 3/15/89

Table of Contents

<u>PART</u>	<u>DESCRIPTION</u>	<u>PAGE NO.</u>
A	Form NIS-1	A, page 1
B	Certificate of Inservice Inspection	B, page 1 - 8
C	Abstract	C, page 1
D	Table of Component and Weld Examination Identification Records	D, page 1 - 7
E	Abstract of ASME Section XI Repairs and Replacements	E, page 1 - 3
F	Form NIS-2's	F, page 1 - 69
G	Abstract of Conditions Noted and Corrective Measures Taken	G, page 1
H	ISI Figures and ISO's	H, page 1 - 35

**FORM NIS-1 OWNERS' DATA REPORT FOR INSERVICE INSPECTIONS****As required by the Provisions of the ASME Code Rules**1. Owner Iowa Electric Light and Power, P.O. Box 351, Cedar Rapids, IA 52406  
(Name and Address of Owner)2. Plant Duane Arnold Energy Center, 3277 DAEC Rd., Palo, IA 52324  
(Name and Address of Plant)3. Plant Unit 1 4. Owner Certificate of Authorization (if required) N/A5. Commercial Service Date 02-01-75 6. National Board Number for Unit N/A7. Components Inspected This report includes a Table of Contents (p.1), Part A (p.1), Part B (pp.1-8), Part C (p.1), Part D (pp.1-7), Part E (pp.1-3), Part F (pp.1-69), Part G (p.1), Part H (pp.1-36)

Component or Appurtenance	Manufacturer or Installer	Manufacturer or Installer Serial No.	State or Province No.	National Board No.
Reactor Pressure Vessel (RPV)	Chicago Bridge and Iron	3-4833	NA	3663
HCA-H2	"	"	"	"
RPV Stabilizer Weld	"	"	"	"
CSA-BD-1	"	"	"	"
RRA-N2-A	"	"	"	"
Vessel Nozzle Inside Radius	"	"	"	"
RRA-BD-1	"	"	"	"
RRB-N2-B	"	"	"	"
Vessel Nozzle Inside Radius	"	"	"	"
RRB-BD-1	"	"	"	"
				
(Refer to Part B, Pages 1 through 8, of this report for continuation of components examined)				

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8½ in. x 11 in., (2) information in items 1 through 6 on this data report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

## FORM NIS-1 (back)

8. Examination Dates 06-30-87 to 12-27-88 9. Inspection Interval from 11-01-85 to 11-01-95
10. Abstract of Examinations. Include a list of examinations and a statement concerning status of work required for current interval.
11. Abstract of Conditions Noted
12. Abstract of Corrective Measures Recommended and Taken

We certify that the statements made in this report are correct and the examinations and corrective measures taken conform to the rules of the ASME Code, Section XI.

Date 3-21 19 89 Signed Iowa Electric Light By David M. Munn  
 Owner Manager, Nuclear Division

Certificate of Authorization No. (if applicable) N/A Expiration Date N/A

### CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State or Province of Iowa and employed by Lumbermens Mutual Casualty Company of Long Grove, IL have inspected the components described in this Owners' Data Report during the period 06-30-87 to 3-22-89, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owners' Data Report in accordance with the requirements of the ASME Code, Section XI., except for the item listed below (Note 1)

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owners' Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date March 22, 19 89

W. Huggles  
 Inspector's Signature

Commissions National Board 5813 (I) (N), IA1041  
 National Board, State, Province and No.

Note 1: NIS-2 No. 09-89-26

(See Part F for NIS-2 form)

1) Owners: Iowa Electric Light and Power Company  
P.O. Box 351  
Cedar Rapids, Iowa 52406

Central Iowa Power Cooperative  
Marion, Iowa

Corn Belt Power Cooperative  
Humboldt, Iowa

2) Plant Duane Arnold Energy Center, Palo, Iowa

3) Plant Unit #1 4) Owners Certificate of Authorization (if required) N/A

5) Commercial Service Date 2-1-75 6) National Board Number of Unit N/A

GROSS GENERATING CAPACITY: 565 MWE

CERTIFICATE OF INSERVICE INSPECTION

COMPONENTS EXAMINED:

Reactor Pressure Vessel

Manufacturer: Chicago Bridge and Iron  
Post Office Box 13308  
Memphis, TN 38113

National Board Number 3663, Mfr. Serial Number 3-4833

Refer to Part A, page 1, Form NIS-1, Owners Data Report for Inservice Inspections.

Piping:

Manufacturers, sizes, part numbers and locations are noted and traceable through the piping isometric and piping instrumentation drawings (P&ID). Installation contractor, fabricator, systems P&ID's and isometric drawings are listed below.

Constructor - Bechtel Power Co.  
P.O. Box 3865  
San Francisco, CA 94119

Fabricator - Southwest Fabricating and Welding Co.  
P.O. Box 9449  
Houston, TX 77011

- 1) Owners: Iowa Electric Light and Power Company  
P.O. Box 351  
Cedar Rapids, Iowa 52406

Central Iowa Power Cooperative  
Marion, Iowa

Corn Belt Power Cooperative  
Humboldt, Iowa

- 2) Plant Duane Arnold Energy Center, Palo, Iowa

- 3) Plant Unit #1 4) Owners Certificate of Authorization (if required) N/A

- 5) Commercial Service Date 2-1-75 6) National Board Number of Unit N/A

GROSS GENERATING CAPACITY: 565 MWE

CERTIFICATE OF INSERVICE INSPECTION

COMPONENTS EXAMINED:

Class 1 Components

Reactor Pressure Vessel	Figure 1.1-3
Control Rod Drive	Figure 1.1-8
Main Steam Loops A, B, C and D	P&ID M-103 GE Drawing 731E615 ISO No's 1.2-1, 1.2-2, 1.2-3, 1.2-4
Feedwater A and B	P&ID M-106, M-107 Bechtel ISO DLA-2-4 ISO No. 1.2-5
Feedwater C and D	P&ID M-106, M-107 Bechtel ISO DLA-2-4 ISO No. 1.2-6
Core Spray A	P&ID M-121 Bechtel Drawings DLA-7-1 and DLA-7-2 ISO No. 1.2-7
High Pressure Coolant Injection - Steam	P&ID M-122 Bechtel Drawing DBA-3-1 ISO No. 1.2-9

- 1) Owners: Iowa Electric Light and Power Company  
P.O. Box 351  
Cedar Rapids, Iowa 52406

Central Iowa Power Cooperative  
Marion, Iowa

Corn Belt Power Cooperative  
Humboldt, Iowa

- 2) Plant Duane Arnold Energy Center, Palo, Iowa  
3) Plant Unit #1 4) Owners Certificate of Authorization (if required) N/A  
5) Commercial Service Date 2-1-75 6) National Board Number of Unit N/A  
GROSS GENERATING CAPACITY: 565 MWE

CERTIFICATE OF INSERVICE INSPECTION

COMPONENTS EXAMINED:

High Pressure Coolant Injection - Water	P&ID M-123 Bechtel Drawing DLA-1-1 ISO No. 1.2-10
Reactor Water Clean-up - Discharge	P&ID M-127 Bechtel Drawing DCA-6-1 ISO No. 1.2-11B
Control Rod Drive Return	P&ID M-117 Bechtel Drawing DBA-6-1 ISO No. 1.2-12A and 1.2-12B
Residual Heat Removal-20A	P&ID M-120 Bechtel Drawing DLA-5-1 ISO No. 1.2-15
Reactor Core Isolation Cooling - Steam	P&ID M-124 Bechtel Drawing DBA-4-1 ISO No. 1.2-17

INSERVICE INSPECTION REPORT  
June 30, 1987 through December 27, 1988

Part B, Page 4 of 8

- 1) Owners: Iowa Electric Light and Power Company  
P.O. Box 351  
Cedar Rapids, Iowa 52406

Central Iowa Power Cooperative  
Marion, Iowa

Corn Belt Power Cooperative  
Humboldt, Iowa

- 2) Plant Duane Arnold Energy Center, Palo, Iowa

- 3) Plant Unit #1 4) Owners Certificate of Authorization (if required) N/A

- 5) Commercial Service Date 2-1-75 6) National Board Number of Unit N/A

GROSS GENERATING CAPACITY: 565 MWE

CERTIFICATE OF INSERVICE INSPECTION

COMPONENTS EXAMINED:

Reactor Core Isolation Cooling - Water

P&ID M-125  
Bechtel Drawing DBA-7-1  
ISO No. 1.2-18

Recirculation Drain Line 'A'

P&ID M-116  
GE Drawing 731E781  
APED B31-9-(1)-6  
ISO No. 1.2-19A

Recirculation Pump B and Bypass

P&ID M-116  
GE Drawing 731E781  
APED B31-9-(1)-6  
ISO No. 1.2-21

Recirculation Drain Line 'B'

P&ID M-116  
GE Drawing 731E781  
APED B31-9-(1)-6  
ISO No. 1.2-21A

Recirculation Manifold B and  
Risers A, B, C and D

P&ID M-116  
GE Drawing 731E781  
APED B31-9-(1)-6  
ISO No. 1.2-22

Head Vent

P&ID M-114  
APED B11-2655-104-3  
ISO No. 1.2-24



INSERVICE INSPECTION REPORT  
June 30, 1987 through December 27, 1988

Part B, Page 5 of 8

- 1) Owners: Iowa Electric Light and Power Company  
P.O. Box 351  
Cedar Rapids, Iowa 52406

Central Iowa Power Cooperative  
Marion, Iowa

Corn Belt Power Cooperative  
Humboldt, Iowa

- 2) Plant Duane Arnold Energy Center, Palo, Iowa

- 3) Plant Unit #1 4) Owners Certificate of Authorization (if required) N/A

- 5) Commercial Service Date 2-1-75 6) National Board Number of Unit N/A

GROSS GENERATING CAPACITY: 565 MWE

CERTIFICATE OF INSERVICE INSPECTION

COMPONENTS EXAMINED:

Bottom Head Drain

P&ID M-127  
Bechtel Drawing FSK-3352B  
ISO No. 1.2-32

Vessel Instrumentation N16A

P&ID M-115  
Bechtel Drawing FSK-5555  
ISO No. 1.2-33

Recirculation Pump 'A' Supports

P&ID M-116  
GE Drawing 731E781  
APED B31-9-(1)-6  
Figure No. 1.3-2

Recirculation Pump 'B' Supports

P&ID M-116  
GE Drawing 731E781  
APED B31-9-(1)-6  
Figure No. 1.3-3

Class 2 Components

RHR Pump Suction (S.E.)

P&ID M-120  
Bechtel Drawing M-712  
ISO No. 2.2-32

RHR Pump Suction (N.W.)

P&ID M-119  
Bechtel Drawing M-713  
ISO No. 2.2-33

INSERVICE INSPECTION REPORT  
June 30, 1987 through December 27, 1988

Part B, Page 6 of 8

- 1) Owners: Iowa Electric Light and Power Company  
P.O. Box 351  
Cedar Rapids, Iowa 52406

Central Iowa Power Cooperative  
Marion, Iowa

Corn Belt Power Cooperative  
Humboldt, Iowa

- 2) Plant Duane Arnold Energy Center, Palo, Iowa  
3) Plant Unit #1 4) Owners Certificate of Authorization (if required) N/A  
5) Commercial Service Date 2-1-75 6) National Board Number of Unit N/A  
GROSS GENERATING CAPACITY: 565 MWE

CERTIFICATE OF INSERVICE INSPECTION

COMPONENTS EXAMINED:

RHR Pump Discharge (N.W.)

P&ID M-119  
Bechtel Drawing M-115  
ISO No. 2.2-39

RHR Heat Exchanger Discharge (N.W.)

P&ID M-119  
Bechtel Drawing M-721  
ISO No. 2.2-40

RHR Fuel Pool Cooling and Cleanup

P&ID M-119 and M-134  
Bechtel Drawing HBB-24-2,  
3, 4 and 5  
ISO No. 2.2-43

INSERVICE INSPECTION REPORT  
June 30, 1987 through December 27, 1988

Part B, Page 7 of 8

- 1) Owners: Iowa Electric Light and Power Company  
P.O. Box 351  
Cedar Rapids, Iowa 52406

Central Iowa Power Cooperative  
Marion, Iowa

Corn Belt Power Cooperative  
Humboldt, Iowa

- 2) Plant Duane Arnold Energy Center, Palo, Iowa

- 3) Plant Unit #1 4) Owners Certificate of Authorization (if required) N/A

- 5) Commercial Service Date 2-1-75 6) National Board Number of Unit N/A

GROSS GENERATING CAPACITY: 565 MWE

CERTIFICATE OF INSERVICE INSPECTION

COMPONENTS EXAMINED:

HPCI Pump Discharge

P&ID M-123  
Bechtel Drawing M-701  
ISO No. 2.2-45

HPCI Turbine Steam Inlet

P&ID M-122  
Bechtel Drawing M-702  
ISO No. 2.2-46

HPCI Turbine Steam Exhaust

P&ID M-122  
Bechtel Drawing M-703  
ISO No. 2.2-47

INSERVICE INSPECTION REPORT  
June 30, 1987 through December 27, 1988

Part B, Page 8 of 8

- 1) Owners: Iowa Electric Light and Power Company  
P.O. Box 351  
Cedar Rapids, Iowa 52406

Central Iowa Power Cooperative  
Marion, Iowa

Corn Belt Power Cooperative  
Humboldt, Iowa

- 2) Plant Duane Arnold Energy Center, Palo, Iowa

- 3) Plant Unit #1 4) Owners Certificate of Authorization (if required) N/A

- 5) Commercial Service Date 2-1-75 6) National Board Number of Unit N/A

GROSS GENERATING CAPACITY: 565 MWE

CERTIFICATE OF INSERVICE INSPECTION

COMPONENTS EXAMINED:

Core Spray Suction (N.W.)

P&ID M-121  
Bechtel Drawing M-709  
ISO No. 2.2-51

Core Spray Discharge (N.W.)

P&ID M-121  
Bechtel Drawing M-711  
ISO No. 2.2-52

- 1) Owners: Iowa Electric Light and Power Company  
P.O. Box 351  
Cedar Rapids, Iowa 52406

Central Iowa Power Cooperative  
Marion, Iowa

Corn Belt Power Cooperative  
Humboldt, Iowa

- 2) Plant Duane Arnold Energy Center, Palo, Iowa  
3) Plant Unit #1 4) Owners Certificate of Authorization (if required) N/A  
5) Commercial Service Date 2-1-75 6) National Board Number of Unit N/A

Abstract:

The Inservice Inspection addressed in this report was performed in accordance with the American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section XI 1980 Edition through Winter 1981 Addenda, and the Duane Arnold Energy Center Updated Final Safety Analysis Report. The inspections were performed utilizing Non-Destructive Examination techniques (i.e., Ut, Pt, Mt, etc.). The examinations were conducted during the period of June 30, 1987 thru December 27, 1988. The specific details and associated records of the examinations are on file at Iowa Electric Light and Power Company.

SYSTEM OR COMPON DESCRIP	ACC REJ	WELD OR COMPONENT DESCRIPTION	UT ISI REPORT NUMBER	VISUAL ISI REPORT NUMBER	MT ISI REPORT NUMBER	PT ISI REPORT NUMBER	ISI ISO NUMBER	ASME XI CATEGORY	COMMENTS
CLASS 1									
RPV INTERIOR	X	RPV INTERIOR	N/A	*	N/A	N/A	N/A	B-N-1	100% REMOTE VT ACCESSIBLE AREAS ABOVE AND BELOW THE REACTOR CORE *(REF. 1988 RFO GE IN VESSEL INSPECTION BOOK)
	X	RPV INTERIOR	N/A	*	N/A	N/A	N/A	B-N-2	
REACTOR PRESSURE VESSEL	X	HCA-H2	N/A	N/A	88-082	N/A	FIG 1.1-3	B-H	TOTAL LENGTH OF WELD 40 FEET. EXAM FROM 0' TO 13.4'
RPV STABILIZERS	X	RPV STABILIZER WELD	N/A	N/A	88-083	N/A	N/A	B-H	AT 0 DEG. UNITS 5 & 6
CONTROL ROD DRIVE	X	1T-221(09) 18-03	N/A	88-407	N/A	N/A	FIG 1.1-8	B-G-2	
(CRD)HOUSING-	X	1T-221(76) 22-07	N/A	88-389	N/A	N/A	FIG 1.1-8	B-G-2	
FLANGE BOLTING,	X	1T-221(06) 14-07	N/A	88-481	N/A	N/A	FIG 1.1-8	B-G-2	
STUDS, & NUTS	X	1T-221(40) 34-11	N/A	88-413	N/A	N/A	FIG 1.1-8	B-G-2	
	X	1T-221(34) 26-11	N/A	88-411	N/A	N/A	FIG 1.1-8	B-G-2	
	X	1T-221(12) 22-11	N/A	88-392	N/A	N/A	FIG 1.1-8	B-G-2	
	X	1T-221(51) 18-11	N/A	88-418	N/A	N/A	FIG 1.1-8	B-G-2	
	X	1T-221(27) 14-11	N/A	88-343	N/A	N/A	FIG 1.1-8	B-G-2	
	X	1T-221(39) 34-15	N/A	88-412	N/A	N/A	FIG 1.1-8	B-G-2	
	X	1T-221(18) 30-15	N/A	88-408	N/A	N/A	FIG 1.1-8	B-G-2	
	X	1T-221(32) 22-15	N/A	88-410	N/A	N/A	FIG 1.1-8	B-G-2	
	X	1T-221(22) 38-19	N/A	88-409	N/A	N/A	FIG 1.1-8	B-G-2	
	X	1T-221(62) 34-19	N/A	88-393	N/A	N/A	FIG 1.1-8	B-G-2	
	X	1T-221(55) 22-19	N/A	88-395	N/A	N/A	FIG 1.1-8	B-G-2	

SYSTEM OR COMPON DESCRIP	ACC REJ WELD OR COMPONENT DESCRIPTION	UT ISI REPORT NUMBER	VISUAL ISI REPORT NUMBER	MT ISI REPORT NUMBER	PT ISI REPORT NUMBER	ISI ISO NUMBER	ASME XI CATEGORY	COMMENTS
-----------------------------------	---------------------------------------------	-------------------------------	-----------------------------------	-------------------------------	-------------------------------	----------------------	------------------------	----------

CRD BOLTING  
(Cont.)

X	1T-221(43) 02-19	N/A	88-334	N/A	N/A	FIG 1.1-8	B-G-2	
X	1T-221(41) 38-23	N/A	88-414	N/A	N/A	FIG 1.1-8	B-G-2	
X	1T-221(60) 30-23	N/A	88-416	N/A	N/A	FIG 1.1-8	B-G-2	
X	1T-221(88) 38-31	N/A	88-406	N/A	N/A	FIG 1.1-8	B-G-2	
X	1T-221(75) 18-31	N/A	88-390	N/A	N/A	FIG 1.1-8	B-G-2	
X	1T-221(38) 30-35	N/A	88-341	N/A	N/A	FIG 1.1-8	B-G-2	
X	1T-221(86) 34-39	N/A	88-482	N/A	N/A	FIG 1.1-8	B-G-2	
X	1T-221(61) 30-39	N/A	88-417	N/A	N/A	FIG 1.1-8	B-G-2	
X	1T-221(36) 26-43	N/A	88-391	N/A	N/A	FIG 1.1-8	B-G-2	
X	1T-221(50) 14-31	N/A	88-415	N/A	N/A	FIG 1.1-8	B-G-2	

## CLASS 1

MAIN STEAM 'A'	X	MSA-BJ-2	88-084	N/A	88-085	N/A	1.2-1	B-J	
	X	CV-4412	N/A	88-419	N/A	N/A	1.2-1	B-G-2	VT-1 BOLTING
	X	CV-4412	N/A	88-420	N/A	N/A	1.2-1	B-M-2	VT-3 VALVE BODY
	X	CV-4413	N/A	88-431	N/A	N/A	1.2-1	B-G-2	VT-1 BOLTING
	X	CV-4413	N/A	88-432	N/A	N/A	1.2-1	B-M-2	VT-3 VALVE BODY
	X	MSA-BJ-3	88-436	N/A	88-437	N/A	1.2-1	B-J	
	X	PSV-4400	N/A	88-442	N/A	N/A	1.2-1	B-G-2	VT-1 BOLTING (LOWER FLANGE)
	X	PSV-4400	N/A	88-443	N/A	N/A	1.2-1	B-M-2	VT-3 VALVE BODY
	X	PSV-4400	N/A	88-477	N/A	N/A	1.2-1	B-G-2	VT-1 BOLTING (REF NCR 88-078)
	X	PSV-4401	N/A	88-477	N/A	N/A	1.2-1	B-G-2	VT-1 BOLTING (REF NCR 88-078)
MAIN STEAM 'B'	X	CV-4415	N/A	88-421	N/A	N/A	1.2-2	B-G-2	VT-1 BOLTING
	X	CV-4415	N/A	88-422	N/A	N/A	1.2-2	B-M-2	VT-3 VALVE BODY
	X	PSV-4403	N/A	88-476	N/A	N/A	1.2-2	B-G-2	VT-1 BOLTING
	X	PSV-4402	N/A	88-477	N/A	N/A	1.2-2	B-G-2	VT-1 BOLTING (REF NCR 88-078)
MAIN STEAM 'C'	X	MSC-BJ-15	88-087	N/A	88-088	N/A	1.2-3	B-J	
	X	MSC-BJ-12-IA	88-089	N/A	88-090	N/A	1.2-3	B-J	
	X	MSC-BJ-12-OA	88-091	N/A	88-092	N/A	1.2-3	B-J	





SYSTEM OR COMPON DESCRIP	ACC REJ	WELD OR COMPONENT DESCRIPTION	UT ISI REPORT NUMBER	VISUAL ISI REPORT NUMBER	MT ISI REPORT NUMBER	PT ISI REPORT NUMBER	ISI ISO NUMBER	ASME XI CATEGORY	COMMENTS
FEEDWATER 'D'	X	FWD-BJ-17	88-134	N/A	88-135	N/A	1.2-6	B-J	
	X	FWD-BK-4	N/A	88-136	N/A	N/A	1.2-6	IWF	VT-3/4 HGR.ID: DLA-2-H-16
CORESPRAY 'A'	X	CSA-BD-1	88-143	N/A	N/A	N/A	1.2-7	B-D	0 DEG. UT
	X	CSA-BD-1	88-144	N/A	N/A	N/A	1.2-7	B-D	45 DEG. UT
	X	CSA-BD-1	88-145	N/A	N/A	N/A	1.2-7	B-D	60 DEG. UT
	X	CSA-N5A	88-146	N/A	N/A	N/A	1.2-7	B-D	INSIDE RADIUS SECTION
HPCI STEAM	X	PSA-BJ-22	88-165	N/A	88-166	N/A	1.2-9	B-J	
	X	MO-2238	N/A	88-402	N/A	N/A	1.2-9	B-M-2	VT-3 VALVE BODY
HPCI WATER	X	MO-2312	N/A	88-492	N/A	N/A	1.2-10	B-M-2	VT-3 VALVE BODY
REACTOR WATER CLEANUP	X	CUB-BF-4	88-181	N/A	N/A	88-182	1.2-11B	B-F	
	X	CUB-BJ-5	88-183	N/A	N/A	88-184	1.2-11B	B-J	
	X	CUB-BK-12A	N/A	88-185	N/A	N/A	1.2-11B	IWF	VT-3/4 HGR.ID: DCA-14-SS-74
	X	CUB-BK-12	N/A	88-186	N/A	N/A	1.2-11B	IWF	VT-3/4 HGR.ID: DCA-14-H-31
CONTROL ROD DRIVE RETURN	X	CRA-BJ-3	N/A	N/A	N/A	88-194	1.2-12A	B-J	
	X	CRA-BJ-47	N/A	N/A	88-195	N/A	1.2-12B	B-J	
	X	CRA-BJ-46	N/A	N/A	88-196	N/A	1.2-12B	B-J	
	X	CRA-BJ-43	N/A	N/A	88-197	N/A	1.2-12B	B-J	
	X	CRA-BK-45A	N/A	88-198	N/A	N/A	1.2-12B	IWF	VT-3/4 HGR.ID: DBA-6-H-33
RESIDUAL HEAT REMOVAL	X	RHC-BJ-1-LS	88-203	N/A	N/A	88-204	1.2-15	B-J	
	X	RHC-BF-2	N/A	N/A	N/A	88-333	1.2-15	B-F	UT PERFORMED IN OUTAGE 08
	X	MO-2003	N/A	88-405	N/A	N/A	1.2-15	B-M-2	VT-3 VALVE BODY
REACTOR CORE ISOLATION COOLING -STEAM	X	RSA-BJ-23	88-205	N/A	88-206	N/A	1.2-17	B-J	
REACTOR CORE ISOLATION COOLING -WATER	X	RSB-BJ-4	88-207	N/A	88-208	N/A	1.2-18	B-J	
DRAIN LINE RECIRC 'A'	X	RDA-BJ-2	N/A	N/A	N/A	88-221	1.2-19A	B-J	
	X	RDA-BJ-3	N/A	N/A	N/A	88-222	1.2-19A	B-J	
	X	RDA-BK-8	N/A	88-223	N/A	N/A	1.2-19A	IWF	VT-3/4 HGR.ID: SH-117

[illegible]

SYSTEM OR COMPON DESGRIP	ACC REJ	WELD OR COMPONENT DESCRIPTION	UT ISI REPORT NUMBER	VISUAL ISI REPORT NUMBER	MT ISI REPORT NUMBER	PT ISI REPORT NUMBER	ISI ISO NUMBER	ASME XI CATEGORY	COMMENTS
CLASS 2									
RHR PUMP SUCTION(SE)	X	RHA-CE-61A	N/A	88-002	N/A	N/A	2.2-32	IWF	VT-3/4
	X	RHA-CE-9	N/A	88-004	N/A	N/A	2.2-32	IWF	HGR.ID: HBB-24-SG-2 VT-3/4
	X	RHA-CE-22	N/A	88-006	N/A	N/A	2.2-32	IWF	HGR.ID: HBB-24-H-10-1 VT-3/4
	X	RHA-CF-52	N/A	N/A	88-007	N/A	2.2-32	C-F	HGR.ID: HBB-24-H-9-1
	X	RHA-CF-78	N/A	N/A	88-008	N/A	2.2-32	C-F	
	X	RHA-CE-066	N/A	88-458	88-445	N/A	2.2-32	C-C	HGR.ID: HBB-24-H-2
RHR PUMP SUCTION (N.W.)	X	RHB-CF-74	N/A	N/A	88-009	N/A	2.2-33	C-F	
	X	RHB-CF-75	N/A	N/A	88-010	N/A	2.2-33	C-F	
RHR HEAT EXCHANGER STEAM SUPPLY SE/NW	X	RHD-CF-28	N/A	N/A	88-011	N/A	2.2-33	C-F	
RHR PUMP DISCHARGE N.W.	X	RHI-CF-61	N/A	N/A	88-012	N/A	2.2-39	C-F	
RHR HEAT EXCHANGER DISCHARGE	X	RHJ-CF-13	N/A	N/A	88-013	N/A	2.2-40	C-F	
	X	RHJ-CF-47	N/A	N/A	88-014	N/A	2.2-40	C-F	
RHR FUEL POOL COOLING AND CLEAN UP	X	RHM-CF-24	N/A	N/A	88-015	N/A	2.2-43	C-F	
	X	RHM-CF-26	N/A	N/A	88-016	N/A	2.2-43	C-F	
HPCI PUMP DISCHARGE	X	HPB-CF-73	88-017	N/A	88-018	N/A	2.2-45	C-F	
HPCI STEAM TURBINE INLET	X	HPC-CE-77	N/A	88-019	88-020	N/A	2.2-46	C-C	HGR.ID: EBB-14-H-3
	X	HPC-CF-29	88-021	N/A	88-022	N/A	2.2-46	C-F	
	X	HPC-CF-24	88-023	N/A	88-024	N/A	2.2-46	C-F	
HPCI TURBINE STEAM EXHAUST	X	HPD-CF-10	N/A	N/A	88-025	N/A	2.2-47	C-F	
CORE SPRAY SUCTION N.W.	X	CSD-CF-4	N/A	N/A	88-026	N/A	2.2-51	C-F	

SYSTEM OR COMPON DESCRIP	ACC REJ	WELD OR COMPONENT DESCRIPTION	UT ISI REPORT NUMBER	VISUAL ISI REPORT NUMBER	MT ISI REPORT NUMBER	PT ISI REPORT NUMBER	ISI ISO NUMBER	ASME XI CATEGORY	COMMENTS
CORE SPRAY DISCHARGE N.W.	X	CSE-CF-73	N/A	N/A	88-027	N/A	2.2-52	C-F	
CLASS 2 PRESSURE TESTS	X	CORE SPRAY	N/A	88-388	N/A	N/A	VARIOUS	C-H	VT-2 (STP45A001-QA)
	X	RHR PUMP SUCTION DISCHARGE	N/A	88-346	N/A	N/A	VARIOUS	C-H	VT-2 (STP45A002-QA)
	X	HPCI SYSTEM	N/A	88-345	N/A	N/A	VARIOUS	C-H	VT-2 (STP45D001-Q) EXCEPT STEAM TUNNEL AREA
	X	HPCI SYSTEM	N/A	88-486	N/A	N/A	VARIOUS	C-H	VT-2 (STP45D001-Q, APPENDIX 1) STEAM TUNNEL AREA
	X	CRD SCRAM DISCHARGE VOLUME	N/A	88-438	N/A	N/A	VARIOUS	C-H	VT-2 (STP685001-6)
	X	CRD HYDRUALIC CONTROL UNITS	N/A	88-485	N/A	N/A	VARIOUS	C-H	VT-2 (STP-BS-47) TOTAL 89
	X	MAIN STEAM LINES	N/A	88-487	N/A	N/A	VARIOUS	C-H	VT-2 (STP-BS-49)
PRESSURE TEST OF INSTRUMENT LINES	X	RPV	N/A	88-081	N/A	N/A	VARIOUS	C-H	VT-2 (STP46G022)
	X	MAIN STEAM	N/A	88-081	N/A	N/A	VARIOUS	C-H	VT-2 (STP46G022)
	X	RECIRC	N/A	88-081	N/A	N/A	VARIOUS	C-H	VT-2 (STP46G022)
	X	RCIC	N/A	88-081	N/A	N/A	VARIOUS	C-H	VT-2 (STP46G022)
	X	HPCI	N/A	88-081	N/A	N/A	VARIOUS	C-H	VT-2 (STP46G022)
	X	CORE SPRAY	N/A	88-081	N/A	N/A	VARIOUS	C-H	VT-2 (STP46G022)

Abbreviations

ACC - Accept  
REJ - Reject  
RPV - Reactor Pressure Vessel  
COMPON - Component  
DESCRIP - Description  
HGR - Hanger

ABSTRACT OF ASME SECTION XI REPAIRS AND REPLACEMENTS

The following is a list of the Repairs and Replacements completed with a brief description of work performed.

- 1) Owners: Iowa Electric Light and Power Company  
P.O. Box 351  
Cedar Rapids, Iowa 52406

Central Iowa Power Cooperative  
Marion, Iowa

Corn Belt Power Cooperative  
Humboldt, Iowa

- 2) Plant Duane Arnold Energy Center, Palo, Iowa  
3) Plant Unit #1 4) Owners Certificate of Authorization (if required) N/A  
5) Commercial Service Date 2-1-75 6) National Board Number of Unit N/A

<u>NIS-2 No.</u>	<u>COMPONENTS</u>	<u>DESCRIPTION</u>
08-88-01	Snubber pins, see Table PSA-1-87	Replaced snubber pins
08-88-02	Snubber pins, see Table PSA-3-87	Replaced snubber pins
08-88-03	Snubber pins, see Table PSA-3-87B	Replaced snubber pins
08-88-04	Snubber pins, see Table PSA-10-87A	Replaced snubber pins
08-88-05	Snubber pins, see Table PSA-35-87	Replaced snubber pins
08-88-06	Snubber pins, see Table PSA-100-87	Replaced snubber pins
08-88-07	Snubber pins, DLA-6-SS-13	Replaced snubber pins
08-88-08	Snubber pins, GBB-13-SS-16	Replaced snubber pins
08-88-09	Snubber pins, see Table PSA-10-87B	Replaced snubber pins
09-88-10	LS 2206 (level switch)	Repaired Plug
09-88-11	Clevis assembly (Rear), EBB-16-SS-234A	Replaced clevis assembly
09-88-12	Pipe clamp-studs and nuts, DBA-7-SS-71	Replaced studs and nuts

<u>NIS-2 No.</u>	<u>COMPONENTS</u>	<u>DESCRIPTION</u>
09-88-13	Hydraulic snubber, EBB-14-SS-14	Replaced snubber
09-88-14	Cylinder tube & flange, see Table CRD-1	Replaced CRD's drives
09-88-15	Snubber pins, DLA-005-SS-011	Replaced snubber pins
09-88-16	Hydraulic snubber, HBB-001-SS-010	Replaced snubber
09-88-17	RHR pressure vessel, 1E-201A	Repaired defect in tube sheet cladding
09-88-18	Lug pad, SSA-1 and SSB-1	Repaired rejected indications (grinding)
09-88-19	Pipe clamp - studs and nuts, DCA-6-SS-50	Replaced studs and nuts
09-88-20	Pilot seat valve-bolts, see Table MSR-1	Replaced pilot seat - valve bolts
09-88-21	Base plate of support, DBA-6-H-1	Repaired base plate of variable support
09-88-22	Pilot seat valve-bolts, see Table MSR-2	Replaced pilot seat - valve bolts
09-88-23	Check valve-discs, V-14-1 and V-14-3	Replaced check valve disc
09-89-24	Hydraulic snubbers, DLA-14-SS-74, DCA-14-SS-73	Replaced snubbers
09-89-25	CV4400, see Table MSR-3	Replaced main valve body, pilot valve and pilot/main valve body bolts, and main disc
09-89-26	Recirc. drain line, 2"-DAC-19	Replaced pipe and elbows due to pin hole leaks
09-89-27	Disc, stem/stem disc assembly, CV4415	Replaced disc and stem/stem disc assembly
09-89-28	Disc, CV4421	Replaced valve disc
09-89-29	Stem/stem disc assembly, CV4412	Replaced stem/stem disc assembly
09-89-30	Stem/stem disc assembly, CV4413	Replaced stem/stem disc assembly Repaired main valve body

<u>NIS-2 No.</u>	<u>COMPONENTS</u>	<u>DESCRIPTION</u>
09-89-31	Stem/stem disc assembly, CV4419	Replaced stem/stem disc assembly
09-89-32	Main disc, CV4420	Replaced main disc
09-89-33	LS2206 (level switch)	Repaired by welding new plug
09-89-34	Hydrogen monitor, AE 4660	Replacement of blind flange with monitor
09-89-35	Main disc, PSV 4403	Replaced valve disc
09-89-36	Hydraulic Snubber, EBB-14-SS-16A	Replaced snubber

INSERVICE INSPECTION REPORT  
June 30, 1987 through December 27, 1988

Part F, 69 pages



**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As Required by the Provisions of the ASME Code Section XI

1. Owner Iowa Electric Light and Power Date 2-12-88  
Name  
P.O. Box 351, Cedar Rapids, IA 52406 Sheet 1 of 2  
Address
2. Plant Duane Arnold Energy Center Unit 1  
Name  
3277 DAEC Rd., Palo, IA 52324 See Attch. PSA-1-87  
Address Repair Organization P.O. No., Job No., etc.
3. Work Performed by Iowa Electric Type Code Symbol Stamp None  
Name  
3277 DAEC Rd., Palo, IA 52324 Authorization No. None  
Address Expiration Date None
4. Identification of System See Attch. PSA-1-87
5. (a) Applicable Construction Code ASME III 19 74 Edition, W/76 Addenda, None Code Case  
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1980 W/81

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
(2) Snubber Pins	Iowa Electric	See Note 1	None	See Attch. PSA-1-87	Note 1 1987	Replacement	No

7. Description of Work Snubber Pin Replacement

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☐  
Other ☐ Pressure None psi Test Temp. None °F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8½ in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

FORM NIS-2 (Back)

9. Remarks Replaced snubber pins with snubber pins fabricated from certified  
round bar stock (P.O. S37978) (Note 1). VT-3/VT-4 preservice inspection  
performed on replacement pins only.\*

\* No VT-3/VT-4 was performed on snubber pins of 2B, CMAR 085866 due to line size exemption.

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this Replacement conforms to the rules of the ASME Code, Section XI. repair or replacement

Type Code Symbol Stamp None

Certificate of Authorization No. None Expiration Date None

Signed R. M. H. ASME Administrator Date February 25<sup>th</sup>, 19 88  
 Owner or Owner's Designee Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Iowa and employed by Lumbermen's Mutual Casualty Company of Long Grove, Illinois have inspected the components described in this Owner's Report during the period 10-23-87 to 5-4-88, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

W. H. Ruggles Commissions Nat'l Bd. SB13(N)(I) IA-1041  
 Inspector's Signature National Board, State, Province, and Endorsements

Date May 5, 19 88

(12/82) Note 1: Replacement snubber pins were fabricated, by Iowa Electric, from 1/2-inch diameter SA-564-T-630 round bar stock (CMAR 85732), heat number 446004.

1. Owner Iowa Electric Light and Power  
Name  
P.O. Box 351, Cedar Rapids, IA 52406  
Address

Date 2-12-88

Sheet 2 of 2

2. Plant Duane Arnold Energy Center  
Name  
3277 DAEC Rd., Palo, IA 52324  
Address

Unit 1

see below

3. Work Performed by Iowa Electric  
Name  
3277 DAEC Rd. Palo IA 52324  
Address

Repair Organiz. P.O. No., Job No., etc.

Type Code Symbol Stamp None

Authorization No. None

Expiration Date None

4. Identification of System see below

5. (a) Applicable Construc. Code ASME III 19 74 Edition, W/76 Addenda None Code Case

(b) Applicable Edition of Section XI Utilized for Repairs or Replacement 19 80 W/81

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Comp.	Name of Manufac.	Manufacturer Serial No.	Board No.	Other Identif.	Year Built	ASME Code Repaired Replaced or Replacement	Stamped (Yes or No)
2 Snubber Pins	Iowa Electric	See Sheet 1	None	See Below	1987	Replacement	No

Table PSA-1-87 (Class 1)

Identification of System	Repair Organization (CMAR)	Other Identification	Inspection Report
CRD Return Line	085825	DBA-6-SS-30	87-834
CRD Return Line	085824	DBA-6-SS-29	87-833
HPCI-Steam	085834	DLA-3-SS-1	87-831
Reactor Vessel Head Vent	085866	2B	*

\* no VT-3/VT-4 was performed on snubber pins of 2B, CMAR 085866 due to line size exemption.

**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As Required by the Provisions of the ASME Code Section XI

1. Owner Iowa Electric Light and Power Date 2-12-88  
Name  
P.O. Box 351, Cedar Rapids, IA 52406 Sheet 1 of 3  
Address
2. Plant Duane Arnold Energy Center Unit 1  
Name  
3277 DAEC Rd., Palo, IA 52324 See Attch. - PSA-3-87A  
Address Repair Organization P.O. No., Job No., etc.
3. Work Performed by Iowa Electric Type Code Symbol Stamp None  
Name  
3277 DAEC Rd., Palo, IA 52324 Authorization No. None  
Address Expiration Date None
4. Identification of System See Attch. - PSA-3-87A
5. (a) Applicable Construction Code ASME III 19 74 Edition, W/76 Addenda, None Code Case  
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 19 80 W/81

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
(2) Snubber Pins	Iowa Electric	See Note 1	None	See Attch. PSA-3-87A	Note 1 1987	Replacement	No

7. Description of Work Snubber Pin Replacement

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☐  
Other ☐ Pressure None psi Test Temp. None °F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8½ in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

FORM NIS-2 (Back)

9. Remarks Replaced snubber pins with snubber pins fabricated from certified  
Applicable Manufacturer's Data Reports to be attached  
bar stock (P.O. S37978) (Ref. Note 1). VT-3/VT-4 preservice inspection  
performed on the replacement pins only.

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this Replacement conforms to the rules of the  
ASME Code, Section XI. repair or replacement

Type Code Symbol Stamp None

Certificate of Authorization No. None Expiration Date None

Signed [Signature] a IME Administrator Date February 25<sup>th</sup>, 19 88  
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State  
or Province of Iowa and employed by Lumbermens Mutual Casualty Company of  
Long Grove, Illinois have inspected the components described  
in this Owner's Report during the period 10-21-87 to 5-4-88, and state that  
to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this  
Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificata neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the  
examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer  
shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this  
inspection.

[Signature] Commissions Nat'l Bd. 5813(N)(I) IA1041  
Inspector's Signature National Board, State, Province, and Endorsements

Date May 5, 19 88

(12/82) Note 1: Replacement snubber pins were fabricated by Iowa Electric from  
3/4" diameter SA564-T-630 round bar stock (CMAR 85732), heat  
number 9A2856.

1. Owner Iowa Electric Light and Power  
Name  
P.O. Box 351, Cedar Rapids, IA 52406  
Address

Date 2-12-88

Sheet 2 of 3

2. Plant Duane Arnold Energy Center  
Name  
3277 DAEC Rd., Palo, IA 52324  
Address

Unit 1

see below

3. Work Performed by Iowa Electric  
Name  
3277 DAEC Rd. Palo IA 52324  
Address

Repair Organiz. P.O. No., Job No., etc.  
 Type Code Symbol Stamp None  
 Authorization No. None  
 Expiration Date None

4. Identification of System see below

5. (a) Applicable Construc. Code ASME III 19 74 Edition, W/76 Addenda None Code Case  
 (b) Applicable Edition of Section XI Utilized for Repairs or Replacement 19 80 W/81

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Comp.	Name of Manufac.	Manufacturer Serial No.	Board No.	Other Identif.	Year Built	ASME Code Repaired Replaced or Replacement	Stamped (Yes or No)
2 Snubber ins	Iowa Electric	See Sheet 1	None	See Below	1987	Replacement	No

Table PSA-3-87A (Class 1)

Identification of System	Repair Organiz. (CMAR)	Line Size	Other ID	Inspection Report
Reactor FW Line 'C'	085764	10"	DLA-2-SS-9	87-758
Reactor FW Line 'C'	085833	10"	DLA-2-SS-8	87-815
RCIC-steam	085821	4"	DBA-4-SS-36	87-821
RCIC-steam	085820	4"	DBA-4-SS-35	87-820
RCIC-steam	085819	4"	DBA-4-SS-34	87-819
RCIC-water	085826	4"	DBA-7-SS-71	87-822
Reactor Water Cleanup-Discharge	085832	4"	DCA-14-SS-72	87-816
Reactor Water Cleanup-Suction	085831	4"	DCA-6-SS-50	87-817
_____	_____	_____	_____	_____

1. Owner Iowa Electric Light and Power  
Name  
P.O. Box 351, Cedar Rapids, IA 52406  
Address

Date 2-12-88

Sheet 3 of 3

2. Plant Duane Arnold Energy Center  
Name  
3277 DAEC Rd., Palo, IA 52324  
Address

Unit 1

see below

Repair Organiz. P.O. No., Job No., etc.  
 Type Code Symbol Stamp None  
 Authorization No. None  
 Expiration Date None

3. Work Performed by Iowa Electric  
Name  
3277 DAEC Rd. Palo IA 52324  
Address

4. Identification of System see below

5. (a) Applicable Construc. Code ASME III 19 74 Edition, W/76 Addenda None Code Case

(b) Applicable Edition of Section XI Utilized for Repairs or Replacement 19 80 W/81

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Comp.	Name of Manufac.	Manufacturer Serial No.	Board No.	Other Identif.	Year Built	ASME Code Repaired Replaced or Replacement	Stamped (Yes or No)
2 Snubber ins	Iowa Electric	See Sheet 1	None	See Below	1987	Replacement	No

Table PSA-3-87A (Class 1) (con't)

Identification of System	Repair Organiz. (CMAR)	Line Size	Other IDs	Inspection Report
Reactor Water Cleanup-Suction	085830	4"	DCA-6-SS-49	87-818
'A' Recirc. Discharge	085837	22"	SSA-10(B)	87-836
'A' Recirc. Discharge	085836	22"	SSA-10(A)	87-835
'B' Recirc. Discharge	085838	22"	SSB-10(A)	87-837
'B' Recirc. Discharge	085839	22"	SSB-10(B)	87-838

**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
**As Required by the Provisions of the ASME Code Section XI**

1. Owner Iowa Electric Light and Power Date 2-12-88  
Name  
P.O. Box 351, Cedar Rapids, IA 52406 Sheet 1 of 2  
Address
2. Plant Duane Arnold Energy Center Unit 1  
Name  
3277 DAEC Rd., Palo, Iowa 52324 See Attch. - PSA-3-87B  
Address Repair Organization P.O. No., Job No., etc.
3. Work Performed by Iowa Electric Type Code Symbol Stamp None  
Name Authorization No. None  
3277 DAEC Rd., Palo, IA 52324 Expiration Date None  
Address
4. Identification of System See Attch. - PSA-3-87B
5. (a) Applicable Construction Code ASME III 19 74 Edition, W/76 Addenda, None Code Case  
 (b) Applicable Edition of Section XI Utilized for Repairs or Replacements 19 80 W/81

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
(2) Snubber Pins	Bergen-Patterson	3-1007-004 D	None	See Attch PSA-3-87B	1987	Pin Replacement	No

7. Description of Work Snubber Pin Replacement
8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☐  
 Other ☐ Pressure None psi Test Temp. None °F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 1/2 in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.



FORM NIS-2 (Back)

9. Remarks Replacement of snubber pins with certified snubber pins (P.O. S37975).  
VT-3/VT-4 preservice inspection performed on the replacement pins only.

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this Replacement conforms to the rules of the ASME Code, Section XI. repair or replacement

Type Code Symbol Stamp None

Certificate of Authorization No. None Expiration Date None

Signed ASME administrator Date February 25<sup>th</sup>, 19 88  
 Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Iowa and employed by Lumbermens Mutual Casualty Company of Long Grove, Illinois have inspected the components described in this Owner's Report during the period 10-23-87 to 5-4-88, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

W. Huggles Commissions Nat'l Bd/5813(NI) IA-1041  
 Inspector's Signature National Board, State, Province, and Endorsements

Date May 5, 19 88



**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As Required by the Provisions of the ASME Code Section XI

1. Owner Iowa Electric Light and Power Date 2-12-88  
Name  
P.O. Box 351, Cedar Rapids, IA 52406 Sheet 1 of 2  
Address
2. Plant Duane Arnold Energy Center Unit 1  
Name  
3277 DAEC Rd., Palo, IA 52324 See Attech. PSA-10-87A  
Address Repair Organization P.O. No., Job No., etc.
3. Work Performed by Iowa Electric Type Code Symbol Stamp None  
Name  
3277 DAEC Rd., Palo, IA 52324 Authorization No. None  
Address Expiration Date None
4. Identification of System See Attech. PSA-10-87A
5. (a) Applicable Construction Code ASME III 19 74 Edition, W/76 Addenda, None Code Case  
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 19 80 W/81

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
(2) Snubber Pins	Iowa Electric	Note 1	None	See Attech PSA-10-87A	See Nt. 1 1987	Replacement	No

7. Description of Work Snubber Pin Replacement

- B. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☐  
Other ☐ Pressure None psi Test Temp. None °F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 6 1/2 in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

FORM NIS-2 (Back)

9. Remarks Replaced Snubber pins with snubbers pins fabricated from certified bar  
stock (P.O. S37975) (Ref. Note 1) VT-3/VT-4 preservice inspection performed  
on the replacement pins only.

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this Replacement conforms to the rules of the ASME Code, Section XI. repair or replacement

Type Code Symbol Stamp None

Certificate of Authorization No. None Expiration Date None

Signed [Signature] Date February 25<sup>th</sup>, 19 88  
 Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Iowa and employed by Lumbermens Mutual Casualty Company of Long Grove, Illinois have inspected the components described in this Owner's Report during the period 10-23-87 to 5-4-88, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

[Signature] Commissions Nat'l Bd. SB13(N)(3) IA-1041  
 Inspector's Signature National Board, State, Province, and Endorsements

Date May 5, 19 88

(12/82) Note 1: Replacement snubber pins fabricated, by Iowa Electric, from SA-564-TP-630 bar stock (CMAR 85687), heat number 656177.

1. Owner Iowa Electric Light and Power  
Name  
P.O. Box 351, Cedar Rapids, IA 52406  
Address

Date 2-12-88

2. Plant Duane Arnold Energy Center  
Name  
3277 DAEC Rd., Palo, IA 52324  
Address

Sheet 1 of 2

Unit 1

3. Work Performed by Iowa Electric  
Name  
3277 DAEC Rd. Palo IA 52324  
Address

see below  
 Repair Organiz. P.O. No., Job No., etc.  
 Type Code Symbol Stamp None  
 Authorization No. None  
 Expiration Date None

4. Identification of System see below

5. (a) Applicable Construc. Code ASME III 19 74 Edition, W/76 Addenda None Code Case

(b) Applicable Edition of Section XI Utilized for Repairs or Replacement 19 80 W/81

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Comp.	Name of Manufac.	Manufacturer Serial No.	Board No.	Other Identif.	Year Built	ASME Code Repaired Replaced or Replacement	Stamped (Yes or No)
2 Snubber Pins	Iowa Electric	See Sheet 1	None	See Below	1987	Replacement	No

Table PSA-10-87A (Class 1)

Identification of System	Repair Organiz. (CMAR)	Line Size	Other IDs	Inspection Report
Reactor FW Line 'B'	085662	10"	DLA-2-SS-4	87-736
Reactor FW Line 'C'	085665	16"	DLA-2-SS-7	87-739
'A' Recirc. Suction	085741	22"	SSA-8	87-801
'B' Recirc. Suction	085746	22"	SSB-8	87-795
RHR-20B	085752	20"	DLA-6-SS-12	87-804
HPCI-steam	085666	10"	DLA-3-SS-2	87-740

**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
**As Required by the Provisions of the ASME Code Section XI**

1. Owner Iowa Electric Light and Power Date 2-12-88  
Name  
P.O. Box 351, Cedar Rapids, IA 52406 Sheet 1 of 4  
Address
2. Plant Duane Arnold Energy Center Unit 1  
Name  
3277 DAEC Rd., Palo, IA 52324 See Attch., PSA-35-87  
Address Repair Organization P.O. No., Job No., etc.
3. Work Performed by Iowa Electric Type Code Symbol Stamp None  
Name Authorization No. None  
3277 DAEC Rd., Palo, IA 52324 Expiration Date None  
Address
4. Identification of System See Attch., PSA-35-87
5. (a) Applicable Construction Code ASME III 19 74 Edition, W/76 Addenda, None Code Case  
 (b) Applicable Edition of Section XI Utilized for Repairs or Replacements 19 80 W/81

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
(2) Snubber Pins	Iowa Electric	See Note 1	None	See Attch. PSA-35-87	See Nt. 1 1987	Replacement	No

7. Description of Work Snubber Pin Replacement
8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☐  
 Other ☐ Pressure None psi Test Temp. None °F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8½ in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

FORM NIS-2 (Back)

9. Remarks Replaced snubber pins with snubber pins fabricated from certified  
Applicable Manufacturer's Data Reports to be attached  
round bar stock (P.O. S37978) (Note 1), VT-3/VT-4 preservice inspection was  
performed on the replacement pins only.

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this Replacemnt conforms to the rules of the  
 ASME Code, Section XI. repair or replacement

Type Code Symbol Stamp None

Certificate of Authorization No. None Expiration Date None

Signed Ken Mchale, ASME Administrator Date February 25<sup>th</sup>, 19 88  
 Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State  
 or Province of Iowa and employed by Lumbermens Mutual Casualty Company of  
Long Grove, Illinois have inspected the components described  
 in this Owner's Report during the period 10-23-87 to 5-4-88, and state that  
 to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this  
 Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the  
 examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer  
 shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this  
 inspection.

WE Kuggles Commissions Nat'l Bd 5813 (E)(N) IA-1041  
 Inspector's Signature National Board, State, Province, and Endorsements

Date May 5, 19 88

- (12/82) Note 1: Replacement snubber pins were fabricated by Iowa Electric from  
 1 1/2 - inch diameter SA-564-T-630 round bar stock (CMAR 85732),  
 heat number 9E 0331.

1. Owner Iowa Electric Light and Power  
Name  
P.O. Box 351, Cedar Rapids, IA 52406  
Address

Date 2-12-88

Sheet 2 of 4

2. Plant Duane Arnold Energy Center  
Name  
3277 DAEC Rd., Palo, IA 52324  
Address

Unit 1

3. Work Performed by Iowa Electric  
Name  
3277 DAEC Rd. Palo IA 52324  
Address

see below  
 Repair Organiz. P.O. No., Job No., etc.  
 Type Code Symbol Stamp None  
 Authorization No. None  
 Expiration Date None

4. Identification of System see below

5. (a) Applicable Construc. Code ASME III 19 74 Edition, W/76 Addenda None Code Case

(b) Applicable Edition of Section XI Utilized for Repairs or Replacement 19 80 W/81

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Comp.	Name of Manufac.	Manufacturer Serial No.	Board No.	Other Identif.	Year Built	ASME Code Repaired Replaced or Replacement	Stamped (Yes or No)
2 Snubber Pins	Iowa Electric	See Sheet 1	None	See Below	1987	Replacement	No

Table PSA-35-87 (Class 1)

Identification of System	Repair Organiz. (CMAR)	Line Size	Other IDs	Inspection Report
'A' Main Steam	085673	20"	SSA-1-MS	87-747
'A' Main Steam	085674	20"	SSA-2-MS	87-748
'B' Main Steam	085675	20"	SSB-1-MS	87-749
'B' Main Steam	085677	20"	SSB-2-MS	87-751
'C' Main Steam	085754	20"	SSC-1-MS	87-785
'C' Main Steam	085755	20"	SSC-2-MS	87-777
'D' Main Steam	085679	20"	SSD-1-MS	87-753
'D' Main Steam	085681	20"	SSD-2-MS	87-754
Recirc. Pump 'A'	085678	22"	SSA-5	87-752
Recirc. Loop 'A'	085760	22"	SSA-3	87-772
'A' Recirc. Suction	085739	22"	SSA-6	87-784



1. Owner Iowa Electric Light and Power  
Name  
P.O. Box 351, Cedar Rapids, IA 52406  
Address

Date 2-12-88

Sheet 3 of 4

2. Plant Duane Arnold Energy Center  
Name  
3277 DAEC Rd., Palo, IA 52324  
Address

Unit 1

3. Work Performed by Iowa Electric  
Name  
3277 DAEC Rd. Palo IA 52324  
Address

see below  
 Repair Organiz. P.O. No., Job No., etc.  
 Type Code Symbol Stamp None  
 Authorization No. None  
 Expiration Date None

4. Identification of System see below

5. (a) Applicable Construc. Code ASME III 19 74 Edition, W/76 Addenda None Code Case  
 (b) Applicable Edition of Section XI Utilized for Repairs or Replacement 19 80 W/81

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Comp.	Name of Manufac.	Manufacturer Serial No.	Board No.	Other Identif.	Year Built	ASME Code Repaired Replaced or Replacement	Stamped (Yes or No)
2 Snubber Pins	Iowa Electric	See Sheet 1	None	See Below	1987	Replacement	No

Table PSA-35-87 (Class 1) con't

Identification of System	Repair Organiz. (CMAR)	Line Size	Other IDs	Inspection Report
'A' Recirc. Discharge	085740	22"	SSA-7	87-788
'A' Recirc. Suction	085742	22"	SSA-9	87-786
'A' Recirc. Pump Casing	085756	22"	SSA-1	87-776 766 2-12-88 5-5-88
'A' Recirc. Discharge	085758	22"	SSA-2	87-768
'A' Recirc. Discharge	085762	22"	SSA-11	87-771
'B' Recirc. Pump	085676	22"	SSB-5	87-750
'B' Recirc. Discharge	085745	22"	SSB-7	87-787
'B' Recirc. Suction	085747	22"	SSB-9	87-762
Recirc. Pump Casing	085757	22"	SSB-1	87-765
'B' Recirc. Discharge	085759	22"	SSB-2	87-764
'B' Recirc. Suction	085761	22"	SSB-3	87-769

1. Owner Iowa Electric Light and Power  
Name  
P.O. Box 351, Cedar Rapids, IA 52406  
Address

Date 2-12-88

Sheet 4 of 4

2. Plant Duane Arnold Energy Center  
Name  
3277 DAEC Rd., Palo, IA 52324  
Address

Unit 1

see below

3. Work Performed by Iowa Electric  
Name  
3277 DAEC Rd. Palo IA 52324  
Address

Repair Organiz. P.O. No., Job No., etc.

Type Code Symbol Stamp None

Authorization No. None

Expiration Date None

4. Identification of System see below

5. (a) Applicable Construc. Code ASME III 19 74 Edition, W/76 Addenda None Code Case

(b) Applicable Edition of Section XI Utilized for Repairs or Replacement 19 80 W/81

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Comp.	Name of Manufac.	Manufacturer Serial No.	Board No.	Other Identif.	Year Built	ASME Code Repaired Replaced or Replacement	Stamped (Yes or No)
2 Snubber Pins	Iowa Electric	See Sheet 1	None	See Below	1987	Replacement	No

Table PSA-35-87 (Class 1) con't

Identification of System	Repair Organiz. (CMAR)	Line Size	Other IDs	Inspection Report
'B' Recirc. Discharge	085763	22"	SSB-11	87-770
'B' Recirc. Discharge	085744	22"	SSB-6	87-761
RHR-20A	085751	20"	DLA-5-SS-11	87-767
RHR-18B	085748	18"	DLA-4-SS-14	87-789

**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As Required by the Provisions of the ASME Code Section XI

1. Owner Iowa Electric Light and Power Date 2-12-88  
Name  
P.O. Box 351, Cedar Rapids, Iowa 52406 Sheet 1 of 2  
Address
2. Plant Duane Arnold Energy Center Unit 1  
Name  
3277 DAEC Rd., Palo, Iowa 52324 See Attch. - PSA-100-87  
Address Repair Organization P.O. No., Job No., etc.
3. Work Performed by Iowa Electric Light & Power Type Code Symbol Stamp None  
Name  
3277 DAEC Rd., Palo, Iowa 52324 Authorization No. None  
Address Expiration Date None
4. Identification of System See Attch. - PSA-100-87
5. (a) Applicable Construction Code ASME III 19 74 Edition, None Addenda, None Code Case  
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 19 81 W/82  
80 W/81 5-5-83
6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
(2) Snubber Pins	Iowa Electric	Note 1	None	See Attch. PSA-100-87	Note 1987	Replacement	No

7. Description of Work Snubber Pin Replacement
8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☐  
Other ☐ Pressure None psi Test Temp. None °F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8½ in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

FORM NIS-2 (Back)

9. Remarks Replaced snubber pins with snubber pins fabricated from certified  
round bar stock (P.O. S37978) (Note 1), VT-3/VT-4 preservice inspection was  
performed on the replacement pins only.

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this Replacemnt conforms to the rules of the ASME Code, Section XI. repair or replacement

Type Code Symbol Stamp None

Certificate of Authorization No. None Expiration Date None

Signed *[Signature]* Date Kelly 25<sup>th</sup>, 19 88  
 Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Iowa and employed by Lumbermen's Mutual Casualty Company of Long Grove, Illinois have inspected the components described in this Owner's Report during the period 10-23-87 to 5-4-88, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

*[Signature]* Commissions Nat'l B. 5813(I)(N) IA1041  
 Inspector's Signature National Board, State, Province, and Endorsements

Date May 4 and 5, 1988

(12/82) Note 1: Replacement snubber pins were fabricated by Iowa Electric from 2 inch diameter SA-564-T-630 round bar stock (CMAR 85732), heat number 646398.



**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
**As Required by the Provisions of the ASME Code Section XI**

1. Owner Iowa Electric Light and Power Date 2-12-88  
Name  
P.O. Box 351, Cedar Rapids, IA 52406 Sheet 1 of 1  
Address
2. Plant Duane Arnold Energy Center Unit 1  
Name  
3277 DAEC Rd., Palo, IA 52324 CMAR 85737  
Address Repair Organization P.O. No., Job No., etc.
3. Work Performed by Iowa Electric Type Code Symbol Stamp None  
Name Authorization No. None  
3277 DAEC Rd., Palo, IA 52324 Expiration Date None  
Address
4. Identification of System Residual Heat Removal 20B (Class 1)
5. (a) Applicable Construction Code ASME III 19 74 Edition, W/76 Addenda, None Code Case  
 (b) Applicable Edition of Section XI Utilized for Repairs or Replacements 19 80 W/81

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
Snubber Pins	Iowa Electric	Note 1	None	DLA-6-SS-13	Note 1 1987	Replacement	No

7. Description of Work Snubber Pin Replacement
8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☐  
 Other ☐ Pressure None psi Test Temp. None °F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8½ in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

FORM NIS-2 (Back)

9. Remarks Replaced snubber pins with pins fabricated from certified round bar  
stock (P.O. S37978) (Note 1). VT-3/VT-4 preservice inspection performed on  
replacement pins only. Reference inspection report 87-763.

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this Replacemnt conforms to the rules of the ASME Code, Section XI. repair or replacement

Type Code Symbol Stamp None

Certificate of Authorization No. None

Expiration Date None

Signed [Signature]  
 Owner or Owner's Designee Title

Date February 25<sup>th</sup>, 19 88

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Iowa and employed by Lumbermens Mutual Casualty Company of Long Grove, Illinois have inspected the components described in this Owner's Report during the period 10-23-87 to 5-4-88, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

[Signature]  
 Inspector's Signature

Commissions Nat'l Bd. 5813(E)(N) IA-1041  
 National Board, State, Province, and Endorsements

Date May 5, 19 88

- (12/82) Note 1: One replacement snubber pin was fabricated by Iowa Electric from 1 1/2-inch diameter SA-564-T-630 round bar stock (CMAR 85732), heat number 9E0331 and one replacement snubber pin was fabricated by Iowa Electric from 2-inch diameter SA-564-T-630 round bar stock (CMAR 85732), heat number 646398.

**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
**As Required by the Provisions of the ASME Code Section XI**

1. Owner Iowa Electric Light and Power Date 2-12-88  
Name  
P.O. Box 351, Cedar Rapids, IA 52406 Sheet 1 of 1  
Address
2. Plant Duane Arnold Energy Center Unit 1  
Name  
3277 DAEC Rd., Palo, IA 52324 CMAR 85835  
Address Repair Organization P.O. No., Job No., etc.
3. Work Performed by Iowa Electric Type Code Symbol Stamp None  
Name Authorization No. None  
3277 DAEC Rd., Palo, IA 52324 Expiration Date None  
Address
4. Identification of System Core Spray Discharge (S.E.) (Class 2)
5. (a) Applicable Construction Code ASME III 19 74 Edition, W/76 Addenda, None Code Case  
 (b) Applicable Edition of Section XI Utilized for Repairs or Replacements 19 80 W/81

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
(2) Snubber Pins	Iowa Electric	Note 1	None	GBB-13-SS-16	Note 1987	Replacement	No

7. Description of Work Snubber Pin Replacement
8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☐  
 Other ☐ Pressure None psi Test Temp. None °F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8½ in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.



FORM NIS-2 (Back)

9. Remarks Replaced snubber pins with snubber pins fabricated from certified  
round bar stock (P.O. S37978) (Ref. Note 1), VT-3/VT-4 preservice  
inspection performed on the replacement pins only. Reference inspection  
report 87-832.

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this Replacemnt conforms to the rules of the ASME Code, Section XI. repair or replacement

Type Code Symbol Stamp None

Certificate of Authorization No. None Expiration Date None

Signed For [Signature] ASME Administrator Date February 25, 19 88  
 Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Iowa and employed by Lumbermens Mutual Casualty Company of Long Grove, Illinois have inspected the components described in this Owner's Report during the period 10-23-87 to 5-4-88, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

[Signature] Commissions Nat'l Bd 5813 (N)(I) IA-1041  
 Inspector's Signature National Board, State, Province, and Endorsements

Date May 4, 19 88

(12/82) Note 1: Replacement snubber pins were fabricated by Iowa Electric from 1/2-inch diameter SA-564-T-630 round bar stock (CMAR 85732) heat number 446004.

**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
**As Required by the Provisions of the ASME Code Section XI**

1. Owner Iowa Electric Light and Power Date 4-26-88  
Name  
P.O. Box 351, Cedar Rapids, IA 52406 Sheet 1 of 2  
Address
2. Plant Duane Arnold Energy Center Unit 1  
Name  
3277 DAEC Rd., Palo, IA 52324 See Attch., PSA-10-87B  
Address Repair Organization P.O. No., Job No., etc.
3. Work Performed by Iowa Electric Type Code Symbol Stamp None  
Name Authorization No. None  
3277 DAEC Rd., Palo, IA 52324 Expiration Date None  
Address
4. Identification of System See Attch., PSA-10-87B
5. (a) Applicable Construction Code ASME III 19 74 Edition, W/76 Addenda, None Code Case  
 (b) Applicable Edition of Section XI Utilized for Repairs or Replacements 19 80 W/81

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
(2) Snubber Pins	Iowa Electric	See Note 1	None	See Attch. PSA-10-87B	See Note 1 1987	Replacement	No

7. Description of Work Snubber Pin Replacement
8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☐  
 Other ☐ Pressure None psi Test Temp. None °F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8½ in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

FORM NIS-2 (Back)

9. Remarks Replaced snubber pins with snubber pins fabricated from certified  
Applicable Manufacturer's Data Reports to be attached  
round bar stock (P.O. S37978) (Note 1), VT-3/VT-4 preservice inspection  
performed on the replacement pins only.

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this Replacement conforms to the rules of the ASME Code, Section XI. repair or replacement

Type Code Symbol Stamp None

Certificate of Authorization No. None Expiration Date None

Signed [Signature] ASME Administrator Date April 26<sup>th</sup>, 19 88  
 Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Iowa and employed by Lumbermens Mutual Casualty Company of Long Grove, Illinois have inspected the components described in this Owner's Report during the period 10-23-87 to 5-4-88, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

[Signature] Commissions Nat'l Bd. 5813(N)(I) IA-1041  
 Inspector's Signature National Board, State, Province, and Endorsements

Date May 5, 19 88

(12/82) Note 1: On each snubber listed in Table PSA-10-87B one replacement snubber pin was fabricated by Iowa Electric with 1 inch diameter SA-565-T-630 round bar stock (CMAR 85732), heat number 656177 and one pin was fabricated with 1 1/2 - inch diameter SA-564-7-630 round bar stock (CMAR 85732), heat number 9E0331.



**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
**As Required by the Provisions of the ASME Code Section XI**

1. Owner Iowa Electric Light and Power Date 4/13/88  
Name  
P.O. Box 351, Cedar Rapids, IA 52406  
Address  
 2. Plant Duane Arnold Energy Center Sheet 1 of 1  
Name  
3277 DAEC Rd. Palo, IA 52324 Unit 1  
Address  
CMAR 86840 A  
Repair Organization P.O. No., Job No., etc.  
 3. Work Performed by Iowa Electric Type Code Symbol Stamp None  
Name  
3277 DAEC Rd. Palo, IA 52324 Authorization No. None  
Address Expiration Date None  
 4. Identification of System HPCI Supply Line D.P. Level Switch (LS2206)  
 5. (a) Applicable Construction Code ANSI B31.7 19 69 Edition, 71 Addenda, N/A Code Case  
 (b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1980 W81

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
LS 2206	Robertshaw Controls Co.	N/A	N/A	Model No. 82938-GI	1970	Repaired	No

7. Description of Work Seal weld of 3/4" NPT Plug

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☐  
 Other ☐ Pressure N/A psi Test Temp. N/A °F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 1/2 in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

FORM NIS-2 (Back)

9. Remarks A 3/4" NPT plug had a steam leak that was seal welded under CMAR  
86840 A. The seal weld was liquid penetrant inspected and found accepted.

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this Repair conforms to the rules of the ASME Code, Section XI. repair or replacement

Type Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed [Signature] ASME Administrator Date April 14, 19 88  
 Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of IOWA and employed by Lumbermens Mutual Casualty Company of Long Grove, Illinois have inspected the components described in this Owner's Report during the period 4-12-88 to 4-14-88, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

[Signature] Commissions Nat'l Bd. 5813 (I)(N) IA-1041  
 Inspector's Signature National Board, State, Province, and Endorsements

Date April 14, 19 88

**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As Required by the Provisions of the ASME Code Section XI

1. Owner Iowa Electric Light & Power Date 11-2-88  
Name  
P.O. Box 351, Cedar Rapids, IA 52406 Sheet 1 of 1  
Address
2. Plant Duane Arnold Energy Center Unit 1  
Name  
3277 DAEC Rd., Palo, IA 52324 CMAR 82468  
Address Repair Organization P.O. No., Job No., etc.
3. Work Performed by Iowa Electric Type Code Symbol Stamp None  
Name  
3277 DAEC Rd., Palo, IA 52324 Authorization No. None  
Address Expiration Date None
4. Identification of System Residual Heat Removal Heat Exchanger Steam Supply (Class 2)
5. (a) Applicable Construction Code ANSI B31.7 19 69 Edition, N/A Addenda, N/A Code Case  
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 19 80 W/81

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No. (part no.)	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
(Rear) Clevis Assembly	Bergen-Paterson	980014	None	EBB-16-SS-234A	1987	Replacement	No

7. Description of Work Rear Clevis Assembly Replacement

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☐  
Other ☐ Pressure None psi Test Temp. None °F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8½ in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

FORM NIS-2 (Back)

9. Remarks Replacement of rear clevis assembly with certified clevis assembly  
 (P.O. S34862) Applicable Manufacturer's Data Reports to be attached

VT-3/VT-4 Preservice inspection performed. Reference inspection report  
88-079.

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this Replacement conforms to the rules of the ASME Code, Section XI. repair or replacement

Type Code Symbol Stamp None

Certificate of Authorization No. None Expiration Date None

Signed *[Signature]*, ASME Administrator Date 11-4, 19 88  
Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Iowa and employed by Lumbermans Mutual Casualty Company of Long Grove, Illinois have inspected the components described in this Owner's Report during the period 10-20-88 to 11-5-88, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI, except IWA-7210.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

*[Signature]* Commissions Nat'l Bd. 5813 (I) (N) IA-1041  
Inspector's Signature National Board, State, Province, and Endorsements

Date November 5 19 88



**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As Required by the Provisions of the ASME Code Section XI

1. Owner Iowa Electric Date 11-11-88  
Name  
P.O. Box 351, Cedar Rapids, IA 52406  
Address  
Sheet 1 of 1
2. Plant Duane Arnold Energy Center Unit 1  
Name  
3277 DAEC Rd., Palo, IA 52324  
Address  
CMAR 88444  
Repair Organization P.O. No., Job No., etc.
3. Work Performed by Iowa Electric  
Name  
3277 DAEC Rd., Palo, IA 52324  
Address  
Type Code Symbol Stamp None  
Authorization No. None  
Expiration Date None
4. Identification of System Reactor Core Isolation Cooling - Water (Class 1)
5. (a) Applicable Construction Code \* ANSI B31.7 19 69 Edition, 71 Addenda, N/A Code Case  
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 19 80 W/81  
\* Original Construction Code for support assembly.
6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No. (Heat No.)	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
Pipe clamp - Studs	Cardinal	KC8972	NA	DBA-7-SS-71 (snubber)	1986	Replaced	No
Pipe clamp - nuts	Cardinal	X569B	NA	DBA-7-SS-71 (snubber)	1986	Replaced	No

7. Description of Work Replaced pipe clamp - studs and nuts

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☐  
Other ☐ Pressure None psi Test Temp. None °F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8½ in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

FORM NIS-2 (Back)

9. Remarks Replaced pipe clamp - studs and nuts with certified studs and nuts,  
Applicable Manufacturer's Data Reports to be attached  
(P.O. S26710) and (P.O. S26813, VT-3/VT-4 preservice inspection performed.  
Reference inspection report no. 88-029.

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this Replacement conforms to the rules of the ASME Code, Section XI. repair or replacement

Type Code Symbol Stamp N/A

Certificate of Authorization No. N/A

Expiration Date N/A

Signed [Signature]

ASME Administrator

Date 11-12

19 88

Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Iowa and employed by Lumbermans Mutual Casualty Company of Long Grove, Illinois

have inspected the components described in this Owner's Report during the period 10-31-88 to 11-18-88, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

[Signature]  
Inspector's Signature

Commissions

Nat'l Bd. 5813 (I) (N) IA-1041  
National Board, State, Province, and Endorsements

Date November 18 19 88

**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As Required by the Provisions of the ASME Code Section XI

1. Owner Iowa Electric Light and Power Date 11-8-88  
Name  
P.O. Box 351, Cedar Rapids, IA 52406  
Address
2. Plant Duane Arnold Energy Center Sheet 1 of 1  
Name  
3277 DAEC Rds., Palo, IA 52324 Unit 1  
Address  
CMAR 91270  
Repair Organization P.O. No., Job No., etc.
3. Work Performed by Iowa Electric Type Code Symbol Stamp None  
Name  
3277 DAEC Rd., Palo, IA 52324 Authorization No. None  
Address Expiration Date None
4. Identification of System HPCI Steam Turbine Inlet (Class 2)
5. (a) Applicable Construction Code ANSI B31.7 1969 Edition, 71 Addenda, N/A Code Case  
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1980 W/81

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
Hydraulic Snubber	Bergen-Paterson	D. Arnold #17	None	EBB-14-SS-14	1987	Replacement	No

7. Description of Work Hydraulic Snubber Replacement-Type (HSSA-3)

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☐  
Other ☐ Pressure None psi Test Temp. None °F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8½ in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

FORM NIS-2 (Back)

9. Remarks Replacement of Hydraulic Snubber with certified Hydraulic Snubber  
(P.O. S34837) VT-3/VT-4 pre-service inspection performed. Reference inspection  
report no. 88-372.

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this replacement conforms to the rules of the ASME Code, Section XI. repair or replacement

Type Code Symbol Stamp None

Certificate of Authorization No. None

Expiration Date None

Signed [Signature] ASME Administrator Date 11-8, 19 88  
 Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Iowa and employed by Lumbermans Mutual Casualty Company of Long Grove, Illinois have inspected the components described in this Owner's Report during the period 10-27-88 to 11-9-88, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI, except IWA-7210

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

[Signature] Commissions Nat'l Bd. 5813 (I) (N) IA-1041  
 Inspector's Signature National Board, State, Province, and Endorsements

Date 11-9, 19 88

**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As Required by the Provisions of the ASME Code Section XI

1. Owner Iowa Electric Light and Power Date 12-28-88  
Name  
P.O. Box 351, Cedar Rapids, IA 52406 Sheet 1 of 2  
Address  
2. Plant Duane Arnold Energy Center Unit 1  
Name  
3277 DAEC Rd., Palo, IA 52324 See Attach. CRD-1  
Address Repair Organization P.O. No., Job No., etc.  
3. Work Performed by Iowa Electric Type Code Symbol Stamp NPT  
Name Authorization No. NP7 N-1151  
3277 DAEC Rd., Palo, IA 52324 Expiration Date 6-16-90  
Address

4. Identification of System Control Rod Drives (Class 1)
5. (a) Applicable Construction Code ASME III 19 74 Edition, W 75 Addenda, 1361-2 Code Case  
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 19 80 W81  
(c) Original Construction Code ASME III 1971 Edition per GE Construction Quality Requirements A22A2534
6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
Cylinder Tube & Flange	General Electric	See Attach CRD-1	None	See Attach CRD-1	1987	Replacement	Yes

7. Description of Work Replacement CRD Cylinder Tube & Flange

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒  
Other ☐ Pressure 1025 psig Test Temp. >185°F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 1/2 in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

FORM NIS-2 (Back)

9. Remarks Replacement CRD Cylinder Tube & Flange Assembly (P.O. S36324). Letter  
NG-88-3356 reconciliation of ASME Section III 1974 Edition W75 addenda.  
1361-2 Code case to original construction code ASME Section III 1971.  
VT-2 of the pressure retaining components were performed under ISI report  
#88-081.

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this Replacement conforms to the rules of the ASME Code, Section XI. repair or replacement

Type Code Symbol Stamp None

Certificate of Authorization No. None Expiration Date None

Signed [Signature], ASME Administrator Date December 30, 19 88  
~~Owner's Designee~~ Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Iowa and employed by Lumbermans Mutual Casualty Company of Long Grove, Illinois have inspected the components described in this Owner's Report during the period 10-12-88 to 1-4-89, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

[Signature] Inspector's Signature Commissions Nat'l Bd. 5813 (I)(N) IA-1041  
 National Board, State, Province, and Endorsements

Date January 4, 19 89

1. Owner Iowa Electric Light and Power  
Name  
P.O. Box 351, Cedar Rapids, IA 52406  
Address

Date 12-28-88

Sheet 2 of 2

2. Plant Duane Arnold Energy Center  
Name  
3277 DAEC Rd., Palo, IA 52324  
Address

Unit 1

see below

3. Work Performed by Iowa Electric  
Name  
3277 DAEC Rd., Palo, IA 52324  
Address

Repair Organiz. P.O. No., Job No., etc.  
 Type Code Symbol Stamp NPT  
 Authorization No. NPT N1151  
 Expiration Date 6-16-90

4. Identification of System see below

5. (a) Applicable Construc. Code ASME III 19 74 Edition, W/75 Addenda 1361-2 Code Case  
 (b) Applicable Edition of Section XI Utilized for Repairs or Replacement 19 80 W/81  
 (c) Original Construction Code ASME III 1971 Edition per GE Construction Quality  
Requirements A22A2534

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Comp.	Name of Manufac.	Board No.	Other Identif.	Year Built	ASME Code Repaired Replaced or Replacement	Stamped (Yes or No)
Cylinder be Flange	General Electric	None	See Below	1987	Replacement	Yes

Table CRD-1 (Class 1)

Installation Organization	Repair Organiz. (CMAR)	Manufac. Serial No.	Other Identification
CMAR 85920	60992C	A6806	CRD 6806 Spare
PMAR 1031922	71866A	A8360	CRD 8360 Spare
PMAR 1031917	73443A	A6933	CRD 6933 Spare
CMAR 85925	73447A	A8370	CRD 8370 Spare

FORM N-2 NPT CERTIFICATE HOLDERS' DATA REPORT FOR NUCLEAR PART AND APPURTENANCES  
As required by the Provision of the ASME Code Rules, Section III, Div. 1

1. Manufactured & Certified by: GE Company, 2117 Castle Hayne Rd., Wilmington, N.C. 28402  
(b) Manufactured for: DUANE ARNOLD (Name and Address of NPT Certificate Holder)  
(Name and Address of N Certificate Holder for completed nuclear component)  
2. Identification-Certificate Holders's S/N of Part: A6806 Nat'l Bd. No. N/A  
(a) Constructed According to Drawing No: 919D258G003 Dwg. Prepared by D. L. Petersen  
(b) Description of Part Inspected: CYLINDER TUBE & FLANGE  
(c) Applicable ASME Code: Section III, Edition 1974, Addenda Date W'75, Case No. 1361-2 Class  
3. REMARKS: Sub-assembly of Control Rod Drive for use with reactor.  
(Brief description of service for which component was designed)  
Hydrostatically tested at 1825 psi. min.

\*Sheet 1 of 2

We certify that the statements in this report are correct and this vessel part or appurtenance as defined in the code conforms to the rules of construction of the ASME Code Section III (The applicable Designed Specification and Stress Report are not the responsibility of the NPT Certificate Holder for parts. An NPT Certification Holder for appurtenances is responsible for furnishing a separate Design Specification and Stress Report if the appurtenance is not included in the component Design Specification and Stress Report).

DATE: 11/10, 19 87 Signed GE-NEBG-NF&CM-QA By J. E. Stroudman  
(NPT Certificate Holder)

Certificate Of Authorization Expires: 6/16/90 Certification of Authorization No.: NPT N-1151

CERTIFICATION OF DESIGN FOR APPURTENANCE

Design information on file at GE COMPANY, SAN JOSE, CALIFORNIA  
Stress analysis report on file at GE COMPANY, SAN JOSE, CALIFORNIA  
DC22A6253 Rev. 0  
Design specification certified by BJORN HAABERG Prof. Eng. State CALIF. Reg. No. 15570  
DC22A6254 Rev. 0.  
Stress analysis report certified by EDWARD YOSHIO Prof. Eng. State CALIF. Reg. No. M018646

CERTIFICATION OF SHOP INSPECTION

I, the undersigned, holding a valid commission by the National Board of Boiler and Pressure Inspectors and/or the State or Province of NORTH CAROLINA and employed by DEPARTMENT OF LABOR of STATE OF NORTH CAROLINA have inspected the part of a pressure vessel described in this Partial Data Report on 11-10 1987, and state that to the best of my knowledge and belief, the NPT Certificate Holder has constructed this part in accordance with the ASME Code Section III.

By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the part described in the Partial Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

DATE 11-10, 1987 J. P. Stroudman NC 779. P.A. WC 2260 - 0440  
Inspector's Signature National Board, State, Province and No.

Supplemental sheets in form of lists, sketches or drawing may be used provided (1) size is 1/2" X 11", (2) information in 1-2 on this Data Report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded in Item 3. "REMARKS"



Items 4-8 Incl. to be completed for single wall vessels, jacketed vessels, or shells of heat exchangers.

4. Shell: Material \_\_\_\_\_ T.S. \_\_\_\_\_ Nominal Thickness \_\_\_\_\_ in. Allowance \_\_\_\_\_ in. Dia. \_\_\_\_\_ ft. \_\_\_\_\_ in. Length \_\_\_\_\_ ft. \_\_\_\_\_ in.  
(Kind & Spec. No.) (Min. of Range Specified)
5. Seams: Long \_\_\_\_\_ H.T.<sup>1</sup> \_\_\_\_\_ R.T. \_\_\_\_\_ Efficiency \_\_\_\_\_ %  
Girth \_\_\_\_\_ H.T.<sup>1</sup> \_\_\_\_\_ R.T. \_\_\_\_\_ No. of Courses \_\_\_\_\_  
6. Header: (a) Material \_\_\_\_\_ T.S. \_\_\_\_\_ (b) Material \_\_\_\_\_ T.S. \_\_\_\_\_
- | Location (Top Bottom, End) | Thickness | Crown Radius | Knuckle Radius | Elliptical Ratio | Conical Apex Angle | Hemispherical Radius | Flat Diameter | Side to Press. (conv. or conc.) |
|----------------------------|-----------|--------------|----------------|------------------|--------------------|----------------------|---------------|---------------------------------|
| (a) _____                  | _____     | _____        | _____          | _____            | _____              | _____                | _____         | _____                           |
| (b) _____                  | _____     | _____        | _____          | _____            | _____              | _____                | _____         | _____                           |
- If removable, bolts used \_\_\_\_\_ Other fastening \_\_\_\_\_  
(Material, Spec. No., T.S. Size Number) (Describe or attach sketch)
7. Jacket Closure: \_\_\_\_\_  
(Describe as ogee and weld, bar, etc. If bar give dimensions, if bolts, describe or sketch)
8. Design Pressure <sup>2</sup> \_\_\_\_\_ psi at \_\_\_\_\_ °F Drop Weight \_\_\_\_\_  
Charpy Impact \_\_\_\_\_ ft-lb  
at temp. of \_\_\_\_\_ °F

Items 9 and 10 to be completed for tube sections.

9. Tube Sheets: Stationary Mat'l. \_\_\_\_\_ Dia. \_\_\_\_\_ Thickness \_\_\_\_\_ in. Attachment \_\_\_\_\_  
(Kind of Spec. No.) (Subj. to Press.) (Welded, Bolted)  
Floating. Material \_\_\_\_\_ Dia. \_\_\_\_\_ Thickness \_\_\_\_\_ in. Attachment \_\_\_\_\_
10. Tubes: Material \_\_\_\_\_ O.D. \_\_\_\_\_ in. Thickness \_\_\_\_\_ or gage. Number \_\_\_\_\_ Type \_\_\_\_\_  
(Str. or U)

Items 11-14 incl. to be completed for inner chambers of jacketed vessels, or channels of heat exchangers

11. Shell: Material \_\_\_\_\_ T.S. \_\_\_\_\_ Nominal Thickness \_\_\_\_\_ in. Allowance \_\_\_\_\_ in. Dia. \_\_\_\_\_ ft. \_\_\_\_\_ in. Length \_\_\_\_\_ ft. \_\_\_\_\_ in.  
(Kind & Spec. No.) (Min. of Range Specified)
12. Seams: Long \_\_\_\_\_ H.T.<sup>1</sup> \_\_\_\_\_ R.T. \_\_\_\_\_ Efficiency \_\_\_\_\_ %  
Girth \_\_\_\_\_ H.T.<sup>1</sup> \_\_\_\_\_ R.T. \_\_\_\_\_ No. of Courses \_\_\_\_\_
13. Header: (a) Material \_\_\_\_\_ T.S. \_\_\_\_\_ (b) Material \_\_\_\_\_ T.S. \_\_\_\_\_
- | Location (a) Top, Bottom, End (b) Channel | Thickness | Crown Radius | Knuckle Radius | Elliptical Ratio | Conical Apex Angle | Hemispherical Radius | Flat Diameter | Side to Press. (Conv. or Conc.) |
|-------------------------------------------|-----------|--------------|----------------|------------------|--------------------|----------------------|---------------|---------------------------------|
| (a) _____                                 | _____     | _____        | _____          | _____            | _____              | _____                | _____         | _____                           |
| (b) _____                                 | _____     | _____        | _____          | _____            | _____              | _____                | _____         | _____                           |
- If removable, bolts used (a) \_\_\_\_\_ (b) \_\_\_\_\_ (c) \_\_\_\_\_ Other Fastening \_\_\_\_\_  
(Describe or attach sketch)
14. Design pressure <sup>2</sup> \_\_\_\_\_ psi at \_\_\_\_\_ °F Drop Weight \_\_\_\_\_  
Charpy Impact \_\_\_\_\_ ft-lb  
at temp. of \_\_\_\_\_ °F

Items below to be completed for all vessels where applicable.

15. Safety Valve Outlets: Number \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_
16. Nozzles:  
Purpose (Inlet Outlet, Drain) \_\_\_\_\_ Number \_\_\_\_\_ Dia or Size \_\_\_\_\_ Type \_\_\_\_\_ Material \_\_\_\_\_ Thickness \_\_\_\_\_ Reinforcement Material \_\_\_\_\_ Attached \_\_\_\_\_
17. Inspection Openings: Manholes, No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_  
Handholes, No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_  
Threaded, No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_
18. Supports: Sirt \_\_\_\_\_ Lugs \_\_\_\_\_ Legs \_\_\_\_\_ Other \_\_\_\_\_ Attached \_\_\_\_\_  
(Yes or No) (Number) (Number) (Describe) (Where & How)

<sup>1</sup> If Postweld Heat-Treated.

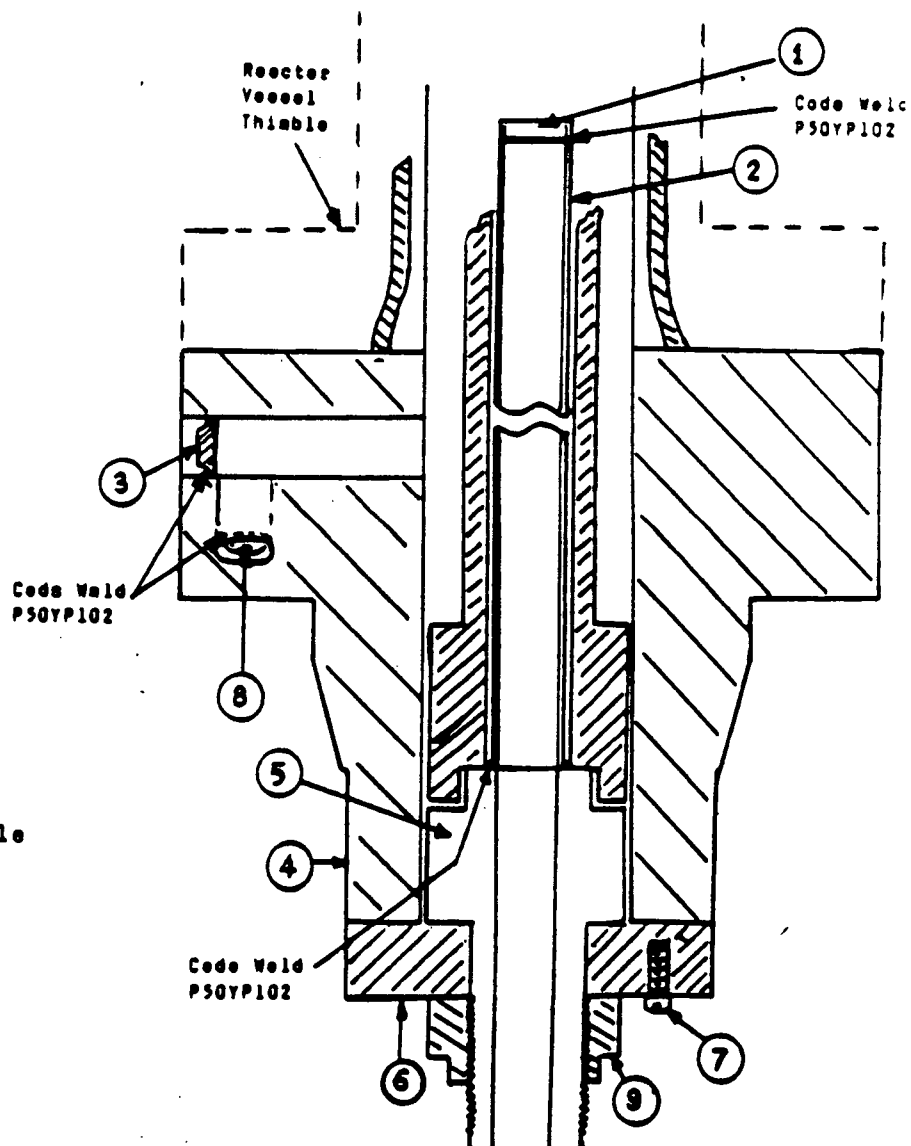
<sup>2</sup> List other internal or external pressure with coincident temperature when applicable.

FORM N-2 NPT CERTIFICATE HOLDERS' DATA REPORT FOR NUCLEAR PART AND APPURTENANCES.  
As required by the Provision of the ASME Code Rules, Section III, Div. 1

1. Manufactured & Certified by: GE Company, 2117 Castle Hayne Rd., Wilmington, N.C. 28401  
(Name and Address of NPT Certificate Holder)
- (b) Manufactured for: DUANE ARNOLD  
(Name and Address of N Certificate Holder for completed nuclear component)
2. Identification-Certificate Holders's S/N of Part: A6806 Nat'l Bd. N. \_\_\_\_\_
- (a) Constructed According to Drawing No: 919D258G003 Dwg. Prepared by D. L. Peterson
- (b) Description of Part Inspected: CYLINDER TUBE & FLANGE
- (c) Applicable ASME Code: Section III, Edition 1974, Addenda Data W'75, Case No. 1361-2 Class \_\_\_\_\_
3. REMARKS: Standard part for use with Reactor. Hydrostatically tested at 1825 psi.  
(Brief description of service for which component was designed)

Sheet 2 of 2

1. Cap 167A2343P1  
(167A2343)  
SA182-F304  
3/8 thick X 1 1/16 OD
2. Indicator Tube 104B1336P1  
SA312-TP316  
3/4 sch 40-seamless pipe  
0.113 wall thickness  
1.065 max. dia.
3. Plug 159A1176P1  
SA182-F304  
1/4 thick x 0.812 OD
4. Flange 919D610P1 (719E474)  
SA182-F304  
3.37 thick x 9 5/8 OD
5. Head 129B3539P1  
SA182-F304  
7/8 thick x 2.875 Dia.
6. Ring Flange 114B5122P2  
SA182-F304  
1" thick x 5.0 OD x 1.75 ID
7. Cap Screw 117C4516P2  
SA193-B6  
6 ea. 1/2 dia. on 4 1/8 bolt circle
8. Plug 175A7961P1  
SA182-F304  
0.38 thick x 1.307 dia.



FORM N-2 NPT CERTIFICATE HOLDERS' DATA REPORT FOR NUCLEAR PART AND APPURTENANCES  
As required by the Provision of the ASME Code Rules, Section III, Div. 1

1. Manufactured & Certified by: GE Company, 2117 Castle Hayne Rd., Wilmington, N.C. 28402  
(b) Manufactured for: DUANE ARNOLD (Name and Address of NPT Certificate Holder)  
(Name and Address of N Certificate Holder for completed nuclear component)
2. Identification-Certificate Holders's S/N of Part: AB360 Net'l Bd. No. N/A  
(a) Constructed According to Drawing No: 919D258G003 Dwg. Prepared by D. L. Peterson  
(b) Description of Part Inspected: CYLINDER TUBE & FLANGE  
(c) Applicable ASME Code: Section III, Edition 1974, Addenda Date W'75, Case No. 1361-2 Class 1
3. REMARKS: Sub-assembly of Control Rod Drive for use with reactor.  
(Brief description of service for which component was designed)  
Hydrostatically tested at 1825 psi. min.

\*Sheet 1 of 2

We certify that the statements in this report are correct and this vessel part or appurtenance as defined in the code conforms to the rules of construction of the ASME Code Section III. (The applicable Designed Specification and Stress Report are not the responsibility of the NPT Certificate Holder for parts. An NPT Certification Holder for appurtenances is responsible for furnishing a separate Design Specification and Stress Report if the appurtenance is not included in the component Design Specification and Stress Report).

DATE: 11/10, 19 87 Signed GE-NEBG-NF&CM-QA By J. Ottendunne  
(NPT Certificate Holder)

Certificate of Authorization Expires: 6/16/90 Certification of Authorization No.: NPT N-1151

CERTIFICATION OF DESIGN FOR APPURTENANCE

Design information on file at GE COMPANY, SAN JOSE, CALIFORNIA  
Stress analysis report on file at GE COMPANY, SAN JOSE, CALIFORNIA  
DC22A6253 Rev. 0  
Design specification certified by BJORN HAABERG Prof. Eng. State CALIF. Reg. No. 15570  
DC22A6254 Rev. 0.  
Stress analysis report certified by EDWARD YOSHIO Prof. Eng. State CALIF. Reg. No. M018646

CERTIFICATION OF SHOP INSPECTION

I, the undersigned, holding a valid commission by the National Board of Boiler and Pressure Inspectors and/or the State or Province of NORTH CAROLINA and employed by DEPARTMENT OF LABOR of STATE OF NORTH CAROLINA have inspected the part of a pressure vessel described in this Partial Data Report on 11-10 1987, and state that to the best of my knowledge and belief, the NPT Certificate Holder has constructed this part in accordance with the ASME Code Section III.

By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the part described in the Partial Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

DATE 11/10, 1987 Inspector's Signature J. Ottendunne NE 779 PP 02266 SHD  
National Board, State, Province and No.

Supplemental sheets in form of lists, sketches or drawing may be used provided (1) size is 1/2" X 11", (2) information in 1-2 on this Data Report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded in Item 3. "REMARKS".

10/77)

Items 4-8 Incl. to be completed for single well vessels, jacketed vessels, or shells of heat exchangers.

4. Shell: Material \_\_\_\_\_ T.S. \_\_\_\_\_ Nominal Thickness \_\_\_\_\_ in. Allowance \_\_\_\_\_ in. Dia. \_\_\_\_\_ ft. \_\_\_\_\_ in. Length \_\_\_\_\_ ft. \_\_\_\_\_ in.  
(Kind & Spec. No.) (Min. of Range Specified)
5. Seams: Long \_\_\_\_\_ H.T.<sup>1</sup> \_\_\_\_\_ R.T. \_\_\_\_\_ Efficiency \_\_\_\_\_ %  
Girth \_\_\_\_\_ H.T.<sup>1</sup> \_\_\_\_\_ R.T. \_\_\_\_\_ No. of Courses \_\_\_\_\_
6. Heads: (a) Material \_\_\_\_\_ T.S. \_\_\_\_\_ (b) Material \_\_\_\_\_ T.S. \_\_\_\_\_  
Location (Top Bottom, End) Thickness \_\_\_\_\_ Crown Radius \_\_\_\_\_ Knuckle Radius \_\_\_\_\_ Elliptical Ratio \_\_\_\_\_ Conical Apex Angle \_\_\_\_\_ Hemispherical Radius \_\_\_\_\_ Flat Diameter \_\_\_\_\_ Side to Press. (conv. or conc.)  
(a) \_\_\_\_\_  
(b) \_\_\_\_\_  
If removable, bolts used \_\_\_\_\_ Other fastening \_\_\_\_\_  
(Material, Spec. No., T.S. Size Number) (Describe or attach sketch)
7. Jacket Closure: \_\_\_\_\_  
(Describe as ogee and weld, bar, etc. If bar give dimensions, if bolts, describe or sketch)
8. Design Pressure <sup>2</sup> \_\_\_\_\_ psi at \_\_\_\_\_ °F Drop Weight \_\_\_\_\_  
Charpy Impact \_\_\_\_\_ ft-lb  
at temp. of \_\_\_\_\_ °F

Items 9 and 10 to be completed for tube sections.

9. Tube Sheet: Stationary Mat'l. \_\_\_\_\_ Dia. \_\_\_\_\_ Thickness \_\_\_\_\_ in. Attachment \_\_\_\_\_  
(Kind of Spec. No.) (Subj. to Press.) (Welded, Bolted)  
Floating. Material \_\_\_\_\_ Dia. \_\_\_\_\_ Thickness \_\_\_\_\_ in. Attachment \_\_\_\_\_  
Inches
10. Tubes: Material \_\_\_\_\_ O.D. \_\_\_\_\_ in. Thickness \_\_\_\_\_ or gage. Number \_\_\_\_\_ Type \_\_\_\_\_  
(Str. or U)

Items 11-14 incl. to be completed for inner chambers of jacketed vessels, or channels of heat exchangers

11. Shell: Material \_\_\_\_\_ T.S. \_\_\_\_\_ Nominal Thickness \_\_\_\_\_ in. Allowance \_\_\_\_\_ in. Dia. \_\_\_\_\_ ft. \_\_\_\_\_ in. Length \_\_\_\_\_ ft. \_\_\_\_\_ in.  
(Kind & Spec. No.) (Min. of Range Specified)
12. Seams: Long \_\_\_\_\_ H.T.<sup>1</sup> \_\_\_\_\_ R.T. \_\_\_\_\_ Efficiency \_\_\_\_\_ %  
Girth \_\_\_\_\_ H.T.<sup>1</sup> \_\_\_\_\_ R.T. \_\_\_\_\_ No. of Courses \_\_\_\_\_
13. Heads: (a) Material \_\_\_\_\_ T.S. \_\_\_\_\_ (b) Material \_\_\_\_\_ T.S. \_\_\_\_\_  
Location Thickness \_\_\_\_\_ Crown Radius \_\_\_\_\_ Knuckle Radius \_\_\_\_\_ Elliptical Ratio \_\_\_\_\_ Conical Apex Angle \_\_\_\_\_ Hemispherical Radius \_\_\_\_\_ Flat Diameter \_\_\_\_\_ Side to Press. (Conv. or Conc.)  
(a) Top, Bottom, End \_\_\_\_\_  
(b) Channel \_\_\_\_\_  
If removable, bolts used (a) \_\_\_\_\_ (b) \_\_\_\_\_ (c) \_\_\_\_\_ Other fastening \_\_\_\_\_  
(Describe or attach sketch)
14. Design pressure <sup>2</sup> \_\_\_\_\_ psi at \_\_\_\_\_ °F Drop Weight \_\_\_\_\_  
Charpy Impact \_\_\_\_\_ ft-lb  
at temp. of \_\_\_\_\_ °F

Items below to be completed for all vessels where applicable.

15. Safety Valve Outlets: Number \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_
16. Nozzles:  
Purpose (Inlet Outlet, Drain) Number Dia or Size Type Material Thickness Reinforcement Material Attached
17. Inspection Manholes, No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_  
Openings: Handlos, No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_  
Threaded, No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_
18. Supports: Shirt \_\_\_\_\_ Lugs \_\_\_\_\_ Legs \_\_\_\_\_ Other \_\_\_\_\_ Attached \_\_\_\_\_  
(Yes or No) (Number) (Number) (Describe) (Where & How)

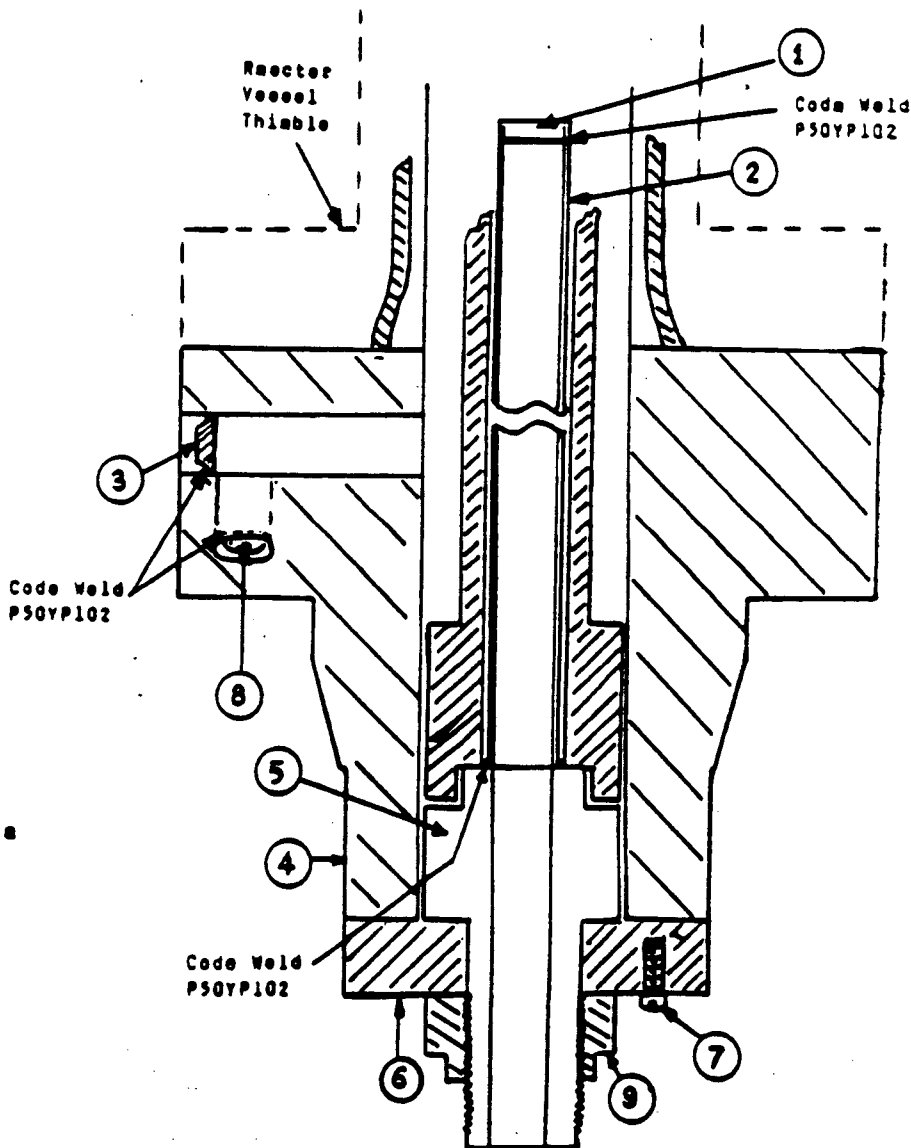
<sup>1</sup> If Postweld Heat-Treated.

<sup>2</sup> List other internal or external pressure with coincident temperature when applicable.

1. Manufactured & Certified by: GE Company, 2117 Castle Hayne Rd., Wilmington, N.C. 28401  
(Name and Address of NPT Certificate Holder)
- (b) Manufactured for: DUANE ARNOLD  
(Name and Address of N Certificate Holder for completed nuclear component)
2. Identification-Certificate Holders's S/N of Parts: A8360 Nat'l Bd. N. \_\_\_\_\_
- (a) Constructed According to Drawing No: 919D258G003 Dwg. Prepared by D. L. Peterson
- (b) Description of Part Inspected: CYLINDER TUBE & FLANGE
- (c) Applicable ASME Code: Section III, Edition 1974, Addenda Data W'75, Case No. 1361-2 Class 1
3. REMARKS: Standard part for use with Reactor. Hydrostatically tested at 1825 psi.  
(Brief description of service for which component was designed)

Sheet 2 of 2

1. Cap 167A2343P1  
(167A2343)  
SA182-F304  
3/8 thick x 1 1/16 OD
2. Indicator Tube 10481336P1  
SA312-TP316  
3/4 inch 40-seamless pipe  
0.113 wall thickness  
1.065 max. dia.
3. Plug 159A1176P1  
SA182-F304  
1/4 thick x 0.812 OD
4. Flange 919D610P1 (719E474)  
SA182-F304  
3.37 thick x 9 5/8 OD
5. Head 129B3539P1  
SA182-F304  
7/8 thick x 2.875 Dia.
6. Ring Flange 11485122P2  
SA182-F304  
1" thick x 5.0 OD x 1.75 ID
7. Cap Screw 117C4516P2  
SA193-B6  
6 ea. 1/2 dia. on 4 1/8 bolt circle
8. Plug 175A7961P1  
SA182-F304  
0.38 thick x 1.307 dia.



FORM N-2 NPT CERTIFICATE HOLDERS' DATA REPORT FOR NUCLEAR PART AND APPURTENANCES\*  
As required by the Provision of the ASME Code Rules, Section III, Div. 1

1. Manufactured & Certified by: GE Company, 2117 Castle Hayne Rd., Wilmington, N.C. 28402  
(b) Manufactured for: DUANE ARNOLD (Name and Address of NPT Certificate Holder)  
(Name and Address of N Certificate Holder for completed nuclear component)
2. Identification-Certificate Holders's S/N of Part: A6933 Net'l Bd. No. N/A  
(a) Constructed According to Drawing No: 919D258G003 Dwg. Prepared by D. L. Peterson  
(b) Description of Part Inspected: CYLINDER TUBE & FLANGE  
(c) Applicable ASME Codes: Section III, Edition 1974, Addenda Date W'75, Case No. 1361-2 Class
3. REMARKS: Sub-assembly of Control Rod Drive for use with reactor.  
(Brief description of service for which component was designed)  
Hydrostatically tested at 1825 psi. min.

\*Sheet 1 of 2

We certify that the statements in this report are correct and this vessel part or appurtenance as defined in the code conforms to the rules of construction of the ASME Code Section III (The applicable Designed Specification and Stress Report are not the responsibility of the NPT Certificate Holder for parts. An NPT Certification Holder for appurtenances is responsible for furnishing a separate Design Specification and Stress Report if the appurtenance is not included in the component Design Specification and Stress Report).

DATE: 11/10, 19 87 Signed GE-NEBG-NF&CM-QA By J. Ettruden  
(NPT Certificate Holder)

Certificate of Authorization Expires: 6/16/90 Certification of Authorization No.: NPT N-1151

CERTIFICATION OF DESIGN FOR APPURTENANCE

Design information on file at GE COMPANY, SAN JOSE, CALIFORNIA  
Stress analysis report on file at GE COMPANY, SAN JOSE, CALIFORNIA  
DC22A6253 Rev. 0  
Design specification certified by BJORN HAABERG Prof. Eng. State CALIF. Reg. No. 15570  
DC22A6254 Rev. 0  
Stress analysis report certified by EDWARD YOSHIO Prof. Eng. State CALIF. Reg. No. M018646

CERTIFICATION OF SHOP INSPECTION

I, the undersigned, holding a valid commission by the National Board of Boiler and Pressure Inspectors and/or the State or Province of NORTH CAROLINA and employed by DEPARTMENT OF LABOR of STATE OF NORTH CAROLINA have inspected the part of a pressure vessel described in this Partial Data Report on 11-10 1987, and state that to the best of my knowledge and belief, the NPT Certificate Holder has constructed this part in accordance with the ASME Code Section III.

By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the part described in the Partial Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

DATE 11-10, 19 87 Inspector's Signature J. L. Brown National Board, State, Province and No. NC-779-P.A.WC260 OHIO

Supplemental sheets in form of lists, sketches or drawing may be used provided (1) size is 1/2" x 11", (2) information in 1-2 on this Data Report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded in Item 3. "REMARKS"

Items 4-8 Incl. to be completed for single wall vessels, jacketed vessels, or shells of heat exchangers.

4. Shell: Material \_\_\_\_\_ T.S. \_\_\_\_\_ Nominal Thickness \_\_\_\_\_ in. Allowance \_\_\_\_\_ in. Dia. \_\_\_\_\_ ft. \_\_\_\_\_ in. Length \_\_\_\_\_ ft. \_\_\_\_\_ in.  
(Kind & Spec.No.) (Min. of Range Specified)
5. Seams: Long \_\_\_\_\_ H.T.<sup>1</sup> \_\_\_\_\_ R.T. \_\_\_\_\_ Efficiency \_\_\_\_\_ %  
Girth \_\_\_\_\_ H.T.<sup>1</sup> \_\_\_\_\_ R.T. \_\_\_\_\_
6. Heads: (a) Material \_\_\_\_\_ T.S. \_\_\_\_\_ (b) Material \_\_\_\_\_ T.S. \_\_\_\_\_ No. of Courses \_\_\_\_\_
- | Location (Top Bottom, Ends) | Thickness | Crown Radius | Knuckle Radius | Elliptical Ratio | Conical Apex Angle | Hemispherical Radius | Flat Diameter | Side to Press. (conv. or conc.) |
|-----------------------------|-----------|--------------|----------------|------------------|--------------------|----------------------|---------------|---------------------------------|
| (a) _____                   | _____     | _____        | _____          | _____            | _____              | _____                | _____         | _____                           |
| (b) _____                   | _____     | _____        | _____          | _____            | _____              | _____                | _____         | _____                           |
- If removable, bolts used \_\_\_\_\_ Other fastening \_\_\_\_\_  
(Material, Spec.No., T.S. Size Number) (Describe or attach sketch)
7. Jacket Closure: \_\_\_\_\_  
(Describe as ogee and weld, bar, etc. If bar give dimensions, if bolts, describe or sketch)
8. Design Pressure <sup>2</sup> \_\_\_\_\_ psi at \_\_\_\_\_ °F Drop Weight \_\_\_\_\_  
Charpy Impact \_\_\_\_\_ ft-lb  
at temp. of \_\_\_\_\_ °F

Items 9 and 10 to be completed for tube sections.

9. Tube Sheets: Stationary Mat'l. \_\_\_\_\_ Dis. \_\_\_\_\_ Thickness \_\_\_\_\_ in. Attachment \_\_\_\_\_  
(Kind of Spec. No.) (Subj. to Press.) (Welded, Bolted)  
Floating. Material \_\_\_\_\_ Dis. \_\_\_\_\_ Thickness \_\_\_\_\_ in. Attachment \_\_\_\_\_
10. Tubes: Material \_\_\_\_\_ O.D. \_\_\_\_\_ in. Thickness \_\_\_\_\_ or gage. Number \_\_\_\_\_ Type \_\_\_\_\_  
(Str. or U)

Items 11-14 incl. to be completed for inner chambers of jacketed vessels, or channels of heat exchangers

11. Shell: Material \_\_\_\_\_ T.S. \_\_\_\_\_ Nominal Thickness \_\_\_\_\_ in. Allowance \_\_\_\_\_ in. Dia. \_\_\_\_\_ ft. \_\_\_\_\_ in. Length \_\_\_\_\_ ft. \_\_\_\_\_ in.  
(Kind & Spec.No.) (Min. of Range Specified)
12. Seams: Long \_\_\_\_\_ H.T.<sup>1</sup> \_\_\_\_\_ R.T. \_\_\_\_\_ Efficiency \_\_\_\_\_ %  
Girth \_\_\_\_\_ H.T.<sup>1</sup> \_\_\_\_\_ R.T. \_\_\_\_\_
13. Heads: (a) Material \_\_\_\_\_ T.S. \_\_\_\_\_ (b) Material \_\_\_\_\_ T.S. \_\_\_\_\_ No. of Courses \_\_\_\_\_
- | Location             | Thickness | Crown Radius | Knuckle Radius | Elliptical Ratio | Conical Apex Angle | Hemispherical Radius | Flat Diameter | Side to Press. (Conv. or Conc.) |
|----------------------|-----------|--------------|----------------|------------------|--------------------|----------------------|---------------|---------------------------------|
| (a) Top, Bottom, End | _____     | _____        | _____          | _____            | _____              | _____                | _____         | _____                           |
| (b) Channel          | _____     | _____        | _____          | _____            | _____              | _____                | _____         | _____                           |
- If removable, bolts used (a) \_\_\_\_\_ (b) \_\_\_\_\_ (c) \_\_\_\_\_ Other Fastening \_\_\_\_\_  
(Describe or attach sketch)
14. Design pressure <sup>2</sup> \_\_\_\_\_ psi at \_\_\_\_\_ °F Drop Weight \_\_\_\_\_  
Charpy Impact \_\_\_\_\_ ft-lb  
at temp. of \_\_\_\_\_ °F

Items below to be completed for all vessels where applicable.

15. Safety Valve Outlets: Number \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_
16. Nozzles:
- | Purpose (Inlet Outlet, Drain) | Number | Dia or Size | Type  | Material | Thickness | Reinforcement Material | Attached |
|-------------------------------|--------|-------------|-------|----------|-----------|------------------------|----------|
| _____                         | _____  | _____       | _____ | _____    | _____     | _____                  | _____    |
17. Inspection Openings: Manholes, No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_  
Handles, No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_  
Threaded, No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_
18. Supports: Shirt \_\_\_\_\_ Lugs \_\_\_\_\_ Lugs \_\_\_\_\_ Other \_\_\_\_\_ Attached \_\_\_\_\_  
(Yes or No) (Number) (Number) (Describe) (Where & How)

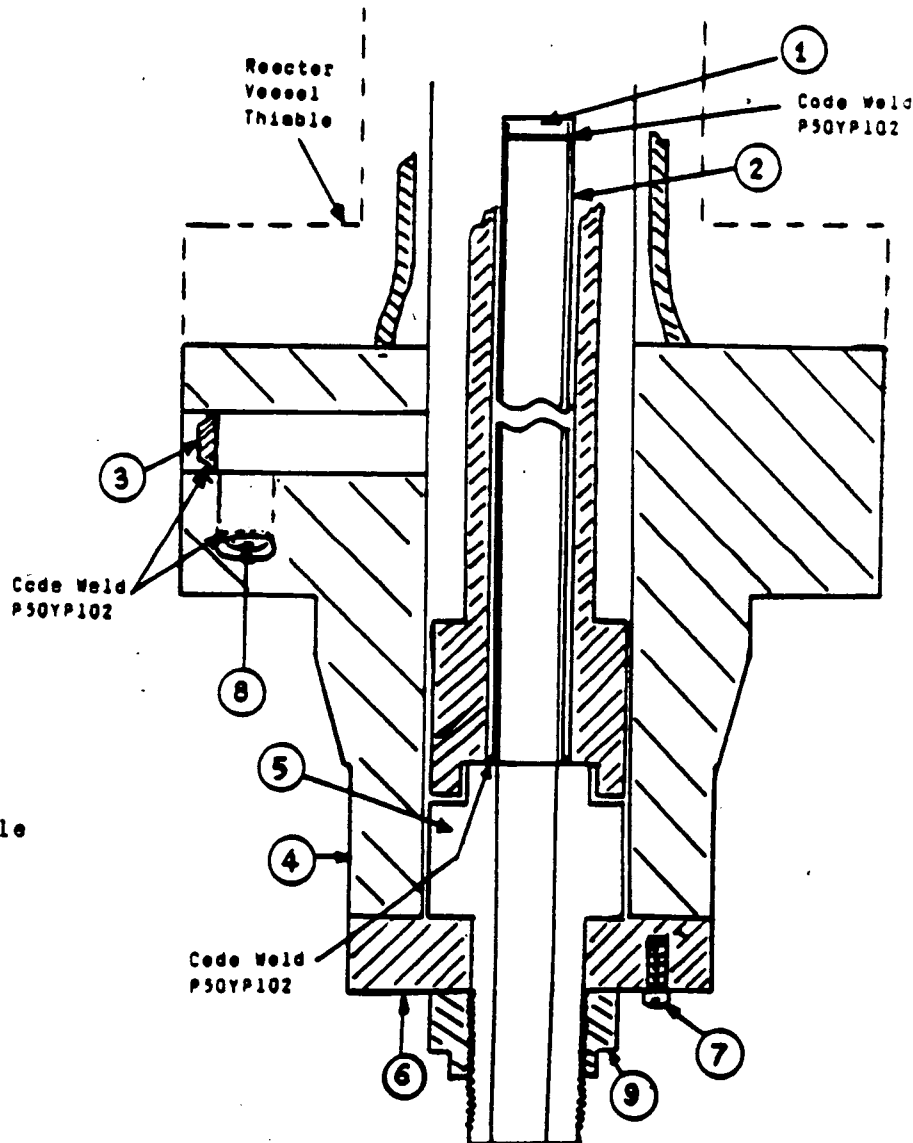
<sup>1</sup> If Postweld Heat-Treated.

<sup>2</sup> List other internal or external pressure with coincident temperature when applicable.

1. Manufactured & Certified by: GE Company, 2117 Castle Hayne Rd., Wilmington, N.C. 28401  
(Name and Address of NPT Certificate Holder)
- (b) Manufactured for: DUANE ARNOLD  
(Name and Address of N Certificate Holder for completed nuclear component)
2. Identification-Certificate Holders's S/N of Part: A6933 Nat'l Id. N. \_\_\_\_\_
- (a) Constructed According to Drawing No: 919D258G003 Dwg. Prepared by D. L. Peterson
- (b) Description of Part Inspected: CYLINDER TUBE & FLANGE
- (c) Applicable ASME Code: Section III, Edition 1974, Addenda Date W'75, Case No. 1361-2 Class \_\_\_\_\_
3. REMARKS: Standard part for use with Reactor. Hydrostatically tested at 1825 psi.  
(Brief description of service for which component was designed)

Sheet 2 of 2

1. Cap 167A2343P1  
(167A2343)  
SA182-F304  
3/8 thick x 1 1/16 OD
2. Indicator Tube 104B1336P1  
SA312-TP316  
3/4 sch 40-seamless pipe  
0.113 wall thickness  
1.065 max. dia.
3. Plug 159A1176P1  
SA182-F304  
1/4 thick x 0.812 OD
4. Flange 919D610P1 (719E474)  
SA182-F304  
3.37 thick x 9 5/8 OD
5. Head 129B3539P1  
SA182-F304  
7/8 thick x 2.875 Dia.
6. Ring Flange 114B5122P2  
SA182-F304  
1" thick x 5.0 OD x 1.75 ID
7. Cap Screw 117C4516P2  
SA193-B6  
6 ea. 1/2 dia. on 4 1/8 bolt circle
8. Plug 175A7961P1  
SA182-F304  
0.38 thick x 1.307 dia.





FORM N-2 NPT CERTIFICATE HOLDERS' DATA REPORT FOR NUCLEAR PART AND APPURTENANCES  
As required by the Provision of the ASME Code Rules, Section III, Div. 1

1. Manufactured & Certified by: GE Company, 2117 Castle Hayne Rd., Wilmington, N.C. 28402  
(b) Manufactured for: DUANE ARNOLD (Name and Address of NPT Certificate Holder)  
(Name and Address of NPT Certificate Holder for completed nuclear component)
2. Identification-Certificate Holders's S/N of Part: A8370 Nat'l Bd. No. N/A  
(a) Constructed According to Drawing No: 919D258G003 Dwg. Prepared by D. L. Peterson  
(b) Description of Part Inspected: CYLINDER TUBE & FLANGE  
(c) Applicable ASME Code: Section III, Edition 1974, Addenda Date W'75, Case No. 1361-2 Class
3. REMARKS: Sub-assembly of Control Rod Drive for use with reactor.  
(Brief description of service for which component was designed)  
Hydrostatically tested at 1825 psi. min.

\*Sheet 1 of 2

We certify that the statements in this report are correct and this vessel part or appurtenance as defined in the code conforms to the rules of construction of the ASME Code Section III. (The applicable Designed Specification and Stress Report are not the responsibility of the NPT Certificate Holder for parts. An NPT Certification Holder for appurtenances is responsible for furnishing a separate Design Specification and Stress Report if the appurtenance is not included in the component Design Specification and Stress Report).

DATE: 11/10, 19 87 Signed GE-NEBG-NF&CM-QA By J. E. Stroudman  
(NPT Certificate Holder)

Certificate of Authorization Expires: 6/16/90 Certification of Authorization No.: NPT N-1151

CERTIFICATION OF DESIGN FOR APPURTENANCE

Design information on file at GE COMPANY, SAN JOSE, CALIFORNIA

Stress analysis report on file at GE COMPANY, SAN JOSE, CALIFORNIA  
DC22A6253 Rev. 0

Design specification certified by BJORN HAABERG Prof. Eng. State CALIF. Reg. No. 15570  
DC22A6254 Rev. 0.

Stress analysis report certified by EDWARD YOSHIO Prof. Eng. State CALIF. Reg. No. MO18646

CERTIFICATION OF SHOP INSPECTION

I, the undersigned, holding a valid commission by the National Board of Boiler and Pressure Inspectors and/or the State or Province of NORTH CAROLINA and employed by DEPARTMENT OF LABOR of STATE OF NORTH CAROLINA have inspected the part of a pressure vessel described in this Partial Data Report on 11-10 1987, and state that to the best of my knowledge and belief, the NPT Certificate Holder has constructed this part in accordance with the ASME Code Section III.

By signing this certificate, neither the Inspector nor his employer make any warranty, expressed or implied, concerning the part described in the Partial Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damages or a loss of any kind arising from or connected with this inspection.

DATE 11/10, 19 87 J. P. Phendy  
Inspector's Signature

NE-778-P.A.W. 2460-OHIO  
National Board, State, Province and No.

\*Supplemental sheets in form of lists, sketches or drawing may be used provided (1) size is 1/2" X 11", (2) information in 1-2 on this Data Report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded in Item 3. "REMARKS"

Items 4-8 Incl. to be completed for single wall vessels, jackets vessels, or shells of heat exchangers.

4. Shell: Material \_\_\_\_\_ T.S. \_\_\_\_\_ Nominal Thickness \_\_\_\_\_ in. Allowance \_\_\_\_\_ in. Dis. \_\_\_\_\_ ft. \_\_\_\_\_ in. Length \_\_\_\_\_ ft. \_\_\_\_\_ in.  
(Kind & Spec. No.) (Min. of Range Specified)
5. Seams: Long \_\_\_\_\_ H.T.<sup>1</sup> \_\_\_\_\_ R.T. \_\_\_\_\_ Efficiency \_\_\_\_\_ %  
Girth \_\_\_\_\_ H.T.<sup>1</sup> \_\_\_\_\_ R.T. \_\_\_\_\_ No. of Courses \_\_\_\_\_
6. Heads: (a) Material \_\_\_\_\_ T.S. \_\_\_\_\_ (b) Material \_\_\_\_\_ T.S. \_\_\_\_\_  
Location (Top Bottom, End) Thickness Crown Radius Knuckle Radius Elliptical Ratio Conical Apex Angle Hemispherical Radius Flat Diameter Side to Press. (conv. or conc.)  
(a) \_\_\_\_\_  
(b) \_\_\_\_\_  
If removable, bolts used \_\_\_\_\_ Other fastening \_\_\_\_\_  
(Material, Spec. No., T.S. Size Number) (Describe or attach sketch)
7. Jacket Closure: \_\_\_\_\_  
(Describe as gage and weld, bar, etc. If bar give dimensions, if bolts, describe or sketch)
8. Design Pressure <sup>2</sup> \_\_\_\_\_ psi at \_\_\_\_\_ °F Drop Weight \_\_\_\_\_  
Charpy Impact \_\_\_\_\_ ft-lb  
at temp. of \_\_\_\_\_ °F

Items 9 and 10 to be completed for tube sections.

9. Tube Sheets: Stationary Mat'l. \_\_\_\_\_ Dis. \_\_\_\_\_ Thickness \_\_\_\_\_ in. Attachment \_\_\_\_\_  
(Kind of Spec. No.) (Subj. to Press.) (Welded, Bolted)  
Floating Material \_\_\_\_\_ Dis. \_\_\_\_\_ Thickness \_\_\_\_\_ in. Attachment \_\_\_\_\_ inches
10. Tubes: Material \_\_\_\_\_ O.D. \_\_\_\_\_ in. Thickness \_\_\_\_\_ or gage. Number \_\_\_\_\_ Type \_\_\_\_\_  
(Str. or U)

Items 11-14 incl. to be completed for inner chambers of jacketed vessels, or channels of heat exchangers.

11. Shell: Material \_\_\_\_\_ T.S. \_\_\_\_\_ Nominal Thickness \_\_\_\_\_ in. Allowance \_\_\_\_\_ in. Dis. \_\_\_\_\_ ft. \_\_\_\_\_ in. Length \_\_\_\_\_ ft. \_\_\_\_\_ in.  
(Kind & Spec. No.) (Min. of Range Specified)
12. Seams: Long \_\_\_\_\_ H.T.<sup>1</sup> \_\_\_\_\_ R.T. \_\_\_\_\_ Efficiency \_\_\_\_\_ %  
Girth \_\_\_\_\_ H.T.<sup>1</sup> \_\_\_\_\_ R.T. \_\_\_\_\_ No. of Courses \_\_\_\_\_
13. Heads: (a) Material \_\_\_\_\_ T.S. \_\_\_\_\_ (b) Material \_\_\_\_\_ T.S. \_\_\_\_\_  
Location (a) Top, Bottom, End Thickness Crown Radius Knuckle Radius Elliptical Ratio Conical Apex Angle Hemispherical Radius Flat Diameter Side to Press. (Conv. or Conc.)  
(b) Channel \_\_\_\_\_  
If removable, bolts used (a) \_\_\_\_\_ (b) \_\_\_\_\_ (c) \_\_\_\_\_ Other Fastening \_\_\_\_\_  
(Describe or attach sketch)  
Drop Weight \_\_\_\_\_  
Charpy Impact \_\_\_\_\_ ft-lb  
at temp. of \_\_\_\_\_ °F
14. Design pressure <sup>2</sup> \_\_\_\_\_ psi at \_\_\_\_\_ °F

Items below to be completed for all vessels where applicable.

13. Safety Valve Outlets: Number \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_
16. Nozzles:  
Purpose (Inlet Outlet, Drain) Number Dis or Size Type Material Thickness Reinforcement Material Attached
17. Inspection Openings: Manholes, No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_  
Handles, No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_  
Threaded, No. \_\_\_\_\_ Size \_\_\_\_\_ Location \_\_\_\_\_
18. Supports: Shirt \_\_\_\_\_ Lug \_\_\_\_\_ Lug \_\_\_\_\_ Other \_\_\_\_\_ Attached \_\_\_\_\_  
(Yes or No) (Number) (Number) (Describe) (Where & How)

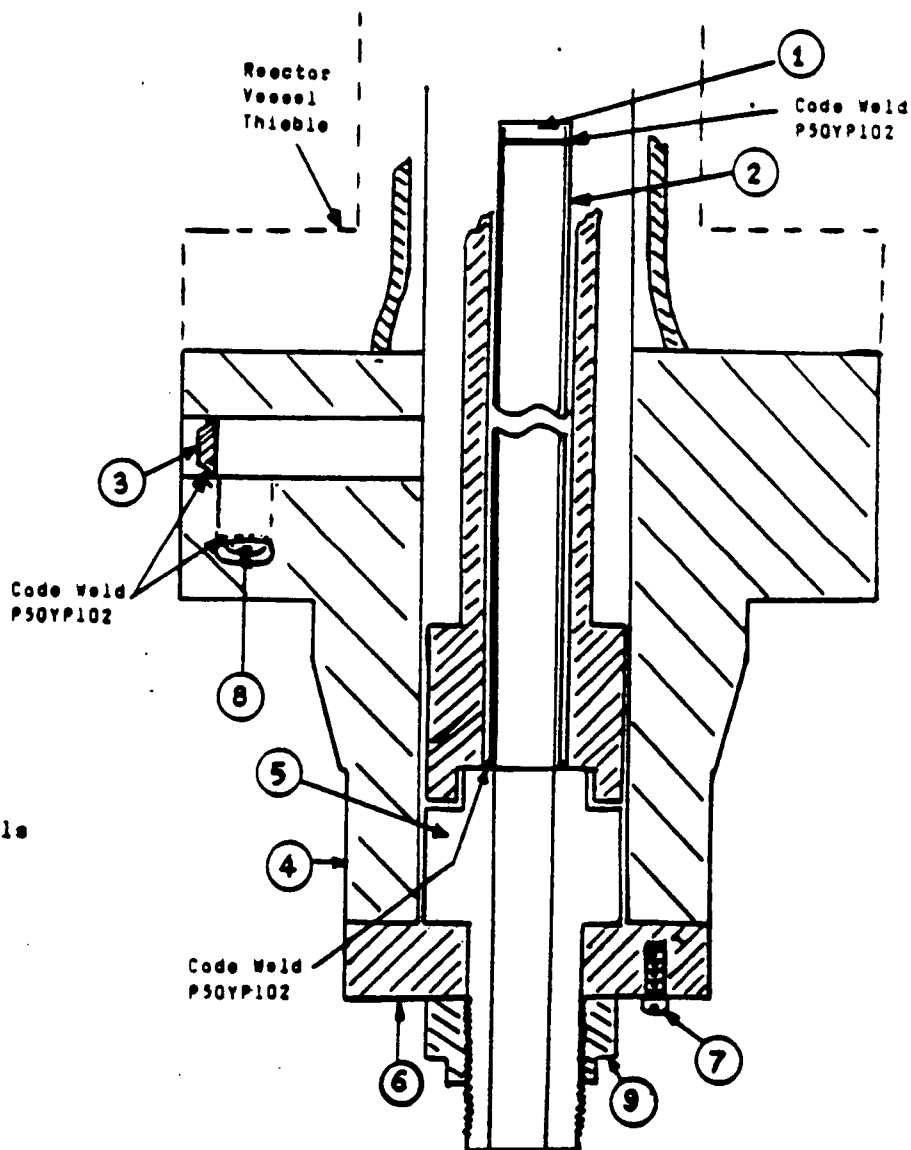
<sup>1</sup> If Postweld Heat-Treated.

<sup>2</sup> List other internal or external pressure with coincident temperature when applicable.

1. Manufactured & Certified by: GE Company, 2117 Castle Hayne Rd., Wilmington, N.C. 28401  
(Name and Address of NPT Certificate Holder)
- (b) Manufactured for: DUANE ARNOLD  
(Name and Address of N Certificate Holder for completed nuclear component)
2. Identification-Certificate Holders's S/N of Part: A8370 Nat'l Id. N. \_\_\_\_\_
- (a) Constructed According to Drawing No: 919D258G003 Dwg. Prepared by D. L. Peterson
- (b) Description of Part Inspected: CYLINDER TUBE & FLANGE
- (c) Applicable ASME Code: Section III, Edition 1974, Addenda Date W'75, Case No. 1361-2 Class \_\_\_\_\_
3. REMARKS: Standard part for use with Reactor. Hydrotestically teeted at 1825 psi.  
(Brief description of service for which component was designed)

Sheet 2 of 2

1. Cap 167A2343P1  
(167A2343)  
SA182-F304  
3/8 thick X 1 1/16 OD
2. Indicator Tube 10481336P1  
SA312-TP316  
3/4 sch 40-seamless pipe  
0.113 wall thickness  
1.065 max. dia.
3. Plug 159A1176P1  
SA182-F304  
1/4 thick x 0.812 OD
4. Flange 919D610P1 (719E474)  
SA182-F304  
3.37 thick x 9 5/8 OD
5. Head 129B3539P1  
SA182-F304  
7/8 thick x 2.875 Dia.
6. Ring Flange 11485122P2  
SA182-F304  
1" thick x 5.0 OD x 1.75 ID
7. Cap Screw 117C4516P2  
SA193-B6  
6 ss. 1/2 dia. on 4 1/8 bolt circles
8. Plug 175A7961P1  
SA182-F304  
0.38 thick x 1.307 dia.



**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As Required by the Provisions of the ASME Code Section XI

1. Owner Iowa Electric Light and Power Date 11-28-88  
Name  
P.O. Box 351, Cedar Rapids, IA 52406 Sheet 1 of 1  
Address
2. Plant Duane Arnold Energy Center Unit 1  
Name  
3277 DAEC Rd., Palo, IA 52324 CMAR 091210  
Address Repair Organization P.O. No., Job No., etc.
3. Work Performed by Iowa Electric Light & Power Type Code Symbol Stamp None  
Name  
3277 DAEC Rd., Palo, IA 52324 Authorization No. None  
Address Expiration Date None
4. Identification of System Residual Heat Removal 20A (Class 1)
5. (a) Applicable Construction Code ASME III 19 74 Edition, None Addenda, None Code Case  
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 19 80 W81

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
Snubber Pin	Iowa Electric	Note 1	None	DLA-005-SS-011	1988	Replacement No	

7. Description of Work Snubber Pin Replacement for a PSA-35 snubber

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☐  
Other ☐ Pressure None psi Test Temp. None °F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8½ in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

FORM NIS-2 (Back)

9. Remarks Replaced snubber pin with pin fabricated from certified round bar stock  
Applicable Manufacturer's Data Reports to be attached  
(P.O. S37978) (Note 1). VT-3/4 preservice inspection performed, Reference  
inspection report 88-379.

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this Replacement conforms to the rules of the ASME Code, Section XI. repair or replacement

Type Code Symbol Stamp None

Certificate of Authorization No. None Expiration Date None

Signed [Signature] ASME Administrator Date December 1, 19 88  
Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Iowa and employed by Lumbermans Mutual Casualty Company of Long Grove, Illinois have inspected the components described in this Owner's Report during the period 11-2-88 to 12-2-88, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

[Signature] Commissions Nat'l Bd. 5813 (I) (N) IA-1041  
Inspector's Signature National Board, State, Province, and Endorsements

Date 12-2- 19 88

(12/82) Note 1: Replacement snubber pins were fabricated by Iowa Electric from 2-inch diameter SA-564-T-630 round bar stock, heat number 646398. Bar stock was machined to a diameter approximately 1 3/4 inch.

**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As Required by the Provisions of the ASME Code Section XI

1. Owner Iowa Electric Light and Power Date 12-5-88  
Name  
P.O. Box 351, Cedar Rapids, IA 52406 Sheet 1 of 1  
Address
2. Plant Duane Arnold Energy Center Unit 1  
Name  
3277 DAEC Rd. Palo, IA 52324 CMAR 90840  
Address Repair Organization P.O. No., Job No., etc.
3. Work Performed by Iowa Electric Type Code Symbol Stamp None  
Name  
3277 DAEC Rd., Palo, IA 52324 Authorization No. None  
Address Expiration Date None
4. Identification of System Core Spray Suction (N.W.) (Class 2)
5. (a) Applicable Construction Code ANIS B31.7 19 69 Edition, 1971 Addenda, N/A Code Case  
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 19 80 W81

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
Hydraulic Snubber	Bergen-Patterson	D. Arnold #20	None	HBB-001-SS-010	1988	Replacement	No

7. Description of Work Hydraulic Snubber Replacement - Type (HSSA-3)

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☐  
Other ☐ Pressure None psi Test Temp. None °F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8½ in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

FORM NIS-2 (Back)

9. Remarks Replacement of Hydraulic Snubber with certified Hydraulic Snubber  
Applicable Manufacturer's Data Reports to be attached  
(P.O. S44346), VT-3/VT-4 pre-service inspection performed. Reference  
inspection report no. 88-441.

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this replacement conforms to the rules of the ASME Code, Section XI. repair or replacement

Type Code Symbol Stamp None

Certificate of Authorization No. None Expiration Date None

Signed [Signature] ASME Administrator Date December 6, 1988  
Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Iowa and employed by Lumbermans Mutual Casualty Company of Long Grove, Illinois have inspected the components described in this Owner's Report during the period 10-26-88 to 12-6-88, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI, except IWA-7210

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

[Signature] Commissions Nat'l Bd. 5813 (I) (N) IA-1041  
Inspector's Signature National Board, State, Province, and Endorsements

Date December 6, 1988

**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As Required by the Provisions of the ASME Code Section XI

1. Owner Iowa Electric Light and Power Date 11/30/88  
Name  
P.O. Box 351, Cedar Rapids, IA 52406 Sheet 1 of 1  
Address
2. Plant Duane Arnold Energy Center Unit 1  
Name  
3277 DAEC Rd., Palo, IA 52324 CMAR 80406 CSR #A  
Address Repair Organization P.O. No., Job No., etc.
3. Work Performed by Iowa Electric Type Code Symbol Stamp None  
Name  
3277 DAEC Rd., Palo, IA 52324 Authorization No. None  
Address Expiration Date None
4. Identification of System (1E-201A) RHR 'A' Heat Exchanger
5. (a) Applicable Construction Code ASME VIII 19 68 Edition, W70 Addenda, N/A Code Case  
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 19 80 W81 Addenda
6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
Pressure Vessel	See Note 1 Iowa Electric	721201-1	4594	1E-201A	1971	Repaired	Yes
<del>_____</del>							
<del>_____</del>							
<del>_____</del>							
<del>_____</del>							

Note 1: Berlin Chapman Division of Perfex

7. Description of Work Weld repair of defect in tube sheet cladding (Class 3)\*  
\* Repair could have affected Class 2 pressure boundary therefore NIS-2 required.
8. Tests Conducted: Hydrostatic ☒ Pneumatic ☐ Nominal Operating Pressure ☐  
Other ☐ Pressure 495 psi Test Temp. 100 °F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8½ in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.



FORM NIS-2 (Back)

9. Remarks Repair to erroded tube sheet to channel shell fillet weld (seal weld)  
by excavation and weld repair. Repair of defects in tube sheet cladding by  
excavation and weld repair. The repaired welds were liquid penetrant inspected  
and found acceptable. The repaired welds also were pressure tested and were  
found acceptable (see ISI No. 88-462).

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this Repair conforms to the rules of the  
 ASME Code, Section XI. repair or replacement

Type Code Symbol Stamp None

Certificate of Authorization No. None Expiration Date None

Signed Robert A. McCracken Date December 1, 19 88  
 Owner, Owner's Designee, Title Inspector

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State  
 or Province of Iowa and employed by Lumbermans Mutual Casualty Company of  
Long Grove, Illinois have inspected the components described  
 in this Owner's Report during the period 10-25-88 to 12-3-88, and state that  
 to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this  
 Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the  
 examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer  
 shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this  
 inspection.

AT Rupples Commissions Nat'l Bd. 5813 (I)(N) IA-1041  
 Inspector's Signature National Board, State, Province, and Endorsements

Date December 3, 19 88

1. Manufactured by Berlin Chemical Corporation, Berlin, Wisconsin

2. Manufactured for General Electric Company, San Jose, California

3. Type Vert. Kind Heat Exch. Vessel No. 721201-1 Nail. Id. 4594 Yr. Built 1971  
(Horn. or Vert.) (Tank, Jacketed, Heat Exch.) (Other Serial) (Other Model No.)

Items 4-9 incl. to be completed for SHells of heat exch.  
4. SHELL: Material SA-516-70 T.S. FBX 70000 Nominal Thickness 1 in. Allowance 10 in. Diam. 3 Ft. 3/4 in. Length 21 Ft. 1/8 in.  
(Kind and Spec. No.) (Fig. or P.S. Spec. Min. T.S.)

5. SEAMS: Long DbL. weld butt. No R.T. Complete Sectioned No Efficiency 100  
(Welded, DbL., Single, Lap, Butt) (Yes or No) (Spot or Complete) (Yes or No)

6. HEADS: (a) Material SA-516-70 T.S. 70000 (b) Material SA-516-70 T.S. 70000  
(Top, bottom, ends) Thickness 13/16 Crown Radius 2:1 Elliptical Ratio 2:1 Conical Apex Angle 3 Hemispherical Radius 3 Flat Diameter 3 Side to Pressure (Concave or Convex) Concave

(a) End 13/16 (b) Material SA-516-70 T.S. 70000  
m) Shell flange SA-105-2 3 3/8 thick

If removable, bolts used (Material, Spec. No., T.S., Size, Number) Other fastening (Describe or Attach Sketch)

7. STAYBOLTS: (Material) If hollow (Size of Hole) Attachment (Threaded, Welded) Pitch (Horn.) X (Vert.) Diam. (Nominal)

8. JACKET CLOSURE: (Describe as type & weld, etc. If bolted, describe or sketch)

9. Constructed for max. allowable working press. 450 psi at max. temp. 400 °F. Min. temp. (when less than -20°) Hydrostatic Test Pressure 775 psi.

Items 10 and 11 to be completed for tube sections:

10. TUBE SHEETS: Stationary. Material SA-516-70 FBX Diam. 5 1/4 in. Thickness 5/16 in. Attachment Welded  
(Kind and Spec. No.) (Integral part of channel) (Welded, Bolted)

Floating. Material SA-249 o.d. 1 in. Thickness 18 or Gage Number 300 Type 304L  
(Kind & Spec. No.) (Strait or U)

Items 12-15 incl. to be completed for Channels of heat exchangers.

12. SHELL Material SA-516-70 T.S. FBX 70000 Nominal Thickness 1 in. Allowance 10 in. Diam. 3 Ft. 3/4 in. Length 21 Ft. 1/8 in.  
(Kind and Spec. No.) (Fig. or P.S. Spec. Min. T.S.)

13. SEAMS: Long DbL. weld butt. No R.T. Complete Sectioned No Efficiency 100  
(Welded, DbL., Single, Lap, Butt) (Yes or No) (Spot or Complete) (Yes or No)

14. HEADS: (a) Material SA-516-70 T.S. 70000 (b) Material SA-516-70 T.S. 70000  
(Top, bottom, ends) Thickness 5/8 Crown Radius 2:1 Elliptical Ratio 2:1 Conical Apex Angle 3 Hemispherical Radius 3 Flat Diameter 49 3/8 Side to Pressure (Concave or Convex) Concave

(a) Channel 5/8 (b) Material SA-516-70 T.S. 70000  
(c) Floating 5/8

If removable, bolts used (a) (Material, Spec. No., T.S., Size, Number) (b) (64) 1" SA-193 B7 125000

(c) Other fastening (Describe or Attach Sketch)

15. Constructed for max. allowable working press. 450 psi at max. temp. 400 °F. Min. temp. (when less than -20°) Hydrostatic Test Pressure 775 psi.

Items 16-17 to be completed for all vessels where applicable.

16. SAFETY VALVE OUTLETS: Number 2 Size 3/4" Location Shell near top  
In channel

17. NOZZLES

Support (Inlet, Outlet, Drain)	Number	Diam. or Size	Type	Material	Thickness	Reinforcement Material	How Attached
Inlet	1	16"	Weld end	SA-105-2	1 7/16"		Welded
Outlet	1	16"	Weld end	SA-105-2	1"		Welded
Drain	2	1"	S.W. Colg.	SA-105-2			Welded
Drain	1	1"	S.W. Colg.	SA-105-2			Welded
Drain	2	3/4"	S.W. Colg.	SA-105-2			Welded

18. INSPECTION: Removable head  
19. SUPPORTS: NO Legs (Number) Legs (Number) Other (Where & How)

20. REMARKS: Residual Heat Removal Exchanger Item B11B001  
Shell side - Reactor water, Tube side - River Water  
\*Upper shell course 7/8" thick, Lower shell course 1 1/8" thick  
\*\*ROWS 1 & 2 #1/2"IG

(Brief description of purpose of the vessel, as Air Tank, After Cooler, Jacketed Cooler, etc. State contents of each part.)

We certify that the statements made in this report are correct and that all details of design, material, construction, and workmanship of this vessel conform to the ASME Code for Pressure Vessels, Section VIII, Division I.

Date MAY 26 1979 Signed Berlin Chapman By Louis Kasten  
(Manufacturer)

Certificate of Authorization Expires December 31, 1974

### CERTIFICATE OF SHOP INSPECTION

VESSEL MADE BY Berlin Chapman at Berlin, Wisconsin  
I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State or Province Ill. and employed by Hartford Steam Boiler I. & I. Co. of Hartford, Connecticut have inspected the pressure vessel described in this manufacturer's data report on MAY 25 1979 and state that to the best of my knowledge and belief, the manufacturer has constructed this pressure vessel in accordance with the applicable sections of the ASME Boiler and Pressure Vessel Code.

By signing this certificate neither the inspector nor his employer makes any warranty, expressed or implied, concerning the pressure vessel described in this manufacturer's data report. Furthermore, neither the inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date 19  
P. E. Call Inspectors Signature  
Commissions N.B. 6150  
Nat'l Board, State, or Province and No.

### CERTIFICATE OF FIELD ASSEMBLY INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State or Province Ill. and employed by Hartford Steam Boiler I. & I. Co. have compared the statements in this manufacturer's data report with the described pressure vessel and state that parts referred to in data items not included in the certificate of shop inspection have been inspected by me and that to the best of my knowledge and belief the manufacturer has constructed and assembled this pressure vessel in accordance with the applicable sections of the ASME Boiler and Pressure Vessel Code. The described vessel was inspected and subjected to a hydrostatic test of psi.

By signing this certificate neither the inspector nor his employer makes any warranty, expressed or implied, concerning the pressure vessel described in this manufacturer's data report. Furthermore, neither the inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date 19  
Commissions N.B. 6150  
Nat'l Board, State, or Province and No.

**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As Required by the Provisions of the ASME Code Section XI

1. Owner Iowa Electric Light and Power Date 12-8-88  
Name  
P.O. Box 351, Cedar Rapids, IA 52406 Sheet 1 of 1  
Address
2. Plant Duane Arnold Energy Center Unit 1  
Name  
3277 DAEC Rd., Palo, IA 52324 Note A - CMAR 89346  
Address Note B - CMAR 89347  
Repair Organization P.O. No., Job No., etc.
3. Work Performed by Iowa Electric Type Code Symbol Stamp None  
Name  
3277 DAEC Rd., Palo, IA 52324 Authorization No. None  
Address Expiration Date None
4. Identification of System Note A - 'A' Recirc. Pump Casing, Note B - 'B' Recirc. Pump Casing
5. (a) Applicable Construction Code B31.7 19 69 Edition, 1971 Addenda, NA Code Case  
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 19 80 W81
6. Identification of Components Repaired or Replaced and Replacement Components

	Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
Note A -	Lug pad	Bergen Patterson	N/A	N/A	SSA-1	1988	Repaired	No
Note B -	Lug pad	Bergen Patterson	N/A	N/A	SSB-1	1988	Repaired	No

7. Description of Work Repaired rejected indications by grinding.

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☐  
Other ☐ Pressure None psi Test Temp. None °F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 1/2 in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

FORM NIS-2 (Back)

9. Remarks Lug pads on structural building side of support had unacceptable  
indications grounded out. Indication removals did not effect the integrity  
of the weld. Welding was not required. Grounded areas were dry magnetic  
particle inspected and found acceptable.

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this repair conforms to the rules of the ASME Code, Section XI. repair or replacement

Type Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed *Ronald K. H. Melch* ASME Administrator Date 12-8, 19 88  
 Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Iowa and employed by Lumbermans Mutual Casualty Company of Long Grove, Illinois have inspected the components described in this Owner's Report during the period 11-14-88 to 12-9-88, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

*W. R. Ruppel* Commissions Nat'l Bd. 5813 (I)(N) IA-1041  
 Inspector's Signature National Board, State, Province, and Endorsements

Date December 9, 19 88

**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As Required by the Provisions of the ASME Code Section XI

1. Owner Iowa Electric Light & Power  
Name  
P.O. Box 351, Cedar Rapids, IA 52406  
Address
2. Plant Duane Arnold Energy Center  
Name  
3277 DAEC Rd., Palo, IA 52324  
Address
3. Work Performed by Iowa Electric  
Name  
3277 DAEC Rd., Palo, IA 52324  
Address
- Date 12-14-88
- Sheet 1 of 1
- Unit 1
- CMAR 88470  
Repair Organization P.O. No., Job No., etc.
- Type Code Symbol Stamp None
- Authorization No. None
- Expiration Date None
4. Identification of System Reactor Water Cleanup - Suction
5. (a) Applicable Construction Code ANSI B31.7 19 69 Edition, 71 Addenda, N/A Code Case
- (b) Applicable Edition of Section XI Utilized for Repairs or Replacements 19 80 W81

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No. (Heat No.)	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
Pipe clamp-2-studs	Cardinal	KC8972	NA	DCA-6-SS-50 (Snubber)	1986	Replaced	No
Pipe clamp-4-nuts	Cardinal	X569B	NA	DCA-6-SS-50 (Snubber)	1986	Replaced	No

7. Description of Work Replaced pipe clamp - studs and nuts
8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☐  
Other ☐ Pressure None psi Test Temp. None °F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8½ in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

FORM NIS-2 (Back)

9. Remarks Replaced pipe clamp - studs and nuts with certified studs and nuts,  
Applicable Manufacturer's Data Reports to be attached  
(P.O. S26710) and (P.O. S26813), VT-3/VT-4 preservice inspection performed.

Reference inspection report no. 88-457

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this Replacement conforms to the rules of the ASME Code, Section XI. repair or replacement

Type Code Symbol Stamp N/A

Certificate of Authorization No. N/A

Expiration Date N/A

Signed [Signature] ASME Administrator Date December 14, 19 88  
Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Iowa and employed by Lumbermans Mutual Casualty Company of Long Grove, Illinois have inspected the components described in this Owner's Report during the period 11-12-88 to 12-15-88, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

[Signature] Commissions Nat'l Bd. 5813 (I) (N) IA-1041  
Inspector's Signature National Board, State, Province, and Endorsements

Date December 15, 19 88

**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As Required by the Provisions of the ASME Code Section XI

1. Owner Iowa Electric Light & Power  
Name  
P.O. Box 351, Cedar Rapids, IA 52406  
Address
- Date 12-21-88
- Sheet 1 of 2
2. Plant Duane Arnold Energy Center  
Name  
3277 DAEC Rd. Palo, IA 52324  
Address
- Unit 1
- See Attach. - MSR-1  
Repair Organization P.O. No., Job No., etc.
3. Work Performed by Iowa Electric  
Name  
3277 DAEC Rd. Palo, IA 52324  
Address
- Type Code Symbol Stamp None
- Authorization No. None
- Expiration Date None
4. Identification of System Main Steam 'A', 'B', 'C' (Class 1)
5. (a) Applicable Construction Code Section III, 1968 Edition, Winter 1968 Addenda, N/A Code Case
- (b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1980 W81

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No. (Heat No.)	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
Pilot seat vlvs. Bolts -	Target Rock	184N844	NA	See Attach. MSR-1	1987	Replaced	No

7. Description of Work Replaced Pilot seat valve bolts

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☐  
Other ☐ Pressure None psi Test Temp. None °F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8½ in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.



FORM NIS-2 (Back)

9. Remarks Replaced pilot seat valve bolts with certified bolts. (P.O. S21635)  
VT-1 of bolt preservice inspection performed.  
Reference inspection report no. 88-477.

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this Replacement conforms to the rules of the ASME Code, Section XI. repair or replacement

Type Code Symbol Stamp N/A

Certificate of Authorization No. N/A

Expiration Date N/A

Signed [Signature] ASME Administrator Date December 28, 19 88  
 Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Iowa and employed by Lumbermans Mutual Casualty Company of Long Grove, Illinois have inspected the components described in this Owner's Report during the period 11-19-88 to 1-6-89, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

[Signature] Commissions Nat'l Bd. 5813 (I)(N) IA-1041  
 Inspector's Signature National Board, State, Province, and Endorsements

Date January 6, 19 89

1. Owner Iowa Electric Light and Power Date 12-21-88  
Name  
P.O. Box 351, Cedar Rapids, IA 52406  
Address
2. Plant Duane Arnold Energy Center Sheet 2 of 2  
Name Unit 1  
3277 DAEC Rd., Palo, IA 52324  
Address see below
3. Work Performed by Iowa Electric Repair Organiz. P.O. No., Job No., etc.  
Name Type Code Symbol Stamp None  
3277 DAEC Rd., Palo, IA 52324 Authorization No. None  
Address Expiration Date None
4. Identification of System see below
5. (a) Applicable Construc. Code ASME III 19 68 Edition, W/68 Addenda None Code Case  
 (b) Applicable Edition of Section XI Utilized for Repairs or Replacement 19 80 W/81
6. Identification of Components Repaired or Replaced and Replacement Components

Name of Comp.	Name of Manufac.	Board No.	Other Identif.	Year Built	ASME Code Repaired Replaced or Replacement	Stamped (Yes or No)
4 Pilot vlvs ts (each)	Target Rock	None	See Sheet 1	1987	Replacement	No

4 Pilot vlvs  
belts (each)  
9/12/88  
12-28-88

Table MSR-1 (Class 1)

Repair Organiz. (PMAR)	Identifica- tion of Sys.	Other Identification
1026156	Main Steam A	PSV4401
1026157	Main Steam B	PSV4402
1026158	Main Steam C	PSV4405
_____	_____	_____

**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As Required by the Provisions of the ASME Code Section XI

1. Owner Iowa Electric Light and Power  
Name  
P.O. Box 351, Cedar Rapids, IA 52406  
Address
2. Plant Duane Arnold Energy Center  
Name  
3277 DAEC Rd., Palo, IA 52324  
Address
3. Work Performed by Iowa Electric  
Name  
3277 DAEC Rd., Palo, Iowa 52324  
Address
- Date 12-28-88
- Sheet 1 of 1
- Unit 1
- CMAR 91632  
Repair Organization P.O. No., Job No., etc.
- Type Code Symbol Stamp None
- Authorization No. None
- Expiration Date None
4. Identification of System Control Rod Drive Return (Class 1)
5. (a) Applicable Construction Code ANSI B31.7-1969 Edition, 1971 Addenda, N/A Code Case  
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 19 80 W81

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No. (Part No.)	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
Base plate of variable support	Bergen-Paterson	VS2F	N/A	DBA-6-H-1	1988	Repaired*	No

7. Description of Work \* Removed hanger to obtain access to motor operator. Welded baseplate of variable support to structural steel.
8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☐  
Other ☐ Pressure None psi Test Temp. None °F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 1/2 in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

FORM NIS-2 (Back)

9. Remarks Rewelded base plate of variable support to structural steel after work  
activities on motor operator was completed. Applicable Manufacturer's Data Reports to be attached  
VT-3/VT-4 preservice inspection also was  
performed. Reference inspection report no. 88-479.

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this Repair conforms to the rules of the ASME Code, Section XI. repair or replacement

Type Code Symbol Stamp None

Certificate of Authorization No. None Expiration Date None

Signed [Signature], ASME Administrator Date December 29, 19 88  
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Iowa and employed by Lumbermans Mutual Casualty Company of Long Grove, Illinois have inspected the components described in this Owner's Report during the period 11-16-88 to 1-6-89, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

[Signature] Commissions Nat'l Bd. 5813 (I)(N) IA-1041  
Inspector's Signature National Board, State, Province, and Endorsements

Date January 6, 19 89

**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As Required by the Provisions of the ASME Code Section XI

1. Owner Iowa Electric Light & Power Date 12-29-88  
Name  
P.O. Box 351, Cedar Rapids, Ia 52406  
Address
2. Plant Duane Arnold Energy Center Sheet 1 of 2  
Name  
3277 DAEC Rd. Palo IA 52324 Unit 1  
Address  
See Attach. MSR-2  
Repair Organization P.O. No., Job No., etc.
3. Work Performed by Iowa Electric Type Code Symbol Stamp None  
Name  
3277 DAEC Rd. Palo, IA 52324 Authorization No. None  
Address Expiration Date None
4. Identification of System Main Steam 'D' (Class 1)
5. (a) Applicable Construction Code Section III 19 68 Edition, Winter 1968 Addenda, N/A Code Case  
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 19 80 W81

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No. (Part No.)	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
Pilot seat vlvs bolts -	Target Rock	*	N/A	See Attach. MSR-2	1978	Replaced	No

\* 1 1/8 - 12 x 6 lg

7. Description of Work Replaced pilot seat valve bolts

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☐  
Other ☐ Pressure None psi Test Temp. None °F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 1/2 in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

FORM NIS-2 (Back)

9. Remarks Replaced pilot seat valve bolts with certified bolts. (P.O. 13741)  
VT-1 of bolt preservice inspection performed. Reference inspection report  
no. 88-477.

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this Replacement conforms to the rules of the ASME Code, Section XI. repair or replacement

Type Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed [Signature] ASME Administrator Date January 3, 19 88  
 Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Iowa and employed by Lumbermans Mutual Casualty Company of Long Grove, Illinois have inspected the components described in this Owner's Report during the period 11-19-88 to 1-4-89, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

[Signature] Commissions Nat'l Bd. 5813 (I)(N) IA-1041  
 Inspector's Signature National Board, State, Province, and Endorsements

Date January 4, 19 89



**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As Required by the Provisions of the ASME Code Section XI

1. Owner Iowa Electric Light and Power Date 12-29-88  
Name  
P.O. Box 351, Cedar Rapids, IA 52406 Sheet 1 of 1  
Address
2. Plant Duane Arnold Energy Center Unit 1  
Name  
3277 DAEC Rd., Palo, IA 52324 DCP 1422 (P.O. S40484)  
Address Repair Organization P.O. No., Job No., etc.
3. Work Performed by Iowa Electric Light and Power Type Code Symbol Stamp None  
Name  
3277 DAEC Rd. Palo, IA 52324 Authorization No. None  
Address Expiration Date None
4. Identification of System Feedwater 'C' 'B'
5. (a) Applicable Construction Code ASME III 19 86 Edition, 1986 Addenda, N/A Code Case  
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 19 80 W81  
(c) Original Construction Code ASME III 1977 Edition, Winter 1977 Addenda
6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
Check valve - Disc	Anchor/Darling	U4082	N/A	V-14-1	1988	Replacement	Yes
Check valve - Disc	Anchor/Darling	U4083	N/A	V-14-3	1988	Replacement	Yes

7. Description of Work Replacement of check valve disc

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒  
Other ☐ Pressure 1000 psi Test Temp. 185°F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8½ in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.



FORM NIS-2 (Back)

9. Remarks Replacement of disc with certified disc (P.O. S40484). Anchor Darling  
letter reconciliation of ASME Section III 1986 Edition 1986 Addenda to  
original construction code, ASME Section III 1977 Edition, Winter 1977 Addenda.  
VT-3 of check valve internals preservice perform. Reference inspection report no.  
88-397A for valve V-14-1 and inspection report no. 88-398 for valve V-14-3.  
(continued below) \*

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this Replacement conforms to the rules of the  
 ASME Code, Section XI. repair or replacement

Type Code Symbol Stamp None

Certificate of Authorization No. None

Expiration Date None

Signed *[Signature]*, ASME Administrator Date January 5, 19 89  
 Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State  
 or Province of Iowa and employed by Lumbermans Mutual Casualty Company of  
Long Grove, Illinois have inspected the components described  
 in this Owner's Report during the period 8-4-88 to 1-11-89, and state that  
 to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this  
 Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the  
 examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer  
 shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this  
 inspection.

*[Signature]* Commissions Nat'l Bd. 5813 (I)(N) IA-1041  
 Inspector's Signature National Board, State, Province, and Endorsements

Date January 11, 19 89

(12/82)

- \* Pressure test (VT-2) was performed. Reference inspection report no.  
 88-081. Welded areas were liquid penetrant inspected and found  
 acceptable.

FORM N-2 NPT CERTIFICATE HOLDERS' DATA REPORT FOR NUCLEAR PART AND APPURTENANCES  
As required by the Provision of the ASME Code Rules, Section III, Div. 1

1. (a) Manufactured by Anchor/Darling Valve Co., 701 First St., Williamsport, PA 17701  
(Name and address of NPT Certificate Holder)  
(b) Manufactured for Iowa Electric Light & Power Co., P.O. Box 351, Cedar Rapids, Iowa 52406  
(Name and address of N Certificate Holder for completed nuclear components)  
2. Identification-Certificate Holder's Serial No. of Part S/N U4082 Nat'l Bd. No. N/A  
(a) Constructed According to Drawing No. D12870 Drawing Prepared by Anchor/Darling Valve Company  
(b) Description of Part Inspected Disc, Heat No. V2242 SA216-WCC  
\*1986 3K 12/8/87 1986  
(c) Applicable ASME Codes Section III, Edition 1977, Addenda date Wnt-177, Case No. N/A Class 1  
3. Remarks 16"-900#-Tilt Disc Check  
(Brief description of service for which component was designed)  
A/DV Shop Order EA667-1  
Note: No Disc Hydro Performed

We certify that the statements made in this report are correct and this vessel part or appurtenance as defined in the Code conforms to the rules of construction of the ASME Code Section III.  
(The applicable Design Specification and Stress Report are not the responsibility of the NPT Certificate Holder for parts. An NPT Certificate Holder for appurtenances is responsible for furnishing a separate Design Specification and Stress Report if the appurtenance is not included in the component Design Specification and Stress Report.)

Date 10/6 19 88 Signed Anchor/Darling Valve Co. By R. L. Hammett  
(NPT Certificate Holder)  
Certificate of Authorization Expires 4/15/89 Certificate of Authorization No. N1713

CERTIFICATION OF DESIGN FOR APPURTENANCE (when applicable)

Design information on file as \_\_\_\_\_  
Stress analysis report on file as \_\_\_\_\_  
Design specifications certified by \_\_\_\_\_ Prof. Eng. State \_\_\_\_\_ Reg. No. \_\_\_\_\_  
Stress analysis report certified by \_\_\_\_\_ Prof. Eng. State \_\_\_\_\_ Reg. No. \_\_\_\_\_

CERTIFICATE OF SHOP INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State of Pennsylvania and employed by Commercial Union Insurance Company of Boston, Mass. have inspected the part of a pressure vessel described in this Partial Data Report on 9-6-88 Ch 10-7-88 16 \_\_\_\_\_, and state that to the best of my knowledge and belief, the NPT Certificate Holder has constructed this part in accordance with the ASME Code Section III.  
By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the part described in this Partial Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date 10-7 19 88  
Charles Young  
Charles Young  
Commission Pennsylvania 2392  
National Board, State, Province and No.

\*Supplemental sheets in form of lists, sketches or drawings may be used provided (1) also in DWG or 11", (2) information in items 1-4 on this form is entered on each sheet, and (3) each sheet is numbered and number of sheets is entered in item 5, "Remarks".

# Anchor/Darling

Valve Company WILLIAMSPORT, PA 17701

\*REVISED COPY



## FORM QAS-14-1 SUPPLEMENTAL DATA REPORT FOR NUCLEAR VALVES OR PARTS

- Work performed by Anchor/Darling Valve Company 701 First Street, Williamsport, PA 17701 RA667-5  
(Shop Order No.)
  - Owner Iowa Electric Light & Power Co., P.O. Box 351, Cedar Rapids, Iowa 52406  
(Name and Address)
  - Name of Nuclear Power Plant Duane Arnold Energy Center
  - Address of Nuclear Power Plant 3277 DAEC Road, Palo, Iowa 52324
  - a: Identification of Component Repaired or Replacement Component 16"-900#-TDC Tilt Disc  
b: Name of Manufacturer (If different from Line 1) Same  
c: Identifying Nos. U4082 N/A N/A 1988  
(Mfr.'s Serial No.) (Mfr.'s Id. No.) (Other) (Year Built)
  - Applicable Edition of Section III of ASME Code 19 77 Addenda Winter-1977 Code Case N/A
  - Description of Work Disc repaired by welding one (1) disc lug to each hinge pin  
(Use of additional sheet(s) or sketch(es) is acceptable if properly identified)
- boss.
- Material: Disc Lugs (2 each) SA105, Heat No. 8897880

### CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and this repair or replacement conforms to Section III of the ASME Code. Signed [Signature] Q.A. Engineer  
(Authorized Representative of Repair Organization) (Title)

11/17/88 19 88. Our ASME Certificate of Authorization No. N1712 to use the N symbol expires 4/15/89.

### CERTIFICATE OF INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors, employed by Commercial Union Insurance Company of Boston, Mass. have inspected the repair or replacement described in this Report on 11-17-88 19 88 and state that to the best of my knowledge and belief, this repair or replacement has been made or constructed in accordance with Section III of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement described in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date 11-17-88 [Signature] Commissions Pennsylvania 2392  
(Inspector) (State or Providence, Nat'l Board)  
Charles Young

12-8-88

FORM N-2 NPT CERTIFICATE HOLDERS' DATA REPORT FOR NUCLEAR PART AND APPURTENANCES\*  
As required by the Provision of the ASME Code Rules, Section III, Div. 1

1. (a) Manufactured by Anchor/Darling Valve Co., 701 First St., Williamsport, PA 17701  
(Name and address of NPT Certificate Holder)  
(b) Manufactured for Iowa Electric Light & Power Co., P.O. Box 351, Cedar Rapids, Iowa 52406  
(Name and address of N Certificate Holder for completed nuclear components)  
2. Identification-Certificate Holder's Serial No. of Part S/N U4083 Nat'l Bd. No. N/A  
(a) Constructed According to Drawing No. D12870 Drawing Prepared by Anchor/Darling Valve Company  
(b) Description of Part Inspected Disc, Heat No. V2242 SA216-WCC  
(c) Applicable ASME Code Section III, Edition \*1986 SR 12/4/84 1986 Addenda date Wnt-1977 Case No. N/A Class 1  
3. Remarks: 16"-900#-Tilt Disc Check  
(Brief description of service for which component was designed)  
A/DV Shop Order E-A667-1  
Note: No Disc Hydro Performed

We certify that the statements made in this report are correct and this vessel part or appurtenance as defined in the Code conforms to the rules of construction of the ASME Code Section III.  
(The applicable Design Specification and Stress Report are not the responsibility of the NPT Certificate Holder for parts. An NPT Certificate Holder for appurtenances is responsible for furnishing a separate Design Specification and Stress Report if the appurtenance is not included in the component Design Specification and Stress Report.)

Date 10/6 1988 Signed Anchor/Darling Valve Co. By R L Stannert  
(NPT Certificate Holder)  
Certificate of Authorization Expires 4/15/89 Certificate of Authorization No. N1713

CERTIFICATION OF DESIGN FOR APPURTENANCE (when applicable)

Design information on file at \_\_\_\_\_  
Stress analysis report on file at \_\_\_\_\_  
Design specifications certified by \_\_\_\_\_ Prof. Eng. State \_\_\_\_\_ Reg. No. \_\_\_\_\_  
Stress analysis report certified by \_\_\_\_\_ Prof. Eng. State \_\_\_\_\_ Reg. No. \_\_\_\_\_

CERTIFICATE OF SHOP INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State of Pennsylvania and employed by Commercial Union Insurance Company of Boston, Mass. have inspected the part of a pressure vessel described in this Partial Data Report on 9-6-88 10-7-88 1988 and state that to the best of my knowledge and belief, the NPT Certificate Holder has constructed this part in accordance with the ASME Code Section III.  
By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the part described in this Partial Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date 10-7 1988  
Charles Young  
Commissioner Pennsylvania 2392  
National Board, State, Province and No.

\*Supplemental sheets in form of lists, sketches or drawings may be used provided (1) each is 8 1/2" x 11", (2) information is same as that on this form, and (3) each sheet is numbered and included in reference to item 2. "Remarks".

# Anchor/Darling

Valve Company WILLIAMSPORT, PA 17701

\*REVISED COPY



## FORM QAS-14-1 SUPPLEMENTAL DATA REPORT FOR NUCLEAR VALVES OR PARTS

1. Work performed by Anchor/Darling Valve Company RA667-5  
701 First Street, Williamsport, PA 17701 (Shop Order No.)
2. Owner Iowa Electric Light & Power Co., P.O. Box 351, Cedar Rapids, Iowa 52406  
(Name and Address)
3. Name of Nuclear Power Plant Duane Arnold Energy Center
4. Address of Nuclear Power Plant 3277 DAEC Road, Palo, Iowa 52324
5. a: Identification of Component Repaired or Replacement Component 16"-900#-TDC Tilt Disc  
b: Name of Manufacturer (if different from Line 1) Same  
c: Identifying Nos. U4083 N/A N/A 1988  
(Mfr.'s Serial No.) (Mfr.'s Bd. No.) (Other) (Year Built)
6. Applicable Edition of Section III of ASME Code 19-77 Addenda -Winter-1977 Code Case N/A
7. Description of Work Disc repaired by welding one (1) disc lug to each hinge pin  
(Use of additional sheet(s) or sketch(es) is acceptable if properly identified)
- boss.
- Material: Disc Lugs (2 each) SA105, Heat No. 8897880

### CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and this repair or replacement conforms to Section III of the ASME Code. Signed [Signature] Q.A. Engineer  
(Authorized Representative of Repair Organization) (Title)

11/17/88, 19 88. Our ASME Certificate of Authorization No. N1712 to use the N symbol expires 4/15/89.

### CERTIFICATE OF INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors, employed by Commercial Union Insurance Company of Boston, Mass. have inspected the repair or replacement described in this Report on 11-14-88 to 11-17-88 SP and state that to the best of my knowledge and belief, this repair or replacement has been made or constructed in accordance with Section III of the ASME Code. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair or replacement described in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date 11-17-88

[Signature]  
(Inspector)  
Charles Young

Commissions Pennsylvania 2392  
(State or Providence, Nat'l Board)

**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As Required by the Provisions of the ASME Code Section XI

1. Owner Iowa Electric Light and Power  
Name

Date 1-3-89

P.O. Box 351, Cedar Rapids, IA 52406  
Address

Sheet 1 of 1

2. Plant Duane Arnold Energy Center  
Name

Unit 1

3277 DAEC Rd., Palo, IA 52324  
Address

Note 1 - CMAR 92147

Note 2 - CMAR 92148

Repair Organization P.O. No., Job No., etc.

3. Work Performed by Iowa Electric  
Name

Type Code Symbol Stamp None

Authorization No. None

Expiration Date None

3277 DAEC Rd., Palo, IA 52324  
Address

4. Identification of System Reactor Water Clean-up Discharge (Class 1)

5. (a) Applicable Construction Code ANSI B31.7 19 69 Edition, 1971 Addenda, N/A Code Case  
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 19 80 W81

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer *	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
Note 1 Hydraulic Snubber	Bergen-Patterson	D. Arnold #250	None	DCA-14-SS-74	1988	Replaced	No
Note 2 Hydraulic Snubber	Bergen-Patterson	D. Arnold #251	None	DCA-14-SS-73	1988	Replaced	No

\* refurbishment performed by Anchor/Darling

7. Description of Work Hydraulic Snubber Replacement - Type (HSSA-3)

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☐  
Other ☐ Pressure None psi Test Temp. None °F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8½ in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

FORM NIS-2 (Back)

9. Remarks Replacement of Hydraulic Snubbers with certified Hydraulic Snubbers  
Applicable Manufacturer's Data Reports to be attached  
(P.O. S45911), VT-3/VT-4 preservice inspection performed. Reference inspection  
report no. 88-494 for note 1 and inspection report no. 88-493 for note 2.

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this replacement conforms to the rules of the ASME Code, Section XI. repair or replacement

Type Code Symbol Stamp None

Certificate of Authorization No. None Expiration Date None

Signed [Signature], ASME Administrator Date January 4, 19 89  
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Iowa and employed by Lumbermans Mutual Casualty Company of Long Grove, Illinois have inspected the components described in this Owner's Report during the period 12-19-88 to 1-5-89, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI, except IWA 7210.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

[Signature] Commissions Nat'l Bd. 5813 (I)(N) IA-1041  
Inspector's Signature National Board, State, Province, and Endorsements

Date January 5, 19 89

**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As Required by the Provisions of the ASME Code Section XI

1. Owner Iowa Electric Light and Power  
Name  
P.O. Box 351, Cedar Rapids, IA 52406  
Address
- Date January 16, 1989  
Sheet 1 of 2
2. Plant Duane Arnold Energy Center  
Name  
3277 DAEC Rd. Palo, IA 52324  
Address
- Unit 1  
See Table MSR-3  
Repair Organization P.O. No., Job No., etc.
3. Work Performed by Iowa Electric  
Name  
3277 DAEC Rd. Palo, IA 52324  
Address
- Type Code Symbol Stamp None  
Authorization No. None  
Expiration Date None
4. Identification of System Main Steam 'A' (Class 1)
5. (a) Applicable Construction Code Section III 1968 Edition, Winter 1968 Addenda, N/A Code Case  
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1980 W81

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
Note 1	Target-Rock	Note 1	NA	PSV4400	Note 1	Note 1	Note 1

Note 1 - See Table MSR-3

7. Description of Work Replaced main valve body, pilot valve and pilot/main valve body bolts, and main disc for main steam relief valve PSV4400.
8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☐  
Other ☒ Pressure 1025 psi Test Temp. 185 °F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8½ in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.



FORM NIS-2 (Back)

9. Remarks Replace 4 pilot seat valve bolts with certified bolts. (P.O. S21635).

Applicable Manufacturer's Data Reports to be attached

Replaced pilot valve S/N 218 with S/N 207. (P.O. 59251). Replaced 1 pilot/  
main body valve nut assembly with certified nut assembly (P.O. S21635).

Replacement of the main valve body and main disc (P.O. S18747). VT-1 of  
bolting preservice was performed under inspection reports #88-442 and 88-477.  
VT-3 inspection of the valve body and internals was performed under inspection \*\*\*

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this Replacement conforms to the rules of the  
ASME Code, Section XI. repair or replacement

Type Code Symbol Stamp None

Certificate of Authorization No. None Expiration Date None

Signed [Signature], Systems Engineer Date January 16, 19 89

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State  
or Province of Iowa and employed by Lumbermens Mutual Casualty Company of  
Long Grove, Illinois have inspected the components described  
in this Owner's Report during the period 11-19-88 to 2-7-89, and state that  
to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this  
Owner's Report in accordance with the requirements of the ASME Code, Section XI. except IWA-7210

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the  
examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer  
shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this  
inspection.

[Signature] Commissions Nat'l Bd. 5813 (I)(N) IA-1041  
Inspector's Signature National Board, State, Province, and Endorsements

Date February 7 19 89

(12/82)

\*\*\* report #88-443, 443A and 484).



**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As Required by the Provisions of the ASME Code Section XI

1. Owner Iowa Electric Light and Power Date 1-6-89  
Name  
P.O. Box 351, Cedar Rapids, IA 52406 Sheet 1 of 1  
Address
2. Plant Duane Arnold Energy Center Unit 1  
Name  
3277 DAEC Rd., Palo, IA 52324 CMAR 092226  
Address Repair Organization P.O. No., Job No., etc.
3. Work Performed by Iowa Electric Type Code Symbol Stamp None  
Name  
3277 DAEC Rd., Palo, IA 52324 Authorization No. None  
Address Expiration Date None
4. Identification of System Recirc. pump Loop B drain line
5. (a) Applicable Construction Code ANSI B31.7 19 69 Edition, Summer 1971 Addenda, None Code Case  
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 19 80 W81

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No. (Part No.)	National Board No.	Other Identification (Line No.)	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
8' / 2" Dia. Pipe Sch 80	SANDVIK	*	NA	2"-DCA-19	1988	Replaced	No
4' / 2" Dia. 90° Elbows	Camco Fitting	**	NA	2"-DCA-19	1988	Replaced	No

7. Description of Work Replaced pipe and elbows due to weld (#12 on FSK 4169) leaking water

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☐  
Other ☒ Pressure 1010 psi Test Temp. 185 °F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8½ in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

(12/82)

This Form (E00030) may be obtained from the Order Dept., ASME, 345 E. 47th St., New York, N.Y. 10017

\* A182F TP304  
\*\* A317/376 TP304

**FORM NIS-2 (Back)**

9. Remarks A 2" drain line (line no. 2"-DCA-19) had a leak found, pipe to elbow  
Applicable Manufacturer's Data Reports to be attached  
connection, during the reactor vessel and piping leakage test. Eight feet  
of the pipe and four elbows were replaced with certified material. (Pipe -  
P.O. 7884-F-4803) (elbows - P.O. 7884-F-7353). The 8 welds were liquid  
penetrant inspected and found acceptable. A VT-2 pressure test was performed  
and was found acceptable. Reference inspection report 88-081

## CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this replacement conforms to the rules of the ASME Code, Section XI. repair or replacement

Type Code Symbol Stamp None

Certificate of Authorization No. None Expiration Date None

\* Signed John P. Mayan, Engineer, NDE/Metallurgical Date January 6, 1989  
Owner or Owner's Designee, Title

# CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Iowa and employed by Lumbermans Mutual Casualty Company of Long Grove, Illinois have inspected the components described in this Owner's Report during the period \_\_\_\_\_ to \_\_\_\_\_, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection. ANII takes exception to this NIS-2.

Inspector's Signature \_\_\_\_\_ Commissions Nat'l Bd. 5813 (I)(N) IA-1041  
National Board, State, Province, and Endorsements

Date \_\_\_\_\_ 19 89

(12/82)

\* Owner meets the intent of the ASME Section XI as addressed in letter NG-89-0728.

**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As Required by the Provisions of the ASME Code Section XI

1. Owner Iowa Electric Light and Power  
Name  
P.O. Box 351, Cedar Rapids, IA 52406  
Address

Date 1-11-87

Sheet 1 of 1

2. Plant Duane Arnold Energy Center  
Name  
3277 DAEC Rd., Palo, IA 52324  
Address

Unit 1

CMAR 90843

Repair Organization P.O. No., Job No., etc.

3. Work Performed by Iowa Electric  
Name  
3277 DAEC Rd., Palo, IA 52324  
Address

Type Code Symbol Stamp None

Authorization No. None

Expiration Date None

4. Identification of System Main Steam 'B' (Class 1)  
ASME Section

5. (a) Applicable Construction Code III 19 71 \* Edition, - Addenda, - Code Case

(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 19 80 W81  
\* except as noted in GE spec 21A9230 Rev. 2

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
Disc	Rockwell	*	None	CV4415	1988	Replaced	No
Piston assembly	Rockwell	**	None	CV4415	1985	Replacement	No
Stem/stem disk assembly	Rockwell	***	None	CV4415	1988	Replaced	No

Note 3

Note 1 - Disc and piston assembly were machined for proper fit.

7. Description of Work Replaced disc, piston assembly and stem/stem disk assembly for control valve CV4415.

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒  
Other ☐ Pressure 1025 psi Test Temp. ≥ 185 °F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 1/2 in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

(12/82)

This Form (E00030) may be obtained from the Order Dept., ASME, 345 E. 47th St., New York, N.Y. 10017

\* 6053657-123  
\*\* 00179756-315443-01 (Part no.)  
\*\*\* 6053657-126

Note 3 - Piston assemblies included on the NIS2 form for trending information only.

FORM NIS-2 (Back)

9. Remarks Replaced disc and stem/stem disc assembly with certified disc and stem/  
Applicable Manufacturer's Data Reports to be attached  
stem disc assembly (P.O. S38654). Replaced piston assembly with certified  
piston assembly (P.O. E9-15157-N-DA) (see Note 2). VT-3 inservice inspection  
of valve internals performed and acceptable reference inspection report no.  
88-422. VT-2 of the pressure retaining components were performed under ISI  
report 88-081.

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this Replacement conforms to the rules of the ASME Code, Section XI. repair or replacement

Type Code Symbol Stamp None

Certificate of Authorization No. None Expiration Date None

Signed [Signature] ASME Administrator Date January 11, 19 89  
Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Iowa and employed by Lumbermens Mutual Casualty Company of Long Grove, Illinois have inspected the components described in this Owner's Report during the period 10-25-88 to 1-23-89, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI, except IWA 7210.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

[Signature] Inspector's Signature Commissions Nat'l Bd. 5813 (I)(N) IA-1041  
National Board, State, Province, and Endorsements

Date January 23, 19 89

(12/82)

Note 2 - Piston assembly for CV4415 was formerly in CV4421 (Class 1)

**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As Required by the Provisions of the ASME Code Section XI

1. Owner Iowa Electric Light and Power Date 1-11-89  
Name  
P.O. Box 351, Cedar Rapids, IA 52406 Sheet 1 of 1  
Address
2. Plant Duane Arnold Energy Center Unit 1  
Name  
3277 DAEC Rd., Palo, IA 52324 CMAR 91481, CSR A, CMAR 91482  
Address Repair Organization P.O. No., Job No., etc.
3. Work Performed by Iowa Electric Type Code Symbol Stamp None  
Name  
3277 DAEC Rd., Palo, IA 52324 Authorization No. None  
Address Expiration Date None
4. Identification of System Main Steam 'D' (Class 1)  
ASME Section
5. (a) Applicable Construction Code III 19 71 Edition, - Addenda, - Code Case  
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 19 80 W81  
\* except as noted in GE spec 21A9230 Rev. 2
6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
Disc	Rockwell	*	None	CV4421	1985	Replaced	No
Piston assembly	Rockwell	**	None	CV4421	1985	Replacement	No
Main valve body	Rockwell	N/A	None	CV4421	1988	Repaired	No

Note 1 - Disc had weld built up and machined for proper fit.  
7. Description of Work Replaced disc for control valve CV4421.

Valve was rebored for proper fit.

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒  
Other ☐ Pressure 1025 psi Test Temp. ≥ 185 °F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8½ in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

(12/82)

This Form (E00030) may be obtained from the Order Dept., ASME, 345 E. 47th St., New York, N.Y. 10017

\* 6062065-56

\*\* 6062065-48

Note 3 - Piston assembly is included on the NIS2 form for trending information only.

FORM NIS-2 (Back)

9. Remarks Replaced disc and piston assembly with certified disc and piston assembly  
Applicable Manufacturer's Data Reports to be attached  
(P.O. E9-15757-N-DA) (see Note 2). VT-3 inservice inspection of valve  
internals performed and acceptable reference inspection report no. 88-464.  
VT-2 of the pressure retaining components were performed under ISI report  
88-081. Acceptable PT inspections of piston assembly, disc and valve seating.  
Disc was welded on and machined for proper fit. Valve was rebored for proper fit.

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this Replacement conforms to the rules of the ASME Code, Section XI. repair or replacement

Type Code Symbol Stamp None  
 Certificate of Authorization No. None Expiration Date None  
 Signed [Signature] 2-14-89 NMS-15-81, ASME Administrator Date January 11, 1989  
Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Iowa and employed by Lumbermens Mutual Casualty Company of Long Grove, Illinois have inspected the components described in this Owner's Report during the period 10-29-88 to 3-15-89, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI, except IWA 7210 and Section IX

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

[Signature] Commissions Nat'l Bd. 5813 (I)(N) IA-1041  
Inspector's Signature National Board, State, Province, and Endorsements  
 Date March 15, 1989

(12/82)

Note 2 - Piston assembly and disc for CV4421 was formerly in CV4412 (Class 1)



**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As Required by the Provisions of the ASME Code Section XI

1. Owner Iowa Electric Light and Power Date 1-10-89  
Name  
P.O. Box 351, Cedar Rapids, IA 52406 Sheet 1 of 1  
Address
2. Plant Duane Arnold Energy Center Unit 1  
Name  
3277 DAEC Rd. Palo, Iowa 52324 CMAR 90841  
Address Repair Organization P.O. No., Job No., etc.
3. Work Performed by Iowa Electric Type Code Symbol Stamp None  
Name  
3277 DAEC Rd., Palo, IA 52324 Authorization No. None  
Address Expiration Date None
4. Identification of System Main Steam 'A' (Class 1)  
ASME Section
5. (a) Applicable Construction Code III 19 71 Edition, - Addenda, - Code Case  
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 19 80 W81  
\* except as noted in GE Spec 21A9230 Rev. 2
6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
Disc	Rockwell	*	None	CV4412	1985	Replacement (Note 1)	No
Piston assembly	Rockwell	**	None	CV4412	1985	Replacement (Note 1)	No
Stem/stem disc assembly	Rockwell	***	None	CV4412	1988	Replaced	No

Note 1 - Disc and piston assembly were machined for proper fit.

7. Description of Work Replaced disc, piston assembly and stem/stem disc assembly for control valve CV4412.

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒  
Other ☐ Pressure 1025 psi Test Temp. ≥ 185 °F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8½ in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

(12/82)

This Form (E00030) may be obtained from the Order Dept., ASME, 345 E. 47th St., New York, N.Y. 10017

- \* 6062065-62  
\*\* 6062065-50  
\*\*\* 6053657-125

Note 3 - piston assembly included on NIS2 for trending information only.

FORM NIS-2 (Back)

9. Remarks Replaced stem/stem disc assembly with certified stem/stem disc assembly  
Applicable Manufacturer's Data Reports to be attached  
(P.O. S38654). Replace disc and piston assembly with certified disc and  
piston assembly (P.O. E9-15757-N-DA) (see Note 2). VT-3 inservice inspection  
of valve internals performed and acceptable reference inspection report no.  
88-420. VT-2 of the pressure retaining components were performed under  
inspection report no. 88-081.

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this Replacement conforms to the rules of the  
 ASME Code, Section XI. repair or replacement

Type Code Symbol Stamp None

Certificate of Authorization No. None Expiration Date None

Signed [Signature], ASME Administrator Date January 16, 19 89  
Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State  
 or Province of Iowa and employed by Lumbermens Mutual Casualty Company of  
Long Grove, Illinois have inspected the components described  
 in this Owner's Report during the period 10-25-88 to 1-16-89, and state that  
 to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this  
 Owner's Report in accordance with the requirements of the ASME Code, Section XI, except IWA 7210.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the  
 examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer  
 shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this  
 inspection.

[Signature] Commissions Nat'l Bd. 5813(I) (N) IA-1041  
Inspector's Signature National Board, State, Province, and Endorsements

Date January 16, 19 89

(12/82)

Note 2 - Piston assembly and disc for CV4412 was formerly in CV 4415  
 (class 1)

**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As Required by the Provisions of the ASME Code Section XI

1. Owner Iowa Electric Light and Power Date 2-14-89  
Name  
P.O. Box 351, Cedar Rapids, IA 52406 Sheet 1 of 1  
Address
2. Plant Duane Arnold Energy Center Unit 1  
Name  
3277 DAEC Rd. Palo, IA 52324 CMAR 90842, CSR#A, CSR#B, 91482  
Address Repair Organization P.O. No., Job No., etc.
3. Work Performed by Iowa Electric Type Code Symbol Stamp None  
Name  
3277 DAEC Rd. Palo, IA 52324 Authorization No. None  
Address Expiration Date None
4. Identification of System Main Steam 'A' (Class 1)  
ASME
5. (a) Applicable Construction Code Section III 19 71 Edition, Note 1 Addenda, -- Code Case  
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 19 80  
Note 1 - except as noted in GE Spec. 21A9230 Rev. 2
6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
Stem/stem disc assembly	Rockwell	*	None	CV4413	1985	Replaced	No
Main valve body	Rockwell	NA	None	CV4413	1988	Repaired	No
Disc	Rockwell	**	None	CV4413	1988	Repaired	No
Valve bonnet	Rockwell	NA	None	CV4413	1988	Repaired	No

\* 6062065-30 \*\* 6062065-30

7. Description of Work Replaced stem/stem disc assembly, rebore main valve body for proper fit of valve internals, welded disc, welded bonnet, welded leakoff line and machined disc, bonnet.
8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒ disc, bonnet.  
Other ☐ Pressure 1025 psi Test Temp. 185 °F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8½ in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

(12/82)

This Form (E00030) may be obtained from the Order Dept., ASME, 345 E. 47th St., New York, N.Y. 10017  
As a note, under CMAR 91482 piston assembly (serial no. 6062065-56 were weld built up and machined for proper fit and went to CV-4421 on 91481 (FYI)

FORM NIS-2 (Back)

9. Remarks Replaced stem/stem disc assembly with certified stem/stem disc assembly  
(P.O. E9-15757-N-DA). Main valve body was rebored for proper fit. Disc and  
bonnet were welded then machined for proper fit. Leakoff line was welded in place.  
VT-3 inservice inspection of valve internals performed and acceptable. Reference  
inspection report no. 88-432. All welded components were PT after machining.  
VT-2 of the pressure retaining components were performed and acceptable under  
inspection report no. 88-081.

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this repair & replacement conforms to the rules of the ASME Code, Section XI.

Type Code Symbol Stamp None

Certificate of Authorization No. None

Expiration Date None

Signed [Signature] 3-15-89, ASME Administrator Date February 14, 19 89  
 Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Iowa and employed by Lumbermans Mutual Casualty Company of Long Grove, Illinois have inspected the components described in this Owner's Report during the period 10-25-88 to 1-20-89 3-15-89, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI. except IWA-7210 and Section II

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

[Signature]  
 Inspector's Signature

Commissions

Nat'l Bd. 5813 (I)(N) IA-1041  
 National Board, State, Province, and Endorsements

Date February March 15, 19 89

**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As Required by the Provisions of the ASME Code Section XI

1. Owner Iowa Electric Light and Power  
Name  
P.O. Box 351, Cedar Rapids, IA 52406  
Address
2. Plant Duane Arnold Energy Center  
Name  
3277 DAEC Road, Palo, IA 52324  
Address
3. Work Performed by Iowa Electric  
Name  
3277 DAEC Road, Palo, IA 52324  
Address
4. Identification of System Main Steam 'C' (Class 1)  
ASME Note 5
5. (a) Applicable Construction Code Section III 19 71 Edition, ----- Addenda, ----- Code Case  
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 19 80 W81  
Note 5 - except as noted in GE Spec 21A9230, Rev. 2.
6. Identification of Components Repaired or Replaced and Replacement Components

Date January 9, 1989

Sheet 1 of 1

Unit 1

CMAR 91482  
CMAR 90844, CSR 'A', CSR 'B'  
Repair Organization P.O. No., Job No., etc.

Type Code Symbol Stamp None

Authorization No. None

Expiration Date None

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
Disc	Rockwell	*	None	CV4419	1985	(Note 1) Replacement	No
Piston Assembly	Rockwell	**	None	CV4419	1985	(Note 1) Replacement	No
Stem/Stem Disk Assembly	Rockwell	***	None	CV4419	1985	Replaced	No
Main Valve Body	Rockwell	N/A	None	CV4419	1988	Repair	No
Valve Bonnet	Rockwell	N/A	None	CV4419	1988	Repaired	No

Note 4

Note 1 - Disc and piston assembly were weld built up and then were machined for (cont.)

7. Description of Work Replaced disc, piston assembly and stem/stem disc assembly for Control Valve CV4419 and rebore valve CV4419 for proper fit.

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒  
Other ☐ Pressure 1025 psi Test Temp. 185 °F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 1/2 in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

(12/82)

This Form (E00030) may be obtained from the Order Dept., ASME, 345 E. 47th St., New York, N.Y. 10017

\* 6062065-59

\*\* 6062065-49

\*\*\* 6062065-28

Note 1 (Cont.) proper fit. Welded disc, welded bonnet and welded leakoff line. Machined disc and bonnet for proper fit.

Note 4 - Piston assembly included on NIS-2 for treading information only.

FORM NIS-2 (Back)

9. Remarks Replaced stem/stem disc assembly with certified stem/stem disc assembly  
Applicable Manufacturer's Data Reports to be attached  
 (P.O. 25138). Replaced disc and piston assembly with certified disc and piston  
assembly (P.O. E9-15757-N-DA) (See Note 2). VT-3 inservice inspection of valve  
internals performed and acceptable. Reference inspection Report No. 88-420.

VT-2 of the pressure retaining components were performed and acceptable under inspection Report No. 88-081. Welded disc, bonnet and leakoff line as repairs,  
machined disc, bonnet. All welded components were PT and found acceptable. (Note 3)

CERTIFICATE OF COMPLIANCE	
We certify that the statements made in the report are correct and this <u>Replacement</u> conforms to the rules of the ASME Code, Section XI. <u>repair or replacement</u>	
Type Code Symbol Stamp	<u>None</u>
Certificate of Authorization No.	<u>None</u> Expiration Date <u>None</u>
Signed <u>[Signature]</u>	<u>2-14-89</u> ASME Administer Date <u>January 13</u> , 19 <u>89</u>
Owner or Owner's Designee, Title	

CERTIFICATE OF INSERVICE INSPECTION	
I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of <u>Iowa</u> and employed by <u>Lumbermens Mutual Casualty Company</u> of <u>Long Grove, Illinois</u> have inspected the components described in this Owner's Report during the period <u>11-11-88</u> to <u>3-15-89</u> , and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI, <u>except IWA 7210 and Section IX.</u>	
By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.	
<u>[Signature]</u> Inspector's Signature	Commissions <u>Nat'l Bd. 5813 (I) (N) IA-1041</u> National Board, State, Province, and Endorsements
Date <u>March 15,</u>	19 <u>89</u>

(12/82)

Note 2 - Piston assembly and disc for CV4419 was formerly spare components.

Note 3 - Rebore of main valve body for proper fit is considered as a repair.

**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As Required by the Provisions of the ASME Code Section XI

1. Owner Iowa Electric Light and Power  
Name  
P.O. Box 351, Cedar Rapids, IA 52406  
Address
2. Plant Duane Arnold Energy Center  
Name  
3277 DAEC Road, Palo, IA 52324  
Address
3. Work Performed by Iowa Electric  
Name  
3277 DAEC Road, Palo, IA 52324  
Address
- Date January 13, 1989
- Sheet 1 of 1
- Unit 1
- CMAR 90845  
Repair Organization P.O. No., Job No., etc.
- Type Code Symbol Stamp None
- Authorization No. None
- Expiration Date None
4. Identification of System Main Steam 'D' (Class 1)
- ASME  
5. (a) Applicable Construction Code Section III 19 71 Edition, - Addenda, - Code Case  
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 19 80 W81
- \* except as noted in GE Spec 21A9230 Rev. 2
6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
Disc	Rockwell	*	None	CV4420	1988	(Note 1) Replaced	No
Piston Assembly	Rockwell	**	None	CV4420	1988	(Note 1) Replaced	No

Note 2

Note 1 - Disc and piston assembly were machined for proper fit. Seat of valve (cont.)

7. Description of Work Replaced disc, piston assembly and stem/stem disk assembly for Control Valve CV4420.

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒ 185 °F  
Other ☐ Pressure 1025 psi Test Temp. 185 °F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8½ in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

(12/82)

This Form (E00030) may be obtained from the Order Dept., ASME, 345 E. 47th St., New York, N.Y. 10017

\* 6053657-124

\*\* 6053657-127

Note 1 - (Cont.) was machined for proper fit.

Note 2 - Piston Assembly included on NIS-2 form for trending purposes only.

FORM NIS-2 (Back)

9. Remarks Replace disc and piston assembly with certified disc and piston  
assembly (P.O. S38654). VT-3 inservice inspection of valve internals perform-  
ed and acceptable reference inspection Report No. 88-423. VT-2 of the press-  
ure retaining components were performed under ISI Report 88-081.

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this Replacement conforms to the rules of the  
 ASME Code, Section XI. repair or replacement

Type Code Symbol Stamp None

Certificate of Authorization No. None Expiration Date None

Signed [Signature], ASME Administrator Date January 13, 19 89  
 Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State  
 or Province of Iowa and employed by Lumbermens Mutual Casualty Company of  
Long Grove, Illinois have inspected the components described  
 in this Owner's Report during the period 10-25-88 to 1-27-89, and state that  
 to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this  
 Owner's Report in accordance with the requirements of the ASME Code, Section XI, except IVA-7216

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the  
 examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer  
 shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this  
 inspection.

[Signature] Commissions Nat'l Bd. 5813 (I) (N) IA-1041  
 Inspector's Signature National Board, State, Province, and Endorsements

Date January 27, 19 89



**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As Required by the Provisions of the ASME Code Section XI

1. Owner Iowa Electric Light & Power  
Name

Date January 17 1989

P.O. Box 351, Cedar Rapids, IA 52406  
Address

Sheet 1 of 1

2. Plant Duane Arnold Energy Center  
Name

Unit 1

3277 DAEC Rd., Palo, IA 52324  
Address

CMAR 87141

Repair Organization P.O. No., Job No., etc.

3. Work Performed by Iowa Electric  
Name

Type Code Symbol Stamp None

3277 DAEC Rd., Palo, IA 52324  
Address

Authorization No. None

Expiration Date None

4. Identification of System HPCI Supply line D.P. Level Switch (LS2206)  
ANSI

5. (a) Applicable Construction Code B31.7 1969 Edition, 71 Addenda, N/A Code Case  
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1980 W81

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
LS 2206	Robert Shaw Controls Co.	N/A	N/A	Model No. 82938-GI	1970	/repaired	No

7. Description of Work LS2206 was repaired by welding in new 3/4" NPT plug

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☐  
Other ☐ Pressure N/A psi Test Temp. N/A °F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8½ in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

FORM NIS-2 (Back)

9. Remarks In March 1988, LS2206 was repaired by seal welding the drain plug under  
CMAR 86840A (Ref. NIS2 09-88-10). In order to be able to drain LS2206 it  
was necessary to weld a new 3/4" NPT plug (A105) in place. This was  
accomplished under CMAR 87141. The weld was liquid penetrant inspected  
and found acceptable.

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this Repair conforms to the rules of the ASME Code, Section XI. repair or replacement

Type Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed [Signature] ASME Administrator Date January 17, 19 89  
~~Owner~~ or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Iowa and employed by Lumbermens Mutual Casualty Company of Long Grove, Illinois have inspected the components described in this Owner's Report during the period 11-16-88 to 1-30-89, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

[Signature] Commissions Nat'l Bd. 5813(I)(N) IA-1041  
Inspector's Signature National Board, State, Province, and Endorsements

Date January 30, 19 89

**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As Required by the Provisions of the ASME Code Section XI

1. Owner Iowa Electric Light & Power Date 1-31-89  
Name  
P.O. Box 351, Cedar Rapids, IA 52406 Sheet 1 of 1  
Address

2. Plant Duane Arnold Energy Center Unit 1  
Name  
3277 DAEC Rd. Palo, IA 52324 DCP 1434  
Address Repair Organization P.O. No., Job No., etc.

3. Work Performed by Iowa Electric Type Code Symbol Stamp None  
Name  
3277 DAEC Rd. Palo, IA 52324 Authorization No. None  
Address Expiration Date None

4. Identification of System Recirculation Pump "B" Suction (Class 1)  
ASME Section
5. (a) Applicable Construction Code III 19 86 Edition, - Addenda, N/A Code Case  
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1980 W81  
(c) Applicable Construction Code for studs and nuts ASME Section III 1977 Edition,  
6. Identification of Components Repaired or Replaced and Replacement Components Summer 1977 Addenda, N/A Code Case

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
*	GE Reuter Stokes, Inc	G6802	None	AE4660	1988	Replacement	Yes
Stud bolt	GE Nuclear	GYH **	None	AE4660	1988	Replacement	No
Nut	GE Nuclear	CEI **	None	AE4660	1988	Replacement	No

\*\* Heat code

7. Description of Work Replaced blind flange with hydrogen monitor mount, also replaced 8 studs and 16 nuts
8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒  
Other ☐ Pressure 1000 psi Test Temp. 185 °F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8½ in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

(12/82)

This Form (E00030) may be obtained from the Order Dept., ASME, 345 E. 47th St., New York, N.Y. 10017

\* Recirc Flange Stress Corrosion Monitoring Assembly

FORM NIS-2 (Back)

9. Remarks Replaced blind flange with hydrogen monitor attachment. (P.O. 44865)  
Applicable Manufacturer's Data Reports to be attached  
Replaced flange studs and nuts with 8 new studs and 16 new nuts (P.O. 44865)  
VT-2 of the pressure retaining components were performed under inspection  
report no. 88-081. Flange studs and nuts were visually examined and were found  
satisfactory. Manufacturer performed PT and UT on welds and was found  
satisfactory. Manufacturer performed MT on studs and nuts and was found satisfactory. *MM 3-2-89*

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this Replacement conforms to the rules of the ASME Code, Section XI. repair or replacement

Type Code Symbol Stamp N/A  
 Certificate of Authorization No. N/A Expiration Date N/A  
 Signed *[Signature]* ASME Administrator Date 1-31, 19 89  
 Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Iowa and employed by Lumbermans Mutual Casualty Company of Long Grove, Illinois have inspected the components described in this Owner's Report during the period 10-15-88 to 3-2-89, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

*[Signature]* Commissions Nat'l Bd. 5813(I)(N) IA-1041  
 Inspector's Signature National Board, State, Province, and Endorsements  
 Date March 2, 19 89

## FORM N-2 MANUFACTURERS DATA REPORT FOR NUCLEAR PART AND APPURTENANCES

As required by the Provisions of the ASME Code Rules

1. (a) Manufactured by GE Reuter Stokes, Inc. 8499 Darrow Rd. Twinsburg, OH 44087  
(Name and address of Manufacturer of part)
- (b) Manufactured for Duane Arnold-IEL&P Co. 3277 DAEC Road Palo, Iowa  
(Name and address of Manufacturer of completed nuclear component)
2. Identification-Manufacturer's Serial No. of Part G6802 Nat'l Bd. No. N/A
- (a) Constructed According to Drawing No. RS-E6-1200-215 Drawing Prepared by GE Reuter Stokes
- (b) Description of Part Inspected Recirculation Pipe Mounted SCM
- (c) Applicable ASME Code: Section III, Edition 1986, Addenda date -, Case No. N/A Class 1
3. Remarks: Design: Pressure 1250 PSIG Temperature 575°F  
(Brief description of service for which component was designed)  
Shop Hydrostatic Pressure Test: 1613 PSIG

We certify that the statements made in this report are correct and this vessel part or appurtenance as defined in the Code conforms to the rules of construction of the ASME Code Section III.  
(The applicable Design Specification and Stress Report are not the responsibility of the part Manufacturer. An appurtenance Manufacturer is responsible for furnishing a separate Design Specification and Stress Report if the appurtenance is not included in the component Design Specification and Stress Report.)

Date October 7, 1988 Signed GE Reuter Stokes By Robert Chandler  
(Manufacturer) Quality Assurance

Certificate of Authorization Expires September 16, 1992 Certificate of Authorization No. N-2703

## CERTIFICATION OF DESIGN FOR APPURTENANCE (when applicable)

Design information on file at GE Reuter Stokes Inc.-Twinsburg Ohio DC23A6181

Stress analysis report on file at GE Reuter Stokes Inc.-Twinsburg Ohio CDR-C-5003-01

Design specifications certified by Michael Potter Prof. Eng. State Calif. Reg. No. 25904

Stress analysis report certified by Surinder Kampani Prof. Eng. State Ohio Reg. No. E-034113

## CERTIFICATE OF SHOP INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State or Province of Ohio and employed by H.S.BI&I Co. of Hartford CT. have inspected the part of a pressure vessel described in this Manufacturer's Partial Data Report on 10/07 1988, and state that to the best of my knowledge and belief, the Manufacturer has constructed this part in accordance with the ASME Code Section III.

By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the part described in this Manufacturer's Partial Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date 10/07 19 88

Louis V. Whetzel  
Inspector's Signature

Commission OHIO PA2389  
National Board, State, Province and No.

**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
As Required by the Provisions of the ASME Code Section XI

1. Owner Iowa Electric Light and Power  
Name

Date 1-10-39

P.O. Box 351, Cedar Rapids, IA 52406  
Address

Sheet 1 of 1

2. Plant Duane Arnold Energy Center  
Name

Unit 1

3277 DAEC Rd., Palo, IA 52324  
Address

PMAR 1029165

Repair Organization P.O. No., Job No., etc.

3. Work Performed by Iowa Electric \*\*  
Name

Type Code Symbol Stamp None

3277 DAEC Rd., Palo, IA 52324  
Address

Authorization No. None

Expiration Date None

4. Identification of System Main Steam 'B'

ASME Section

5. (a) Applicable Construction Code III 19 68 Edition, Summer 1969 Addenda, None Code Case  
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 19 80 W81

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
Disc	Dresser	*	NA	PSV4403	1978	Replacement	No

\* S/N AAJ217 - 10000

7. Description of Work Removed and Reinstalled valve PSV 4403\*\*

See Note 1 below

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒  
Other ☐ Pressure 1025 psi Test Temp. 2185 °F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 1/2 in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

(12/82)

This Form (E00030) may be obtained from the Order Dept., ASME, 345 E. 47th St., New York, N.Y. 10017

Note 1: Dresser disassembled (at vendor's facility), inspected, installed Iowa Electric's valve disk replacement, reassembled and tested safety valve PSV 4403.

FORM NIS-2 (Back)

9. Remarks Replaced disc with certified disc (P.O. S33410) VT-2 of the  
pressure retaining components were performed under ISI report 88-081.  
Ultrasonic testing and magnetic particle testing was performed under  
Mfg. order no. 86-22885-0 and was performed 9-10-78 and 9-14-78. Both  
reports accept the results.

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this Replacement conforms to the rules of the ASME Code, Section XI. repair or replacement

Type Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed [Signature] ASME Administer Date January 10, 19 89  
~~XXXX~~ Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Iowa and employed by Lumbermens Mutual Casualty Company of Long Grove, Illinois have inspected the components described in this Owner's Report during the period 11-16-88 to 3-9-89, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

[Signature] Commissions Nat'l Bd. 5813 (I)(N) IA-1041  
 Inspector's Signature National Board, State, Province, and Endorsements  
 Date March 9, 19 89

FORM NVR-1 REPORT OF REPAIR ☒, MODIFICATION ☐, OR REPLACEMENT ☐  
OF NUCLEAR PRESSURE RELIEF DEVICE

CORRECTED REPORT

Dresser Industries, Inc., Dresser Valve & Controls Div., Industrial Valve North American Operations,  
Intersection Hwy. 167 & 3225 North, Alexandria, LA

1. Work performed by (name of repair organization)

2. Owner Iowa Electric Light & Power Co.

(name)

P. O. Box 351, Cedar Rapids, Iowa 52406

(address)

3. Name, address and identification of nuclear power plant Iowa Electric Light & Power Co.  
Duane Arnold Energy Center, 3277 DAEC Road, Palo, Iowa 52324

4. a. Identification of repaired pressure relief device: Safety Valves

b. Name of manufacturer: Dresser IVO

c. Identifying nos. 6"3777QA-RT-21

(type)

BMB491

N/A

Steam

6

1972

(mfr's. serial no.) (Nat'l Bd. no) (service) (size) (year built)

5. Applicable edition of ASME Code Section XI under which repairs, modifications or replacements were made: 1980 Winter 1981  
N/A (Code Case) (edition) (addenda)

6. Applicable edition of ASME Code Section III to which repairs modifications or replacements were made: 1968 Summer 1969  
N/A (Code Case) (edition) (addenda)

7. Design responsibilities: Dresser IVO

8. Opening pressure: 1240 PSIG Blowdown (if applicable): N/A Set pressure and blowdown adjustments made at  
Wyle Laboratories, Huntsville, AL (location) using Steam (test media)

9. Description of work: (include name and identifying no. of replacement parts) Disassembled, inspected, reassembled and tested.  
Replaced Disc - S/N AAJ21

10. Remarks: None

## CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and the repair, modification or replacement of the pressure relief device described above conforms to Section XI and Section III of the ASME Code and the National Board rules as defined in the publications NB-65 and NB-102, current editions.

Certificate of Authorization no. 121 to use the "VR" stamp expires 3-30 19 90.  
Certificate of Authorization no. 47 to use the "NR" stamp expires 10-01 19 90.

Date 3-2, 1989. Signed Same as item 1 above Principal QA Engineer  
(repair organization) (authorized representative) (title)

## CERTIFICATE OF INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors, and certificate of competency issued by the state or province of TN and employed by The Hartford Steam Boiler Inspection and Insurance Co. of Hartford, CT have inspected the repair, modification or replacement described in this report on 11-12, 19 88 and state that to the best of my knowledge and belief, this repair, modification or replacement has been made or constructed in accordance with Section XI and Section III of the ASME Code and the National Board rules as defined in the publications NB-65 and NB-102, current editions. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the repair, modification or replacement described in this report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date 3-7 1988 E. J. Paulk Commissions NB 5114 TN 555-  
(Authorized Inspector) (Nat'l Bd No. (including endorsements) state or province & no.)



**FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS**  
**As Required by the Provisions of the ASME Code Section XI**

1. Owner Iowa Electric Light and Power Date September 18, 1987  
Name  
P.O. Box 351, Cedar Rapids, IA 52406 Sheet 1 of 1  
Address
2. Plant Duane Arnold Energy Center Unit 1  
Name  
3277 DAEC Rd., Palo, Iowa 52324 CMAR 081957  
Address Repair Organization P.O. No., Job No., etc.
3. Work Performed by Iowa Electric Type Code Symbol Stamp N/A  
Name Authorization No. N/A  
3277 DAEC Rd., Palo, Iowa 52324 Expiration Date N/A  
Address
4. Identification of System High Pressure Coolant Injection Steam Supply (Class 2)
5. (a) Applicable Construction Code ANSI B31.7 19 69 Edition, 71 Addenda, N/A Code Case  
 (b) Applicable Edition of Section XI Utilized for Repairs or Replacements 19 80 w/81

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built *	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
Hydraulic Snubber	Bergen-Patterson	D. Arnold #52	None	EBB-14-SS-16-A	1987	Replacement No	

7. Description of Work Hydraulic Snubber Replacement - Type (HSSA-3)

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☐  
 Other ☐ Pressure N/A psi Test Temp. N/A °F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8½ in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

FORM NIS-2 (Back)

9. Remarks Hydraulic snubber was found with fluid levels below allowable technical  
specification limits. The unacceptable hydraulic snubber was replaced with  
a like-for-like replacement (P.O. S34837). Preservice inspection report  
87-724. (VT-3/VT-4) was acceptable.

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this Replacement conforms to the rules of the  
 ASME Code, Section XI. repair or replacement

Type Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed R. M. M. ASME administrator Date March 20, 19 89  
 Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State  
 or Province of Iowa and employed by Lumberman Mutual Casualty Company of  
Long Grove, Illinois have inspected the components described  
 in this Owner's Report during the period 8-28-87 to 3-20-89, and state that  
 to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this  
 Owner's Report in accordance with the requirements of the ASME Code, Section XI, except IWA-7210

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the  
 examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer  
 shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this  
 inspection.

W. Huggles Commissions Nat'l Bd. 5813 (I) (N) IA-1041  
 Inspector's Signature National Board, State, Province, and Endorsements

Date March 20, 19 89

INSERVICE INSPECTION REPORT  
June 30, 1987 through December 27, 1988

Part G, Page 1 of 1

- 1) Owners: Iowa Electric Light and Power Company  
P.O. Box 351  
Cedar Rapids, Iowa 52406

Central Iowa Power Cooperative  
Marion, Iowa

Corn Belt Power Cooperative  
Humboldt, Iowa

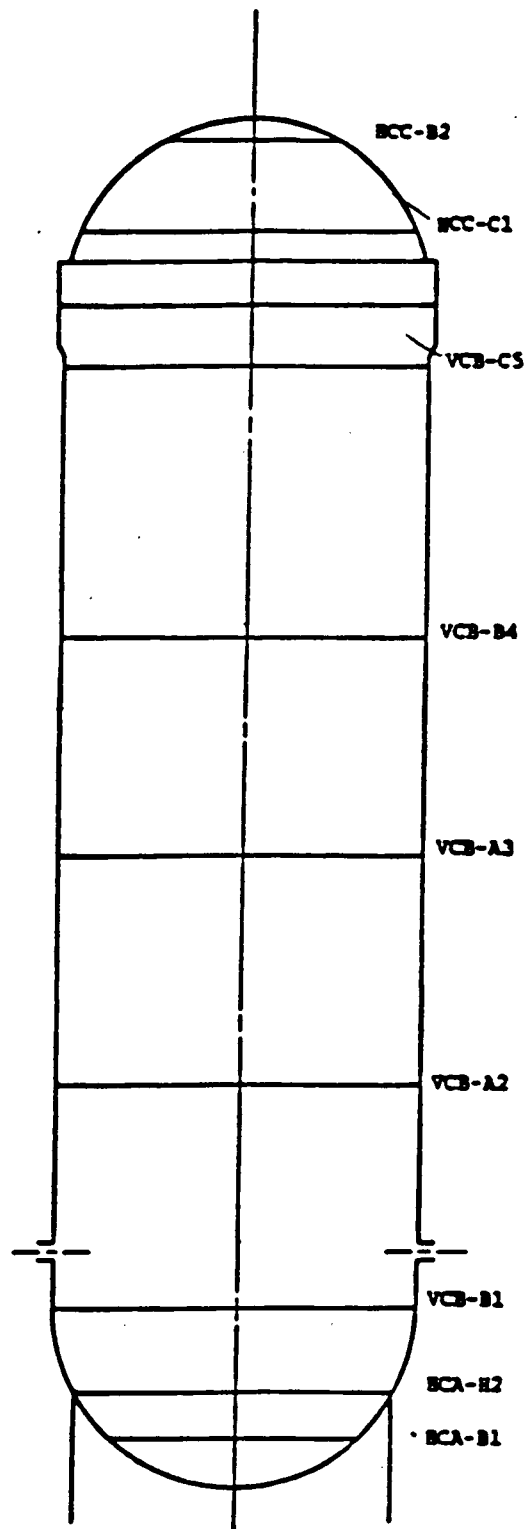
- 2) Plant Duane Arnold Energy Center, Palo, Iowa  
3) Plant Unit #1 4) Owners Certificate of Authorization (if required) N/A  
5) Commercial Service Date 2-1-75 6) National Board Number of Unit N/A

Abstract of Conditions Noted and Corrective Measures Taken:

The corrective measures addressed in this report were performed in accordance with the American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section XI, 1980 Edition through Winter 1981 Addenda, and the Duane Arnold Energy Center Updated Final Safety Analysis Report. The corrective measures performed as Repairs or Replacements are listed in Part E of this report and are documented, using Form NIS-2, in accordance with the American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section XI, 1980 Edition through Winter 1982 Addenda. Specific details and associated records of additional corrective measures are on file at Iowa Electric Light and Power Company. The corrective measures addressed were performed during the period of June 30, 1987 through December 27, 1988.

Inservice Inspection Report  
June 30, 1987 through  
December 27, 1988

Part H  
Pg. 1 of 36



CIRCUMFERENTIAL SEAM WELDS

Figure No. 1.1-3

Part H  
Pg. 2 of 36

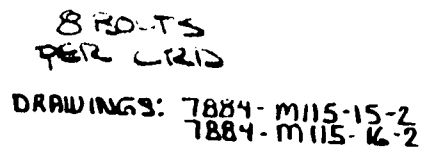
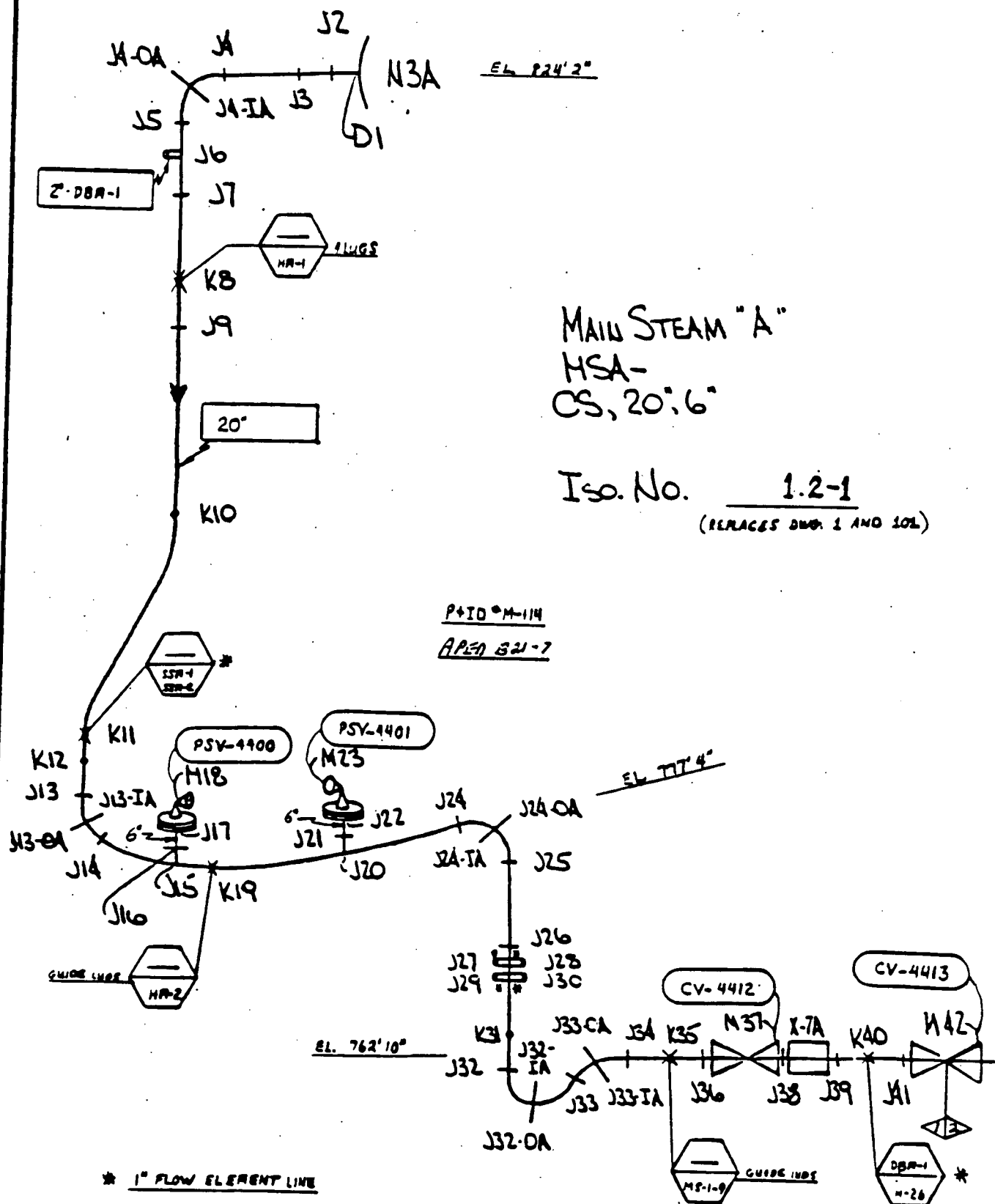
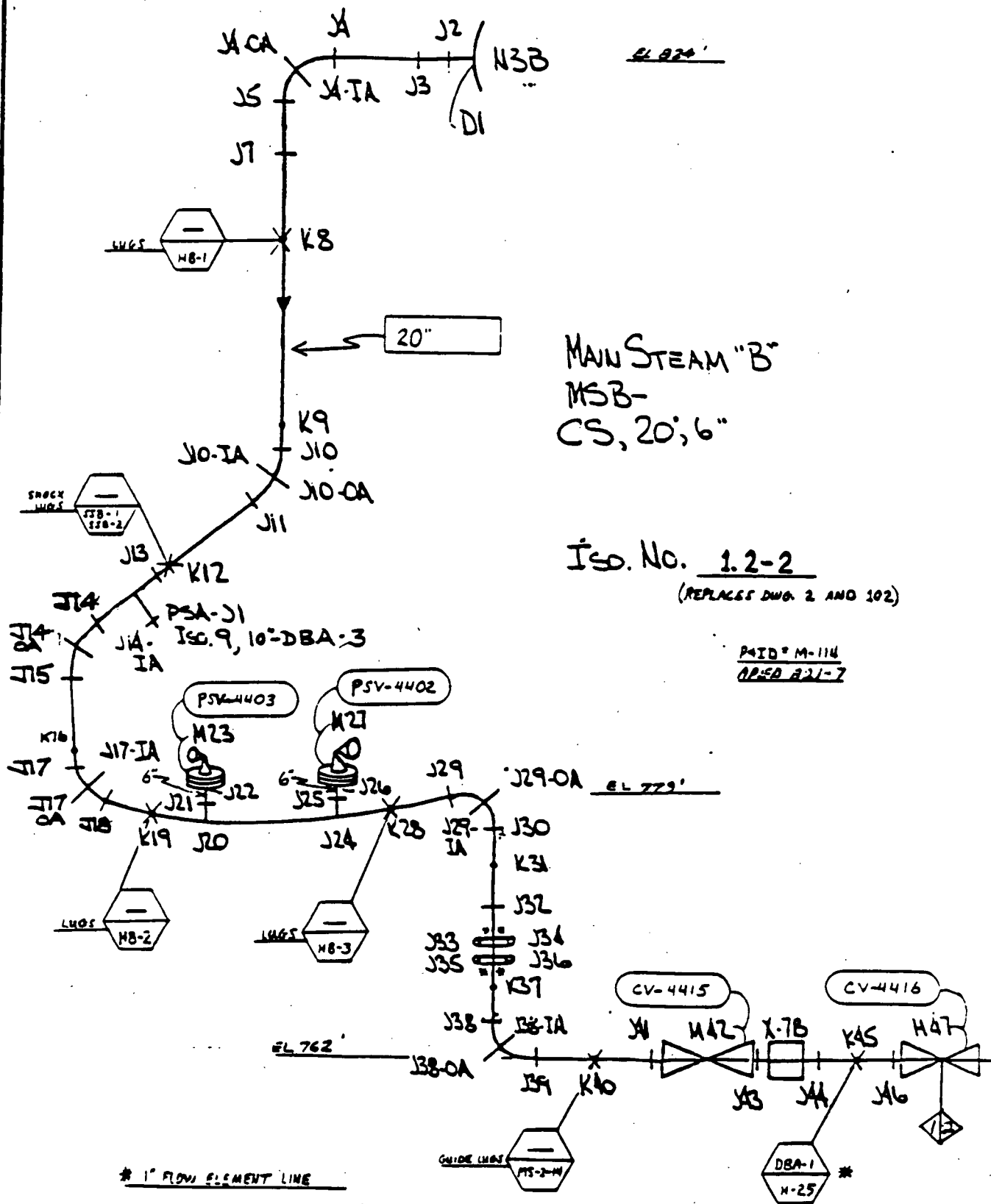


Figure No. 1.1-8

Inservice Inspection Report  
June 30, 1987 through  
December 27, 1988

Part H  
Pg. 3 of 36

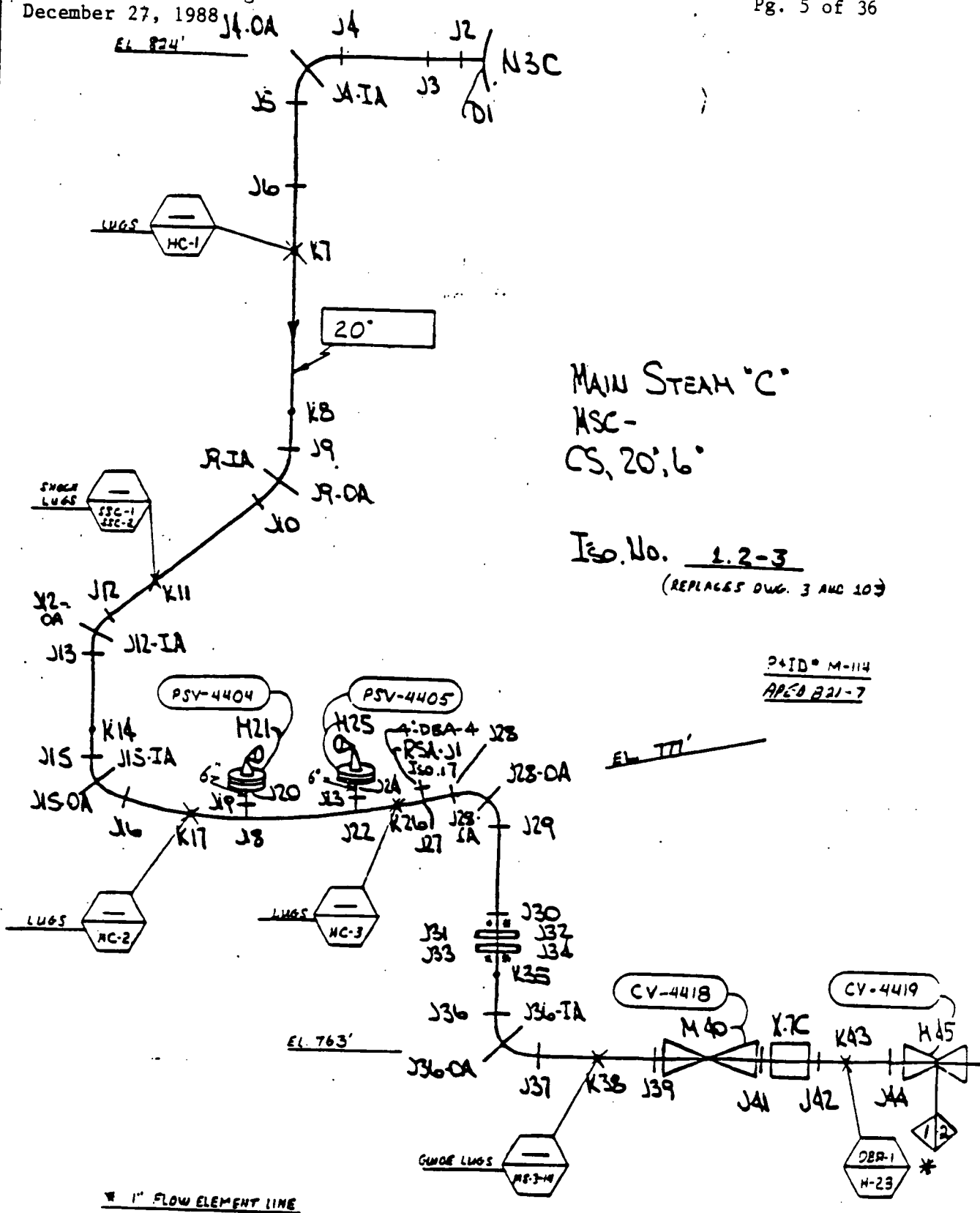




• DENOTES NONWELDED  
(NWF) ATTACHMENTS

Inservice Inspection Report  
June 30, 1987 through  
December 27, 1988

Part H  
Pg. 5 of 36

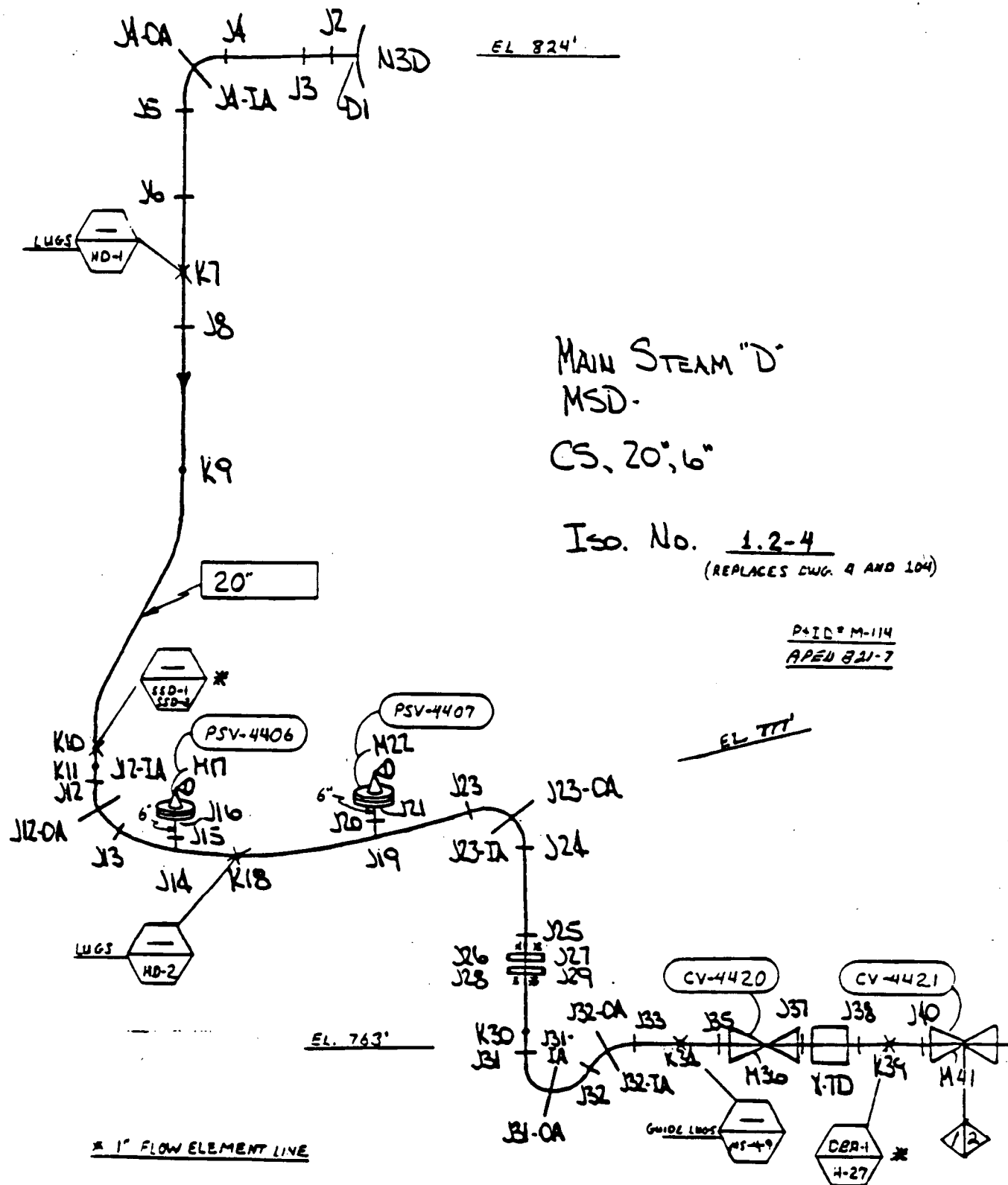


\* DENOTES NONWELDED  
(IWF) ATTACHMENTS

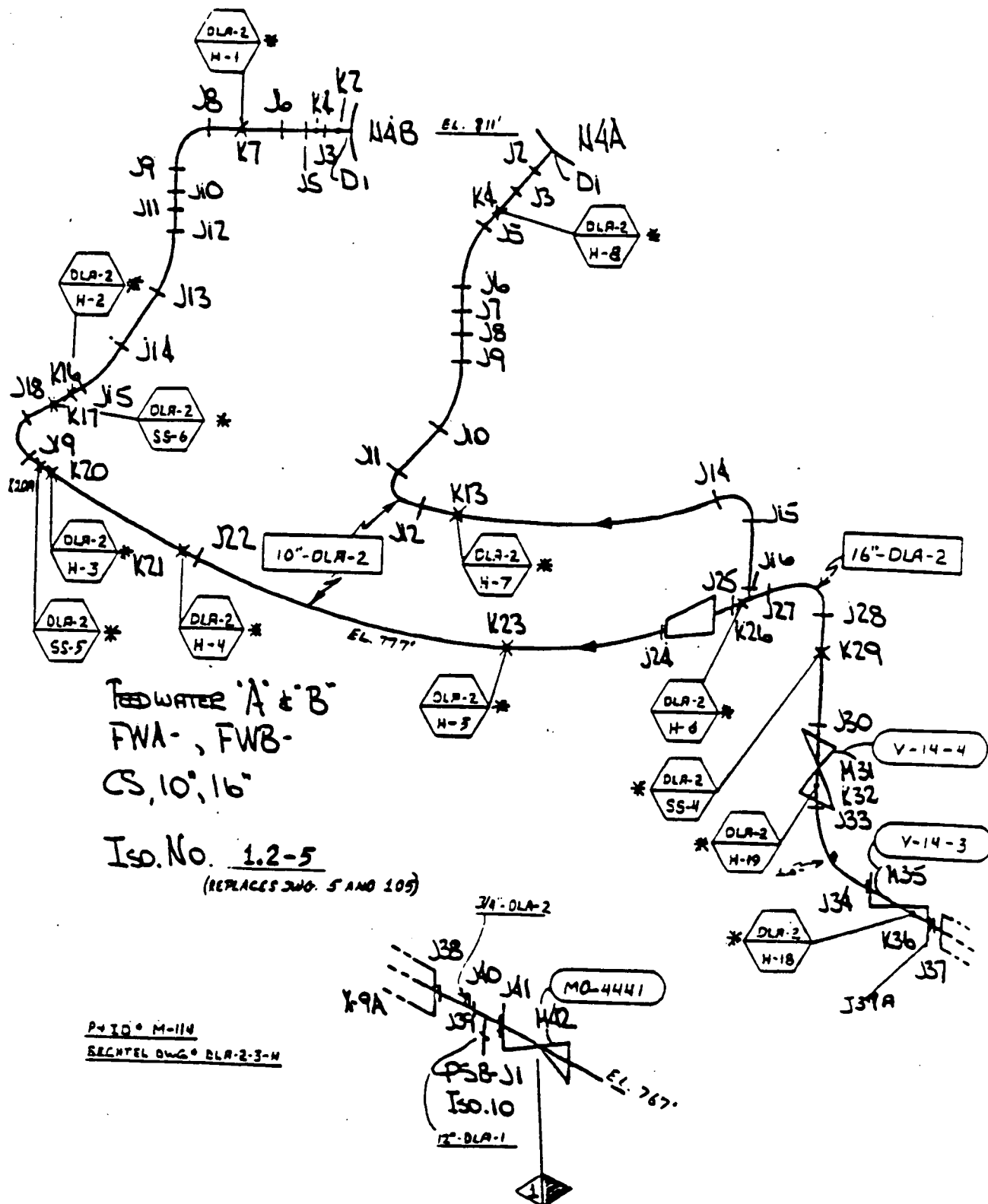


Inservice Inspection Report  
June 30, 1987 through  
December, 27, 1988

Part H  
Pg. 6 of 36



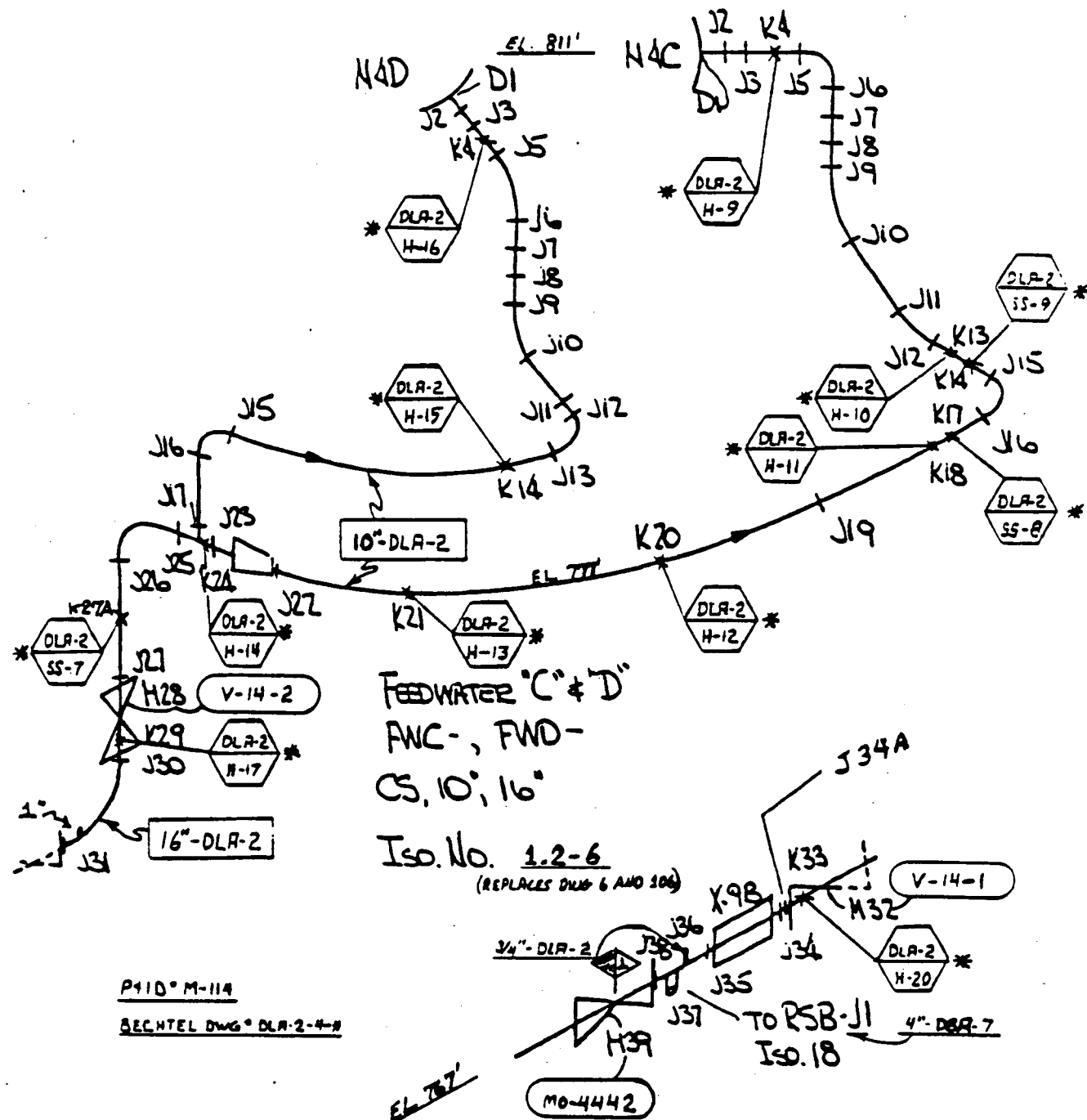
Part H  
Pg. 7 of 36



INSERVICE INSPECTION ASME SECTION XI ISOMETRIC

Inservice Inspection Report  
June 30, 1987 through  
December 27, 1988

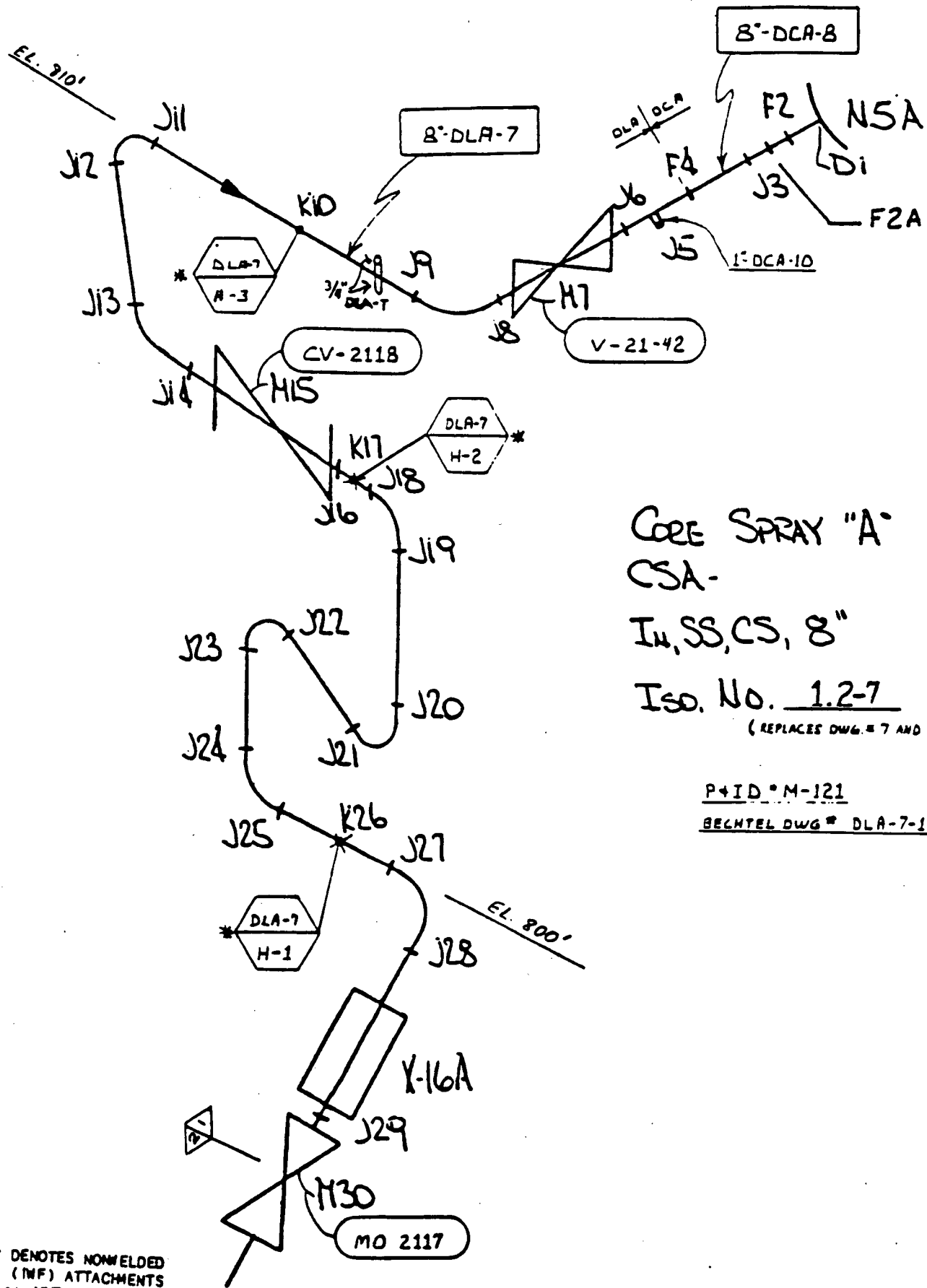
Part H  
Pg. 8 of 36



\* DENOTES NONWELDED  
(NFW) ATTACHMENTS

Inservice Inspection Report  
June 30, 1987 through  
December 27, 1988

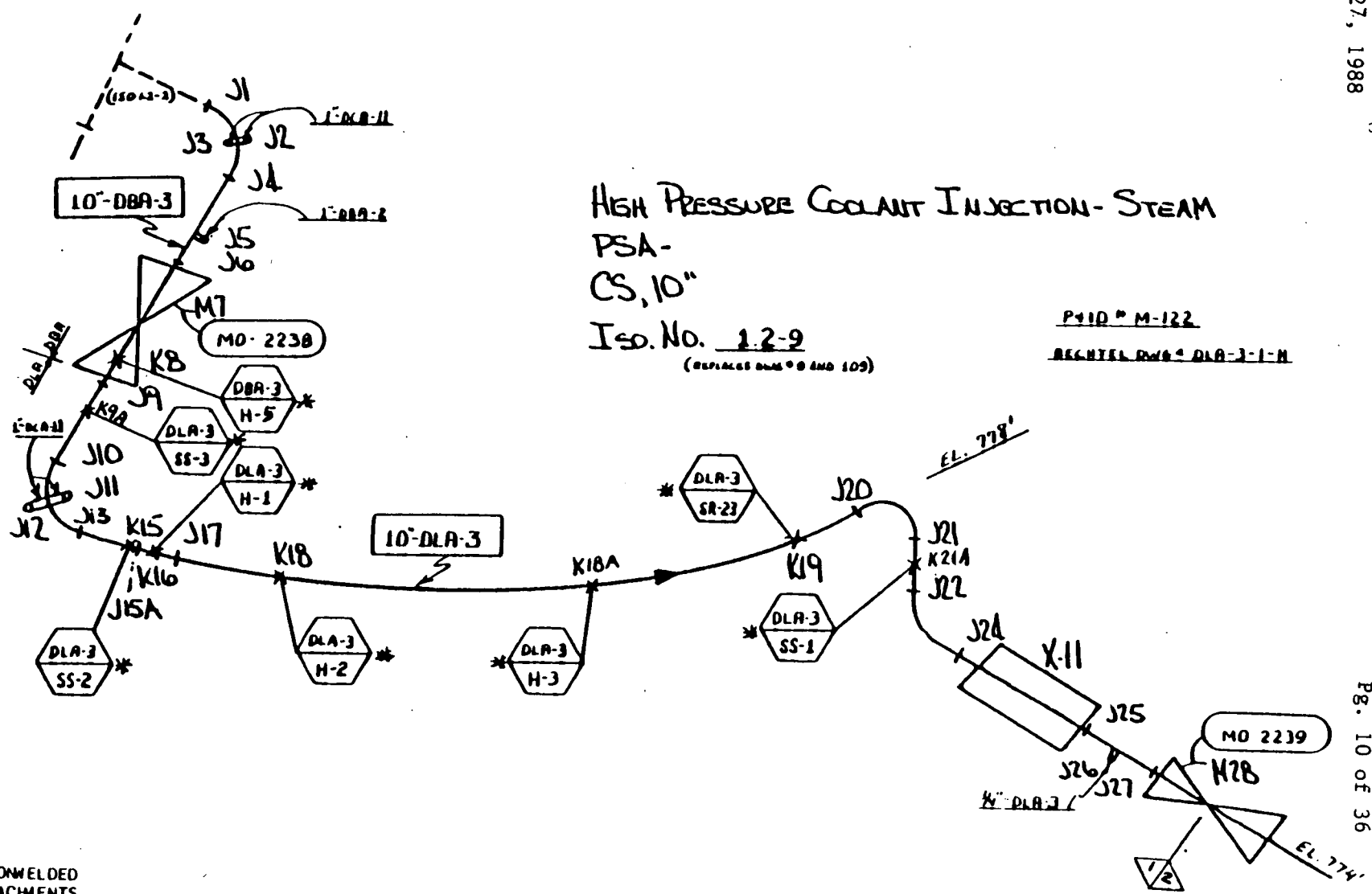
Part H  
Pg. 9 of 36



Inservice Inspection Report  
June 30, 1987 through  
December 27, 1988

High Pressure Coolant Injection - STEAM  
PSA -  
CS, 10"  
Iso. No. 12-9  
(REPLACES DWS # 8 AND 109)

P+ID # M-122  
RECENTED DWS # DLA-3-1-M



\* DENOTES NONWELDED  
(W/F) ATTACHMENTS

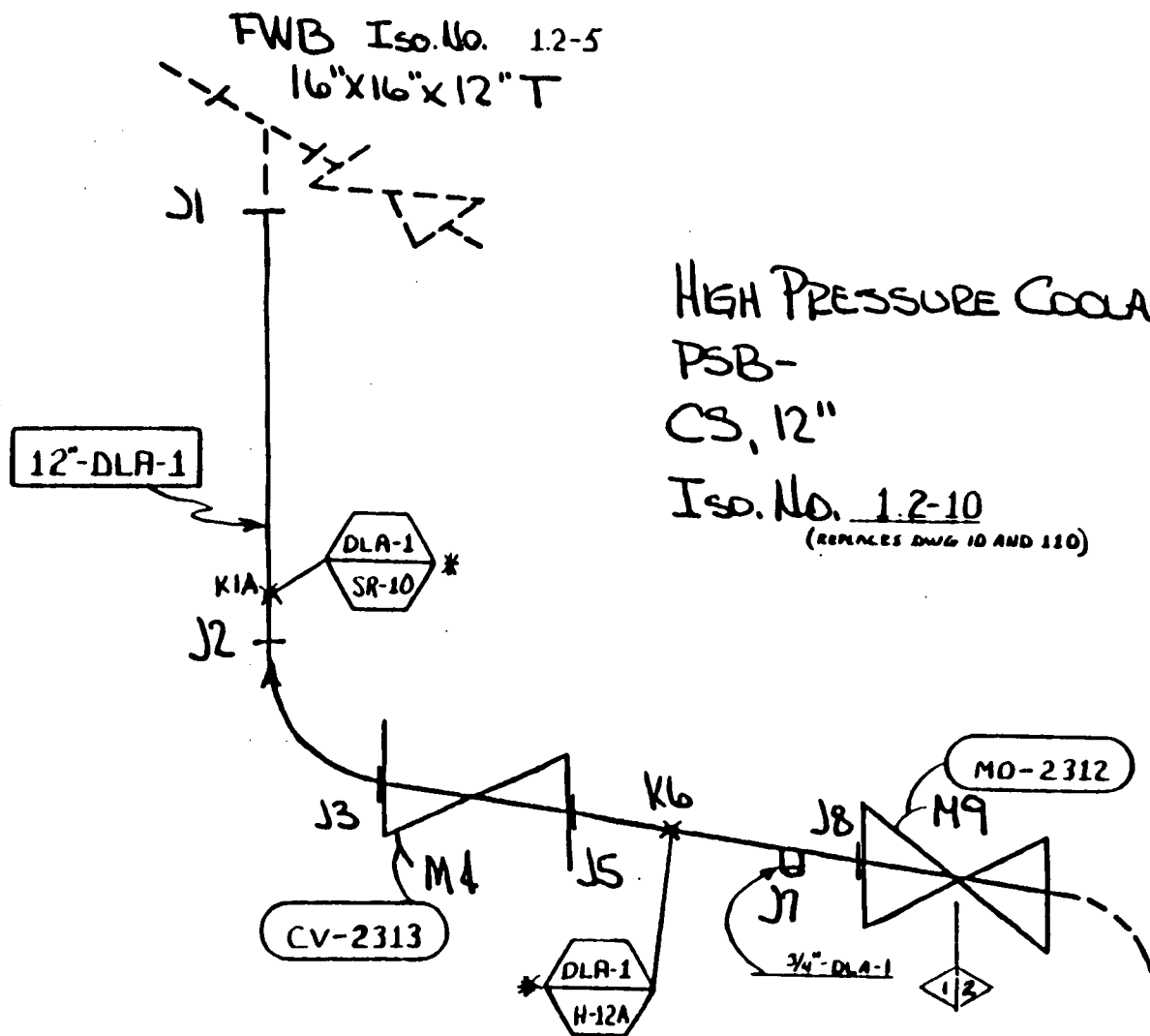
INSERVICE INSPECTION AREA SECTION II ISOMETRIC

Inservce Inspection Report  
June 30, 1987 through  
December 27, 1988

P+ID # M-123

RECHTEL DWG # DLA-1-1-H

HIGH PRESSURE COOLANT INJECTION - WATER  
PSB-  
CS, 12"  
Iso. No. 1.2-10  
(REPLACES DWG 10 AND 110)

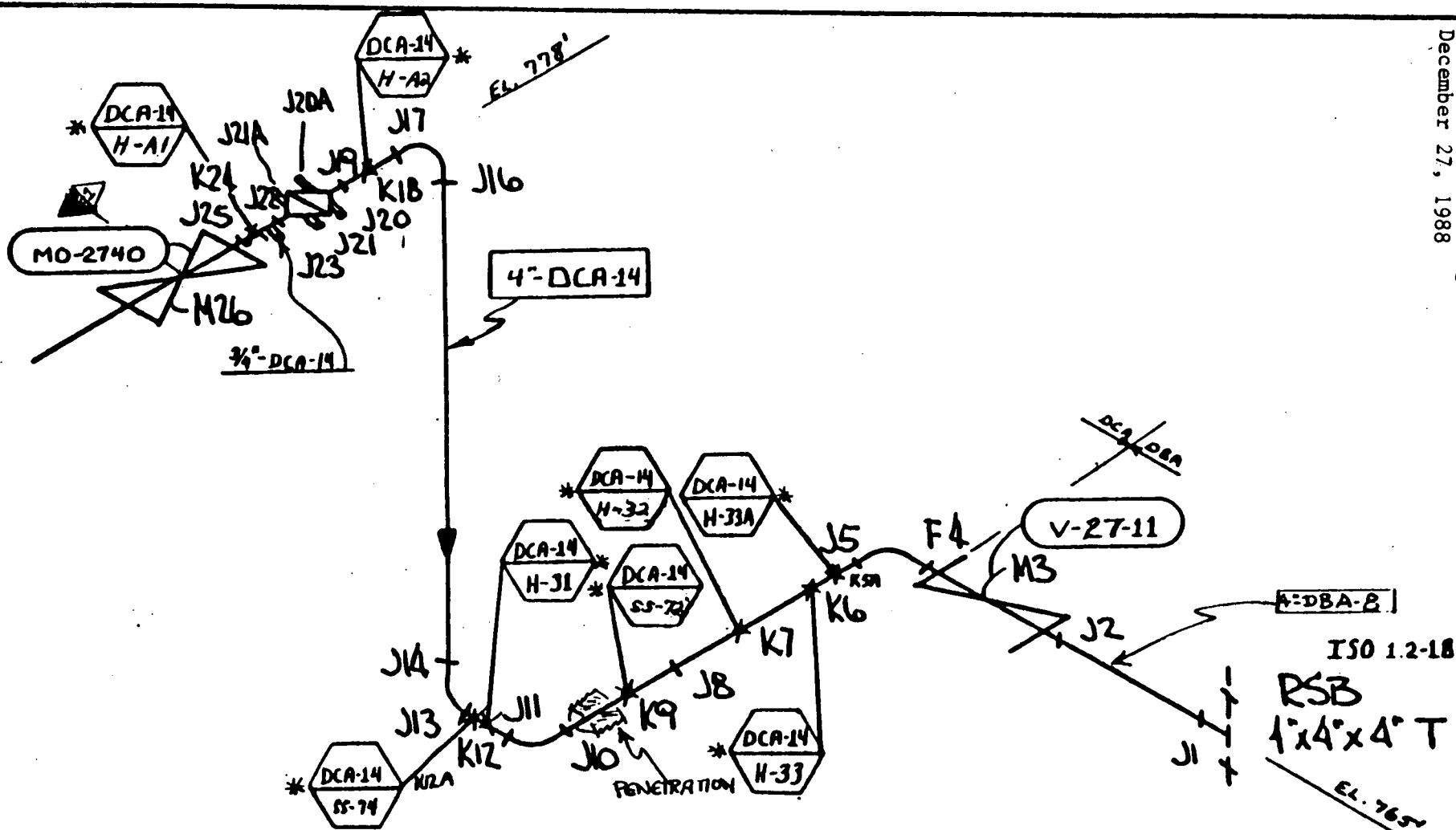


\* DENOTES NONWELDED  
(W/F) ATTACHMENTS

Inservise Inspection Report  
June 30, 1987 through  
December 27, 1988

Part H  
Pg. 12 of 36

Crane Run-in



REACTOR WATER CLEANUP - Discharge (CLEAN)  
CUB-  
CS, SS, 4"

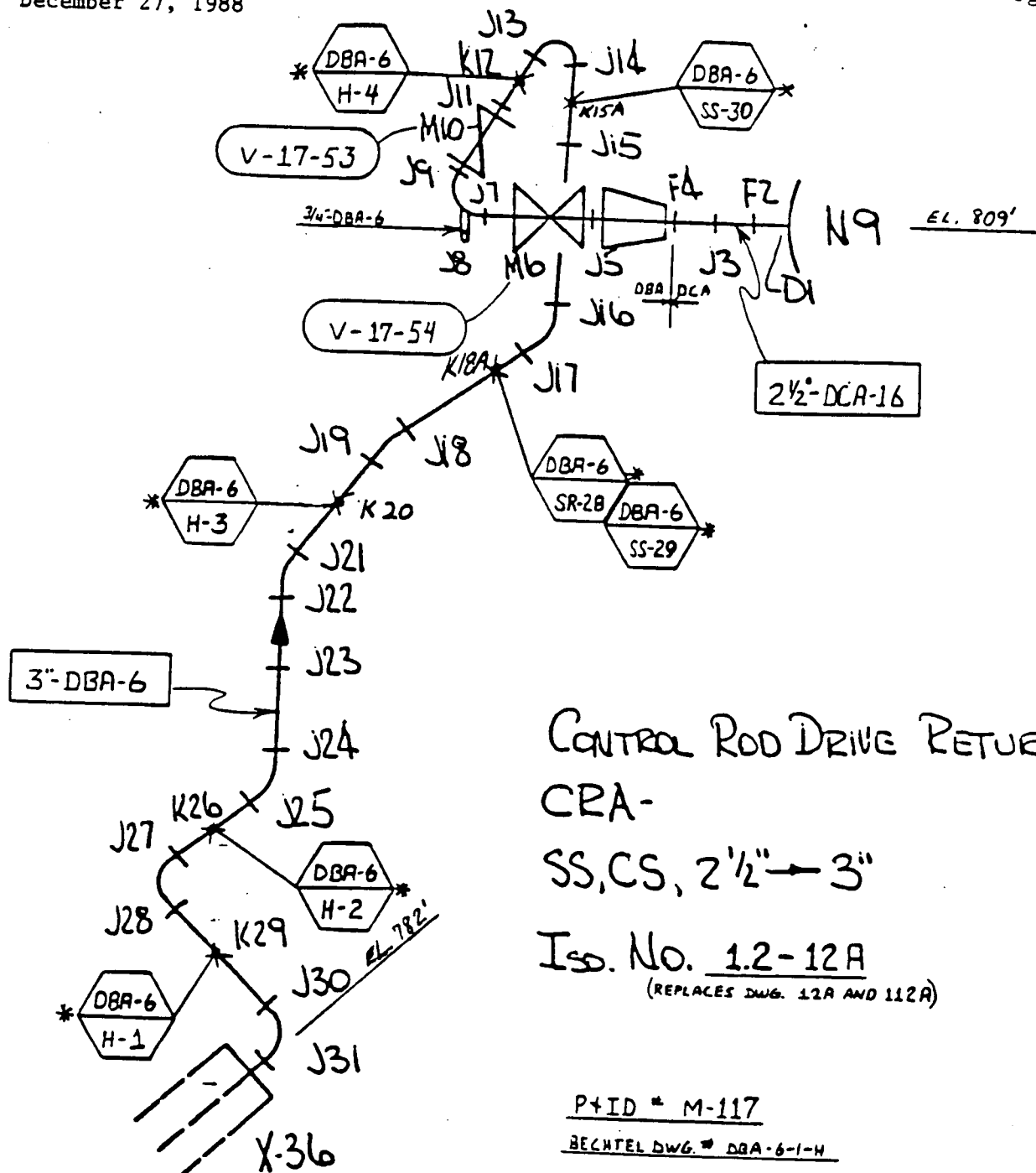
Isa No. 1.2-11B  
(REPLACES DWG 11B AND 111B)

P+ID # M-127  
RECHTEL DWG # DCA-14-1-M

\* DENOTES NONWELDED  
(IMF) ATTACHMENTS

Inservice Inspection Report  
June 30, 1987 through  
December 27, 1988

Part H  
Pg. 13 of 36



Central Rod Drive Return  
CRA-

SS, CS, 2 1/2" → 3"

Iss. No. 1.2-12A  
(REPLACES DWG. 12A AND 112A)

P+ID # M-117

BECHTEL DWG. # DBA-6-1-H

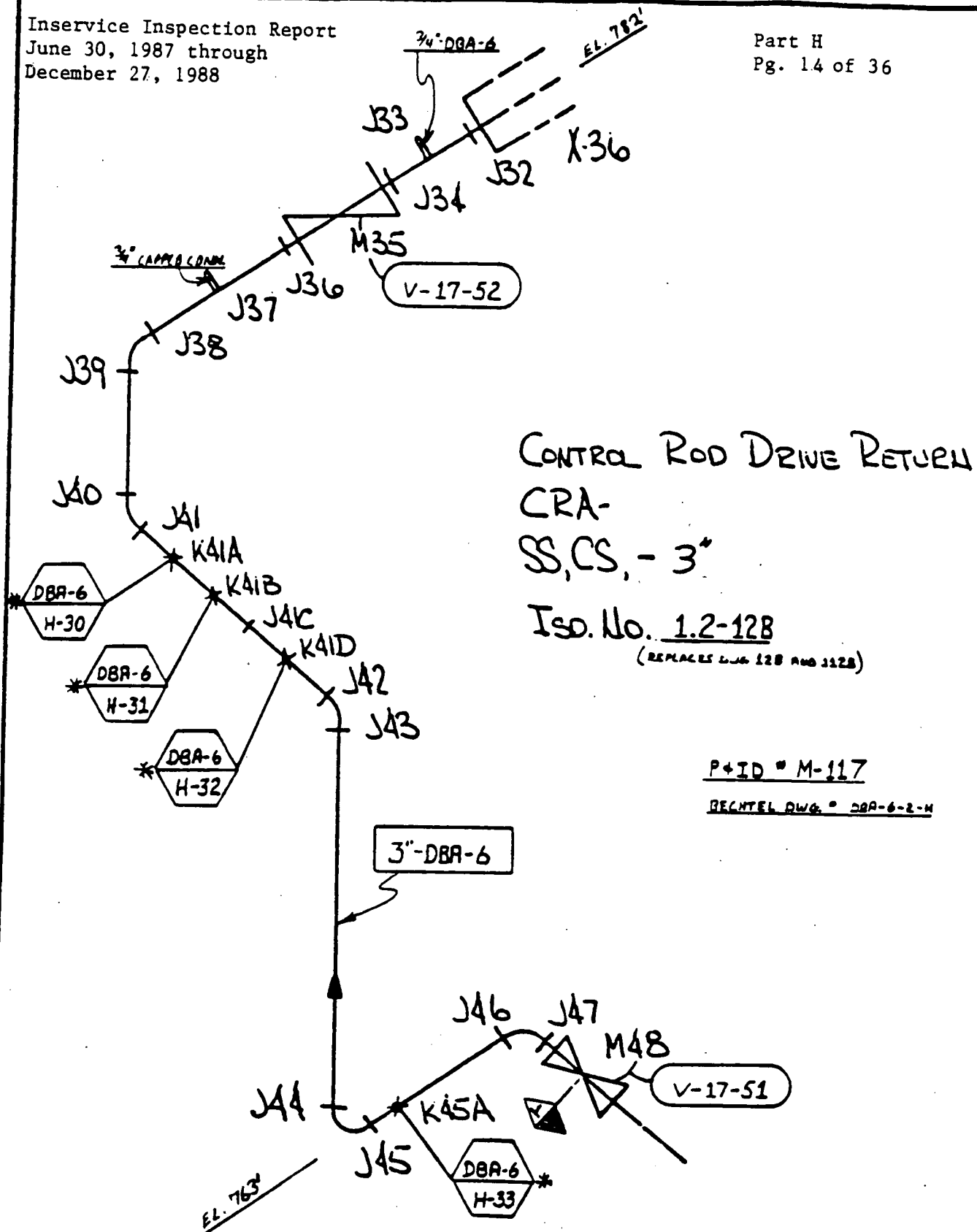
CONT. ON ISO 1.2-12B

\* DENOTES NONWELDED  
(NW) ATTACHMENTS



Inservice Inspection Report  
June 30, 1987 through  
December 27, 1988

Part H  
Pg. 14 of 36



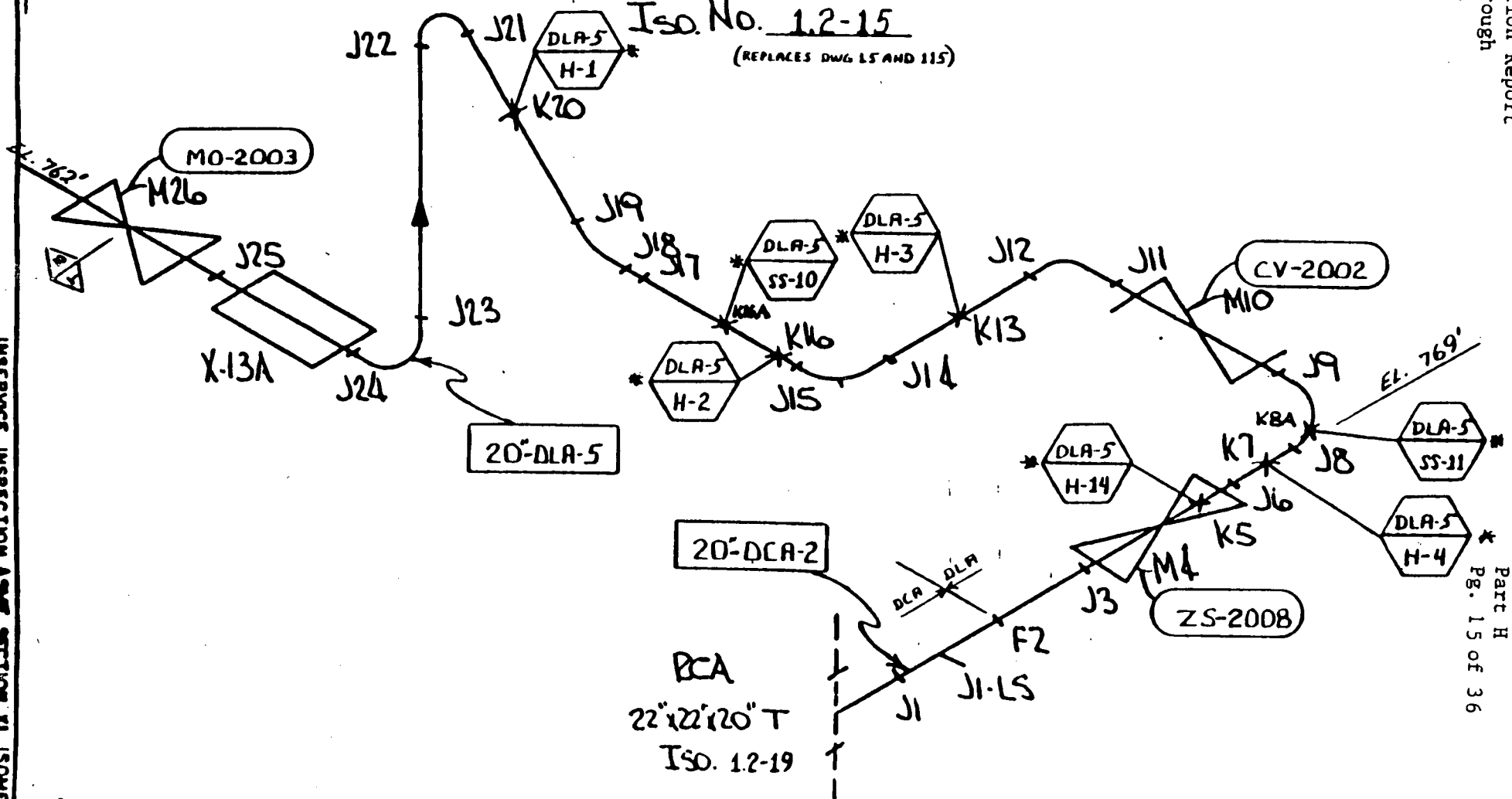
\* DENOTES NONWELDED  
(NFW) ATTACHMENTS

Inservice Inspection Report  
June 30, 1987 through  
December 27, 1988

P+ID M-120  
MECHTEL DWG. DLA-5-1-M

# RESIDUAL HEAT REMOVAL - 20A RHC - SS, CS, 20"

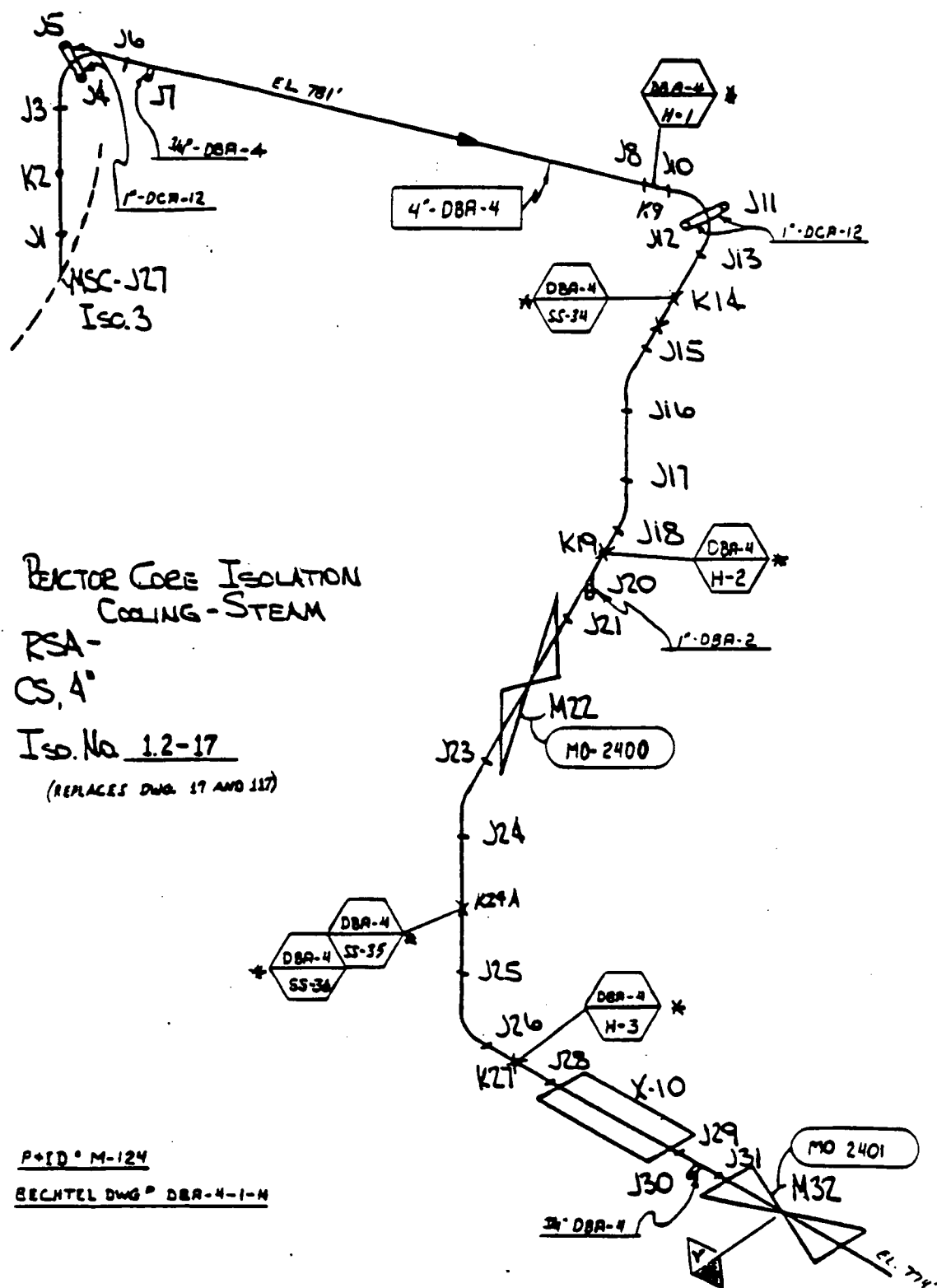
ISO. No. 1.2-15  
(REPLACES DWG 15 AND 115)



\* DENOTES NONWELDED  
(INF) ATTACHMENTS

Inservice Inspection Report  
June 30, 1987 through  
December 27, 1988

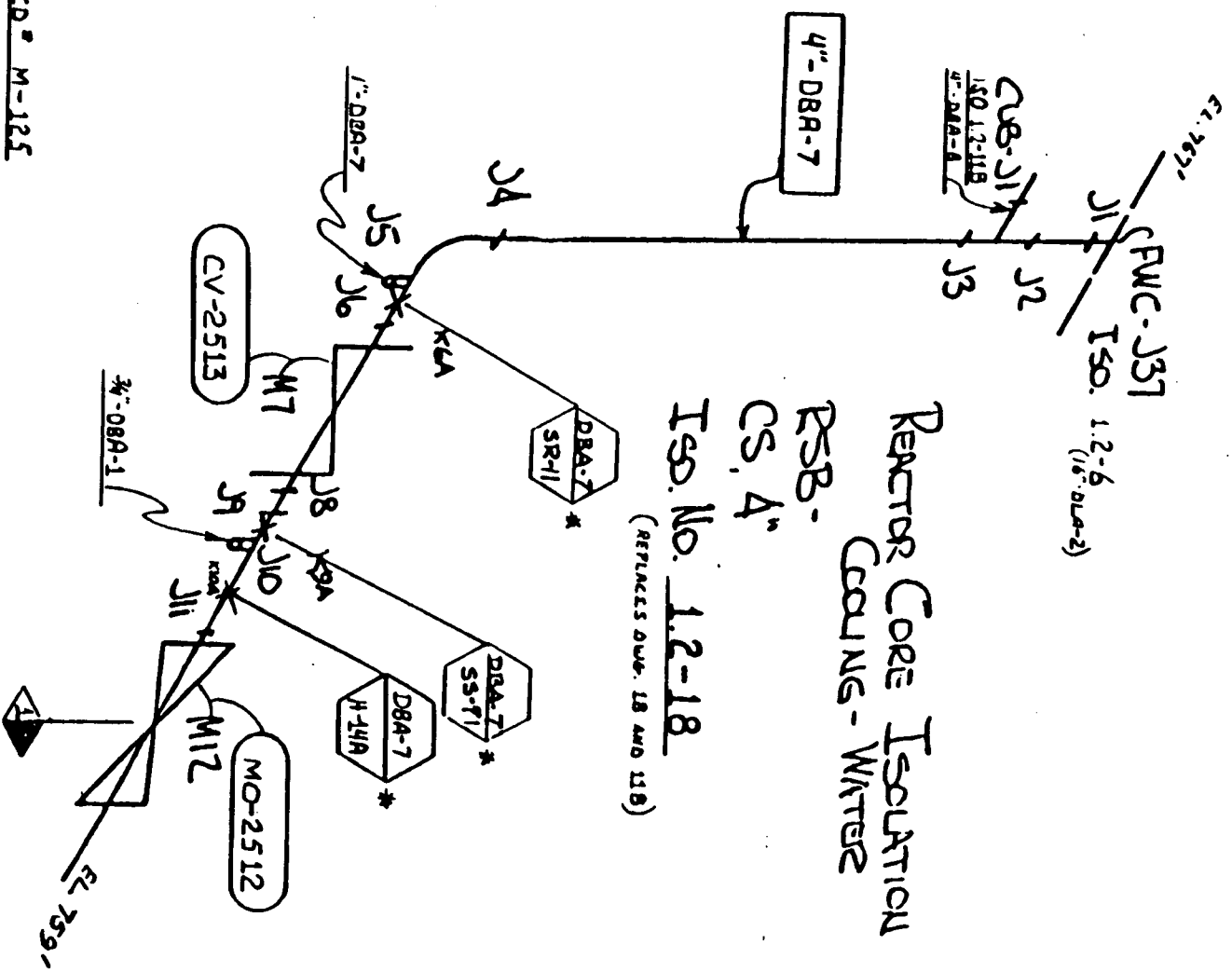
Part H  
Pg. 16 of 36



\* DENOTES NONWELDED  
(INF) ATTACHMENTS

Inservce Inspection Report  
June 30, 1987 through  
December 27, 1988

Part H  
Pg. 17 of 36

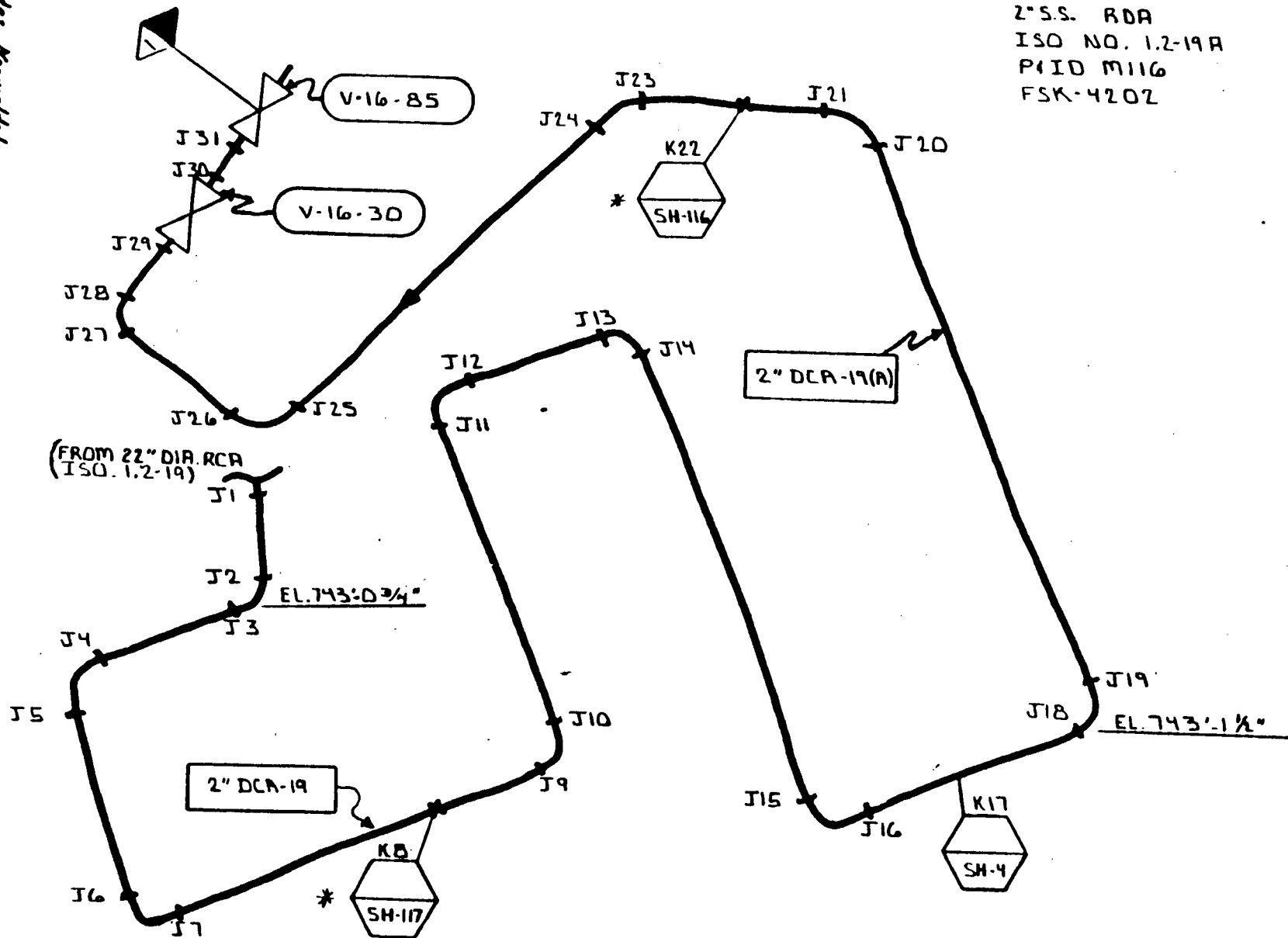


P&ID # M-125

SECRET Dwg. # DBA-7-1-M

\* DENOTES NON ELDED  
(MF) ATTACHMENTS

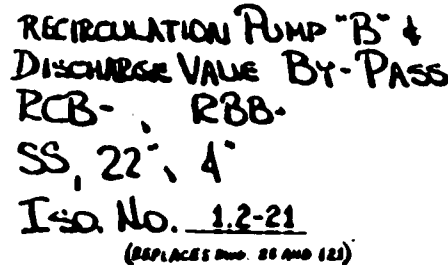
DRAIN LINE RECIRCULATION "A"  
 2" S.S. RDA  
 ISO NO. 1.2-19A  
 PID M116  
 FSK-4202



\* Don'ts Newbold  
 Civil Mechanical

Revised: 3-19-16

Part H  
Pg. 19 of 36



P41D" M-116

• DENOTES NONWELDED  
(MF) ATTACHMENTS

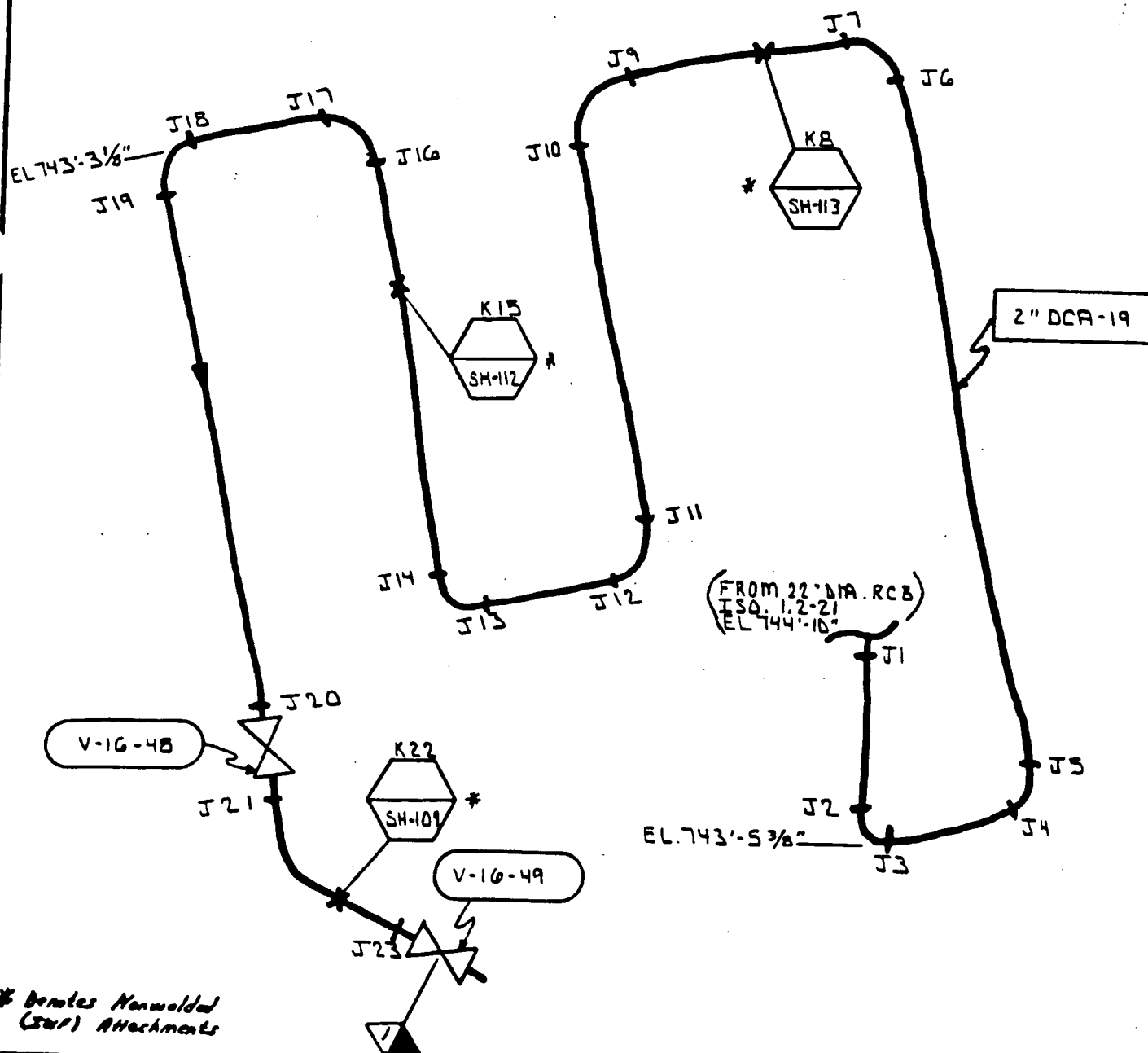
**INSERVICE INSPECTION AREA SECTION XI ISOMETRIC**

Inservice Inspection Report  
June 30, 1987 through  
December 27, 1988

Rev. 1 Date 3-21-76

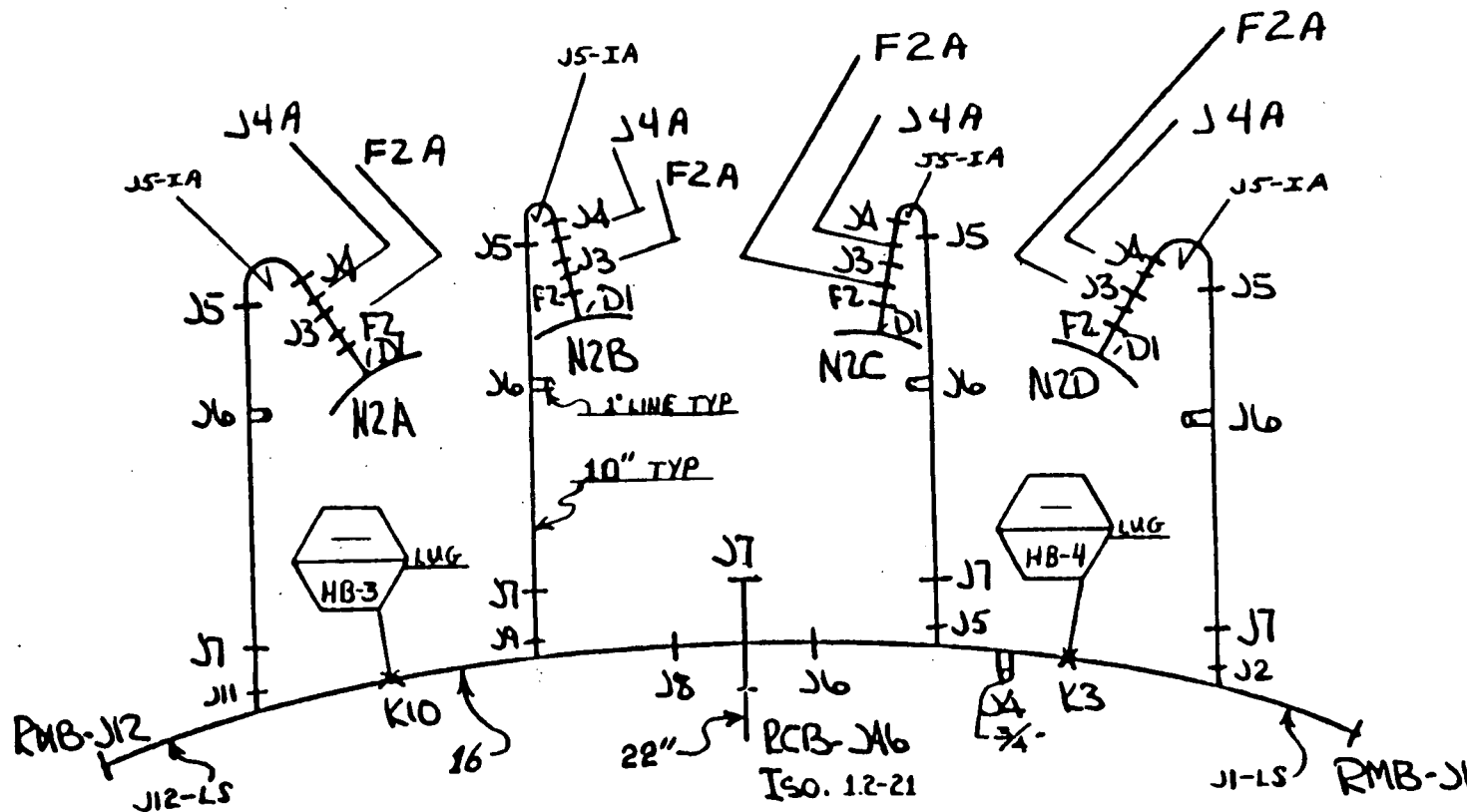
Part H

Pg. 20 of 36  
DRAIN LINE RECIRCULATION "B"  
2" S.S. RDB  
ISO. NO. 1.2-21A  
PID M116  
FSK-4169



Tennessee Trenching Trenching

Inservice Inspection Report  
June 30, 1987 through  
December 27, 1988



Recirculation Manifold "B" & Rises A,B,C,D  
RMB-, PRA-, PRB-, PRC-, PRD-,  
SS, 16", 10"

ISO. No. 12-22

(REPLACES DWG. # 21 AND 122)

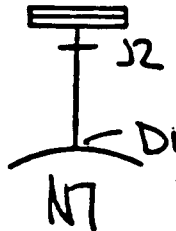
P+ID# M-116

\* DENOTES NONWELDED  
(INF) ATTACHMENTS



Inservice Inspection Report  
June 30, 1987 through  
December 27, 1988

Part H  
Pg. 22 of 36



HEAD VENT

HVA-

CS, 4"

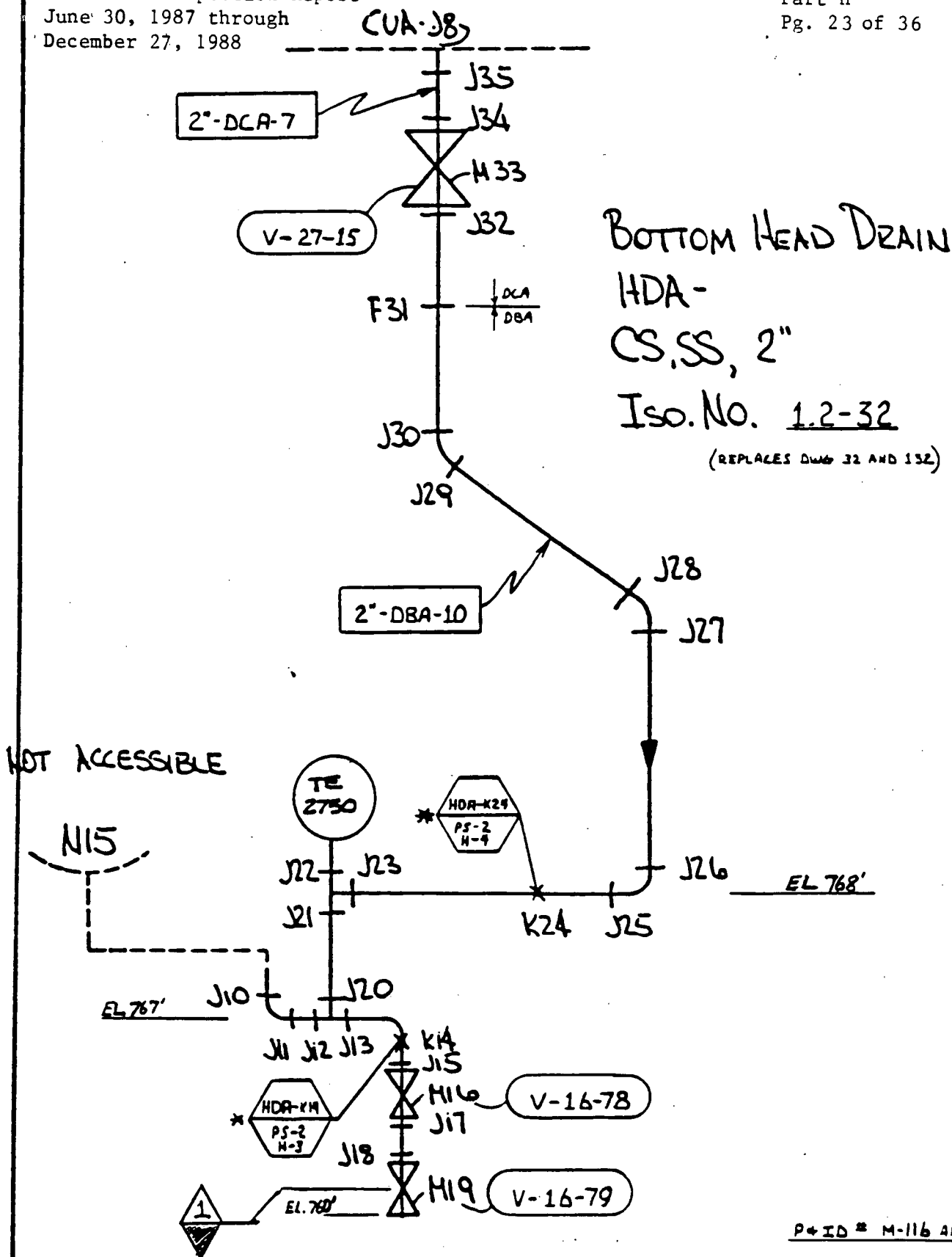
Iso. No. 1.2-24

(REPLACES DWG 24 AND 124)

P & ID M-114

Inservice Inspection Report  
June 30, 1987 through  
December 27, 1988

Part H  
Pg. 23 of 36



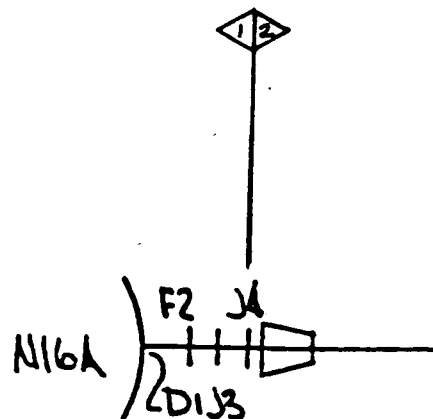
P-ID # M-116 AND M-127

FSK # 3352B

\* DENOTES NONWELDED  
(INF) ATTACHMENTS

Inservice Inspection Report  
June 30, 1987 through  
December 27, 1988

Part H  
Pg. 24 of 36



VESSEL INSTRUMENTATION N16A

VIE -

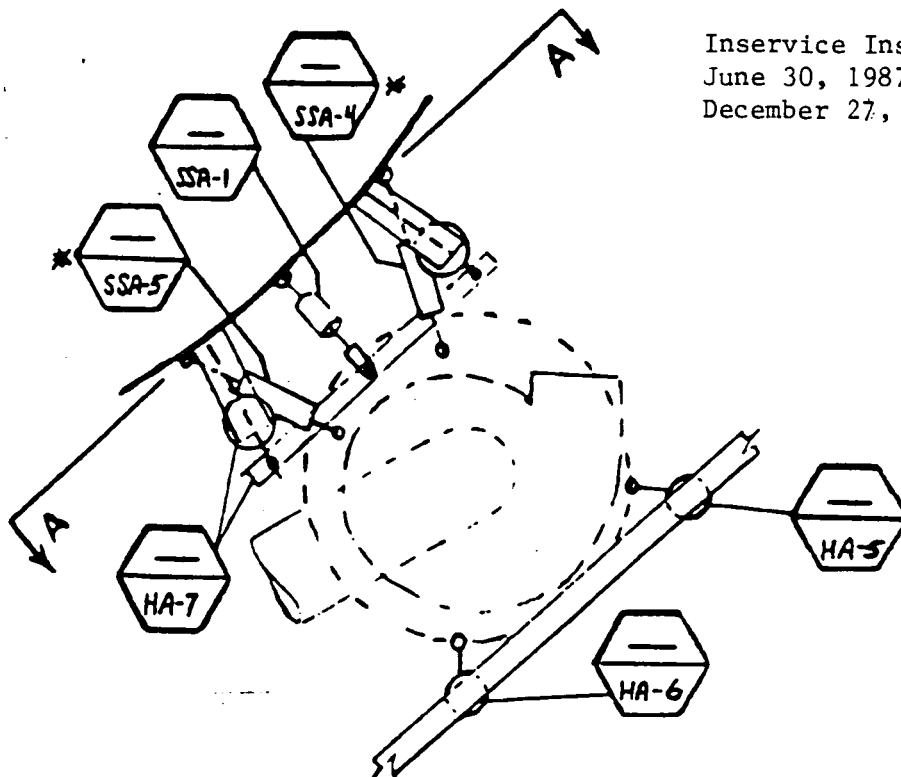
SS - 2" SW

ISO. No. 1.2-33

(REPLACES DWG 33 AND 133)  
PID M-115

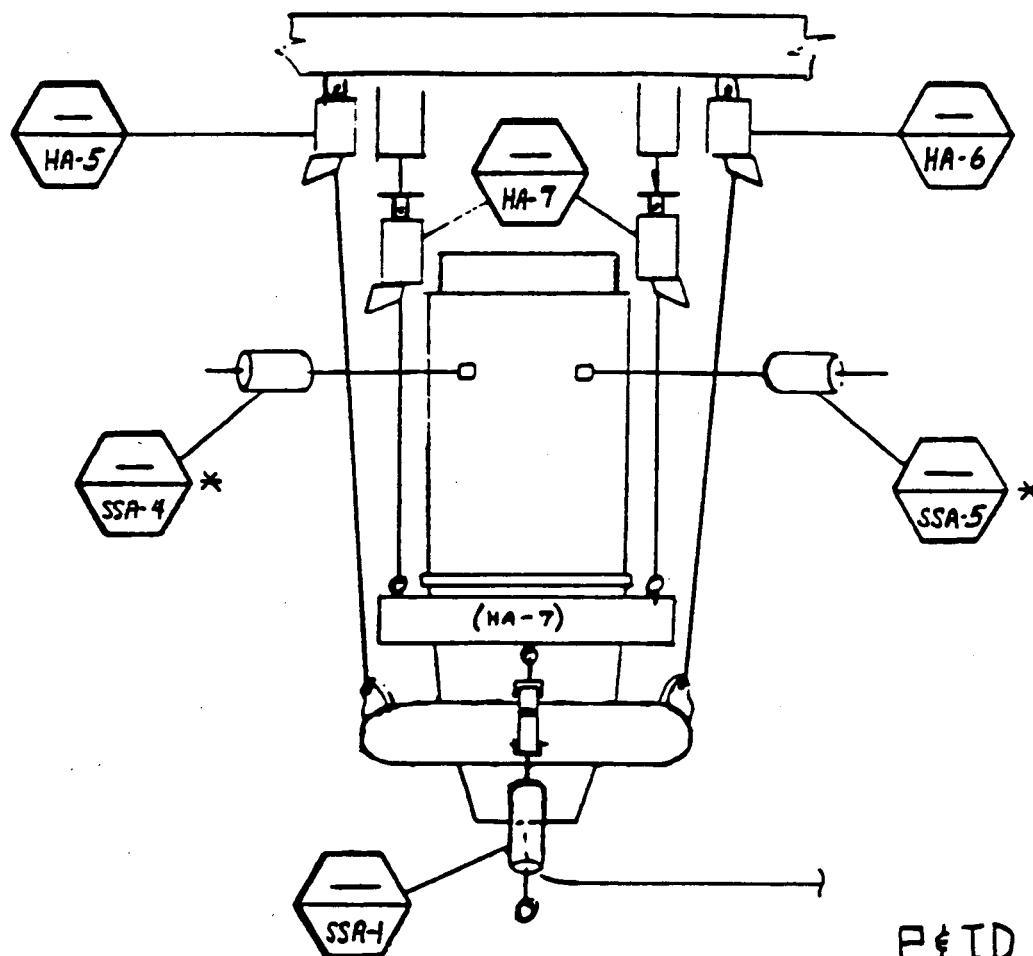
Inservice Inspection Report  
June 30, 1987 through  
December 27, 1988

Part H  
Pg. 25 of 36



RELIRC. PUMP "A" SUPPORTS

Figure No. 1.3-2



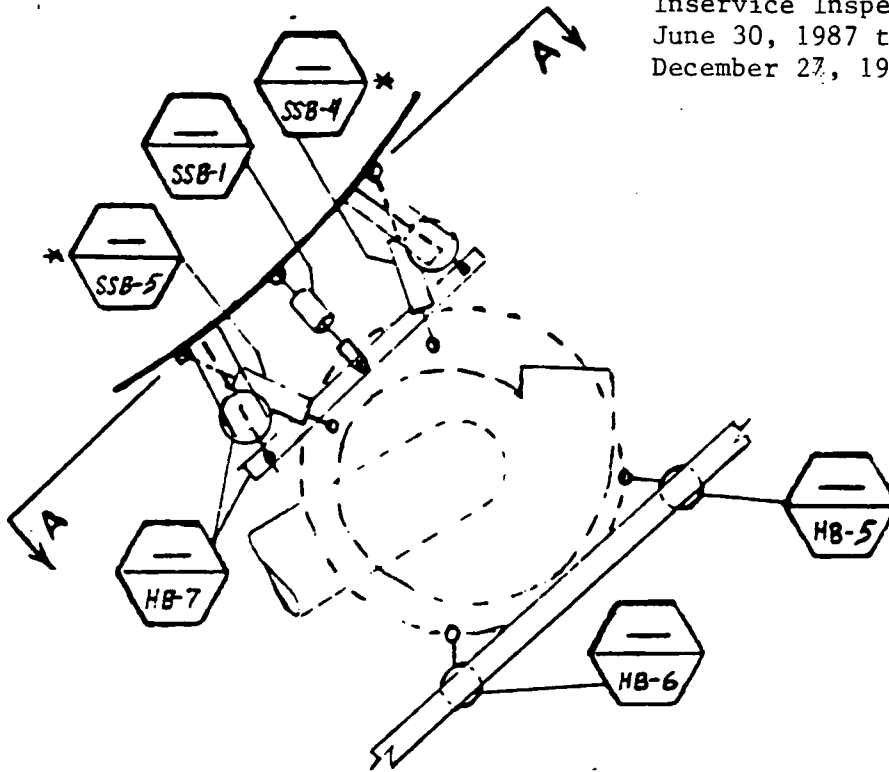
\* DENOTES NONWELDED  
(IWF) ATTACHMENTS

VIEW A-A

PFID M-116

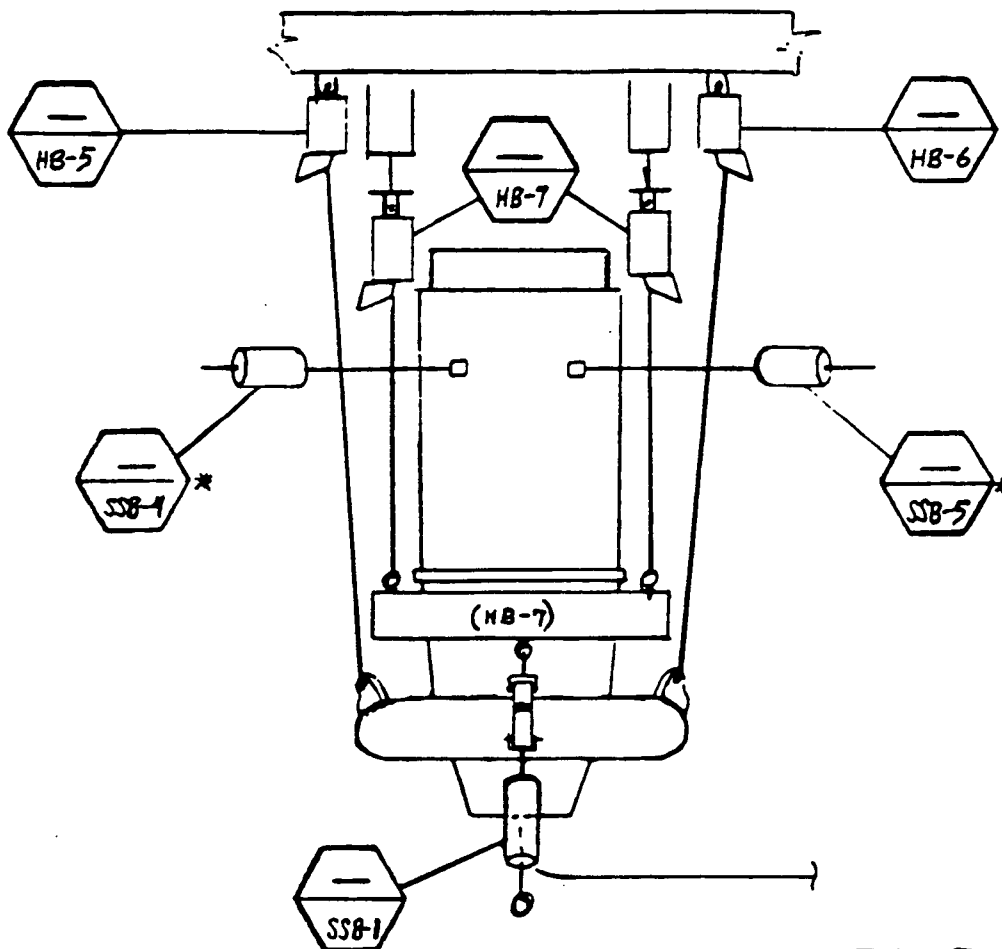
Inservice Inspection Report  
June 30, 1987 through  
December 27, 1988

Part H  
Pg. 26 of 36



RECIRC. PUMP "B" SUPPORTS

Figure No. 1.3-3



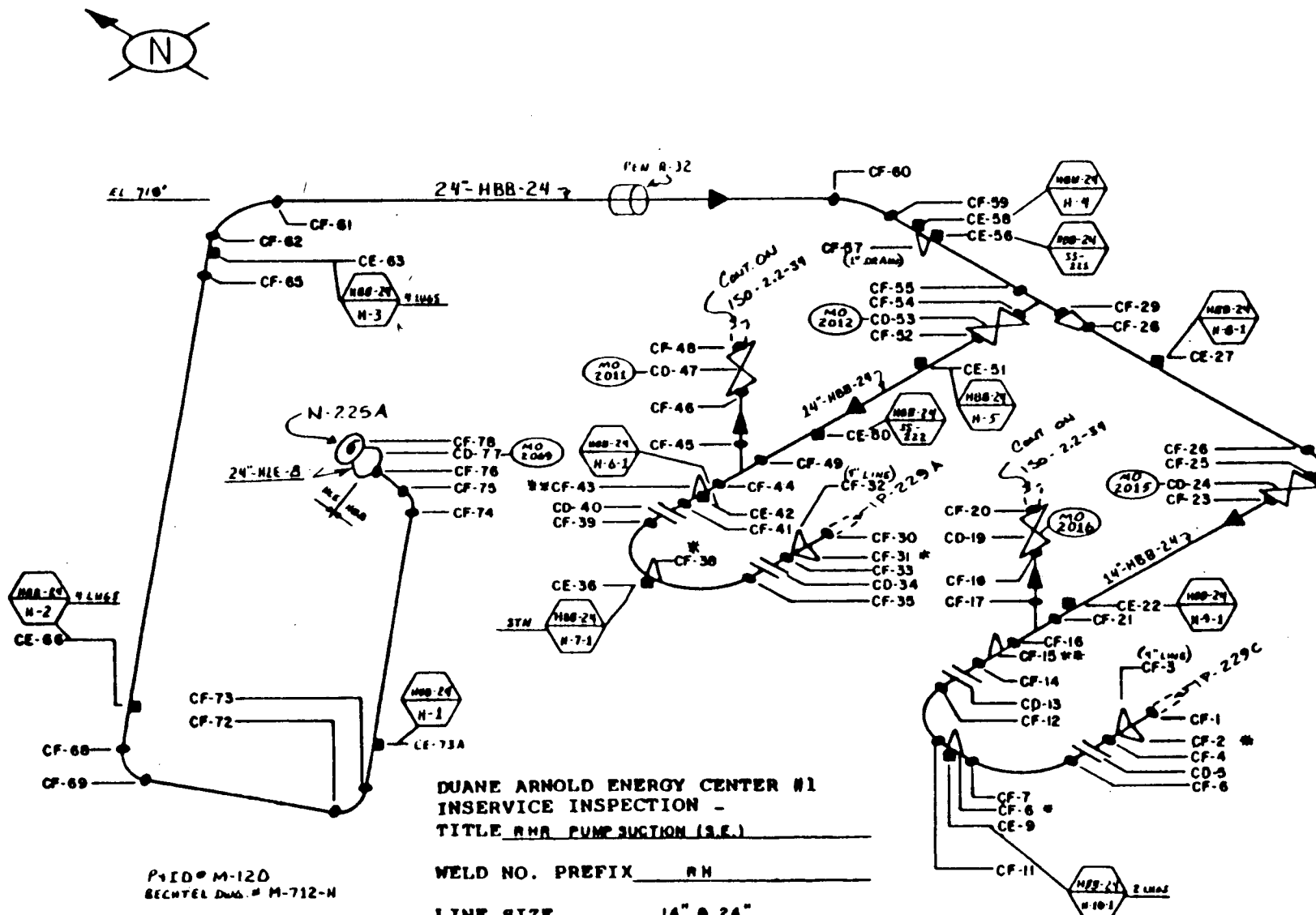
\* DENOTES NONWELDED  
(NFW) ATTACHMENTS

VIEW A-A

P&ID M-116

Inservice Inspection Report  
June 30, 1987 through  
December 27, 1988

Part H  
Pg. 27 of 36



P&ID# M-120  
RECHTEL DWG. # M-712-N

W - INST. LINE  
RR - PSV LINE (1")

DUANE ARNOLD ENERGY CENTER #1  
INSERVICE INSPECTION -  
TITLE RHR PUMP SUCTION (S.E.)

WELD NO. PREFIX RM

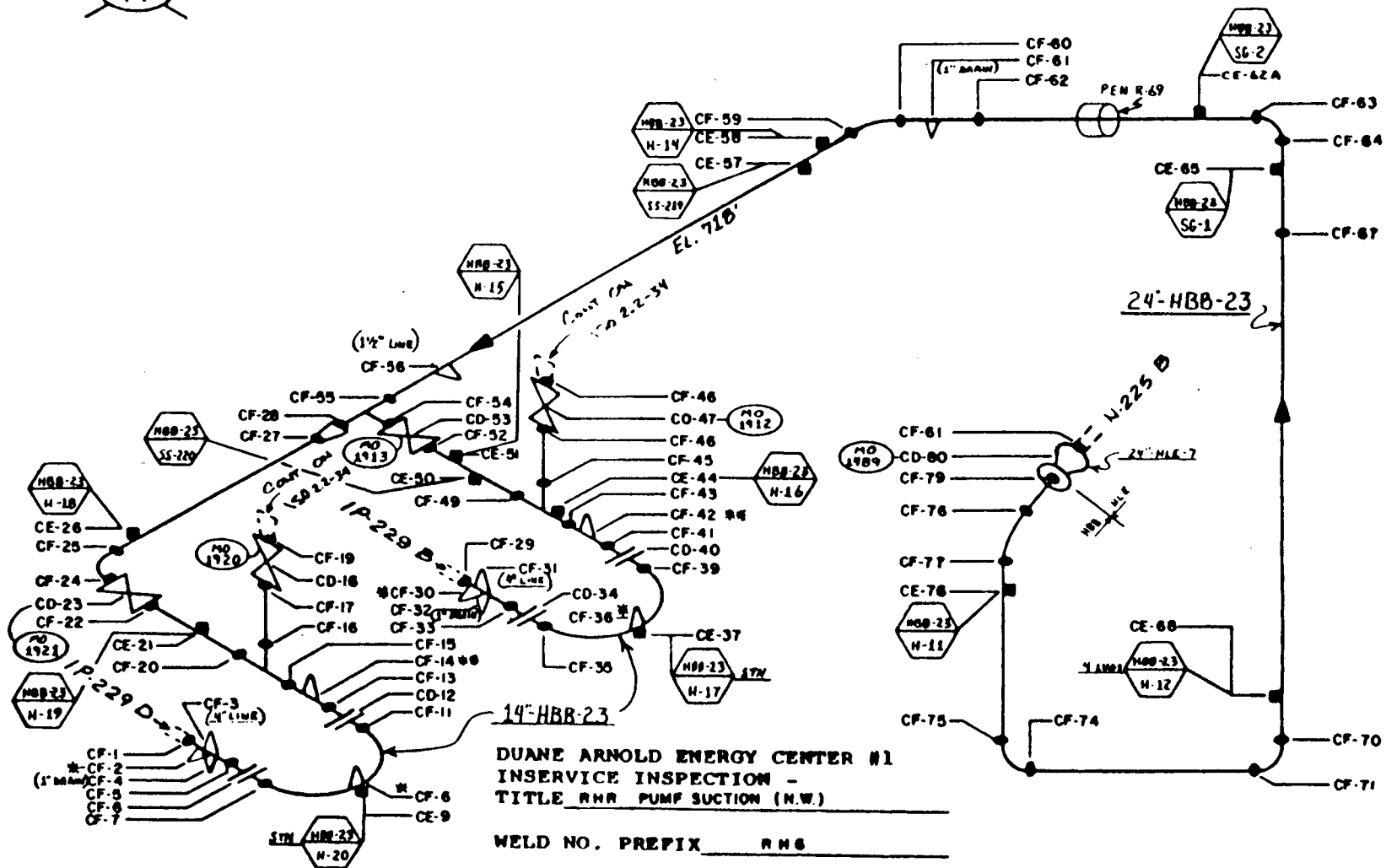
LINE SIZE 14" & 24"

MATERIAL CARBON STEEL

ISO. NO. 2.2 - 32 (REPLACES DWG. 32 AND 232)

Inservice Inspection Report  
June 30, 1987 through  
December 27, 1988

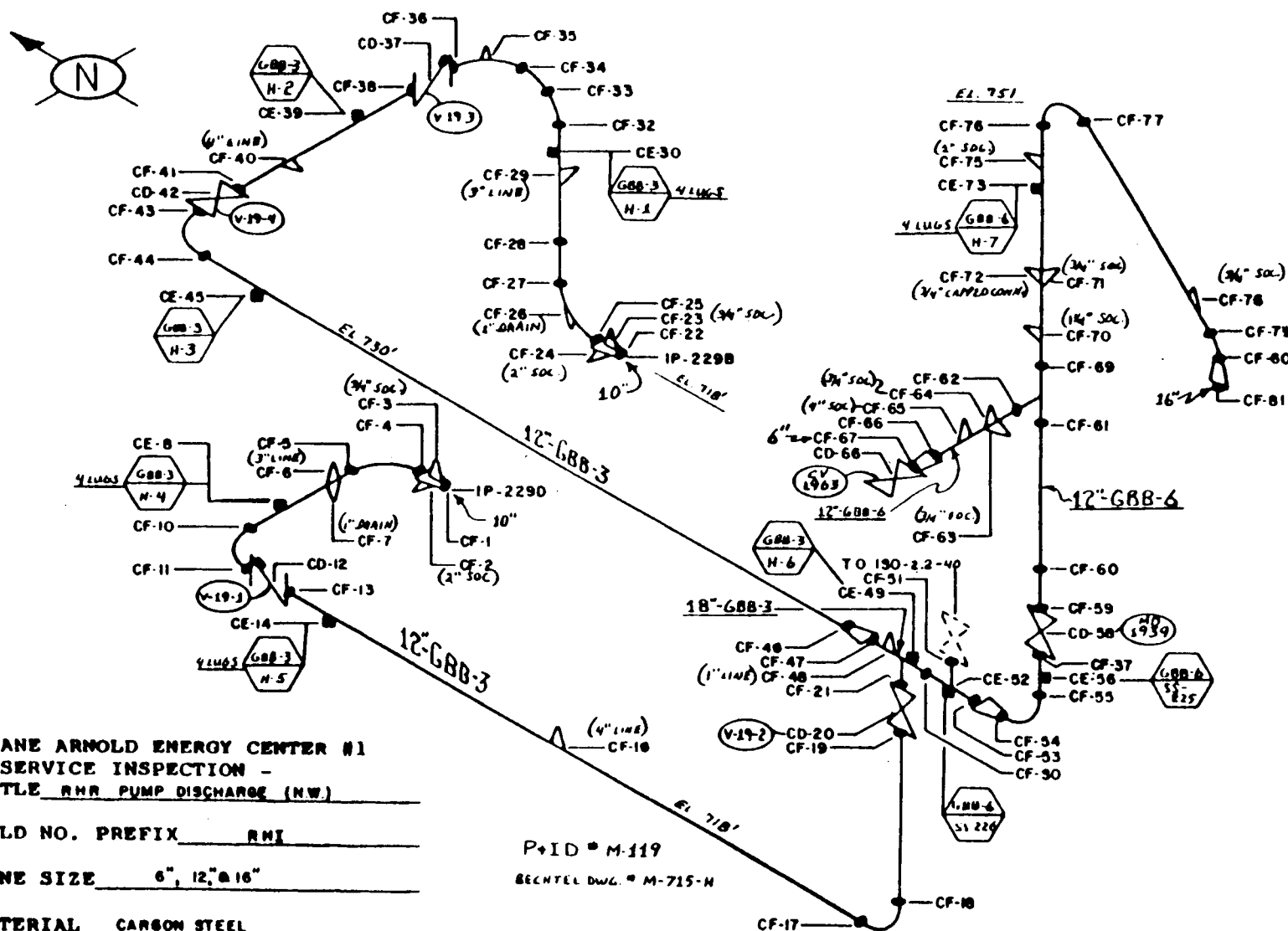
Part H  
Pg. 28 of 36



P&ID # M-119  
SCHEMATIC DWG # M-713-H  
INST. LINE  
PSV LINE (1")

Inservice Inspection Report  
June 30, 1987 through  
December 27, 1988

Part H  
Pg. 29 of 36



DUANE ARNOLD ENERGY CENTER #1  
INSERVICE INSPECTION -  
TITLE RHR PUMP DISCHARGE (NW)

WELD NO. PREFIX RMI

LINE SIZE 6", 12", & 16"

MATERIAL CARBON STEEL

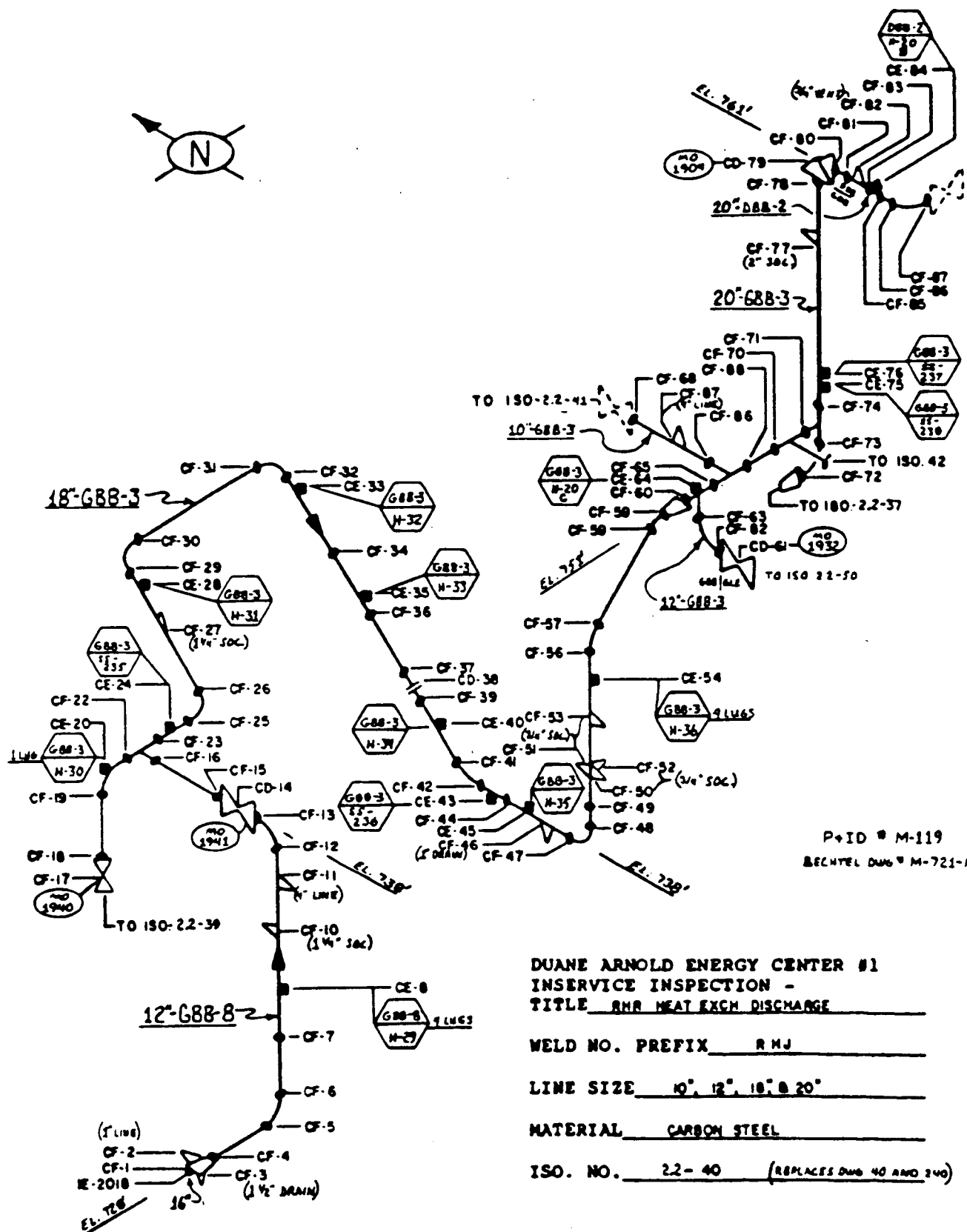
ISO. NO. 2.2-39 (REPLACES DWA M AND 219)

P&ID # M-119  
BECHTEL DWG. # M-715-H



Inservice Inspection Report  
June 30, 1987 through  
December 27, 1988

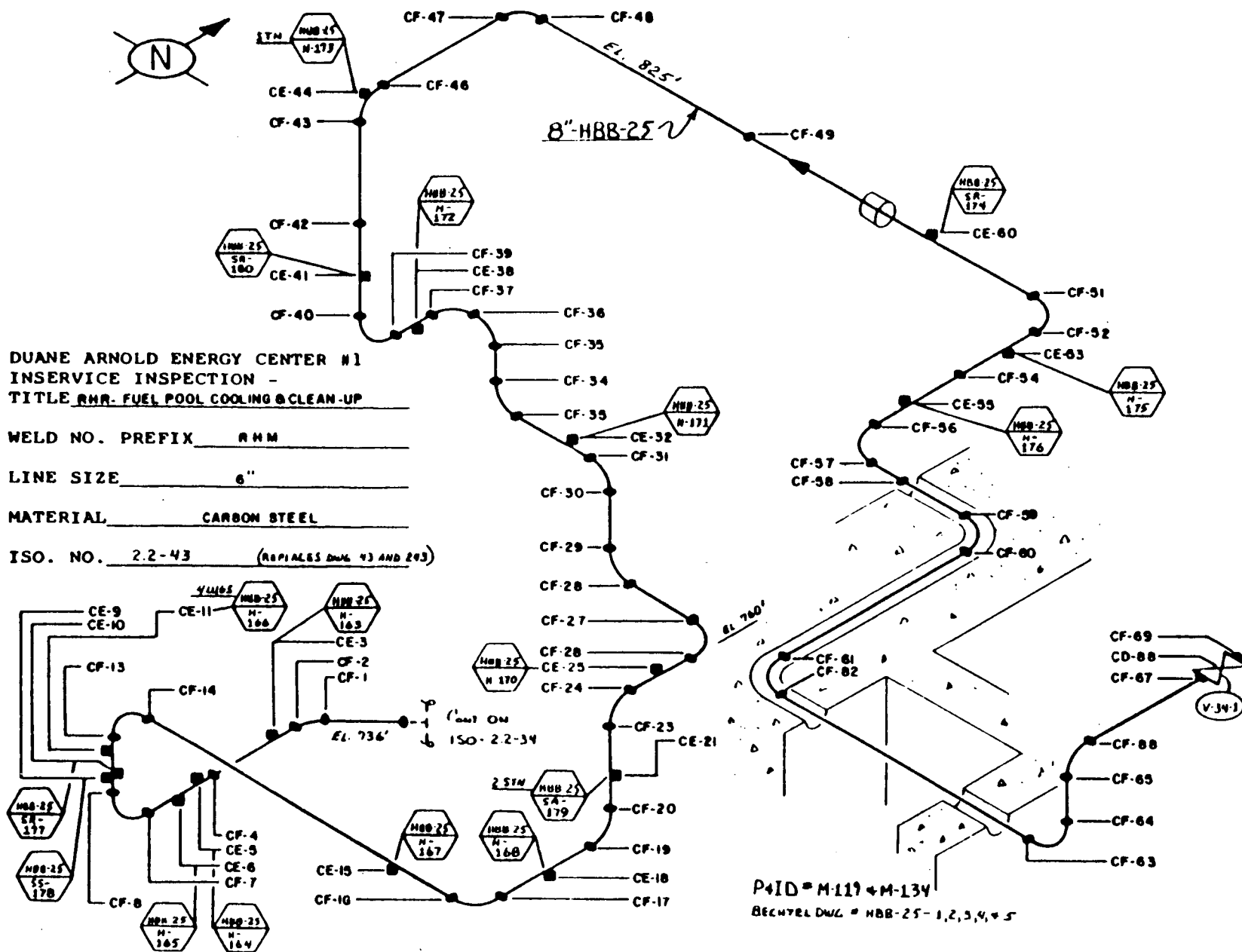
Part H  
Pg. 30 of 36



Inservice Inspection Report  
June 30, 1987 through  
December 27, 1988

Part H  
Pg. 31 of 36

Check Repair Log



Inservice Inspection Report  
June 30, 1987 through  
December 27, 1988

Part H  
Pg. 32 of 36

P4 ID # M-123  
BECHTEL DWG # M-701-N

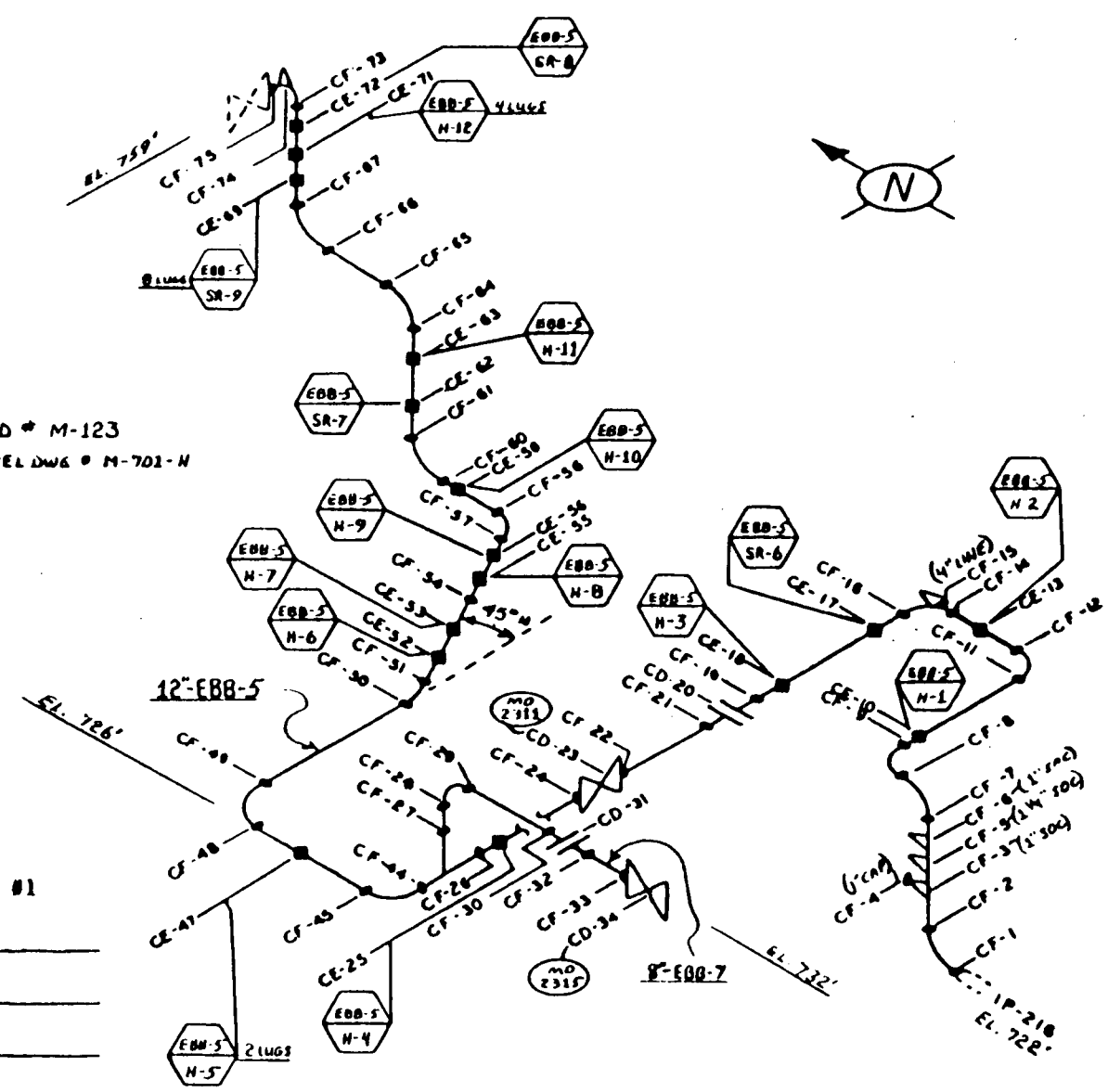
DUANE ARNOLD ENERGY CENTER #1  
INSERVICE INSPECTION -  
TITLE HPCI PUMP DISCHARGE

WELD NO. PREFIX M.P.D

LINE SIZE 12" 8"

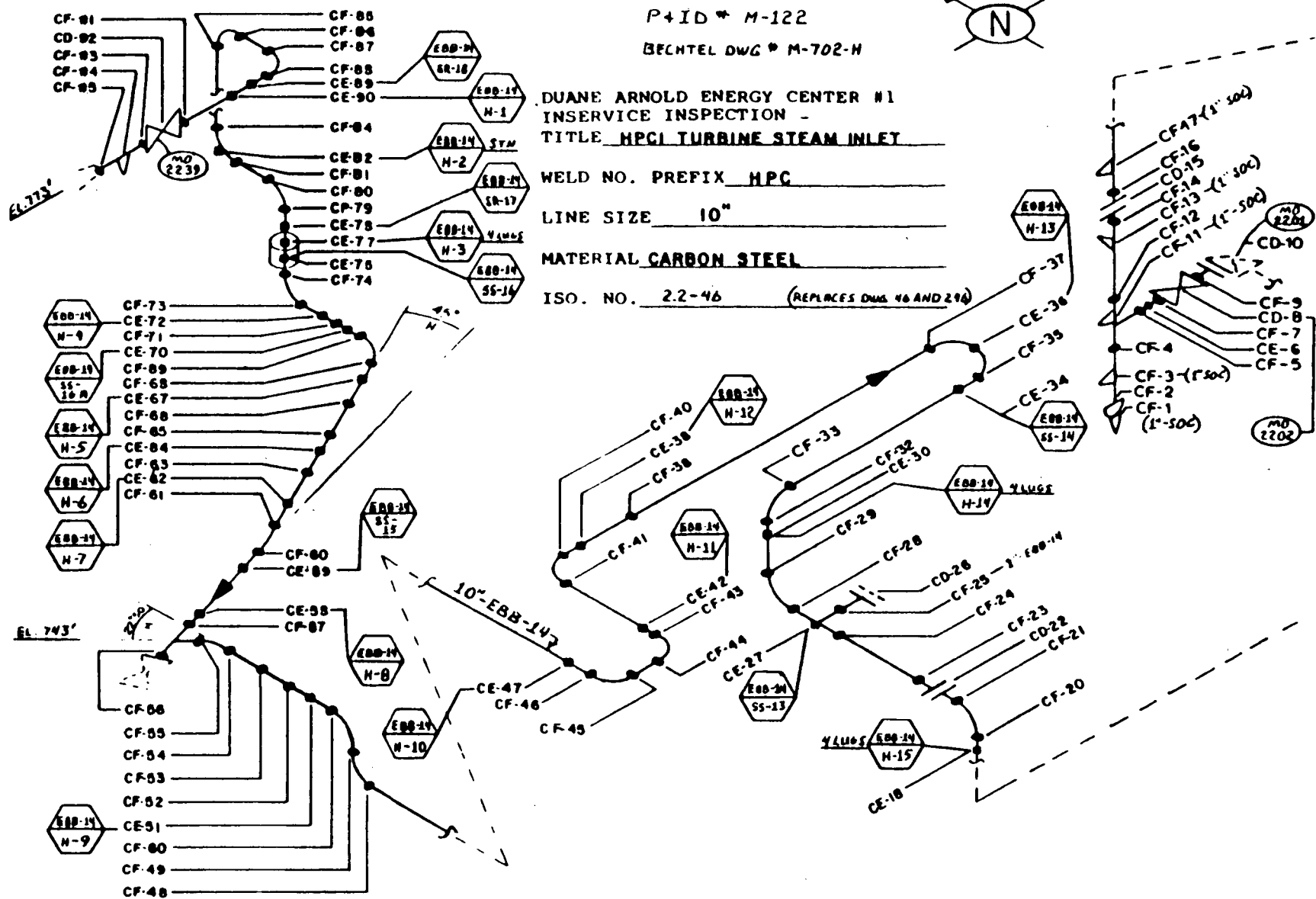
MATERIAL CARBON STEEL

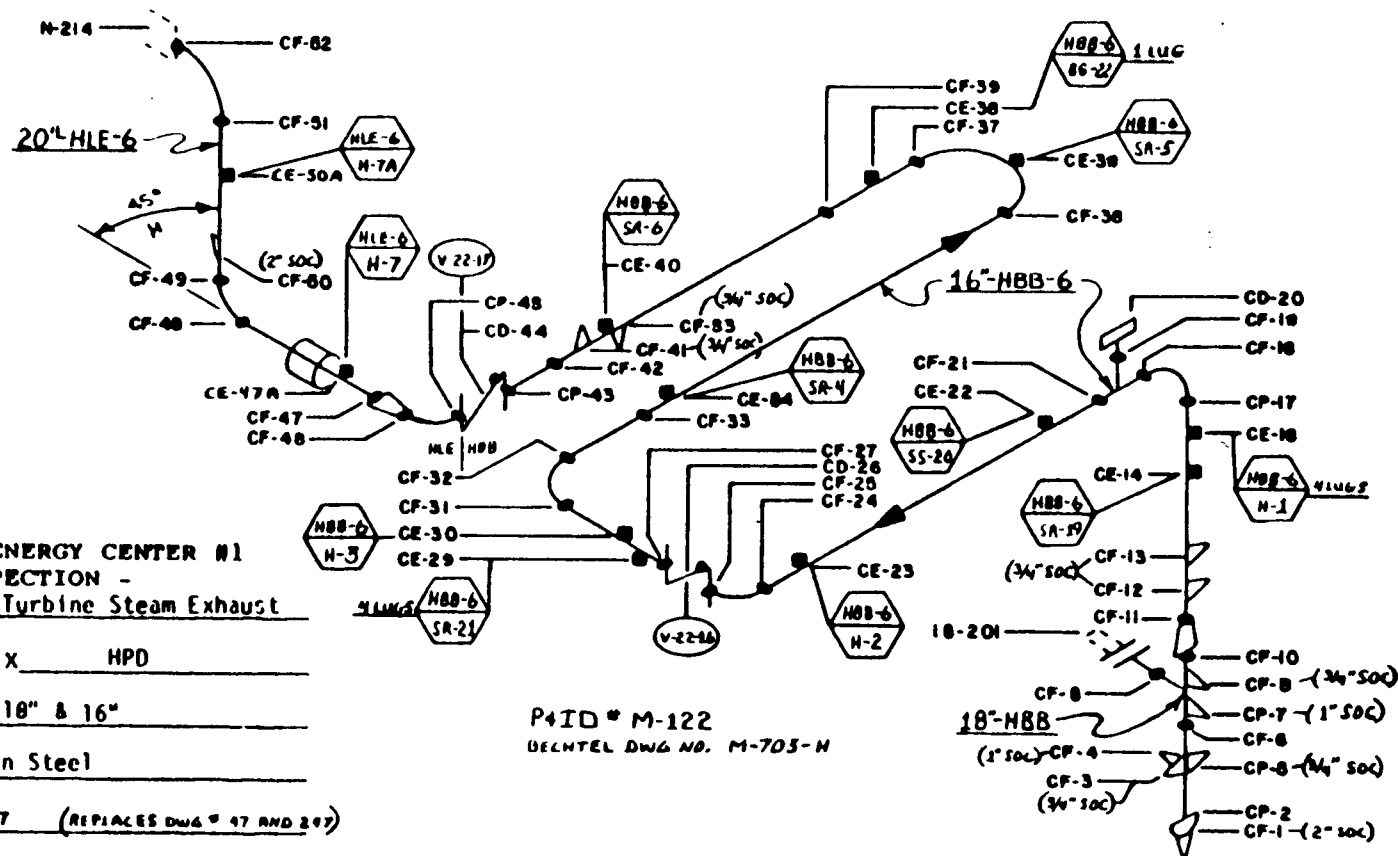
ISO. NO. 212-4545 (REPLACES DWG # 45 AND 245)



Inservise Inspection Report  
June 30, 1987 through  
December 27, 1988

Part H  
Pg. 33 of 36

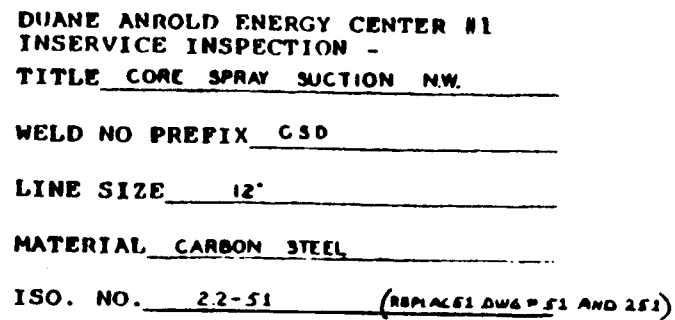




DUANE ARNOLD ENERGY CENTER #1  
INSERVICE INSPECTION -  
TITLE HPCI Turbine Steam Exhaust  
WELD NO. PREFIX HPD  
LINE SIZE 20", 18" & 16"  
MATERIAL Carbon Steel  
ISO. NO. 2.2-47 (REPLACES DWG # 47 AND 247)

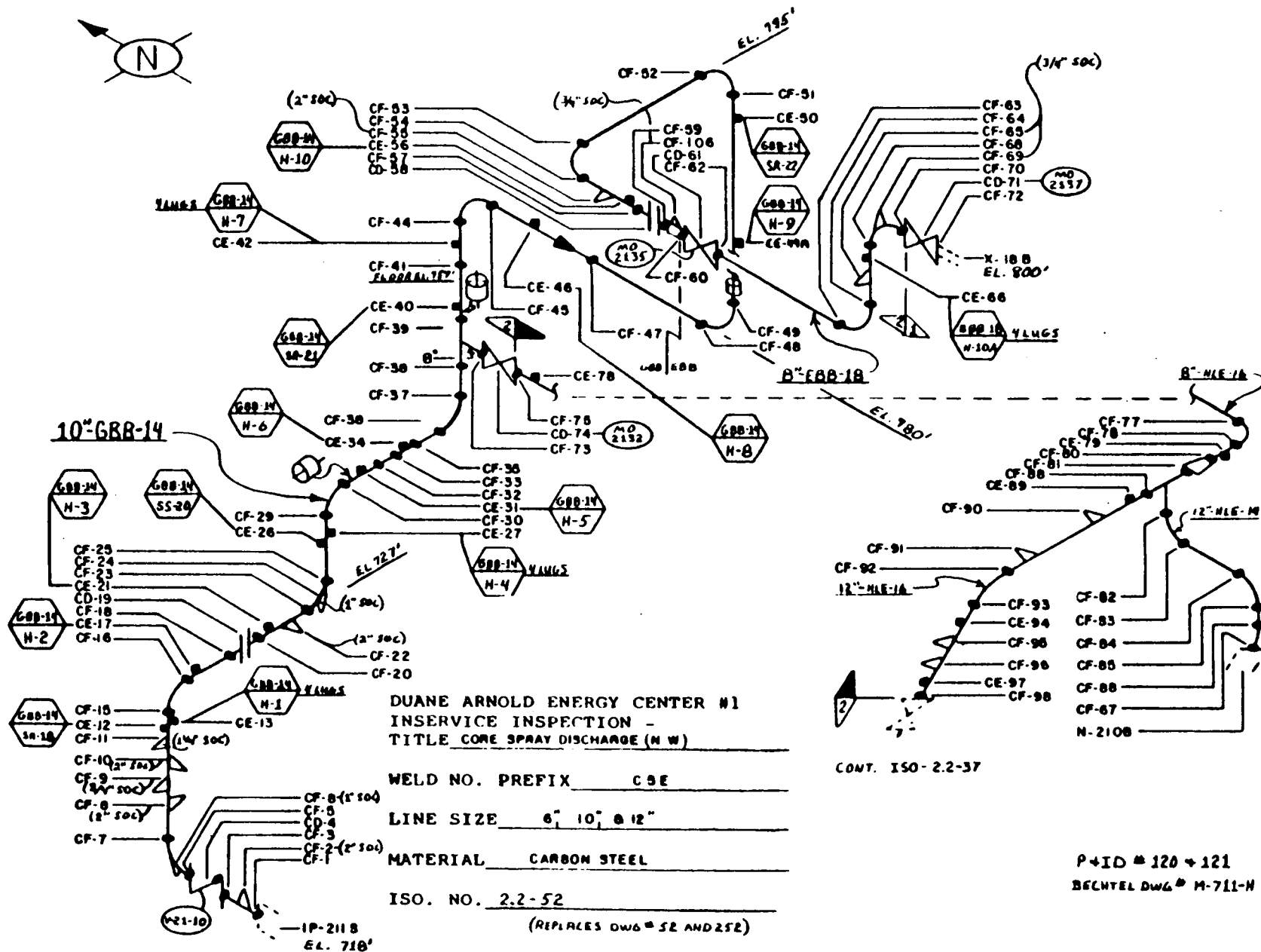
P&ID # M-122  
BELNTEL DWG NO. M-703-N

Part H  
Pg. 33 of 36



Inservice Inspection Report  
June 30, 1987 through  
December 27, 1988

Part H  
Pg. 36 of 36



IOWA ELECTRIC POSITION REGARDING PRESSURE TESTING REQUIREMENTS  
FOR REPAIRS TO THE 'B' RECIRCULATION PUMP SUCTION DRAIN LINE

The purpose of this attachment is to document the position of Iowa Electric Light and Power Company with regard to the pressure test performed to support repairs to the two-inch diameter 'B' Recirculation Pump Suction drain line. This repair was accomplished in late December 1988 after pinhole leaks were discovered in this drain line during the Class I leakage test of the Reactor Vessel at the conclusion to the 1988 Refueling Outage. The method of repair is documented on Form NIS-2, No. 09-89-26 (found in Attachment 1 to this letter). The Authorized Nuclear Insurer Inspector (ANII) at the DAEC has taken exception to our interpretation of the ASME Code, Section XI, with regard to the required pressure testing requirements following this repair.

In accordance with the ASME Code, Section XI, 1980 Edition through Winter 1981 Addenda, Paragraph IWA-4400(a), "...after repairs by welding on a pressure retaining boundary, a system hydrostatic test shall be performed in accordance with IWA-5000." Section IWA-5000 states that the hydrostatic test pressure shall be 1.08 times the nominal operating pressure corresponding to 100% rated reactor power. The nominal operating pressure at the DAEC is 1025 psig, thus the required hydrostatic test pressure would be 1107 psig. However, at the time of the repair, the reactor vessel contained nuclear fuel and thus Paragraph IWA-5222(b) was applicable in determining the required test pressure. This paragraph states that "...the test pressure shall not exceed the limiting conditions specified in the plant Technical Specifications".

A test pressure of 1107 psig would have required us to remove or disable a number of Safety Relief Valves (SRVs). These SRVs provide the Low Low Set (LLS) and Automatic Depressurization System (ADS) safety functions and their opening setpoints (safety mode) range from 1110 to 1140 psig with a 1% setpoint tolerance. We interpret our Technical Specifications to not allow these safety functions to be disabled simultaneously with irradiated fuel in the reactor vessel and the vessel pressurized above atmospheric pressure.

At the time of the repair it was impractical to remove the SRVs from service as the valve pilots would have had to be removed. Industry experience indicates that exposure of the pilot valves to the atmosphere after they have been exposed to moisture causes oxidation on the valve internal surfaces which may cause SRV malfunctions, thus refurbishment would likely be required. The SRVs had been refurbished during the 1988 Refueling Outage and the valves had been exposed to moisture during the Class I leakage test of the reactor vessel. In addition, removal of the valves would require another Class I leakage test upon reinstallation due to breaking of the mechanical connections.



Based upon the above considerations, we were presented with three alternatives for pressure testing the repaired drain line:

1. Perform a hydrostatic test to 1107 psig. This would have required us to violate the DAEC Technical Specifications or seek discretionary enforcement. It is our policy to seek discretionary enforcement only when no other alternatives are viable.
2. Remove the fuel from the vessel and perform a hydrostatic test at 1107 psig. This alternative was dismissed as impractical since the risk of fuel and/or equipment damage during reactor vessel assembly/disassembly and refueling operations was significantly greater than the other options. In addition, after the reactor vessel was refueled, another Class I leakage test would be required.
3. Perform the hydrostatic test at a lower pressure than the code-required test pressure (1107 psig). This option would allow us to operate within the bounds of our Technical Specifications and also determine the adequacy of our repair by pressure testing at a pressure within 10% of the code-required hydrostatic test pressure. In addition, the risk of fuel and equipment damage caused by defueling and refueling would not be realized.

In considering the above options, Option 3 was chosen as the most practical and a test pressure of 1010 psig was specified (91% of the pressure specified by the ASME Code for hydrostatic pressure testing). Sound engineering judgment was used in the decision to perform the pressure test at 1010 psig to prevent damage to plant equipment, to prevent the plant from being in an unsafe condition, and to prevent the possibility of injury to personnel.

During the pressure test following the aforementioned repair, a pressure of 1010 psig was achieved and personnel were allowed to enter the area to conduct a VT-2 visual inspection of the repairs. No leakage was noted. It is our interpretation that when considering Paragraph IWB-5222(b) of the ASME Code and the alternative testing methods, the requirements and the intent of the Code were fully met.

NUREG-0313 REV.2 AND 0619  
AUGMENTED INSPECTION  
REPORT FOR DAEC 1988 OUTAGE

SYSTEM OR COMPONENT DESCRIPTION	ACCEPT	REJECT	0313	0619	WELD OR COMPONENT DESCRIPTION	UT REPORT NO.	COMMENTS
FEEDWATER"B"	X		X		FWB-BD-1	88-117	0 DEG. UT
	X		X		FWB-BD-1	88-118	45 DEG. UT
	X		X		FWB-BD-1	88-119	60 DEG. UT
	X		X		FWB-N4-B	88-120	
	X		X		FWB-N4-B THERMAL SLEEVE	88-121A, 88-121B	
FEEDWATER"C"	X		X		FWC-BD-1	88-129	0 DEG. UT
	X		X		FWC-BD-1	88-130	45 DEG. UT
	X		X		FWC-BD-1	88-131	60 DEG.UT
	X		X		FWC-N4-C	88-132	
	X		X		FWC-N4-C THERMAL SLEEVE	88-133, 88-133A,	
FEEDWATER "D"	X		X		FWD-BD-1	88-138	0 DEG.UT
	X		X		FWD-BD-1	88-139	45 DEG. UT
	X		X		FWD-BD-1	88-140	60 DEG UT
	X		X		FWD-N4-D	88-141	
	X		X		FWD-N4-D THERMAL SLEEVE	88-142, 88-142B	
CORE SPRAY "A"	X		X		CSA-BF-2	88-147	NOZZLE SIDE
	X		X		CSA-BF-2	88-148	SAFE END SIDE
	X		X		CSA-BF-2A	88-149	SAFE-END TO PIPE
	X		X		CSA-BF-2A	88-150	INCONEL SIDE
	X		X		CSA-BJ-3	88-151	
	X		X		CSA-BF-4	88-152	STAINLESS STEEL SIDE
	X		X		CSA-BF-4	88-153	CARBON SIDE
CORE SPRAY "B"	X		X		CSB-BF-2	88-158	INCONEL SIDE
	X		X		CSB-BF-2	88-159	SAFE-END SIDE
	X		X		CSB-BF-2A	88-160	SAFE-END TO PIPE
	X		X		CSB-BF-2A	88-161	INCONEL SIDE
	X		X		CSB-BJ-3	88-162	
	X		X		CSB-BF-4	88-163	STAINLESS STEEL SIDE
	X		X		CSB-BF-4	88-164	CARBON STEEL SIDE
REACTOR WATER CLEANUP SUCTION	X		X		CUA-BJ-1	88-167	
	X		X		CUA-BJ-2	88-168	
	X		X		CUA-BJ-4	88-169	
	X		X		CUA-BJ-5	88-170	
	X		X		CUA-BJ-12	88-171	
	X		X		CUA-BJ-13	88-172	
	X		X		CUA-BJ-15	88-173	
	X		X		CUA-BJ-17	88-174	
	X		X		CUA-BJ-18	88-175	
	X		X		CUA-BJ-19	88-176	
	X		X		CUA-BJ-21	88-177	
	X		X		CUA-BJ-23	88-178	

NUREG-0313 REV.2 AND 0619  
AUGMENTED INSPECTION  
REPORT FOR DAEC 1988 OUTAGE

SYSTEM OR COMPONENT DESCRIPTION	ACCEPT	REJECT	0313 0619 WELD OR COMPONENT DESCRIPTION	UT REPORT NO.	COMMENTS
RWCU-SUCTION (cont)	X	X	CUA-BJ-24	88-179,	
REACTOR WATER CLEANUP DISCHARGE	X	X	CUB-BF-4	88-181	
	X	X	CUB-BJ-5	88-183	
	X	X	CUB-BJ-8	88-347	
	X	X	CUB-BJ-10	88-348	
	X	X	CUB-BJ-11	88-349	
	X	X	CUB-BJ-13	88-350	
	X	X	CUB-BJ-14	88-351	
	X	X	CUB-BJ-16	88-352	
	X	X	CUB-BJ-17	88-353	
	X	X	CUB-BJ-19	88-354	
	X	X	CUB-BJ-22	88-355	
	X	X	CUB-BJ-25	88-357	
	X	X	CUB-BJ-27	88-358	
CONTROL ROD DRIVE RETURN	X	X	CRA-BF-2	88-189, 88-189A	
	X	X	CRA-BJ-3	88-190	
	X	X	CRA-BF-4	88-191	STAINLESS STEEL SIDE
	X	X	CRA-BF-4	88-192	CARBON STEEL SIDE
RESIDUAL HEAT REMOVAL-18B	X	X	RHB-BJ-1-OVL	88-199	0 DEG. UT
	X	X	RHB-BJ-1-OVL	88-200	60 DEG. UT
	X	X	RHB-BF-3	88-201	STAINLESS STEEL SIDE
	X	X	RHB-BF-3	88-202	CARBON STEEL SIDE
	X	X	RHB-BJ-2	88-362	
RECIRC PUMP "A" SUCTION	X	X	RCA-BF-2	88-211	STAINLESS STEEL SIDE
	X	X	RCA-BF-2	88-212	CARBON STEEL SIDE
	X	X	RCA-BJ-3	88-213	
	X	X	RCA-BJ-12	88-214	
	X	X	RCA-BJ-5A	88-359	
	X	X	RCA-BJ-18	88-360	
	X	X	RCA-BJ-27	88-365	
	X	X	RCA-BJ-34	88-366	
RECIRC BYPASS "A"	X	X	RBA-BJ-2	88-215	
	X	X	RBA-BJ-3	88-216	
	X	X	RBA-BJ-6	88-217	
	X	X	RBA-BJ-8	88-218	
	X	X	RBA-BJ-9	88-219	
	X	X	RBA-BJ-10	88-220	
RECIRC MANIFOLD "A"	X	X	RMA-BJ-6	88-226	
	X	X	RMA-BJ-11	88-227	

NUREG-0313 REV.2 AND 0619  
AUGMENTED INSPECTION  
REPORT FOR DAEC 1988 OUTAGE

SYSTEM OR COMPONENT DESCRIPTION	ACCEPT	REJECT	0313	0619	WELD OR COMPONENT DESCRIPTION	UT REPORT NO.	COMMENTS
RECIRC RISER "E"	X	X			RRE-BF-2	88-228	CARBON STEEL SIDE
	X	X			RRE-BF-2	88-229	INCONEL SIDE
	X	X			RRE-BF-2A	88-230	STAINLESS STEEL SIDE
	X	X			RRE-BJ-4/4A-OVL	88-232	0 DEG. UT
	X	X			RRE-BJ-4/4A-OVL	88-233	60 DEG. UT
RECIRC RISER "F"	X	X			RRF-BF-2	88-234	CARBON STEEL SIDE
	X	X			RRF-BF-2	88-235	INCONEL SIDE
	X	X			RRF-BF-2A	88-236	STAINLESS STEEL SIDE
	X	X			RRF-BJ-4/4A-OVL	88-238	0 DEG. UT
	X	X			RRF-BJ-4/4A-OVL	88-239	60 DEG. UT
RECIRC RISER "G"	X	X			RRG-BF-2	88-244	CARBON STEEL SIDE
	X	X			RRG-BF-2	88-245	INCONEL SIDE
	X	X			RRG-BF-2A	88-246	STAINLESS STEEL SIDE
	X	X			RRG-BJ-4/4A-OVL	88-248	0 DEG. UT
	X	X			RRG-BJ-4/4A-OVL	88-249	60 DEG. UT
RECIRC RISER "H"	X	X			RRH-BF-2	88-254	CARBON STEEL SIDE
	X	X			RRH-BF-2	88-255	INCONEL SIDE
	X	X			RRH-BF-2A	88-256	STAINLESS STEEL SIDE
	X	X			RRH-BJ-4/4A-OVL	88-258	0 DEG. UT
	X	X			RRH-BJ-4/4A-OVL	88-259	60 DEG. UT
RECIRC PUMP "B" SUCTION	X	X			RCB-BF-2	88-260	STAINLESS STEEL SIDE
	X	X			RCB-BF-2	88-261	CARBON STEEL SIDE
	X	X			RCB-BJ-3	88-262	
	X	X			RCB-BJ-15	88-263	
	X	X			RCB-BJ-21	88-361	
	X	X			RCB-BJ-30	88-363	
	X	X			RCB-BJ-37	88-364	
RECIRC BYPASS "B"	X	X			RBB-BJ-2	88-268	
	X	X			RBB-BJ-3	88-269	
	X	X			RBB-BJ-6	88-270	
	X	X			RBB-BJ-7	88-271,	
	X	X			RBB-BJ-9	88-272	
	X	X			RBB-BJ-12	88-273	
RECIRC MANIFOLD "B"	X	X			RMB-BJ-6	88-276	
	X	X			RMB-BJ-7	88-277	
RECIRC RISER "A"	X	X			RRA-BF-2	88-282	CARBON STEEL SIDE
	X	X			RRA-BF-2	88-283	STAINLESS STEEL SIDE
	X	X			RRA-BF-2A	88-284	
	X	X			RRA-BJ-4/4A-OVL	88-286	0 DEG. UT
	X	X			RRA-BJ-4/4A-OVL	88-287	60 DEG. UT

NUREG-0313 REV.2 AND 0619  
AUGMENTED INSPECTION  
REPORT FOR DAEC 1988 OUTAGE

SYSTEM OR COMPONENT DESCRIPTION	ACCEPT	REJECT	0313	0619	WELD OR COMPONENT DESCRIPTION	UT REPORT NO.	COMMENTS
RECIRC RISER "B"	X	X			RRB-BF-2	88-292	CARBON STEEL SIDE
	X	X			RRB-BF-2	88-293	INCONEL SIDE
	X	X			RRB-BF-2A	88-294	STAINLESS STEEL SIDE
	X	X			RRB-BJ-4/4A-OVL	88-296	0 DEG.UT
	X	X			RRB-BJ-4/4A-OVL	88-297	60 DEG. UT
RECIRC RISER "C"	X	X			RRC-BF-2	88-298	CARBON STEEL SIDE
	X	X			RRC-BF-2	88-299	INCONEL SIDE
	X	X			RRC-BF-2A	88-300	STAINLESS STEEL SIDE
	X	X			RRC-BJ-4	88-302	
	X	X			RRC-BJ-4A	88-303,	MANUAL AND AUTOMATIC UT
						88-303A	
RECIRC RISER "D"	X	X			RRD-BF-2	88-304	CARBON STEEL SIDE
	X	X			RRD-BF-2	88-305	INCONEL SIDE
	X	X			RRD-BF-2A	88-306	STAINLESS STEEL SIDE
	X	X			RRD-BJ-4/4A-OVL	88-308	0 DEG. UT
	X	X			RRD-BJ-4/4A-OVL	88-309	60 DEG. UT
	X	X			RRD-BJ-7-OVL	88-310	0 DEG. UT
	X	X			RRD-BJ-7-OVL	88-311A,	60 DEG.UT