DUANE ARNOLD ENERGY CENTER

UNIT #1 PALO, IOWA

Commercial Service Date: February 1, 1975

INSERVICE INSPECTION REPORT

December 28, 1988 through September 10, 1990

Dated: November 19, 1990

OWNER:

IOWA ELECTRIC LIGHT and POWER COMPANY
P.O. Box 351
Cedar Rapids, Iowa 52406

Prepared by: _____ Date: 11-19-90
ISI/EC Specialist

Reviewed by: Surinder Sharma Date: 11-20-90
Codes & Materials, GL

Concurred by: Narinder N Sehta Date: 11-21-90
Supervising Engineer

Approved by: Dana A. Lacy Date: 11/21/90
Manager, Design Engineering

Table of Contents

FORM NIS-1 OWNERS' DATA REPORT FOR INSERVICE INSPECTIONS

As required by the Provisions of the ASME Code Rules

1. Owner Iowa Electric Light & Power, P.O. Box 351, Cedar Rapids, IA 52406 (Note 2)
(Name and Address of Owner)

2. Plant Duane Arnold Energy Center, 3277 DAEC Road, Palo, IA 52324
(Name and Address of Plant)

3. Plant Unit 1 4. Owner Certificate of Authorization (if required) N/A

5. Commercial Service Date 02-01-75 6. National Board Number for Unit N/A

7. Components Inspected This report includes a Table of Contents (p1), Part A (pp 1-2), Part B (pp 1-6), Part C (p 1), Part D (pp 1-12), Part E (pp 1-6), *

Component or Appurtenance	Manufacturer or Installer	Manufacturer or Installer Serial No.	State or Province No.	National Board No.
Reactor Press. Vessel (RPV)**	Chicago Bridge and Iron	3-4833	N/A	3663
Refer to Part B, Pages 1 through 6, 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.

* Part F (pp 1-5), Part G (pp 197), Part H (p 1), Part I (p 45) Part J (pp 1-6).

** and items listed under RPV interior or Reactor Pressure Vessel in Part B, pages 1-6 of this report.

FORM NIS-1 (back)

8. Examination Dates 12-28-88 to 09-10-90 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.

SEE PART D AND PART J.

11. Abstract of Conditions Noted

SEE PART H

12. Abstract of Corrective Measures Recommended and Taken

SEE PART H

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. SEE NOTE 1 BELOW

Date 11-26 19 90 Signed Iowa Electric Light and Power Company By _____

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 Hartford Boiler Co. of Hartford, CT have inspected the components described in this Owners' Data Report during the period 12-28-88 to 9-10-90, 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.

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 Nov 26 19 90

_____ Commissions NB 8829(I) (N) 941-IA

Inspector's Signature National Board, State, Province and No.

Note 1: As per letter NG-89-3390, the ASME Section XI "Vessels", RHR Heat Exchangers, 1E-201A and 1E-201B and the Reactor Vessel are excluded from the summary report to the State.

Note 2: Other Owners are Central Iowa Power Cooperative and Corn Belt Power Cooperative.

1) Owners: Iowa Electric Light and Power Company
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5) Commercial Service Date 2-1-75

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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, From 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

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CERTIFICATE OF INSERVICE INSPECTION

COMPONENTS EXAMINED:

Class 1 Components

Reactor Pressure Vessel	Figure 1.1-2, 1.1-3, 1.1-5 and 1.1-6
Control Rod Drive	Figure 1.1-8A and 1.1-8B
Main Steam Loops A, B, C and D	P&ID M-103, GE Drawing 731E615 ISO Nos. 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
High Pressure Coolant Injection - Water	P&ID M-123, Bechtel Drawing DLA-1-1, ISO No. 1.2-10

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COMPONENTS EXAMINED:

ctor Water Cleanup - Discharge	P&ID M-127, Bechtel Drawing DCA-6-1, ISO No. 1.2-11B
Control Rod Drive Return	P&ID M-113, Bechtel Drawing DBA-6-1, ISO Nos. 1.2-12A and 1.2-12B
Residual Heat Removal - Head Spray	P&ID M-119, Bechtel Drawing DBA-5-1, ISO No. 1.2-13
Residual Heat Removal - 18B	P&ID M-119, Bechtel Drawing DLA-4-1, ISO No. 1.2-14
Residual Heat Removal - 20A	P&ID M-120, M-107, Bechtel Drawing DLA-5-1, ISO No. 1.2-15
Residual Heat Removal - 20B	P&ID M-119, Bechtel Drawing DLA-6-1, ISO No. 1.2-16
Recirculation Pump A and Bypass	P&ID M-116, GE Drawing 731E781, APED B31-9(1)-6, ISO No. 1.2-19A
Recirculation Drain Line 'A'	P&ID M-116, GE Drawing 731E781, APED B31-9(1)-6, ISO No. 1.2-19A

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CERTIFICATE OF INSERVICE INSPECTION

COMPONENTS EXAMINED:

Recirculation Manifold A and Risers E, F, G and H	P&ID M-116, GE Drawing 731[redacted], APED B31-9(1)-6, ISO No. 1.[redacted]0
Recirculation Pump B and Bypass	P&ID M-116, GE Drawing 731E781 APED B31-9-(1)-6, ISO No. 1.2-21
Jet Pump Instrumentation 'A'	P&ID M-115, APED B11-2655-105-4, ISO No. 1.2-25
Recirculation Pump 'A' & 'B' Details	P&ID M-116, GE Drawing 731E781, APED B31-9(1)-6, Figure No. 1.3-1
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

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CERTIFICATE OF INSERVICE INSPECTION

COMPONENTS EXAMINED:

s 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
RHR Pump Shutdown	P&ID M-119, M-120 and M-122, Bechtel Drawing M-723, ISO No. 2.2-34
RHR Heat Exchanger Discharge (S.E.)	P&ID M-120, Bechtel Drawing M-720, ISO No. 2.2-37A, ISO No. 2.2-37B
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
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
Spray Suction (S.E.)	P&ID M-121, Bechtel Drawing M-708, ISO No. 2.2-48

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CERTIFICATE OF INSERVICE INSPECTION

COMPONENTS EXAMINED:

Core Spray Discharge (S.E.)	P&ID M-119, Bechtel Drawing M-710, ISO No. 2.2-50
Main Steam Loop A	P&ID M-103, Bechtel Drawing M-716, ISO No. 2.2-53
Main Steam Loop B	P&ID M-103, Bechtel Drawing M-716, ISO No. 2.2-54
Main Steam Bypass	P&ID M-103, Bechtel Drawing EDB-6-1 and EDB-6-2, ISO No. 2.2-57
Main Steam Bypass	P&ID M-103, Bechtel Drawing EDB-6-3, ISO No. 2.2-58
Scram Discharge Header - South	P&ID M-118, ISO No. 2.2-60

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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 old Energy Center updated Final Safety Analysis Report. The inspections e performed utilizing Non-Destructive Examination techniques (i.e., Ut, Pt, Mt, etc.). The examinations were conducted during the period of December 28, 1988 through September 10, 1990. The specific details and associated records of the examinations are on file at Iowa Electric Light and Power Company.

INSERVICE INSPECTION REPORT
December 28, 1988 through September 10,1990

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GROSS GENERATING CAPACITY: 565 MWE

Component and Weld Examinations Identification Records

COMPONENT	DESCRIPTION	ISI REPORT	ISI ISO NUM.	CATEGORY	RESULTS	COMMENTS
CLASS 1 RPV INTERIOR	RPV Interior	89-439,VT-3	N/A	B-N-1	ACCEPTED	AREAS AB[illegible]AN[illegible] BELOW THE[illegible]EAC[illegible] CORE REFERENCE 1990
	RPV INTERIOR	89-439	N/A	B-N-2	ACCEPT	RFO GE INVESSEL INSPECTION BOOK AREAS ABOVE AND BELOW THE REACT CORE REF. 1990 RFO C INVESSEL INSPECTION BOOK
REACTOR VESSEL	HCC-B002	89-23,UT-0 89-24,UT-45 89-25,UT-60	1.1-02	B-A	NRI	
	HMC-B002	89-26,UT-0 89-27,UT-45 89-28,UT-60		B-A	NRI	
	VCB-C005	89-29,UT-0 89-30,UT-45 89-31,UT-60	1.1-03	B-A	NRI	FROM STUDS 20-4
	HCC-C001	89-32,MT 89-33,UT-0 89-34,UT-45 89-35,UT-60		B-A	NRI	FROM STUDS 20-4
	HCA-H002	89-36,MT		B-H	NRI	SKIRT WELD FROM 13'-4" TO 26'-8"
	CLOSURE HEAD NUTS	89-37,MT	1.1-05	B-G-1	NRI	NUTS 1 - 40
	CLOSURE HEAD STUDS	89-38,UT-0			NRI	STUDS 1
	CLOSURE HEAD LIGAMENTS	89-39,UT-0			NRI	LIGAMENTS 1 - 4
	CLOSURE HEAD WASHERS	89-40,VT-1			NRI	WASHERS 1 - 40

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Component and Weld Examinations Identification Records

COMPONENT	DESCRIPTION	ISI REPORT	ISI ISO NUM.	CATEGORY	RESULTS	COMMENTS
RPV (cont)	VESSEL STABILIZER WELD-90 DEG	89-41,MT		B-H	NRI	
	VID-D001	89-52,UT-70 89-53,UT-0 89-54,UT-45 89-55,UT-60	1.1-06	B-D	NRI	
	JPA-D001	89-56,UT-70 89-57,UT-0 89-58,UT-45 89-59,UT-60			NRI	
	RRF-D001	89-60,UT-70 89-61,UT-0 89-62,UT-45 89-63,UT-60			NRI	
	RCA-D001	89-64,UT-70 89-65,UT-0 89-66,UT-45 89-67,UT-60			NRI	
	CRA-D001	89-69,UT-0 89-70,UT-45 89-71,UT-70			NRI	
	HSE-D001	89-72,UT-70 89-73,UT-0 89-74,UT-45 89-75,UT-60			NRI	
CONTROL ROD DRIVE BOLTING, STUDS AND NUTS	CRD FLANGE 1R215(06-23)	90-29,VT-1	1.1-08A,B	B-G-2	ACCEPTED	
	CRD FLANGE 1R215(34-31)	90-31,VT-1			ACCEPTED	
	CRD FLANGE 1R215(10-19)	90-32,VT-1			ACCEPTED	
	CRD FLANGE 1R215(10-35)	90-33,VT-1			ACCEPTED	
	CRD FLANGE 1R215(34-15)	90-34,VT-1			ACCEPTED	
	CRD FLANGE 1R215(42-19)	90-35,VT-1			ACCEPTED	

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Component and Weld Examinations Identification Records

COMPONENT	DESCRIPTION	ISI REPORT	ISI ISO NUM.	CATEGORY	RESULTS	COMMENTS
CRD BOLTING (cont)	CRD FLANGE 1R215(02-19)	90-36,VT-1			ACCEPTED	
	CRD FLANGE 1R215(06-11)	90-37,VT-1			ACCEPTED	
	CRD FLANGE 1R215(10-39)	90-38,VT-1			ACCEPTED	
	CRD FLANGE 1R215(14-15)	90-39,VT-1			ACCEPTED	
	CRD FLANGE 1R215(30-23)	90-41,VT-1			ACCEPTED	
	CRD FLANGE 1R215(38-11)	90-42,VT-1			ACCEPTED	
	CRD FLANGE 1R215(42-43)	90-43,VT-1			ACCEPTED	
	CRD FLANGE 1R215(02-23)	90-44,VT-1			ACCEPTED	
	CRD FLANGE 1R215(10-11)	90-45,VT-1			ACCEPTED	
	CRD FLANGE 1R215(10-27)	90-46,VT-1			ACCEPTED	
	CRD FLANGE 1R215(22-23)	90-47,VT-1			ACCEPTED	
	CRD FLANGE 1R215(26-19)	90-48,VT-1			ACCEPTED	
MAIN STEAM 'A'	MSA-K035	89-76,VT-3/4	1.2-01	F-C	ACCEPTED	
	CV-4412	90-246,VT-1		B-G-2	ACCBPTED	
		90-247,VT-3		B-M-2	ACCEPTED	
	CV-4413	90-248,VT-1		B-G-2	ACCBPTED	
		90-249,VT-3		B-M-2	ACCEPTED	
	PSV-4400	90-187,VT-1		B-G-2	ACCEPTED	
		90-188,VT-3		B-M-2	ACCEPTED	
	PSV-4401	90-189,VT-1		B-G-2	ACCEPTED	
		90-191,VT-3		B-M-2	ACCEPTED	
MAIN STEAM 'B'	MSB-K040	89-446,VT3/4	1.2-02	F-C	ACCEPTED	
	CV-4415	89-452,VT-1		B-G-2	ACCEPTED	
		89-451,VT-3		B-M-2	ACCEPTED	
	CV-4416	90-252,VT-1		B-G-2	ACCEPTED	
		90-253,VT-3		B-M-2	ACCEPTED	

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GROSS GENERATING CAPACITY: 565 MWE

Component and Weld Examinations Identification Records

COMPONENT	DESCRIPTION	ISI REPORT	ISI ISO NUM.	CATEGORY	RESULTS	COMMENTS
SB (cont)	PSV-4402	90-195,VT-1		B-G-2	ACCEPTED	
		90-272,VT-3		B-G-2	ACCEPTED	
	PSV-4403	90-008,VT-1		B-G-2	ACCEPTED	
		90-009,VT-3		B-M-2	ACCEPTED	
MAIN STEAM 'C'	MSC-J009	89-78,MT	1.2-03	B-J	ACCEPTED	
		89-79,UT-45		B-J	ID ROOT	GEOMETRY
	MSC-J009-OA	89-80,MT		B-J	NRI	
		89-81,UT-45		B-J	NRI	
	MSC-J009-IA	89-82,MT		B-J	NRI	
		89-83,UT-45		B-J	NRI	
	MSC-J010	89-84,MT		B-J	NRI	
		89-85,UT-45		B-J	NRI	
	MSC-K011A	89-86,MT		B-K-1	NRI	
		89-87,VT-3/4		F-C	ACCEPTED	
	MSC-K011B	89-89,VT-3/4		F-C	ACCEPTED	
	MSC-J015-OA	89-90,MT		B-J	NRI	
		89-91,UT-45		B-J	NRI	
	MSC-J015-IA	89-92,MT		B-J	NRI	
		89-93,UT-45		B-J	NRI	
	MSC-J027	89-94,MT		B-J	NRI	
		89-95,UT-45		B-J	NRI	
	CV-4419	89-454,VT-1		B-G-2	ACCEPTED	
		89-453,VT-3		E-M-2	ACCEPTED	
	CV-4418	90-254,VT-1		B-G-2	ACCEPTED	
		90-255,VT-3		H-M-2	ACCEPTED	
	PSV-4404	90-010,VT-1		B-G-2	ACCEPTED	
		90-011,VT-3		B-M-2	ACCEPTED	
	PSV-4405	90-197,VT-3		B-M-2	ACCEPTED	
		90-186,VT-3		B-M-2	ACCEPTED	
		90-26,VT-1		B-G-2	ACCEPTED	
MAIN STEAM 'D'	MSD-K018	89-96,MT	1.2-04	B-K-1	NRI	
		89-97,VT-3/4		F-C	ACCEPTED	
	MSD-J031-OA	89-98,MT		B-J	NRI	
		89-99,UT-45		B-J	NRI	
	MSD-J031-IA	89-100,MT		B-J	NRI	
		89-101,UT-45		B-J	NRI	
	MSD-J032	89-102,MT		B-J	NRI	
		89-103,UT-45		B-J	NRI	

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GROSS GENERATING CAPACITY: 565 MWE

Component and Weld Examinations Identification Records

COMPONENT	DESCRIPTION	ISI REPORT	ISI ISO NUM.	CATEGORY	RESULTS	COMMENTS
MSD (cont)	MSD-J032-OA	89-104,MT		B-J	NRI	
		89-105,UT-45		B-J	NRI	
	MSD-J032-IA	89-106,MT		B-J	NRI	
		89-107,UT-45		B-J	NRI	
	MSD-J016	89-108,MT		B-J	NRI	
		89-109,UT-45		B-J	NRI	
	CV-4420	90-258,VT-1		E-G-2	ACCEPTED	
		90-259,VT-3		B-M-2	ACCEPTED	REPAIRED AREAS ACCEPTED UNDER 90-327
	CV-4421	90-260,VT-1		B-G-2	ACCEPTED	
		90-261,VT-3		B-M-2	ACCEPTED	
	PSV-4406	90-199,VT-3		B-M-2	ACCEPTED	
		90-198,VT-1		B-G-2	ACCEPTED	
		89-15,VT-1		B-G-2	ACCEPTED	
	PSV-4407	89-19,VT-3		B-M-2	ACCEPTED	
		90-201,VT-3		B-M-2	ACCEPTED	
		90-200,VT-1		B-G-2	ACCEPTED	
		89-18,VT-1		B-G-2	ACCEPTED	
FEEDWATER A & B	V-14-3	90-164,VT-3	1.2-05	B-M-2	ACCEPTED	
FEEDWATER C & D	FWC-J027	89-110,MT	1.2-06	B-J	NRI	
		89-111,UT-45		B-J	NRI	
	FWC-K026A	89-112,VT3/4		F-C	ACCEPTED	
	FWC-K020	89-113,VT3/4		F-C	ACCEPTED	
	FWC-K018	89-114,VT3/4		F-C	ACCEPTED	
	FWC-J012	89-115,MT		B-J	NRI	
		89-116,UT-45		B-J	ROOT GEO.	
	FWD-J016	89-117,MT		B-J	NRI	
		89-118,UT-45		B-J	ROOT GEO.	
	FWD-K014	89-119,VT3/4		F-C	ACCEPTED	
	FWC-J037	89-120,MT		B-J	NRI	
		89-121,UT-45		B-J	NRI	
	V-14-1	90-22,VT-3		B-M-2	ACCEPTED	
CORE SPRAY A	CSA-J023	89-129,MT	1.2-07	B-J	NRI	
		89-130,UT-45		B-J	NRI	

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3) Plant Unit #1

4) Owners Certificate of Authorization (if required) N/A

5) Commerial Service Date 2-1-75

6) National Board Number of Unit N/A

GROSS GENERATING CAPACITY: 565 MWE

Component and Weld Examinations Identification Records

COMPONENT	DESCRIPTION	ISI REPORT	ISI ISO NUM.	CATEGORY	RESULTS	COMMENTS
CSA (cont)	CSA-J022	89-131,MT		B-J	NRI	
		89-132,UT-45		B-J	NRI	
	CSA-K017	89-133,VT3/4		F-C	ACCEPTED	
HPCI-STEAM	MO-2238	89-08,VT-3	1.2-09	B-M-2	ACCEPTED	
	MO-2239	90-06,VT-3		B-M-2	ACCEPTED	
HPCI-WATER	MO-2312	89-20,VT-3	1.2-10	B-M-2	ACCEPTED	
	V23-0049	89-459,VT-3		B-M-2	ACCEPTED	
RWCU-DISCHARGE	CUB-K024	89-144,VT3/4	1.2-11B	F-C	ACCEPTED	
	CUB-K018	89-145,VT3/4		F-C	ACCEPTED	
	CUB-J017	89-146,PT		B-J	ACCEPTED	
		89-135,UT-45		B-J	NRI	
CRD-RETURN	CRA-K017AA	89-152,VT3/4	1.2-12A	F-C	ACCEPTED	
	CRA-K017AB	89-153,VT3/4		F-C	ACCEPTED	
	CRA-F004	89-154,PT		B-F	NRI	
		89-147,UT-45		B-F	NRI	
		89-148,UT-45		B-F	NRI	
	CRA-F002	89-155,PT		B-F	NRI	
		89-150,UT-45		B-F	NRI	
		89-151,UT-45		B-F	NRI	
	CRA-K041D	89-156,VT3/4		F-C	ACCEPTED	
	CRA-K041A	89-157,VT3/4		F-C	ACCEPTED	
	CRA-J041	89-158,MT		B-J	NRI	
	CRA-J040	89-159,MT		B-J	NRI	
	CRA-J034	89-160,MT		B-J	NRI	
RHR-HEADSPRAY	RHA-J002	89-161,MT	1.2-13	B-J	NRI	
		89-162,UT-45		B-J	NRI	
RHR-SDC	RHB-J001-LS	89-166,PT	1.2-14	B-J	NRI	
		89-167,UT-45		B-J	NRI	
	RHB-F003	89-168,PT		B-F	NRI	
		89-169,UT-45		B-F	NRI	
		89-170,UT-45		B-F	NRI	
	RHB-K004	89-171,VT3/4		F-C	ACCEPTED	
	RHB-K009	89-172,VT3/4		F-C	ACCEPTED	

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GROSS GENERATING CAPACITY: 565 MWE

Component and Weld Examinations Identification Records

COMPONENT	DESCRIPTION	ISI REPORT	ISI ISO NUM.	CATEGORY	RESULTS	COMMENTS
RHR-SDC (cont)	RHR-J016	89-173,MT		B-J	NRI	
		89-174,UT-45		B-J	NRI	
	RHB-J002	89-175,PT		B-J	NRI	
		89-165,UT-45		B-J	NRI	
RHR-20A	RHC-J024	89-176,MT	1.2-15	B-J	NRI	
		89-177,UT-45		B-J	COUNTER	BORE AND O.D. GEOMETRY
	RHC-J023	89-178,MT		B-J	NRI	
		89-179,UT-45		B-J	NRI	
	RHC-K016A	89-180,VT3/4		F-C	ACCEPTED	
	RHC-K016	89-181,VT3/4		F-C	ACCEPTED	
RHR-20B	MO-1905	89-449,VT-3	1.2-16	B-M-2	ACCEPTED	
RECIRC PUMP VALVE BYPASS 'A'	RBA-FLG-BOLTING	89-200,VT-1	1.2-19A	B-G-2	ACCEPTED	
	RBA-J002	89-201,PT		B-J	NRI	
		89-183,UT-45		B-J	NRI	
	RHA-K005A	89-202,VT3/4		F-C	ACCEPTED	
	RBA-K005B	89-203,VT3/4		F-C	ACCEPTED	
RECIRC. SUCTION 'A'	RCA-F002	89-204,PT	1.2-19A	B-F	NRI	
		89-192,UT-RL		B-F	ID-GEO.	
	RCA-J003-LS	89-205,PT		B-J	NRI	
		89-206,UT-45		B-J	NRI	
	RCA-J004	89-207,PT		B-J	NRI	
		89-208,UT-45		B-J	NRI	
	RCA-J004-OA	89-209,PT		B-J	NRI	
		89-210,UT-45		B-J	NRI	
	RCA-J004-IA	89-211,PT		B-J	NRI	
		89-212,UT-45		B-J	NRI	
	RCA-K017	89-213,PT		B-K-1	NRI	
		89-214,VT3/4		F-C	ACCEPTED	
	1P201A-CASE INT	89-215,VT-3		B-L-2	ACCEPTED	
	RCA-K026	89-216,PT		B-K-1	NRI	
		89-217,VT3/4		F-C	ACCEPTED	
	RCA-K035	89-218,VT3/4		F-C	ACCEPTED	
	RCA-J018	89-219,PT		B-J	NRI	
		89-197,UT-45		B-J	NRI	
	RCA-J019	89-220,PT		B-J	NRI	

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GROSS GENERATING CAPACITY: 565 MWE

Component and Weld Examinations Identification Records

COMPONENT	DESCRIPTION	ISI REPORT	ISI ISO NUM.	CATEGORY	RESULTS	COMMENTS
RECIRC	RDA-J006	89-221,PT	1.2-19B	B-J	NRI	
DRAIN 'A'	RDA-J007	89-222,PT		B-J	NRI	
RECIRC MANIFOLD	RMA-J007	89-241,PT	1.2-20	B-J	NRI	
'A' SIDE		89-223,UT-45		B-J	NRI	
	RMA-K003	89-242,VT3/4		F-C	ACCEPTED	
RECIRC MANIFOLD	RRF-F002	89-243,PT		B-F	NRI	
'A' (cont)		89-244,UT-RL		B-F	ROOT GEOM.	
	RRF-F002A	89-246,PT		B-F	NRI	
		89-247,UT-45		B-F	NRI	
RECIRC PUMP SUCTION 'B'	1P201B-CASE INT	89-251,VT-3	1.2-21A	B-L-2	ACCEPTED	
JET PUMP	JPA-F002	89-272,PT	1.2-25	B-F	NRI	
INST 'A'		89-269,UT-45		B-F	NRI	
		89-270,UT-45		B-F	NRI	
	JPA-J003	89-273,PT		B-F	NRI	
		89-271,UT-45		B-F	NRI	
RECIRC PUMP 'A'	HPA-CS-STUDS	89-278,UT-0	1.3-01	B-G-1	NRI	STUDS 1-16
	HPA-FLG-SURFACE	89-279,VT-1		B-G-1	ACCEPTED	
	RPA-CS-NUTS	89-282,VT-1		B-G-1	ACCEPTED	NUTS 1-16
	RPA-SF-SCREWS	89-283,VT-1		B-G-2	ACCEPTED	SCREWS 1-16
RECIRC PUMP 'B'	RPB-CS-STUDS	89-277,UT-0		B-G-1	NRI	STUDS 1-16
	RPB-FLG-SURFACE	89-280,VT-1		B-G-1	ACCEPTED	
	RPB-CS-NUTS	89-281,VT-1		B-G-1	ACCEPTED	NUTS 1-16
	RPA-SF-SCREWS	89-284,VT-1		B-G-2	ACCEPTED	SCREWS 1-16
RECIRC PUMP 'A'	RPA-K001	89-285,PT	1.3-02	B-K-1	NRI	
		89-286,VT3/4		F-C	ACCEPTED	
	RPA-K004A	89-287,VT3/4		F-C	ACCEPTED	
RECIRC PUMP 'B'	RPB-K004A	89-289,VT3/4	1.3-03	F-C	ACCEPTED	
	RPB-K005	89-450,PT		B-K-1	NRI	
		89-290,VT3/4		F-C	ACCEPTED	

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5) Commerial Service Date 2-1-75

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GROSS GENERATING CAPACITY: 565 MWE

Component and Weld Examinations Identification Records

COMPONENT	DESCRIPTION	ISI REPORT	ISI ISO NUM.	CATEGORY	RESULTS	COMMENTS
CLASS 1 PRESSURE TESTS	RPV PIPING, PUMPS, VALVES & CRD DRIVES	89-13,VT-2	VARIOUS	B-P	SAT	PROCEDURE STP 46G022
CLASS 2						
RHR PUMP SUCTION 'SE'	RHA-CE073A	89-291,VT3/4	2.2-32	F-C	ACCEPTED	
	RHA-CF072	89-292,MT		C-F	ACCEPTED	
	RHA-CF069	89-293,MT		C-F	ACCEPTED	
	RHA-CF006	89-295,MT		C-F	ACCEPTED	
RHR PUMP SUCTION 'NW'	RHB-CE076	89-298,VT3/4	2.2-33	F-C	ACCEPTED	
	RHB-CE068	89-299,MT		C-C	NRI	
		89-300,VT3/4		F-C	ACCEPTED	
	RHB-CE065	89-301,VT3/4		F-A	ACCEPTED	
	RHB-CE037	89-303,VT3/4		F-C	ACCEPTED	
RHR PUMP SHUTDOWN	RHC-CE060	89-304,MT	2.2-34	C-C	NRI	
		89-305,VT3/4		F-C	ACCEPTED	
	REC-CF056	89-306,MT		C-F	NRI	
	REC-CE076	89-307,VT3/4		F-C	ACCEPTED	
	REC-CF080	89-308,MT		C-F	NRI	
	REC-CE029	89-310,VT3/4		F-A	ACCEPTED	
	REC-CE024	89-311,VT3/4		F-C	ACCEPTED	
	RHC-CF012	89-313,MT		C-F	NRI	
RHR HT EXCH DISCHARGE 'SE'	REF-CF004	89-314,MT	2.2-37E	C-F	NRI	
	RHF-CE040	89-315,VT3/4		F-C	ACCEPTED	
	RHF-CE045	89-316,VT3/4		F-C	ACCEPTED	
	REF-CF047	89-317,MT		C-F	NRI	
	REF-CE051	89-318,VT3/4		F-A	ACCEPTED	
	REF-CE069	89-320,VT3/4	2.2-37A	F-C	ACCEPTED	
	REF-CE131	89-321,VT3/4		F-C	ACCEPTED	
	REF-CF115	89-323,MT		C-F	NRI	
	REF-CE123	89-324,MT		C-C	ACCEPTED	
		89-325,VT3/4		F-C	ACCEPTED	
RHR FUEL POOL COOLING	RHM-CE044	89-329,VT3/4	2.2-43	F-C	ACCEPTED	
	RHM-CE032	89-330,VT3/4		F-C	ACCEPTED	
	RHM-CE025	89-331,VT3/4		F-C	ACCEPTED	
	RHM-CF020	89-333,MT		C-F	NRI	
	RHM-CF019	89-334,MT		C-F	NRI	
	RHM-CE015	89-335,VT3/4		F-C	ACCEPTED	

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GROSS GENERATING CAPACITY: 565 MWE

Component and Weld Examinations Identification Records

COMPONENT	DESCRIPTION	ISI REPORT	ISI ISO NUM.	CATEGORY	RESULTS	COMMENTS
RHR (cont)	RHM-CE011	90-328,MT		C-C	NRI	
	RHM-CE041	90-304,VT3/4		F-A	ACCEPTED	
HPCI-TURBINE STEAM INLET	HPC-CE090	89-338,VT3/4	2.2-46	F-C	ACCEPTED	
	HPC-CE089	89-339,VT3/4		F-B	ACCEPTED	
	HPC-CE082	89-340,VT3/4		F-C	ACCEPTED	
	HPC-CE078	89-341,VT3/4		F-B	ACCEPTED	
	HPC-CE075	89-342,VT3/4		F-C	ACCEPTED	
	HPC-CE072	89-343,VT3/4		F-C	ACCEPTED	
	HPC-CE070	89-344,VT3/4		F-C	ACCEPTED	
	HPC-CE067	89-345,VT3/4		F-C	ACCEPTED	
	HPC-CE064	89-346,VT3/4		F-C	ACCEPTED	
	HPC-CE062	89-347,MT		C-C	NRI	
		89-348,VT3/4		F-A	ACCEPTED	
	HPC-CE047	89-349,VT3/4		F-C	ACCEPTED	
	HPC-CF046	89-350,MT		C-F	NRI	
		89-351,UT-45		C-F	NRI	
	HPC-CF044	89-352,MT		C-F	NRI	
		89-353,UT-45		C-F	NRI	
	HPC-CE042	89-354,VT3/4		F-C	ACCEPTED	
HPCI TURBINE STEAM EXHAUST	HPD-CE014	89-355,VT3/4	2.2-47	F-B	ACCEPTED	
	HPD-CE016	89-356,MT		C-C	NRI	
		89-357,VT3/4		F-C	ACCEPTED	
	HPD-CE022	89-358,VT3/4		F-C	ACCEPTED	
	HPD-CE023	89-359,VT3/4		F-C	ACCEPTED	
	HPD-CE030	89-360,MT		C-C	NRI	
		89-361,VT3/4		F-B	ACCEPTED	
	HPD-CE034	89-362,VT3/4		F-A	ACCEPTED	
	HPD-CF043	89-363,MT		C-F	NRI	
	HPD-CE047A	89-364,VT3/4		F-C	ACCEPTED	
CORE SPRAY UCTION 'SE'	CSA-CE041	89-365,VT3/4	2.2-48	F-A	ACCEPTED	
	CSA-CF040	89-366,MT		C-F	NRI	
	CSA-CE038A	89-367,VT3/4		F-C	ACCEPTED	
	CSA-CE030	89-368,VT3/4		F-A	ACCEPTED	
CORE SPRAY DISCHARGE 'SE'	CSC-CE005	89-369,VT3/4	2.2-50	F-C	ACCEPTED	

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GROSS GENERATING CAPACITY: 565 MWE

Component and Weld Examinations Identification Records

COMPONENT	DESCRIPTION	ISI REPORT	ISI ISO NUM.	CATEGORY	RESULTS	COMMENTS
MAIN STEAM 'A'	MSA-CE023	89-370,VT3/4	2.2-53	F-A	ACCEPTED	
	MSA-CE029A	89-371,VT3/4		F-C	ACCEPTED	
	MSA-CE029B	89-372,VT3/4		F-C	ACCEPTED	
MAIN STEAM 'B'	MSB-CF002	89-373,MT	2.2-54	C-F	NRI	
	MSB-CE013	89-374,VT3/4		F-C	ACCEPTED	
	MSB-CE021	89-375,VT3/4		F-C	ACCEPTED	
	MSB-CE024	89-376,VT3/4		F-C	ACCEPTED	
	MSB-CE030	89-377,VT3/4		F-C	ACCEPTED	
MAIN STEAM BYPASS	MSE-CE028	89-378,VT3/4	2.2-57	F-C	ACCEPTED	
	MSE-CE032	89-379,VT3/4		F-B	ACCEPTED	
	MSE-CE004	89-380,VT3/4		F-C	ACCEPTED	
	MSE-CF009	89-381,MT		C-F	ACCEPTED	
		89-382,UT-45		C-F	NRI	
	MSE-CF013	89-383,MT		C-F	NRI	
		89-384,UT-45		C-F	NRI	
	MSF-CE006	89-385,VT3/4	2.2-58	F-C	ACCEPTED	
	MSF-CE007	89-386,VT3/4		F-C	ACCEPTED	
	MSF-CE008	89-387,MT		C-F	NRI	
		89-388,UT-45		C-F	NRI	
	MSF-CE009	90-163,MT		C-C	ACCEPTED	
	MSF-CF011	89-389,MT		C-F	NRI	
		89-390,UT-45		C-F	NRI	
SCRAM DISCHARGE HDR "SOUTH"	SDS-CF002	89-391,MT	2.2-60	C-F	NRI	
		89-392,UT-45		C-F	NRI	
	SDS-CE001B	89-393,VT3/4		F-A	ACCEPTED	
CLASS 2 PRESSURE TESTS						
CRD MINIPURGE 10 YEAR HYDRO TEST	CRD MINIPURGE	90-53,VT-2	VARIOUS	C-H	SAT	PROCEDURE STP 46G01
CRD HYD CONTROL UNIT LEAKAGE TEST	CRA-HCU-ALL 89	89-436,VT-2	VARIOUS	C-H	SAT	PROCEDURE STP BS-47

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GROSS GENERATING CAPACITY: 565 MWE

Component and Weld Examinations Identification Records

COMPONENT	DESCRIPTION	ISI REPORT	ISI ISO NUM.	CATEGORY	RESULTS	COMMENTS
HPCI 10 YEAR HYDRO TEST	HPCI STEAM SIDE	90-54,VT-2	VARIOUS	C-H	SAT	PROCEDURE STP 46G010
HPCI FUNCTION TEST	HPCI STEAM AND PUMP SIDE	89-437,VT-2	VARIOUS	C-H	SAT	PROCEDURE STP 45D001
PRESSURE TEST OF INSTRUMENT LINES	RPV	89-13,VT-2	VARIOUS	C-H	SAT	PROCEDURE STP 46G022
	MAIN STEAM	89-13,VT-2	VARIOUS	C-H	SAT	PROCEDURE STP 46G022
	RECIRC	89-13,VT-2	VARIOUS	C-H	SAT	PROCEDURE STP 46G022
	RCIC	89-13,VT-2	VARIOUS	C-H	SAT	PROCEDURE STP 46G022
	HPCI	89-13,VT-2	VARIOUS	C-H	SAT	PROCEDURE STP 46G022
	CORE SPRAY	89-13,VT-2	VARIOUS	C-H	SAT	PROCEDURE

Abbreviations

RPV - Reactor Pressure Vessel
NRI - Non-Recordable Indication "Acceptable"
RFO - Refueling Outage
ID - Inner Diameter
GEO.- Geometry
OD - Outer Diameter
SAT - Satisfactory

ABSTRACT OF ASME SECTION XI ADDITIONAL AND SUCCESSIVE EXAMINATIONS

The following is a list of the additional examinations due to ASME Section XI corrective measures. Also included are successive examinations required due to corrective measures during previous outages.

1) Owners: Iowa Electric Light and Power Company
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Additional Examinations

Corrective Measured Component	Class	Additional Inspected Component	Report #	ISI ISO.
Hanger EBB-14-H-5 (89-345)	2	EBB-14-H-8	90-012	2.2-46
Hanger EBB-14-H-11 (89-354)	2	EBB-14-H-9	90-013	2.2-46
		EBB-14-H-12	90-014	2.2-46
		EBB-14-H-13	90-015	2.2-46
		HLE-6-H-7A	90-017	2.2-47
Hanger EBB-14-H-8 (90-12)	2	All similar	N/A	2.2-46
Hanger EBB-14-H-12(90-14)	2	hangers examined		
Hanger GBB-5-H-20 (89-325)	2	GBB-5-H19	90-207	2.2-37A
		GBB-3-H-20C	90-208	2.2-40
		DBB-2-H-20B	90-209	2.2-40
		GLE-5-H-24	90-210	2.2-50
		GBB-5-H-18	90-211	2.2-37A

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ective Measured Component	Class	Additional Inspected Component	Report #	ISI ISO.
Hanger HBB-25-H-166 (89-336)	2	HBB-25-H-163	90-212	2.2-43
		HBB-25-H-164	90-213	2.2-43
		HBB-25-H-165	90-214	2.2-43
		HBB-25-H-168	90-215	2.2-43
		HBB-25-H-172	90-216	2.2-43
Lug Weld RHF-CE123 (89-324)	2	RHF-CE107	90-262	2.2-37A
		RHC-CE054	90-263	2.2-34
		RHE-CE069	90-264	2.2-36
		HPC-CE030	90-265	2.2-46
		HPC-CE077	90-266	2.2-46
		CSB-CE013	90-267	2.2-49
		RHJ-CE008	90-268	2.2-40
		RHI-CE073	90-269	2.2-39
Weld Surface MSC-J009 (89-078)	1	MSB-J010	90-273	1.2-2
		MSB-J011	90-274	1.2-2
		MSC-J015	90-275	1.2-3
		MSC-J016	90-276	1.2-3
Hanger EBD-2-SR-111 (89-370)	2	EBD-2-SR-109	90-277	2.2-53
		EBD-2-H-10	90-278	2.2-53
		EBD-2-SA-135	90-279	2.2-53

ABSTRACT OF ASME SECTION XI ADDITIONAL AND SUCCESSIVE EXAMINATIONS

The following is a list of the additional examinations due to ASME Section XI corrective measures. Also included are successive examinations required due to corrective measures during previous outages.

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 52324

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

Corrective Measured Component	Class	Additional Inspected Component	Report #	ISI ISO.
Snubber EBD-2-SS-115 (89-371)	2	EBD-2-H-9	90-286	2.2-53
		EBD-2-H-19	90-287	2.2-53
		EBD-2-SS-117	90-288	2.2-54
		EBD-2-SS-118	90-289	2.2-54
Snubber EBD-2-SS-116 (89-372)	2	All snubbers of this type examined in this area	N/A	2.2-53
Weld MSE-CF009 (89-381)	2	MSE-CF010	90-280	2.2-57
		MSE-CF006	90-281	2.2-57
		MSE-CF014	90-282	2.2-57
		MSE-CF020	90-283	2.2-57
Hanger GBB-5-H-19 (90-707)	2	GBB-5-SA-230	90-303	2.2-37
Weld MSE-CF010 (90-280)	2	MSE-CF022	90-306	2.2-57
Weld MSE-CF006 (90-281)	2	MSE-CF023	90-307	2.2-57
		MSE-CF024	90-308	2.2-57
		MSE-CF026	90-309	2.2-57
		MSE-CF027	90-310	2.2-57

ABSTRACT OF ASME SECTION XI ADDITIONAL AND SUCCESSIVE EXAMINATIONS

The following is a list of the additional examinations due to ASME Section XI corrective measures. Also included are successive examinations required due to corrective measures during previous outages.

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 52324

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

rective Measured Component	Class	Additional Inspected Component	Report #	ISI ISO.
		MSE-CF029	90-311	2.2-57
		MSE-CF030	90-312	2.2-57
		MSE-CF034	90-313	2.2-57
		MSE-CF035	90-314	2.2-57
		MSE-CF038	90-315	2.2-57
		MSE-CF039	90-316	2.2-57
		MSF-CF002	90-317	2.2-57
		MSF-CF012	90-318	2.2-57
		MSF-CF013	90-319	2.2-57
		MSF-CF022	90-320	2.2-57
		MSF-CF023	90-321	2.2-57
		MSE-CF024	90-322	2.2-57
CRD Drive Bolting 10-19 (90-32) 10-35 (90-33) 02-19 (90-36) 06-11 (90-37) 14-15 (90-39)	1	Remaining bolts in tension During leakage test	89-13	1.1-8A

ABSTRACT OF ASME SECTION XI ADDITIONAL AND SUCCESSIVE EXAMINATIONS

The following is a list of the additional examinations due to ASME Section XI corrective measures. Also included are successive examinations required due to corrective measures during previous outages.

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 52324

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

Corrective Measured Component	Class	Additional Inspected Component	Report #	ISI ISO.
30-23 (90-41)				
42-23 (90-43)				
02-23 (90-44)				
10-11 (90-45)				
10-27 (90-46)				

ABSTRACT OF ASME SECTION XI ADDITIONAL AND SUCCESSIVE EXAMINATIONS

The following is a list of the additional examinations due to ASME Section XI corrective measures. Also included are successive examinations required due to corrective measures during previous outages.

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 52324

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

Successive Exams

Corrective Measured Component	Class	Additional Inspected Component	Report #	ISI ISO.	Results
RPA-K002	1	87-559	89-288	1.3-2	Accepted
RHA-CE056	2	87-713	89-294	2.2-32	Accepted
RHA-CE050	2	87-714	89-296	2.2-32	Accepted
RHA-CE042	2	87-598	89-297	2.2-32	Accepted
RHB-CE057	2	87-658	89-302	2.2-33	Accepted
RHC-CE038A/B	2	87-342	89-309	2.2-34	Accepted
RHC-CE022A/B	2	87-668	89-312	2.2-34	Accepted
RHF-CE056	2	89-042	89-319	2.2-37A	Accepted
RHF-CE092A	2	87-560	89-322	2.2-37A	Accepted
RHM-CE021	2	87-601	89-332	2.2-43	Accepted
RHM-CE010	2	87-562	89-337	2.2-43	Accepted

ABSTRACT OF ASME SECTION XI REPAIRS AND REPLACEMENTS

The following is a list of 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 52324

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

NIS-2 No.	Class	Components	Description
10-89-01	1	PSV4402, pilot valve S/N 141	Replaced pilot valv
10-89-02	1	CV4416	Replaced stem/stem disassembly
10-89-03	2	LS2206 (level switch)	Repaired plug
10-89-04	1	CV4416	Replaced stem/stem disassembly, disk, bonnet nut
10-89-05	1	PSV4402, pilot valve S/N 200	Replaced pilot valve, stud, nuts
10-90-01	2	Hydraulic snubber, GBB-003-SS-225	Replaced snubber
10-90-02	2	Hydraulic snubber, GLE-008-SS-240	Replaced snubber
10-90-03	2	Hydraulic snubber, HBB-002-SS-300	Replaced snubber
10-90-04	1	MSRV pilot valve S/N 141 to be placed on PSV4405. See NIS2 10-90-43	Replaced pilot disc and pre load spacer
10-90-05	1	MSRV pilot valve S/N 218 to be placed on PSV4402. See NIS2 10-90-44	Repaired valve body and pilot disc
10-90-06	1	MSRV pilot valve S/N 203 to be placed on PSV4406	Welded bellows and pilot valve body
10-90-07	1	Hydraulic snubber, DCA-14-SS-73	Replaced studs/nuts
10-90-08	2	Valve, V-19-27	Replaced valve

ABSTRACT OF ASME SECTION XI REPAIRS AND REPLACEMENTS

The following is a list of 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 52324

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

NIS-2 No.	Class	Components	Description
10-90-09	2	Hanger lug, RHF-CE-123	Repaired hanger lug (surface)
10-90-10	1	Weld, MSC-J009	Repaired weld (surface)
10-90-11	1	Mechanical snubber, EBA-X7D-SS-001	Replaced snubber for functional test
10-90-12	1	Mechanical snubber, DLA-003-SS-003	Replaced snubber for functional test
10-90-13	2	Weld, MSE-CF009	Repaired weld (surface)
10-90-14	2	Weld, MSE-CF006	Repaired weld (surface)
10-90-15	2	Weld, MSE-CF010	Repaired weld (surface)
10-90-16	2	Valve, MO-1934	Repaired valve body, welding disc
10-90-17	1	Snubber pin for DCA-004-SSB-001	Replaced snubber pin for proper fit
10-90-18	1	Mechanical snubber, DCA-004-SSB-004	Replaced snubber for functional test
10-90-19	2	Line 10"-EBB-16 (RHR side)	Modified line
10-90-20	2	Line 10"-EBB-16 (HPCI side)	Modified line
10-90-21	1	Snubber pin for DCA-004-SSA-001	Replaced snubber pin for proper fit
10-90-22	1	Valve, MO1905	Repaired valve internals
10-90-23	1	Mechanical snubber, DBA-004-SS-036	Replaced snubber for functional test
10-90-24	2	Valve, MO1989	Repaired guide rib and replaced 3 studs

ABSTRACT OF ASME SECTION XI REPAIRS AND REPLACEMENTS

The following is a list of 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 52324

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

NIS-2 No.	Class	Components	Description
10-90-25	2	HPCI Line 1" EBB-14	Modified line, sockolet with 1-1/2" diameter pieces
10-90-26	1	Mechanical snubber, DBA-004-SS-001	Replaced snubber for functional testing
10-90-27	1	Mechanical snubber, DBA-009-SS-002B	Replaced snubber for functional testing
10-90-28	2	Hanger, HBB-25-H163	Replaced base plate
10-90-29	2	Valve, V03-0005	Replaced valve bonnet and valve disk
10-90-30	2	Valve, V03-0004	Replaced valve bonnet and valve disk
10-90-31	2	Valve, V19-46	Replaced valve
10-90-32	1	RWCU line 4"-DCA-6 and 4"-DCA-14	Modified line and two supports
10-90-34	1	Valve, MO-2312	Replaced bonnet
10-90-35	1	CRD drives, see CRD Table OP cycle 10/11	Replaced CRD drives, some bolting
10-90-36	1	Socket weld, 4F3 on Recirc Riser 'F'	Weld repair of socket weld
10-90-37	1	N7 vent flange	Machined flange for better fit
10-90-38	1	Head Vent line flange, (lower, 2" DBA-9)	Replaced studs and nuts
10-90-39	1	Valve, V14-06	Replaced valve
10-90-40	1	Valve, V14-05	Replaced valve

ABSTRACT OF ASME SECTION XI REPAIRS AND REPLACEMENTS

The following is a list of 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 52324

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

-2 No.	Class	Components	Description
10-90-41	2	Line to relief valve PSV2223	Replaced threaded pipe with flanges
10-90-42	1	Relief valve, PSV4407	Replaced pilot valve, main body
10-90-43	1	Relief valve, PSV4405	Replaced pilot valve
10-90-44	1	Relief valve, PSV4402	Replaced pilot valve
10-90-45	1	Valve, MO-2239	Repaired valve internals
10-90-46	1	Valve, MO-4630	Replaced disc, studs, nuts
10-90-47	1	Valve, MO-4629	Repaired valve internals
10-90-48	1	CRD housing, 1R215 (22-19)	Replaced bolts
10-90-49	1	Relief valve, PSV4406	Replaced bolts and nuts
10-90-54	1	Recirc Pump A	Modified internals
10-90-55	1	Recirc Pump B	Modified internals
10-90-56	1	Relief valve, PSV4401	Replaced pilot
10-90-57	1	Relief valve, PSV4403	Replaced studs and nut
10-90-58	1	Valve, CV4412	Modified valve internals
10-90-59	1	Valve, CV4413	Modified valve internals
10-90-60	1	Valve, CV4415	Modified valve internals
0-61	1	Valve, CV4416	Modified valve internals

ABSTRACT OF ASME SECTION XI REPAIRS AND REPLACEMENTS

The following is a list of 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 52324

3) Plant Unit #1

4) Owners Certificate of Authorization (if reguired) N/A

5) Commercial Service Date 2-1-75

6) National Board Number of Unit N/A

NIS-2 No.	Class	Components	Description
10-90-62	1	Valve, CV4418	Modified valve internals
10-90-63	1	Valve, CV4419	Modified valve internals
10-90-64	1	Valve, CV4420	Modified valve internals
10-90-65	1	Valve, CV4421	Modified valve internals

INSERVICE INSPECTION REPORT
December 28, 1988 through September 10,1990

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 52324

3) Plant Unit #1

4) Owners Certificate of Authorization (if required) N/A

5) Commerial Service Date 2-1-75

6) National Board Number of Unit N/A

GROSS GENERATING CAPACITY: 565 MWE

FORM NIS2'S

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 February 7, 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 93369 (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' (Class 1) ASME Section

5. (a) Applicable Construction Code III 19 68 Edition, W68 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~~ Tested	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
Target Rock Pilot Valve	Target Rock	S/N 141	N/A	PSV 4402	1988	Replaced	Yes

7. Description of Work Replaced pilot valve S/N 189 with pilot valve S/N 141

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒
Other ☐ Pressure 1025 psi Test Temp. 550 °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.

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

FORM NIS-2 (Back)

9. Remarks Replaced pilot valve S/N 189 with pilot valve 141. (P.O. S46339)

Applicable Manufacturer's Data Reports to be attached

VT-3 inservice inspection of valve internals (partial only) performed and acceptable. Reference inspection report no. 89-03. VT-2 of the pressure retaining components were performed under inspection report no.89-01.

CERTIFICATE OF COMPLIANCE

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

Type Code Symbol Stamp None

Certificate of Authorization No. None Expiration Date None

Signed [signature], ASME Administrator Date February 10, 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 1-18-89 to 10-4-89, 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, 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 E Ruggles* Commissions Nat'l Bd. 5813 (I)(N) IA-1041

Inspector's Signature — National Board, State, Province, and Endorsements

Date Oct. 4 19 89

(12/82) * Consideration is given to Iowa Electric Relief Request No. NDE-009, re: IE Letter Minarik to Murley, 9-18-89, NG-89-1680. WERuggles 10-4-89

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) — Date April 3, 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, Iowa 52324 (Address) — CMAR 93695 CSR 'A' (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 'A' (Class 1)
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 Replacad 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)
Valve Bonnet	Rockwell	N/A	None	CV 4416	1989	Repaired	No
Stem/stem disc assembly	Rockwell	*	None	CV 4416	1989	Replaced**	No

7. Description of Work Replaced stem/stem disc assembly for control valve CV4416. Machined valve bonnet for proper fit.
8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominel Operating Pressure ☒
   Other ☐ Pressure 1025 psi Test Temp. 525 °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.

* 6062065-31
** Stem/stem disc assembly was formerly in CV 4412

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. 15757). Valve bonnet remachined, then PT tested, and was found acceptable
VT-3 inservice inspection of valve internals performed and acceptable
reference inspection report no. 89-005. VT-2 of the pressure retaining components
were performed under inspection report no. 89-007.

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

Signad [signature], ASME Administrator Date April 3, 19 89
Owner or Owner's Designee, Title

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issuad 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 3-10-89 to 4-17-89, 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(T) (N) IA-1041
Inspector's Signature
National Board, State, Province, and Endorsements

Date April 17, 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)

Dete October 25, 1989

Sheet 1 of 1

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

Unit 1

CMAR 97337
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 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 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	Yeer Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
LS2206	Robert Shaw 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: Hydrostetic ☐ 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 A 3/4" NPT plug had a steam leak that was seal welded under CMAR 97337.

Applicable Manufacturer's Data Reports to be attached

The seal 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 repair or replacement ASME Code, Section XI.

Typa Code Symbol Stamp N/A

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

Signed Kevin McGuire, ASME Administrator Date 10-30, 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 10-23-89 to 12-4-89, 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.

W E Ruggles Commissions Nat'l Bd. 5813 (I)(N) IA-1041

Inspector's Signature National Board, State, Province, and Endorsements

Date Dec. 4, 19 89

(12/82)

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 November 2, 1989
Sheet 1 of 21

2. Plant Duane Arnold Energy Center (Name)
3277 DAEC Rd, Palo, IA 52324 (Address)
Unit One
Note 2 PMAR 1038426, Note 3 CMAR 92975
Repair Organization P.O. No., Job No., etc.

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

4. Identification of System Main Steam 'B' Class 1
Note 1

5. (a) Applicable Construction Code B31.1 19 67 Edition, --- Addenda, --- Code Case
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 19 80 w81
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)
Note 2	Stem/Stem Disk Assembly	Rockwell	*	None	CV4416	1985	Replaced	No
Note 2	Disk	Rockwell	**	None	CV4416	1985	Replaced	No
Note 2	Bonnet Nut	Rockwell	MT# IN85326	None	CV4416	1988	Replaced	No
Note 3	Disk	Rockwell	**	None	Spare	1989	Repaired	No
Note 2	Main Valve Body	Rockwell	N/A	None	Guide Rib	1989	Repaired	No

7. Description of Work Replaced disc and stem/stem disk assembly for control valve CV4416 Not

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

NOTE: Supplemental sheets in form of lists, sketchas, 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.

* 6062065-29 Note 4 disk had removed all stellite on seating area by grinding, rewelded and machined to proper dimensions. Stem was redressed and
** 6062065-61 acceptable for reuse by Quality Control. Guide Rib was smoothed for proper fit of valve internals.

FORM NIS-2 (Back)

9. Remarks Replacing stem/stem disc assembly and disk with certified stem/stem disc assembly and disk (P.O. E9-15757-N-DA) (see Note 5). VT-3 inservice inspection of valve internals performed and accepted (Report No. 89-451). All welded components after grinding, rewelded and machined to proper fit were PT and acceptable VT-2 of the pressure retains components were performed and acceptable under inspection report no. 89-017 Bonnet Nut was replaced with certified nut (P.O. 101859). Replaced nut was inspected and acceptable (see Report No. 89-452).

Applicable Manufacturer's Data Reports to be attached

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.

repair or replacement

Type Code Symbol Stamp None

Certificate of Authorization No. None Expiration Date None

Signed [signature] owner's designee, ASME Admin. 1-12-90 Date December 8, 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 9-20-89 to 1-12-90, 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 accordanca with the requirements of the ASME Code, Section XI, except Note 6.

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 Biggles Commissions Nat'l Bd. 5813 (I) (N) IA-1041

Inspector's Signature National Board, State, Province, and Endorsements

Date January 12, 19 90

(12/82)

Note 5 - disk assembly was formly in CV4421 and stem/stem disc assembly was formly in CV4419, then both as spares.

Note 6 - except as described by NCR 89-20 and NCR 89-21. 1-12-90

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 December 20, 1989
   P.O. Box 351, Cedar Rapids IA 52406 (Address) — Sheet 1 of 1
2. Plant Duane Arnold Energy Center (Name) — Unit One
   3277 DAEC Road, Palo, IA 52324 (Address) — CMAR 94253 (Repair Organization P.O. No., Job No., etc.)
3. Work Performed by Iowa Electric (Name) — Type Code Symbol Stamp None
   3277 DAEC Road, Palo, IA 52324 (Address) — Authorization No. None
   Expiration Date None
4. Identification of System Main Steam 'B' (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.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
	Pilot Valve Assembly	Target-Rock	200	N/A	PSV 4402	1976	Replacement	Yes
6	Base pilot Op bolting	Cardinal	Ht no. 211916	N/A	PSV 4402	1989	Replacement	No
3	Base pilot Op nuts	Target-Rock	Ht no. 51480	N/A	PSV 4402	1977	Replacement	No
3	Base pilot Op nuts	Target-Rock	Ht no. 578L7375	N/A	PSV 4402	1984	Replacement	No

7. Description of Work Replaced pilot valve assembly, base pilot operator bolting and nuts.
8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒
   Other ☐ Pressure 1025 psi Test Temp. 525 °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 6 base pilot operator bolts with certified bolts (P.O. S49381)

Applicable Manufacturer's Data Reports to be attached

Replaced 6 base pilot operator nuts with certified nuts (P.O. 25364*21635) (3 ea.)

Replaced pilot valve assembly (P.O. 18747) VT-1 of bolting was performed under

inspection report #89.464, VT-3 of valve body performed under inspection report # 39-465. Valve #200 was operability test was satisfactory (P.O. 546339). VT-2 of the valve was performed under inspection report #89-466

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this Replacement (repair or 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], ASME Administrator (Owner or Owner's Designee) Title Date December 20, 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 Lumbermans Mutual Casualty Company of Long Grove, Illinois have inspected the components described in this Owner's Report during the period 11-28-89 to 1-11-90, 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 11, 19 90

(12/82)

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 February 7, 1990
   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 1040723 (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 RHR PUMP DISCHARGE (N.W.) (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 80W81
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 #38	None	GBB-003 -SS-225	1988	Replacement	No

7. Description of Work Hydraulic Snubber Replacement - Type (HSSA-10)
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. 45911) VT-3/VT-4 pre-service inspection performed. Reference inspection report no. 90-001.

CERTIFICATE OF COMPLIANCE

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

Type Code Symbol Stamp None

Certificate of Authorization No. None Expiration Date None

Signed _____, ASME Administrator Date February 12, 19 90

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 1-31-90 to 2-26-90, 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 E Ruggles Commissions Nat'l Bd. 5813(I) (N) IA-1041

Inspector's Signature National Board, State, Province, and Endorsements

Date February 26, 19 90

(12/82)

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 February 7, 1990

Sheet 1 of 1

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

Unit 1

PMAR 1040724
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 RHR Heat Exchanger Discharge (NW) (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 80W81

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Seriel No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (Yes or No)
Hydraulic Snubber	Bergen Patterson	D. Arnold #55	None	GLE-008 -SS-240	1988	Replacement	No

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

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

NOTE: Supplemental sheets in form of lists, skatches, 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 racorded 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. 45911) VT-3/VT-4 pre-service inspection performed. Reference inspection report no. 90-002.

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this Replacement (repair or 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 _____ (Owner or Owner's Designee, Title), ASME Administrator Date February 12, 1990

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 1-31-90 to 2-26-90, 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.

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

Date February 26, 1990

(12/82)

NIS2 NO. 10-90-03

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 July 10, 1990

P.O.Box 351, Cedar Rapids, IA 52406 (Address) Sheet 1 of 2

2. Plant Duane Arnold Energy Center (Name) Unit 1

3277 DAEC Rd. Palo, IA 52324 (Address) PMAR #1045101 (Repair Organization P.O.No.,Job No.)

3. Work Performed by Iowa Electric (Name) Type Code Symbol Stamp None

Authorization No. None

3277 DAEC Road Palo, IA 52324 (Address) Expiration Date None

4. Identification of System Suction of Core Spray (A) Pump (Class 2)

5. (a)Applicable Const. Code ASME SECT. III 19 77 Edition, W77 Addenda, N-249,N-71,N-225 Code Case
(b)Applicable Edition of Section XI Utilizad for Repairs or Replacements 1980 W81

6. Identification of Components Repairad or Replaced and Replacement Components

Name of Component	Name of Manufacture	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repairad Replacad, or Replacement	ASME Code Stamped (Yes or No)
Hydraulic Snubber	Berg-Patter	2500-10 866	N/A	HBB-002-SS-300	1983	Replacad	No
Hydraulic Snubber	Berg-Patter	2500-10 865	N/A	HBB-002-SS-300	1983	Replacement	No

7. Description of Work Hydraulic Snubber Replacement - Type HSSA-10

8. Tests Conductad: Hydrostatic ☐ Pneumatic ☐ Nominal Operation Pressure ☐
Other ☐ Pressure N.A. psi Test Temp. N.A. °F
Testad per STP 46H002 before inatallation.

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

ANII Review 9-3-90

NIS2 NO. 10-90-03

Sheet 2 of 2

FORM NIS-2 (Back)

9. Remarks Replacement of hydraulic snubber with certified hydraulic snubber (P.O. #062285), VT-3/4 preservice Applicable Manufacturer's Data Reports to attached inspection performed, Reference Inspection Report No. 90-192

CERTIFICATE OF COMPLIANCE

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

Type Code Symbol Stamp None

Certificate of Authorization No. None Expiration Date N.A.

Signed Surinder Sharma 8-6-90 Codes & Materials, TGL Date 8-6-90, 19 90
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 Hartford Steam Boiler ITI Co of Hartford, Connecticut have inspected the components described in this Owner's Report during the period 5-31-90 to 9-3-90, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in the Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate naither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, noither 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.

Scott Fiesler Commissions NB 8829 (I)(N) 941-IA
Inspectors Signature National Board, State, Province, and Endorsements

Date 9-3 19 90

NIS2 NO. 10-90-04

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 July 23, 1990

P.O.Box 351, Cedar Rapids, IA 52406 (Address) Sheet 1 of 2

2. Plant Duane Arnold Energy Center (Name) Unit 1

3277 DAEC Rd. Palo, IA 52324 (Address) P.O. B02568 (CMAR 98047A) (Repair Organization P.O.No.,Job No.)

3. Work Performed by Target Rock (Name) Type Code Symbol Stamp None

Authorization No. None

1966e Broadhollow Rd. Farmingdale, NY 11735-0917 (Address) Expiration Date None

4. Identification of System Main Steam (class 1)

5. * (a)Applicable Const. Code SECT. III 19 68 Edition, W68 Addenda, N/A Code Case
(b)Applicable Edition of Section XI Utilized for Repairs or Replacements 1980 W81
*GE Spec 21A9206 Rev 6 & 7

6. Identification of Components Repaired or Replaced and Replacement Componenta

Name of Component	Name of Manufacture	Manufacturer Serial No.	National Boerd No.	Other Identification	Year Built	Repaired Replaced, or Replacement	ASME Code Stamped (Yes or No)
Pilot Disc	Target Rock	S/N 407	N/A	Part #200242-1	1975	Replacement	No
Pilot Disc	Target Rock	S/N 425	N/A	Part #200242-1		Replaced	No
Pre-loed Specer	Target Rock	S/N 376	N/A	Part #100322-1	1975	Replacement	No
Pre-loed Spacer	Target Rock	S/N 412	N/A	Part #100322-1		Replaced	No

7. Description of Work Replaced pilot disc and preload spacer for MSRV Pilot Valve S/N 141.

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☐
Other ☐ Pressure _____ psi Test Tamp. _____ °F
(See Note #1)

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.

Note #1 - This pilot is a spare and the pressure test will be performed when installed in the plant.

NIS2 NO. 10-90-04

FORM NIS-2 (Back) sheet 2 of 2

9. Remarks Pilot Valve (S/N 141) was removed and sent to Wyle Labs for testing. The pilot disc and pre-load spacer required replacement due to steam cutting. Pilot valve disc (S/N 407) and pre-load spacer (S/N 376) (P.O. 05954) was installed. A preservice VT-3 exam (89-467) was performed and accepted. The valve was then tested and accepted.

Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this replacement (repair or 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 Surinder Sharma Codes & Materials, TGL Date 7-27-, 19 90
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 Hartford Steam Boiler I&I Co. of Hartford, Connecticut have inspected the components described in this Owner's Report during the period 3-30-90 to 6-11-90, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in the 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 ner 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.

Scott Fowler Commissions NB 8829(I)(N) 941-IA
Inspectors Signature National Board, State, Province, and Endorsements

Date August 11 19 90

NIS2 NO. 10-90-05

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 July 31, 1990

P.O.Box 351, Cedar Rapids, IA 52406 (Address) Sheet 1 of 2

2. Plant Duane Arnold Energy Center (Name) Unit 1

3277 DAEC Rd. Palo, IA 52324 (Address) P.O. B02568 (CMAR 92907) (Repair Organization P.O.No.,Job No.)

3. Work Performed by Target Rock (Name) Type Code Symbol Stamp None

Authorization No. None

1966E Broadhollow Rd. Farmingdale, N.Y. 11735-0919 (Address) Expiration Date None

4. Identification of System Main Steam (Class 1)

5.* (a)Applicable Const. Code ASME SECT. III 19 68 Edition, W68 Addenda, / N A Code Case
(b)Applicable Edition of Section XI Utilized for Repairs or Replacements 1980 W81
* GE SPEC. 21A9206 Rev. 6 & 7

6. Identification of Components Repairod or Roplaced and Replacement Components

Name of Component	Name of Manufacture	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired Replaced, or Replacement	ASME Code Stamped (Yes or No)
MSRV Pilot Valve	Target Rock	S/N 218	N/A	SPARE	1975	Repaired	Yes

7. Description of Work New second stage seet welded into valve body, Pilot disc, S.S.discs skim-cut & polished

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☐
Other * ☒ Pressure 1130 +/- 1% psi Test Tamp. 500 °F

*Set pressure test performed at WYLE Labs

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.

8-11-98

NIS2 NO. 10-90-05

FORM NIS-2 (Back) sheet 2 of 2

9. Remarks Pilot valve (S/N 218) was removed and sent to Wyle Labs for testing. Welded new second stage seat to valve
Applicable Manufacturer's Data Reports to be attached
body & pilot disc and second stage disc were lapped for proper fit. Pt was performed on Pilot disc, S.S. discs & S.S. seat by DAEC QA. Vt-3 of valve internals performed under ISI report # 89-463

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the repart 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 Surinder Sharma Codes & Materials, TGL Date 8-7-, 19 90
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 Hartford Steem Boiler I&I Co of Hartford, Connecticut have inspected the components described in this Owner's Report during the period 5-2-90 to 5-11-90, and state that to the best of my knowledge and belief, the Owner has performed examinatione and taken corrective measures described in the 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.

Scott Crosier Commissions NB 8829(I)(N) 941-IA
Inspectors Signature Nationsl Bosrd, State, Province, and Endorsements

Date August 11 19 90

NIS2 NO. 10-90-06

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 July 31, 1990

P.O.Box 351, Cedar Rapids, IA 52406 (Address) Sheet 1 of 2

2. Plant Duane Arnold Energy Center (Name) Unit 1

3277 DAEC Rd. Palo, IA 52324 (Address) P.O. B02568 (CMAR 92908) (Repair Organization P.O.No., Job No.)

3. Work Performed by Target Rock (Name) Type Code Symbol Stamp None

Authorization No. None

1966E Broadhollow Rd. Farmingdale, N.Y. 11735-0919 (Address) Expiration Date None

4. Identification of System Main Steam (Class 1)

5.* (a)Applicable Const. Code ASME SECT. III 19 68 Edition, W68 Addenda, N/A Code Case

(b)Applicable Edition of Saction XI Utilized for Repairs or Replacements 1980 W81

* GE SPEC. 21A9206 Rev. 6 & 7

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacture	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired Replaced, or Replacement	ASME Code Stamped (Yes or No)
MSRV Pilot Valve	Target Rock	S/N 203	N/A	SPARE	1975	Repaired	Yes

7. Description of Work Bellows and new pilot seat welded into valve body

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☐

Other * ☒ Pressure 1140 +/- 1% psi Test Temp. 550 °F

*Set pressure test performed at WYLE Labs

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 repart is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

AP 8-16-90 ANII Review

NIS2 NO. 10-90-06

FORM NIS-2 (Back) sheet 2 of 2

9. Remarks Pilot valve (S/N 203) was removed and sent to Wyle Labs for testing. The bellows was removed to allow Applicable Manufacturer's Data Reports to be attached access for pilot seat. Pt was performed on bellows, pilot seat, pilot & 2nd Stage by DAEC QA. Vt-3 inspection of pilot valve assembly was performed under ISI# 89-462

CERTIFICATE OF COMPLIANCE

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

Type Code Symbol Stamp N/A

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

Signed Surinder Shargan Codes & Materials, TGL Date 8-7-, 19 90
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 Hartford Steem Boiler I&I Co of Hartford, Connecticut have inspected the components described in this Owner's Repart during the period 5-2-90 to 5-11-90, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in the Owner's Repart in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer mekes 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.

Scott Fowler Commissions NB 8829(I)(N) 941-IA
Inspectors Signature Nationsl Board, State, Province, and Endorsements

Date August 11 19 90

NIS2 NO. 10-90-07

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 August 11,1990

P.O.Box 351, Cedar Rapids, IA 52406 (Address) Sheet 1 of 2

2. Plant Duane Arnold Energy Center (Name) Unit 1

3277 DAEC Rd. Palo, IA 52324 (Address) CMAR #A 02652 (Repair Organization P.O.No.,Job No.)

3. Work Performed by Iowa Electric (Name) Type Code Symbol Stamp None

Authorization No. None

3277 DAEC Road Palo, IA 52324 (Address) Expiration Date None

4. Identification of Systam Reactor Water Cleanup System (Class1)

5. (a)Applicable Const. 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
(c)Construction code of Replacement Code Section III 19 83 Edition, S85 Addenda

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacture	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired Replaced, or Replacement	ASME Code Stamped (Yes or No)
4 studs for Hydraulic Snubber	Cardinal	006	N/A	DCA-14-SS-73	1986	Replacement	No
8 nuts for Hydraulic Snubber	Cardinal	093	N/A	DCA-14-SS-73	1986	Replacement	No

7. Description of Work Removed hanger clamp for UT access. Replacing studs/nuts with higher grade material

8. Tests Conducted: Hydrestatic ☐ Pneumatic ☐ Nominal Operation Pressure ☐
Other ☐ Pressure N/A psi Test Tamp. 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.

ANII Review 9-3-90

NIS2 NO. 10-90-07

FORM NIS-2 (Back) sheet 2 of 2

9. Remarks Replacement of snubbers (Ber-Pat HSSA-3) clamp nuts and studs with higher grade. (PO s26710,s26813)
Applicable Manufacturer's Data Reports to be attached

VT-3/4 of snubber preservice inspection performed. Reference inspection report no. 90-290.

CERTIFICATE OF COMPLIANCE

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

Type Code Symbol Stamp None

Certificate of Authorization No. None Expiration Date

Signed Surinder Sharma Codes & Materials, TGL Date 8-18-, 19 90
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 Hartford Steam Boiler I&I Co of Hartford, Connecticut have inspected the components described in this Owner's Report during the period 8-6-90 to 9-3-90, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in the 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.

Scott Carlson Commissions NB 8829(I)(N) 941-IA
Inspectors Signature National Board, State, Province, and Endorsements

Date 9-3 19 90

NIS2 NO. 10-90-08

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 (Nema) Date August 11,1990

P.O.Box 351, Cedar Rapids, IA 52406 (Address) Sheet 1 of 2

2. Plant Duane Arnold Energy Center (Name) Unit 1

3277 DAEC Rd. Palo, IA 52324 (Address) CMAR #091149 (EMA) (Repair Organization P.O.No.,Job No.)

3. Work Performed by Iowa Electric (Name) Type Code Symbol Stamp None

Authorization No. None

3277 DAEC Roed Palo, IA 52324 (Address) Expiration Date None

4. Identification of System RHR (Class 2)

5. (a)Applicable Const. Code ANSI B31.7 (pipe) 19 69 Edition, 71 Addenda, N/A Code Case
(b)Applicable Edition of Saction XI Utilized for Repairs or Replacements 1980 W81
(c) Applicable Const. CodeSection III (valve)19 71 Edition, W71 Addenda
(d) Replacements pipe-Section III 1971 Edition; valve-Section III 1971 Edition w1972 addenda

6. Identification of Components Repoired or Replaced and Replacement Components

Name of Component	Name of Manufacture	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired Replaced, or Replacement	ASME Code Stamped (Yes or No)
2" Pipe	JSS	n/a	N/A	2"-HBB-23	1971	Roplacement	No
2" stop valve	velan val.	38.1-1	N/A	v-19-27	1974	Replacement	yes

7. Description of Work Removed old valve and replaced new one also added pipe for fit up

8. Tests Conducted: Hydrostatic [x] Pneumatic [ ] Nominal Operation Pressure [ ]
Other [ ] Pressure 190 psi Test Temp. 80 °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.

ANII Review 9-3-90

NIS2 NO. 10-90-08

FORM NIS-2 (Back) sheet 2 of 2

9. Remarks Replacement stop valve v-19-27 and added associated piping for proper fit. Replacement performed with Applicable Manufacturer's Data Reports to be attached

certified material (valve- P.O.s55488)(pipe- P.O.s57406). Welds were liquid penetrant inspected and was found acceptable. Hydrostatic test performed under ISI # 90-007.

CERTIFICATE OF COMPLIANCE

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

Type Code Symbol Stamp None

Certificate of Authorization No. None Expiration Date

Signed Owner or Owner's Designee, Title Codes & Materials, TGL Date 8-18-90

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 Hartford Steam Boiler I&I Co of Hartford, Connecticut have inspected the components described in this Owner's Report during the period 5-18-90 to 9-3-90, and state that to the best of my knowledge and belief, the Owner has performed examinations and takan corroctive maasures described in the Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector ner his employer makes any warranty, expressed or implied, concerning the examinations and corrective maasures 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.

Inspectors Signature Commissions NB 8829(I)(N) 941-IA
Nationsl Board, State, Province, and Endorsements

Date 9-3 19 90

NIS2 NO. 10-90-09

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 August 13,1990

P.O.Box 351, Cedar Rapids, IA 52406 (Address) Sheet 1 of 2

2. Plant Duane Arnold Eneg Center (Name) Unit 1

3277 DAEC Rd. Palo, IA 52324 (Address) CMAR #A 00577 (Repair Organization P.O.No.,Job No.)

3. Work Performed by Iowa Electric (Name) Type Code Symbol Stamp None

Authorization No. None

3277 DAEC Road Palo, IA 52324 (Address) Expiration Date None

4. Identification of System RHR (class 2)

5. (a)Applicable Const. 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 class 2

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacture	Manufacturer Serial No.	Nationsl Board No.	Other Identification	Year Built	Repaired Replaced, or Replacement	ASME Code Stamped (Yes or No)
Welded hanger lug RHF-CE-123	Bechtel	n/a	N/A	GBB-5-H-20	1978	Repair	No

7. Description of Work Removal of 1" linear indication on hanger lug

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operation 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)informotion in itema 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.

ANII Review 9-3-90

NIS2 NO. 10-90-09

FORM NIS-2 (Back) sheet 2 of 2

9. Remarks 1" linear indication discovered during ISI(MT) of hanger lug CE-123. Repaired indication by grinding it out
Applicable Manufacturer's Data Reports to be attached

Performed Mt exam under same inspection number 89-324 and wes acceptable.

CERTIFICATE OF COMPLIANCE

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

Type Code Symbol Stemp None

Certificate of Authorization No. Nons Expiration Date

Signed Surinder Sharma Codes & Materials, TGL Date 8-18-, 19 90
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 Hartford Steam Boiler I&I Co of Hartford, Connecticut have inspected the components described in this Owner's Report during the period 8-1-90 to 9-3-90, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in the 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 personsl injury or property damage or a loss of any kind arising from or connected with this inspection.

Scott Sauder Commissions NB 8829(I)(N) 941-IA
Inspectors Signature Nationsl Board, State, Province, and Endorsements

Date 9-3 19 90

NIS2 NO. 10-90-10

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 August 24,1990

P.O.Box 351, Cedar Rapids, IA 52406 (Address) Sheet 1 of 2

2. Plant Duane Arnold Energy Center (Name) Unit 1

3277 DAEC Rd. Palo, IA 52324 (Address) CMAR #A 00578 (Repoir Organization P.O.No.,Job No.)

3. Work Performed by Iowa Electric (Name) Type Code Symbol Stamp None

Authorization No. None

3277 DAEC Roed Palo, IA 52324 (Address) Expiration Date None

4. Identification of System Main Steam "C" line (class 1)

5. (a)Applicable Const. Code ANSI B31.1 19 67 Edition, Addenda, N/A Code Case
(b)Applicable Edition of Section XI Utilized for Repairs or Replecements 1980 W81 class 2

6. Identification of Components Repaired or Replacod and Replacement Components

Name of Component	Name of Manufecture	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired Replaced, or Replacement	ASME Code Stamped (Yes or No)
Weld MSC-J009	General Electric	PS-1-C2	N/A	Main steam 'c'	1973	Repoir	No

7. Description of Work Remaval of 1/2" in length, 1/16" width linear indication at the toe of the weld

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operation 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 itema 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.

ANII Review

AP
9-3-90

NIS2 NO. 10-90-10

FORM NIS-2 (Back) sheet 2 of 2

9. Remarks 1/2" long linear indication discovered during ISI(MT) of Main Steam 'C' line weld MSC-J009. Repaired weld
Applicable Manufacturer's Data Reports to be attached
by grinding out indications. Performed MT using the same ISI No. 89-078 and was found acceptable. Minimum wall thickness was verified by UT, minimum wall required .902"; as left 1.003".

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 Stemp None

Certificate of Authorization No. None Expiration Date

Signed Surinder Sharma Codes & Materials, TGL Date 8-25-, 19 90
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 Hartford Steam Boiler I&I Co of Hartford, Connecticut have inspected the components described in this Owner's Report during the period 7-26-90 to 9-3-90, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in the 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.

Scott Fowler Commissions NB 8829(I)(N) 941-IA
Inspectors Signature National Board, State, Province, and Endorsements

Date 9-3 19 90

NIS2 NO. 10-90-11

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 August 25,1990

P.O.Box 351, Cedar Rapids, IA 52406 (Address) Sheet 1 of 2

2. Plant Duane Arnold Energy Center (Name) Unit 1

3277 DAEC Rd, Palo, IA 52324 (Address) PMAR #1045061, P.O. 51555 (Repair Organization P.O.No.,Job No.)

3. Work Performed by Iowa Electric (Name) Type Code Symbol Stamp None

Authorization No. None

3277 DAEC Road Palo, IA 52324 (Address) Expiration Date None

4. Identification of System MAIN STEAM 'D' (CLASS 1)

5. (a)Applicable Const. Code ANSI B31.1 19 67 Edition, NONE Addenda, NONE Code Case
(b)Applicable Edition of Saction XI Utilizad for Repairs or Replacements 1980 W81
(c)Construction code of Replacement ITEMSection III 19 74 Edition, W76 Addenda 1644-5 Code Case*
*Item replacad built to this construction code

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacture	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired Replaced, or Replacement	ASME Code Stamped (Yes or No)
Mechanical Snubber	Pacific-Scientific	SN9549	N/A	EBA-X7D-SS-001	1982	Replacad	No
Mechanical Snubber	Pacific-Scientific	SN9553	N/A	EBA-X7D-SS-001	1982	Replacement	No

7. Description of Work Replace snubber for functionsl test.Formerly ID no. SSD-1-MS

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

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

NRR Review AP 8-30-90

NIS2 NO. 10-90-11

FORM NIS-2 (Back) sheet 2 of 2

9. Remarks Replacement of snubber (PSA-35) with new one for functional testing purposes. New snubber never been installed before. Vt-3/4 preservice examintion performed reference inspection 90-177.

Applicable Manufacturer's Data Reports to be attachad

CERTIFICATE OF COMPLIANCE

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

Type Code Symbol Stamp None

Certificate of Authorization No. None Expiration Date

Signed Surinder Sharma Codes & Materials, TGL Date 8 - 2 5 - , 19 90
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 employad by Hartford Steem Boiler I&I Co of Hartford, Connecticut have inspectad the components described in this Owner's Report during the period 5-31-72 to 8-30-90, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in the Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer mekes any warranty, expressed or implied, concerning the examinetions and corrective measures described in this Owner's Repart. 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.

Scott Fowler Commissions NB 8829(I)(N) 941-IA
Inspectors Signature National Boarrd, State, Province, and Endorsements

Date 8-30 19 90

NIS2 NO. 10-90-12

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 August 25,1990

P.O.Box 351, Cedar Rapids, IA 52406 (Address) Sheet 1 of 2

2. Plant Duane Arnold Energy Center (Name) Unit 1

3277 DAEC Rd. Palo, IA 52324 (Address) PMAR #1045060, P.O. 51155 (Repair Organization P.O.No.,Job No.)

3. Work Performed by Iowa Electric (Name) Type Code Symbol Stamp None

Authorization No. None

3277 DAEC Road Palo, IA 52324 (Address) Expiration Date None

4. Identification of System HPCI-STEAM SIDE (CLASS 1)

5. (a)Applicable Const. Code ANSI B31.7 19 69 Edition, NONE Addenda, NONE Code Case
(b)Applicable Edition of Section XI Utilized for Repairs or Replacements 1980 W81
(c)Construction code of Replacement ITEMSection III 19 74 Edition, W76 Addenda 1644-5 Code Case*
*Item roplacad built to this construction code

6. Identification of Components Repaired or Replacad and Replacement Components

Name of Component	Name of Manufacture	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repairad Replaced, or Replacement	ASME Code Stamped (Yes or No)
Mechanical Snubber	Pacific-Scientific	SN1889	N/A	DLA-003-SS-003	1977	Replacad	No
Mechanical Snubber	Pacific-Scientific	SN26375	N/A	DLA-003-SS-003	1983	Replacement	No

7. Description of Work Replace snubber for functional test.

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

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

AF
9-7-90

FORM NIS-2 (Back) sheet 2 of 2

9. Remarks Replacement of snubber (PSA-3) with new one for functional testing purposes. New snubber never been

Applicable Manufacturer's Data Reports to be attached

installed before. Vt-3/4 preservice examintion performed reference inspection 90-179.

CERTIFICATE OF COMPLIANCE

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

Type Code Symbol Stamp None

Certificate of Authorization No. Nons Expiration Date ________

Signed Surinder Shangari (Owner or Owner's Designee, Title) Codes & Materials, TGL Date 8-25-, 19 90

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 Hartford Steem Boiler I&I Co of Hartford, Connecticut have inspectad the components described in this Owner's Repart during the period 5-31-90 to 9-7-90, and state that to the best of my knowledge and belief, the Owner has performed exeminations and taken corrective measures described in the Owner's Repart 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 exeminetions 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 connectad with this inspection.

Scott A Presler (Inspectors Signature) Commissions NB 8829(I)(N) 941-IA (National Board, State, Province, and Endorsements)

Date 9-7 19 90

NIS2 NO. 10-90-13

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 August 27,1990

P.O.Box 351, Cedar Rapids, IA 52406 (Address) Sheet 1 of 2

2. Plant Duane Arnold Energy Center (Name) Unit 1

3277 DAEC Rd. Palo, IA 52324 (Address) CMAR #A 00576 (Repair Organization P.O.No.,Job No.)

3. Work Performed by Iowa Electric (Name) Type Code Symbol Stamp None

Authorization No. None

3277 DAEC Road Palo, IA 52324 (Address) Expiration Date None

4. Identification of System Main Steam Bypass line (Class 2)

5. (a)Applicable Const. Code ANSI B31.1 19 67 Edition, Addenda, N/A Code Case
(b)Applicable Edition of Section XI Utilizad for Repairs or Replacements 1980 W81 class 2

6. Identification of Components Repairad or Replacad and Replacement Components

Name of Component	Name of Manufacture	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repairad Replaced, or Replacement	ASME Code Stamped (Yes or No)
Weld MSE-CF009	Bechtel	spool # EBD-6-1-1	N/A	Main steam bypass	1971	Repair	No

7. Description of Work Removal of 3/8" in length, 1/64" width and a 1/4" in length, 1/32" width indication

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

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be usad, 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 shest is numberad and the number of sheets is recorded at the top of this form.

ANII Review 8-30-90

NIS2 NO. 10-90-13

FORM NIS-2 (Back) sheet 2 of 2

9. Remarks A 3/8" and a 1/4" long indication was discovered during an ISI (MT) inspection of Main Steam Bypass weld
Applicable Manufacturer's Data Reports to be attached

MSE-CF009. Repaired weld by grinding out indications. Inspected under same ISI number 89-381. Minimum wall thickness was verified by UT, minimum wall required .602"; as left .638".

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

Signed Surinder Sharma Codes & Materials, TGL Date 8-28-90, 19 90
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 Hartford Steam Boiler I&I Co of Hartford, Connecticut have inspected the components described in this Owner's Report during the period 7-26-90 to 8-30-90, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in the 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.

Scott Fowler Commissions NB 8829(I)(N) 941-IA
Inapectors Signature National Board, State, Province, and Endorsements

Date 8-30 19 90

NIS2 NO. 10-90-14

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 August 27,1990

P.O.Box 351, Cedar Rapids, IA 52406 (Address) Sheet 1 of 2

2. Plant Duane Arnold Energy Center (Nema) Unit 1

3277 DAEC Rd. Palo, IA 52324 (Address) CMAR #A 02679 (Repair Organization P.O.No.,Job No.)

3. Work Performed by Iowa Electric (Name) Type Code Symbol Stamp None

Authorization No. None

3277 DAEC Road Palo, IA 52324 (Address) Expiration Date None

4. Identification of System Main Steam Bypass line (Class 2)

5. (a)Applicable Const. Code ANSI 831.1 19 67 Edition, Addenda, N/A Code Case
(b)Applicable Edition of Section XI Utilized for Repairs or Replacements 1980 W81 class 2

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacture	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repoired Replaced, or Replacement	ASME Code Stamped (Yes or No)
Weld MSE-CF006	Bechtel	spool # EBD-6-1-1	N/A	Main steam bypass	1971	Repair	No

7. Description of Work Removal of two 5/16" indications on the Main Steam Bypass line 12"-EBD-6

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

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

ANII Review 9-29-90

NIS2 NO. 10-90-14

FORM NIS-2 (Back) sheet 2 of 2

9. Remarks Two 5/16" long indications was discovered during an ISI(MT) inpsection of Main Steam Bypass weld MSE-CF006
Applicable Manufacturer's Data Reports to be attached

Weld was repaired by grinding out indications. Inspected under same ISI number 90-281. Minimum wall thickness was verified by UT, minimum wall required .602"; as left .628".

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 Stemp None

Certificate of Authorization No. None Expiration Date

Signed Surinder Ghangas Codes & Materials, TGL Date 8-28-, 19 90
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 Hartford Steam Boiler I&I Co of Hartford, Connecticut have inspected the components described in this Owner's Report during the period 8-13-90 to 8-29-90, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in the 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.

Scott Fowler Commissions NB 8829(I)(N) 941-IA
Inspectors Signature National Board, State, Province, and Endorsements

Date 8-29 19 90

NIS2 NO. 10-90-15

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 August 27,1990

P.O.Box 351, Cedar Rapids, IA 52406 (Address) Sheet 1 of 2

2. Plant Duane Arnold Energy Center (Name) Unit 1

3277 DAEC Rd. Palo, IA 52324 (Address) CMAR #A 02658 (Repair Organization P.O.No.,Job No.)

3. Work Performed by Iowa Electric (Name) Type Code Symbol Stamp None

Authorization No. None

3277 DAEC Road Palo, IA 52324 (Address) Expiration Date None

4. Identification of Systam Main Steam Bypass Lina (Class 2)

5. (a)Applicable Const. Code ANSI B31.1 19 67 Edition, Addenda, N/A Code Case
(b)Applicable Edition of Section XI Utilized for Repairs or Replacements 1980 W81 class 2

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacture	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired Replaced, or Replacement	ASME Code Stamped (Yes or No)
Weld MSE-CF010	Bechtel	spool # EBD-6-1-1	N/A	Main steam bypass	1971	Repair	No

7. Description of Werk Removal of a 3" indication on Mein Steam Bypass line 12"-EBD-6

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operation 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 repart is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

ANII Review AF 8-30-90

NIS2 NO. 10-90-15

FORM NIS-2 (Back) sheet 2 of 2

9. Remarks A 3" long indications was discovered during an ISI(MT) inspection of the Main Steam Bypass weld MSE-CF-010
Applicable Manufacturer's Data Reports to be attached

Weld was repaired by grinding out indications. Inspected under same ISI number 90-280. Minimum wall thickness was verified by UT, minimum wall required .602"; as left .638".

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

Signed Surinder Sharma Codes & Materials, TGL Date 8-28-, 1990
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 Hartford Steam Boiler I&I Co of Hartford, Connecticut have inspected the components described in this Owner's Report during the period 8-13-90 to 5-30-92, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in the 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 personel injury or property damage or a loss of any kind arising from or connected with this inspection.

Scott Cousins Commissions NB 8829(I)(N) 941-IA
Inspectors Signature National Board, State, Province, and Endorsements

Date 8-30 19 92

NIS2 NO. 10-90-16

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 August 28,1990

P.O.Box 351, Cedar Rapids, IA 52406 (Address) Sheet 1 of 2

2. Plant Duane Arnold Energy Center (Name) Unit 1

3277 DAEC Rd. Palo, IA 52324 (Address) CMAR #091778 (Repair Organization P.O.No.,Job No.)

3. Work Performed by Iowa Electric (Name) Type Code Symbol Stamp None

Authorization No. None

3277 DAEC Roed Palo, IA 52324 (Address) Expiration Date None

4. Identification of System RHR line 12"-GLE-5 (Class 2)

5. (a)Applicable Const. Code ASME PUMP & VALVE CODE 19 68 Edition, Addenda, N/A Code Case EXTENSION OF CONTAINMENT ASME CODE CASE 1427
(b)Applicable Edition of Section XI Utilized for Repairs or Replacements 1980 W81 class 2

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacture	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired Replaced, or Replacement	ASME Code Stamped (Yes or No)
MO-1934	ANCHOR DARLING	UNKNOWN	N/A	12"-GLE-GB	1972	REPAIRED	YES

7. Description of Work Grinding of eroded areas of valve body, welding of disc and guide ribs.

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

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

ANI Review 9-11-90

FORM NIS-2 (Back) sheet 2 of 2

9. Remarks When MO-1934 was disassembled for inspection, it was discovered that the valve body, guide ribs, and disc required repair. The valve body was blended and MT inspected and found accepted. A UT inspection was performed to verify wall thickness (min.1.01"). A weld buildup was performed on the disc and guide ribs. The weld areas were machined to the proper dimensions. A final surface exam (MT/PT) was performed and accepted.

Applicable Manufacturer's Data Reports to be attached

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

Signed Surinder Sharma Codes & Materials, TGL Date 9-6-, 19 90
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 Hartford Steem Boiler I&I Co of Hartford, Connecticut have inspected the components described in this Owner's Report during the period 7-26-88 to 9-11-90, and state that to the best of my knowledge and belief, the Owner has performed examinationa and taken corrective maasures described in the Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector ner his employer makes any warranty, expressed or implied, concerning the examinetions and corrective maasures described in this Owner's Repart. 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.

Scott Fischer Commissions NB 8829(I)(N) 941-IA
Inspectors Signature National Board, State, Province, and Endorsements

Date 9-11 19 90

NIS2 NO. 10-90-17

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 August 27,1990

P.O.Box 351, Cedar Rapids, IA 52406 (Address) Sheet 1 of 2

2. Plant Duane Arnold Energy Center (Name) Unit 1

3277 DAEC Rd, Palo, IA 52324 (Address) PMAR #1046776, P.O. S34267 (Repair Organization P.O.No.,Job No.)

3. Work Performed by Iowa Electric (Name) Type Code Symbol Stamp None

Authorization No. None

3277 DAEC Road Palo, IA 52324 (Address) Expiration Date None

4. Identification of System Recirc Pump 'B' (CLASS 1)

5. (a)Applicable Const. Code ANSI B31.7 19 69 Edition, 1971 Addenda, NONE 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 Manufacture	Manufecturer Serial No.	National Board No.	Other Identification	Year Built	Repaired Replaced, or Replacement	ASME Code Stamped (Yes or No)
Snubber Pin	Iowa Electric	**	N/A	DCA-004-SSB-001	1987	Replaced	No
Snubber Pin	Bergen-Paterson	P1165721	N/A	DCA-004-SSB-001	1987	Replacement	No

** Fabricated from 1 1/2" SA-564-T-640 round ber stock

7. Description of Work Replace snubber pin for proper fit.

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operation 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) eech sheet is numbered and the number of sheets is recorded at the top of this form.

ANI Review

8-30-90

NIS2 NO. 10-90-17

FORM NIS-2 (Back) sheet 2 of 2

9. Remarks Replacement of snubber pin on Pump side for proper fit. Vt- 3/4 preservice inspection performed reference Applicable Manufacturer's Data Reports to be attached

ISI inservice inspection report 90-205.

CERTIFICATE OF COMPLIANCE

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

Type Code Symbol Stamp None

Certificata of Authorization No. None Expiration Date

Signed Surinder Shaunpai (Owner or Owner's Designee, Title) Codes & Materials, TGL Date 8 - 28 -, 19 90

CERTIFICATE OF INSERVICE INSPECTION

I, tha 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 Hartford Steam Boiler I&I Co of Hartford, Connecticut have inspected the components described in this Owner's Report during the period 8-21-90 to 8-30-90, and state that to the best of my knowledge and belief, the Owner has parformed examinations and taken corrective maasuros described in the Owner's Repart 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 impliod, concerning the examinetions 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.

Scott Preston
Inspectors Signature

Commissions NB 8829(I)(N) 941-IA
National Board, State, Province, and Endorsements

Date 8-30 19 90

NIS2 NO. 10-90-18

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 August 27,1990

P.O.Box 351, Cedar Rapids, IA 52406 (Address) Sheet 1 of 2

2. Plant Duano Arnold Energy Center (Name) Unit 1

3277 DAEC Rd. Palo, IA 52324 (Address) PMAR #1046777, P.O. 15066 (Repair Organization P.O.No.,Job No.)

3. Work Performed by Iowa Electric (Name) Type Code Symbol Stamp None

Authorization No. None

3277 DAEC Roed Palo, IA 52324 (Address) Expiration Date None

4. Identification of System Recirc Pump 'B' (CLASS 1)

5. (a)Applicable Const. Code ANSI 831.7 19 69 Edition, NONE Addenda, NONE Code Case
(b)Applicable Edition of Section XI Utilized for Repairs or Replacements 1980 W81
(c)Construction code of Replacement ITEMSection III 19 74 Edition, W76 Addenda 1644-5 Code Case*
*Item replaced built to this construction code

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacture	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired Replaced, or Replacement	ASME Code Stamped (Yes or No)
Mechanical Snubber	Pacific-Scientific	SN352	N/A	DCA-004-SSB-004	1977	Replaced	No
Mechanical Snubber	Pacific-Scientific	SN101	N/A	DCA-004-SSB-004	1984	Replacement	No

7. Description of Work Replace snubber for functional test.

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operation 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.

Review

AP
9-4-92

NIS2 NO. 10-90-18

FORM NIS-2 (Back) sheet 2 of 2

9. Remarks Replacement of snubber (PSA-100) with new one for functional testing purposes. New snubber never been installed before. Vt-3/4 preservice examintion performed reference inspection 90-203.

Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

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

Type Code Symbol Stamp None

Certificate of Authorization No. None Expiration Date

Signed Surinder Sharma Codes & Materials, TGL Date 8-30-, 19 90
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 Hartford Steam Boiler I&I Co of Hartford, Connecticut have inspected the components described in this Owner's Report during the period 7-28-90 to 9-4-90, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in the 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 massures 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 demage or a loss of any kind arising from or connected with this inspection.

Scott Fowler Commissions NB 8829(I)(N) 941-IA
Inspectors Signature National Board, State, Province, and Endorsements

Date 9-4 19 90

NIS2 NO. 10-90-19

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 September 3,1990

P.O.Box 351, Cedar Rapids, IA 52406 (Address) Sheet 1 of 2

2. Plant Duane Arnold Energy Center (Name) Unit 1

3277 DAEC Rd. Palo, IA 52324 (Address) DCP 1499 up to and including FCN 1 DCN 0 (Repair Organization P.O.No.,Job No.)

3. Work Performed by Iowa Electric (Name) Type Code Symbol Stamp None

Authorization No. None

3277 DAEC Road Palo, IA 52324 (Address) Expiration Date None

4. Identification of System RHR line 10" E88-16 (class 2)

5. (a)Applicable Const. Code ANSI B31.7 19 69 Edition, 1971 Addenda, NONE 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 Manufacture	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repairad Replacad, or Replacement	ASME Code Stamped (Yes or No)
10" Pipa(misc.)	Bechtel	E88-16-1	N/A	10"-E88-16	1971	Replacad	No
10" valve	Anchor Valve	10"E88-GT	N/A	MO 2298	1971	Replacad	Yes
Snubber	Bergen-Paterson	DA10	N/A	E88-16-SS-231	1982	Replacad	No
Hanger	Bergen-Paterson	VSIF	N/A	E88-16-H-17	1973	Replacad	No
10" Pipe (Cap)	Tioga Pipe Co.	HT 7815A	N/A	10"-E88-16	1990	Replacement	No
Weld RHD-CF-50R	Iowa Electric	N/A	N/A	FW-1A	1990	Replacement	No

7. Description of Work Removed cross tie line 10"-E88-16, Capped off line (RHR side)

8. Tests Conducted: Hydrostatic [x] Pneumatic [ ] Nominal Operation Pressure [ ]

Other [ ] Pressure 469 psi Test Temp. min. 60 °F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be usad, providad (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.

11-14-90

NIS2 NO. 10-90-19

FORM NIS-2 (Back) sheet 2 of 2

9. Remarks Replacement crosstie line 10"-EB8-16 with cap on RHR side (see NIS-2 109020 for HPCI side). Performed the Applicable Manufacturer's Data Reports to be attached following NDE: preservice UT for weld RHD-CF-50R, ISI Report # 90-329,90-330; preservice MT ISI Report # 90-331; RT of weld per construction code. VT-2 performed under procedure GMP-Test-001 and report # 90-358.

CERTIFICATE OF COMPLIANCE

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

Type Code Symbol Stamp None

Certificate of Authorization No. None Expiration Date _____

Signed _____ Codes & Materials, TGL Date _____, 19 90
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 Hartford Steam Boiler I&I Co of Hartford, Connecticut have inspected the components described in this Owner's Report during the period 7-20-90 to 11-14-90, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in the Owner's Report in accordence 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.

_____ Commissions NB 8829(I)(N) 941-IA
Inspectors Signature National Board, State, Province, and Endorsemonts

Date Nov 14 19 90

NIS2 NO. 10-90-20

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 September 3 ,1990

P.O.Box 351, Cedar Rapids, IA 52406 (Address) Sheet 1 of 2

2. Plant Duane Arnold Energy Center (Name) Unit 1

3277 DAEC Rd, Palo, IA 52324 (Address) DCP 1499 up to and including FCN 1 DCN 0 (Repair Organization P.O.No.,Job No.)

3. Work Performed by Iowa Electric (Name) Type Code Symbol Stamp None

Authorization No. None

3277 DAEC Road Palo, IA 52324 (Address) Expiration Date None

4. Identification of System HPCI line 10" E8B-14 (class 2)

5. (a)Applicable Const. Code ANSI B31.7 19 69 Edition, 1971 Addenda, NONE Code Case

(b)Applicable Edition of Section XI Utilized for Repairs or Replacements 1980 W81

6. Identification of Components Repoired or Replaced and Replacement Components

Name of Component	Name of Manufacture	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repairad Replaced, or Replacemont	ASME Code Stamped (Yes or No)
10" Pipe(tee)	Bechtel	E8B-16-1	N/A	10"-E8B-14	1971	Replacad	No
Hanger	Bergen-Patterson	N/A	N/A	E8B-14-SR-17	1973	Replaced	No
10" Pipe(elbow)	Tioga Pipe Co.	HT7814A	N/A	10"-E8B-14	1990	Replacement	No
Weld HPC-CF55R	Iowa Electric	N/A	N/A	FW-3A	1990	Replacement	No
Weld HPC-CF57R	Iowa Electric	N/A	N/A	FW-1A	1990	Replacement	No
Weld HPC-CF56R	Iowa Electric	N/A	N/A	FW-2A	1990	Replacement	No
5/8"x4" bolt	Cardinal	A2213-A2	N/A	E8B-14-H8	1986	Replacement	No
5/8"x3" bolt	Cardinal	HT D66732	N/A	E8B-14-H8	1988	Replacement	No

7. Description of Work Removed cross tie line 10"-E8B-16, Replace with Elbow (HPCI side)

8. Tests Conductad: Hydrostatic [x] Pneumatic [ ] Nominal Operation Pressure [ ]

Other [ ] Pressure 1430 psi Test Temp. 75 °F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be usad, 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 recordad at the top of this form.

NIS2 NO. 10-90-20

FORM NIS-2 (Back) sheet 2 of 2

9. Remarks Replacement crosstie line 10"-EBB-16 with elbow and pipe on HPCI side (see NIS-2 109019 for RHR side)

Applicable Manufacturer's Data Reports to be attached

following NDE: preservice UT for weld HPC-CF55R,ISI Report #90-335,#90-336;preservice MT ISI Report #90-337. Preservice UT for weld HPC-CF56R #90-338, #90-339;preservice MT #90-340. Preservice UT for weld HPC-CF57R 90-332, 90-333;Preservice MT #90-334. RT of each weld per construction code. VT-2 performed under procedure STP46G010.**

CERTIFICATE OF COMPLIANCE

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

Type Code Symbol Stamp None

Certificate of Authorization No. None Expiration Date _____

Signed S. Sheridan Codes & Materials, TGL Date 11-13-, (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 Hartford Steam Boiler I&I Co of Hartford, Connecticut have inspected the components described in this Owner's Report during the period 7-20-90 to 11-14-90, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in the 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.

Inspectors Signature Commissions NB 8829(I)(N) 941-IA (National Board, State, Province, and Endorsements)

Date Nov 14 19 90

**Preservice VT-3/4 on EBD-14-H8 was performed under ISI No. 90-012.

NIS2 NO. 10-90-21

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

Owner Iowa Electric Light and Power (Name) Date August 27,1990

P.O.Box 351, Cedar Rapids, IA 52406 (Address) Sheet 1 of 2

2. Plant Duane Arnold Energy Center (Name) Unit 1

3277 DAEC Rd. Palo, IA 52324 (Address) PMAR #1046774, P.O. S34267 (Repair Organization P.O.No.,Job No.)

3. Work Performed by Iowa Electric (Name) Type Code Symbol Stamp None

Authorization No. None

3277 DAEC Road Palo, IA 52324 (Address) Expiration Date None

4. Identification of System Recirc Pump 'A' (CLASS 1)

5. (a)Applicable Const. Code ANSI B31.7 19 69 Edition, 1971 Addenda, NONE 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 Manufacture	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired Replaced, or Replacement	ASME Code Stamped (Yes or No)
Snubber Pin	Iowa Electric	**	N/A	DCA-004-SSA-001	1987	Replaced	No
Snubber Pin	Bergen-Paterson	P1165721	N/A	DCA-004-SSA-001	1987	Replacement	No

** Fabricated from 1 1/2" SA-564-T-640 round bar stock

7. Description of Work Replace snubber pin for proper fit.

8. Tests Conductad: Hydrostatic ☐ Pneumatic ☐ Nominal Operation Pressure ☐

Other

Pressure N/A psi ☐

Test Temp. N/A °F

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

ANII Review

AP 5-29-92

NIS2 NO. 10-90-21

FORM NIS-2 (Back) sheet 2 of 2

9. Remerks Replacement of snubber pin on Pump side for proper fit. Vt- 3/4 preservice inspection performed reference Applicable Manufacturer's Data Reports to ba attached ISI inservice inspection report 90-206.

CERTIFICATE OF COMPLIANCE

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

Type Code Symbol Stamp None

Certificate of Authorization No. None Expiration Date

Signed Surinder Bhargava Codes & Materials, TGL Date 8 - 28 -, 19 90
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 Hartford Steam Boiler I&I Co of Hartford, Connecticut have inspected the components described in this Owner's Report during the period 8-21-90 to 8-29-90, and state that to the best of my knowledge and balief, the Owner has performed examinations and taken corrective measures described in the Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer mekes 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 ba liable in any manner for any personal injury or proporty damage or a loss of any kind arising from or connected with this inspection.

Scott Fischer Commissions NB 8829(I)(N) 941-IA
Inspectors Signature National Board, State, Province, and Endorsements

Date 8-29 19 90

NIS2 NO. 10-90-22

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 September 5, 1990

P.O.Box 351, Cedar Rapids, IA 52406 (Address) Sheet 1 of 2

2. Plant Duane Arnold Energy Center (Name) Unit 1

3277 DAEC Rd. Palo, IA 52324 (Address) CMAR #096050 (Repair Organization P.O.No., Job No.)

3. Work Performed by Iowa Electric (Name) Type Code Symbol Stamp None

Authorization No. None

3277 DAEC Road Palo, IA 52324 (Address) Expiration Date None

4. Identification of System RHR inject inboard, line 20"-DLA-6 (class 1)

5. (a)Applicable Const. Code ASME PUMP & VALVE CODE 19 68 Edition, _____ Addenda, N/A Code Case
(b)Applicable Edition of Section XI Utilized for Repairs or Replacements 1980 W81 class 1

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacture	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired Replaced, or Replacament	ASME Code Stamped (Yes or No)
MO-1905	ANCHOR Valve Co.	IM-034	N/A	20"-DLA-GT	1972	REPAIRED	YES

7. Description of Work Machining of disc tee slot and guide saddle, then seal weld of back seat to bonnet.

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operation Pressure ☒
Other ☐ Pressure 1026 psi Test Temp. 206 °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.

ANII Review 12-27-90

NIS2 NO. 10-90-22

FORM NIS-2 (Back) sheet 2 of 2

9. Remarks After disassembly of MO-1905 it was necessary to replace the stem. The disc tee slot and guide saddle required machining to correct misalignment. In addition, because of stem hole bushing wear a replacement was required which was seal welded to bonnet.

Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

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

Type Code Symbol Stamp None

Certificate of Authorization No. None Expiration Date

Signed Surinder Sharma Codes & Materials, TGL (Owner or Owner's Designee, Title) Date 10-1-, 19 90

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 Hartford Steam Boiler I&I Co of Hartford, Connecticut have inspected the components described in this Owner's Report during the period 7-11-90 to 10-27-90, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in the 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.

Inspectors Signature Commissions NB 8829(I)(N) 941-IA (National Board, State, Province, and Endorsements)

Date Oct 29 19 90

NIS2 NO. 10-90-23

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

Owner Iowa Electric Light and Power (Name) Date August 30,1990

P.O.Box 351, Cedar Rapids, IA 52406 (Address) Sheet 1 of 2

2. Plant Duane Arnold Energy Center (Name) Unit 1

3277 DAEC Rd. Palo, IA 52324 (Address) PMAR #1045051, P.O. 5082 (Repair Organization P.O.No.,Job No.)

3. Work Performed by Iowa Elocrtic (Name) Type Code Symbol Stamp None

Authorization No. None

3277 DAEC Roed Palo, IA 52324 (Address) Expiration Date None

4. Identification of System RCIC STEAM SUPPLY (Class 1)

5. (a)Applicable Const. Code ANSI B31.7 19 69 Edition, NONE Addenda, NONE Code Case
(b)Applicable Edition of Section XI Utilized for Repairs or Replacements 1980 W81
(c)Construction code of Replacement ITEMSection III 19 74 Edition, W76 Addenda 1644-5 Code Case*
*Item replaced built to this construction code

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacture	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired Replaced, or Replacement	ASME Code Stamped (Yes or No)
Mechanical Snubber	Pacific-Scientific	SN604	N/A	DBA-004-SS-036	1977	Replaced	No
Mechanical Snubber	Pacific-Scientific	SN1904	N/A	DBA-004-SS-036	1977	Replacement	No

7. Description of Work Replace snubber for functional test.

8. Tests Conductad: Hydrostatic ☐ Pneumatic ☐ Nominsl Operation Pressure ☐
Other ☐ Pressure N/A psi Test Temp. N/A °F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may ba 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 rocorded at the top of this form.

ANI Review JP 9-4-90

NIS2 NO. 10-90-23

FORM NIS-2 (Back) sheet 2 of 2

9. Remarks Replacement of snubber (PSA-3) with new one for functional testing purposes. New snubber never been

Applicable Manufacturer's Data Reports to be attached

installed before. Vt-3/4 preservice examintion performed reference inspection 90-176.

CERTIFICATE OF COMPLIANCE

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

Type Code Symbol Stamp None

Certificate of Authorization No. None Expiration Date

Signed Surinder Sharma Codes & Materials, TGL Date 8-30-, 19 90
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 Hartford Steam Boiler I&I Co of Hartford, Connecticut have inspected the components described in this Owner's Report during the period 5-31-90 to 9-4-90, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in the 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.

Scott Crusher Commissiona NB 8829(I)(N) 941-IA
Inspectors Signature National Board, State, Province, and Endorsements

Date 9-4 19 90

NIS2 NO. 10-90-24

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 August 29,1990

P.O.Box 351, Cedar Rapids, IA 52406 (Address) Sheet 1 of 2

2. Plant Duane Arnold Energy Center (Name) Unit 1

3277 DAEC Rd. Palo, IA 52324 (Addresa) CMAR #A01862 CSR A (Repoir Organization P.O.No.,Job No.

3. Work Performed by Iowa Electric (Name) Type Code Symbol Stamp None

Authorization No. None

3277 DAEC Roed Palo, IA 52324 (Address) Expiration Date None

4. Identification of Systam RHR line 24"-HLE-7 (Class 2)

5. (a)Applicable Const. Code ASME PUMP & VALVE CODE 19 68 Edition, Addenda, N/A Code Case EXTENSION OF CONTAINMENT ASME CODE CASE 1427
(b)Applicable Edition of Section XI Utilized for Repoirs or Replacements 1980 W81 class 2

6. Identification of Components Repoired or Replaced and Replacement Components

Name of Component	Name of Manufacture	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired Replaced, or Replacement	ASME Code Stamped (Yes or No)
MO-1989	ANCHOR Valve	UNKNOWN	N/A	24"-HLE-GT	1971	REPAIRED	YES
3-STUDS	Daniel Bolt	HTCODE 213	N/A	MO 1989	1979	Replacement	NO

7. Description of Work Welding of guide ribs Also repleced 3 studs.

8. Tests Conducted: Hydroatatic ☐ Pneumatic ☐ Nominel Operation Pressure ☐
Other ☐ Pressure N/A psi Test Tamp. 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 itema 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.

AE
9-7-90

NIS2 NO. 10-90-24

FORM NIS-2 (Back) sheet 2 of 2

9. Remarks When MO-1989 was disassembled for inspection, it was discovered that the guide ribs required repairs.
Applicable Manufacturer's Data Reports to be attached

A weld buildup for proper alignment was perforded on the guide ribs. The wald areas were machined to proper dimensions. Replacement of studs ware of A193 grade B7 material (P.O. F16625)

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.
ropeir or roplacement

Type Code Symbol Stamp None

Certificate of Authorization No. None Expiration Date

Signed Surinder Sharma Codes & Materials, TGL Date 8-31-, 19 90
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 Hartford Steam Boiler I&I Co of Hartford, Connecticut have inspected the components described in this Owner's Report during the period 7-30-90 to 7-7-90, and state thet to the best of my knowledge and belief, the Owner has perforded examinations and taken corrective maasures described in the 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 personsl injury or property damage or a loss of any kind arising from or connected with this inspection.

Scott Lueder Commissions NB 8829(I)(N) 941-IA
Inspectors Signature National Board, State, Province, and Endorsements

Date 9-7 19 90

NIS2 NO. 10-90-25

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 August 30,1990

P.O.Box 351, Cedar Rapids, IA 52406 (Address) Sheet 1 of 2

2. Plant Duane Arnold Energy Center (Name) Unit 1

3277 DAEC Rd. Palo, IA 52324 (Address) DCP 1461 (Repair Orgenization P.O.No.,Job No.)

3. Work Performed by Iowa Electric (Name) Type Code Symbol Stamp None

Authorization No. None

3277 DAEC Road Palo, IA 52324 (Address) Expiration Date None

4. Identification of System HPCI line 1" EBB-14 (class 2)

5. (a)Applicable Const. Code ANSI B31.7 19 69 Edition, _____ Addenda, _____ Code Case

(b)Applicable Edition of Section XI Utilized for Repairs or Replacements 1980 W81 CLASS 2

6. Identification of Components Ropeired or Replaced and Replacement Components

Name of Component	Name of Manufacture	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Ropeired Replaced, or Replacement	ASME Code Stamped (Yes or No)
1" 6000# Sockolet	Unknown	N/A	N/A	1"-EBB-14	1971	Replaced	No
10" x 1 1/2" 6000# Sockolet	Energy Steel	HT# Z-295	N/A		1990	Replacement	No
1" sch 160 Pipe	Unknown	N/A	N/A	1"-EBB-14	1971	(Remaved) Replaced	No
1 1/2" sch 160 Pipe	Chicago Tube & Iron	HT# 282792	N/A		1987	Replacement	No
1 1/2" 600# Flange	Hub Inc.	HT# 194SNF	N/A		1990	Replacement	No
1 1/2" 600# Flange	Hub Inc.	HT# 323RNF	N/A		1990	Replacement	No

7. Description of Work Modification of line 1"-EBB-14 to LE 2206

8. Tests Conducted: Nydrostatic [X] Pneumatic [ ] Nominal Operation Pressure [ ]

Other [ ] Pressure 1430 psi Test Tamp. 75 °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.

ANII REVIEW 9-7-92

NIS2 NO. 10-90-25

FORM NIS-2 (Back) sheet 2 of 2

9. Remarks DCP 1461 was completed which modified the HPCI Steam Trap Drain Lines. This included the replacement of the Applicable Manufacturer's Data Reports to be attached 1" sockolet and 1" piping with a 10"x1 1/2" sockolet, 1 1/2" piping and 1 1/2" 600 # flanges. All welds were liquid penetrant inspected and accepted. A hydro was also performed and accepted. An NCR 90-056 was written on the fit-up for weld 10 and dispositioned "use as is". Note: this modification also changed the ISI Section XI boundaries.

CERTIFICATE OF COMPLIANCE

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

Type Code Symbol Stamp None

Certificate of Authorization No. None Expiration Date

Signed Surinder Bhangar Codes & Materials, TGL Date 8-31-, 19 90
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 Hartford Steam Boiler I&I Co of Hartford, Connecticut have inspected the components described in this Owner's Report during the period 6-15-90 to 7-12-90, and state that to the best of my knowledge and belief, the Owner has perforded examinations and taken corrective measures described in the Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer mekes 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.

Scott Crosby Commissions NB 8829(I)(N) 941-IA
Inspectors Signature National Board, State, Province, and Endorsements

Date 9-7 19 90

NIS2 NO. 10-90-26

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

Owner Iowa Electric Light and Power (Name) Date August 30,1990

P.O.Box 351, Cedar Rapids, IA 52406 (Address) Sheet 1 of 2

2. Plant Duane Arnold Energy Center (Name) Unit 1

3277 DAEC Rd. Palo, IA 52324 (Address) PMAR #1045050, P.O. 51155 (Repair Organization P.O.No.,Job No.)

3. Work Performed by Iowa Electric (Name) Type Code Symbol Stamp None

Authorization No. None

3277 DAEC Road Palo, IA 52324 (Address) Expiration Date None

4. Identification of System MSIV Leakage Control System (Class 1)

5. (a)Applicable Const. Code ANSI B31.7 19 67 Edition, Addenda, N/A Cede Case
(b)Applicable Edition of Section XI Utilizad for Repairs or Replecements 1980 W81
(c)Construction Code of Replacement item Section III 1974 Edition, W76 Addenda with Code Case 1644-5*
*item replacad same code of construction

6. Identification of Components Repairad or Replacad and Replacement Components

Name of Component	Name of Manufacture	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired Replaced, or Replacement	ASME Code Stamped (Yes or No)
Mechanical Snubber	Pacific-Scientific	SN21141	N/A	DBA-004-SS-001	1983	Replacad	No
Mechanical Snubber	Pacific-Scientific	SN21145	N/A	DBA-004-SS-001	1982	Replacement	No

7. Description of Work Replacad snubber for functional testing

8. Tests Conductad: Hydrostatic ☐ Pneumatic ☐ Nominal Operation Pressure ☐
Other ☐ Pressure N/A psi Test Tamp. N/A °F

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

ANII Review 9-4-90

NIS2 NO. 10-90-26

FORM NIS-2 (Back) sheet 2 of 2

9. Remarks Replacement of snubber (PSA-1) with new one for functional testing purposes. New snubber never been installed before. VT 3/4 preservice examination performed, reference inspection 90-175.
Applicable Manufacturer's Data Reports to be attachad

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

Signed Surinder Sharma Cedes & Materials, TGL Date 9-1-, 19 90
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 employad by Hartford Steam Boiler I&I Co of Hartford, Connecticut have inspected the components described in this Owner's Report during the period 5-11-90 to 7-4-90, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in the Owner's Report in eccordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressad or impliad, concerning the examinations and corrective measures described in this Owner's Repart. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personel injury or property damege or a loss of any kind arising from or connectad with this inspection.

Scott Preston Commissions NB 8829(I)(N) 941-IA
Inspectors Signature Nationel Board, State, Province, and Endorsements

Date 9-4 19 90

NIS2 NO. 10-90-27

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

Owner Iowa Electric Light and Power (Name) Date August 31,1990

P.O.Box 351, Cedar Rapids, IA 52406 (Address) Sheet 1 of 2

2. Plant Duane Arnold Energy Center (Name) Unit 1

3277 DAEC Rd. Palo, IA 52324 (Address) PMAR #1045052, P.O. 29612 (Repair Organization P.O.No.,Job No.)

3. Work Performed by Iowa Electric (Name) Type Code Symbol Stamp None

Authorization No. None

3277 DAEC Road Palo, IA 52324 (Address) Expiration Date None

4. Identification of System Reactor Vessel Head Vent (class 1)

5. (a)Applicable Const. Code ANSI B31.7 19 67 Edition, Addenda, N/A Code Case
(b)Applicable Edition of Section XI Utilizad for Repairs or Replacements 1980 W81
(c)Construction Code of Replacement item Section III 1974 Edition, W76 Addenda with Code Case 1644-5*
*item replaced same code of construction

6. Identification of Components Repaired or Replacad and Replecement Components

Name of Component	Name of Manufacture	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repoired Replacad, or Replacement	ASME Code Stamped (Yes or No)
Mechanical Snubber	Pacific-Scientific	SN 1311	N/A	DBA-009-SS-002B	1977	Replacad	No
Mechanical Snubber	Pacific-Scientific	SN 2237	N/A	DBA-009-SS-002B	1986	Replacement	No

7. Description of Work Replaced snubber for functional testing

8. Tests Conductad: Hydrostatic ☐ Pneumatic ☐ Nominal Operation Pressure ☐
Other ☐ Pressure N/A psi Test Tamp. 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.

ANII Review

9-4-90

NIS2 NO. 10-90-27

FORM NIS-2 (Back) sheet 2 of 2

9. Remarks Replacement of snubber (PSA-1) with new one for functional testing purposes. New snubber never been installed before. VT 3/4 preservice examination performed, reference inspection 90-166.

Applicable Manufacturer's Data Reports to be attachad

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 Nons

Certificate of Authorization No. None Expiration Date

Signed Surinder Sharma Codes & Materials, TGL Date 8-31-, 19 90
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 Hartford Steem Boiler I&I Co of Hartford, Connecticut have inspected the components described in this Owner's Report during the period 5-31-90 to 9-4-90, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in the 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.

Scott Lauber Commissions NB 8829(I)(N) 941-IA
Inspectors Signature National Board, State, Province, and Endorsements

Date 9-4 19 90

NIS2 NO. 10-90-28

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 September 18,1990

P.O.Box 351, Cedar Rapids, IA 52406 (Address) Sheet 1 of 2

2. Plant Duane Arnold Energy Center (Name) Unit 1

3277 DAEC Rd. Palo, IA 52324 (Address) CMAR #A 02662, P.O. 45327 (Repair Organization P.O.No.,Job No.)

3. Work Performed by Iowa Electric (Name) Type Code Symbol Stamp None

Authorization No. None

3277 DAEC Road Palo, IA 52324 (Address) Expiration Date None

4. Identification of System RHR Fuel Pool Cooling (Class 2)

5. (a)Applicable Const. Code ANSI B31.7 19 67 Edition, Addenda, N/A Code Case
(b)Applicable Edition of Section XI Utilized for Repairs or Replacements 1980 W81
(c)Construction Code of Replacement item Section III 1986 Edition, 86 Addenda with Code Case

6. Identification of Components Repoired or Replacad and Replacement Components

Name of Component	Name of Manufacture	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired Replacad, or Replacement	ASME Cede Stamped (Yes or No)
Base plate of Variable Support	Bethlehem Steel	HT411P3471	N/A	H88-25-H163	1988	Replacement	No

7. Description of Work Replacad bese and shim plate for variable support

8. Tests Conductad: Hydrostatic ☐ Pneumatic ☐ Nominal Operation Pressure ☐
Other ☐ Pressure N/A psi Test Tamp. 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 repart is included on each sheet, and (3) each sheet is numbered and the number of sheets is racorded at the top of this form.

ANII Review 9-21-90

NIS2 NO. 10-90-28

FORM NIS-2 (Back) sheet 2 of 2

9. Remarks Hanger base plate was found with slippage from concrete. Replaced old base plate with a new base plate & Applicable Manufacturer's Data Reports to be attached a new shim plate. VT 3/4 preservice examination performed, reference inspection 90-212. Clearance from hanger and line 4"-GBB-17 is at least 5/8".

CERTIFICATE OF COMPLIANCE

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

Type Code Symbol Stamp None

Certificate of Authorization No. None Expiration Date _____

Signed _____ Codes & Materials, TGL Date _____, 19 90
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 Hartford Steam Boiler I&I Co of Hartford, Connecticut have inspected the components described in this Owner's Report during the period 5-12-90 to 9-21-90, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in the 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.

_____ Commissions NB 8829(I)(N) 941-IA
Inspectors Signature National Board, State, Province, and Endorsements

Date Sept 21 19 90

NIS2 NO. 10-90-29

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

Owner Iowa Electric Light and Power (Name) Date September 13,1990

P.O.Box 351, Cedar Rapids, IA 52406 (Address) Sheet 1 of 2

2. Plant Duane Arnold Energy Center (Nema) Unit 1

3277 DAEC Rd. Palo, IA 52324 (Address) CMAR #91614, P.O. S49899 (Repoir Organization P.O.No.,Job No.)

3. Work Performed by Iowa Electric (Name) Type Code Symbol Stemp None

Authorization No. None

3277 DAEC Road Palo, IA 52324 (Address) Expiration Date None

4. Identification of System Main Steem line 3"-EBD-5 (class 2)

5. (a)Applicable Const. Code ANSI B 31.1 19 67 Edition, N/A Addenda, N/A Code Case
(b)Applicable Edition of Section XI Utilized for Repairs or Replacements 1980 W81 class 2

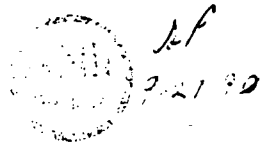
6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacture	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired Replaced, or Replacement	ASME Code Stamped (Yes or No)
Valve Bonnet	ANCHOR Darling	C31745	N/A	V03-0005	1990	Replacement	No
Valve Disk	ANCHOR Darling	S/N U5212	N/A	V03-0005	1990	Replacement	NO

7. Description of Work Replaced valve bonnet and valve disk.

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominel Operation Prossure ☒
Other ☐ Pressure 960 psi Test Temp. 517 °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 racorded at the top of this form.



NIS2 NO. 10-90-29

FORM NIS-2 (Back) sheet 2 of 2

9. Remarks When V03-0005 was diassembled for inspection, it was discovered that the stem, disc, bonnet needad to be Applicable Manufacturer's Data Reports to be attached replaced and that seat machining was required. Replacements were performed and the disc was mechined to a proper fit. VT-2 inservice test was performed under ISI No. 90-361.

CERTIFICATE OF COMPLIANCE

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

Type Code Symbol Stamp Nona

Certificate of Authorization No. Nons Expiration Date

Signed Codes & Materials, TGL Date 9-3-, 19 90
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 Hartford Steam Boiler I&I Co of Hartford, Connecticut have inspectad the components described in this Owner's Report during the period 4-6-90 to 9-21-90, and state that to the best of my knowledge and belief, the Owner has performed examinationa and taken corrective measures described in the 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, expressad 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.

Inspectors Signature Commissions NB 8829(I)(N) 941-IA
National Board, State, Province, and Endorsements

Date Sept 21 1990

NIS2 NO. 10-90-30

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 September 13, 1990

P.O.Box 351, Cedar Rapids, IA 52406 (Address) Sheet 1 of 2

2. Plant Duane Arnold Energy Center (Name) Unit 1

3277 DAEC Rd. Palo, IA 52324 (Address) CMAR #91616, P.O. S49897 (Repair Organization P.O.No.,Job No.)

3. Work Performed by Iowa Electric (Name) Type Code Symbol Stamp None

Authorization No. None

3277 DAEC Road Palo, IA 52324 (Address) Expiration Date None

4. Identification of System Main Steam line 3"-EBD-5 (class 2)

5. (a)Applicable Const. Code ANSI B 31.1 19 67 Edition, N/A Addenda, N/A Code Case
(b)Applicable Edition of Saction XI Utilized for Repairs or Replacements 1980 W81 class 2

6. Identification of Components Repairod or Replaced and Replacement Components

Name of Component	Name of Manufacture	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired Replaced, or Replacement	ASME Code Stamped (Yes or No)
Valve Bonnet	ANCHOR Darling	(Part No.) C31745	N/A	V03-0004	1990	Replacement	No
Valve Disk	ANCHOR Darling	S/N U5218	N/A	V03-0004	1990	Replacement	NO

7. Description of Work Repleced valve bonnet and valve disk.

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operetion Pressure ☒
Other ☐ Pressure 960 psi Test Tamp. 517 °F

NOTE: Supplemental sheets in form of lists, sketches, or drawings mey 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.

ANII 9-21-90

NIS2 NO. 10-90-30

FORM NIS-2 (Back) sheet 2 of 2

9. Remarks When V03-0004 was diassembled for inspection, it was discovered that the stem, disc, bonnet needed to ba
Applicable Manufacturer's Data Reports to be attached

replaced and that seat machining was requirod. Replacements ware performed and the disc was machined to a proper fit. VT-2 was performed under ISI No. 90-361.

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

Signed Surinder Sharma Codes & Materials, TGL Date 9-18-90, 19 90
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 Hartford Steem Boiler I&I Co of Hartford, Connecticut have inspectod the components described in this Owner's Repart during the period 4-6-90 to 5-21-90, and state that to the best of my knowledge and belief, the Owner has berformed exeminations and takon corrective measures described in the 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 embloyer 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.

Scott Lewis Commissiona NB 8829(I)(N) 941-IA
Inspectors Signature National Board, State, Province, and Endorsements

Date Sept 21 19 90

NIS2 NO. 10-90-31

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 August 31,1990

P.O.Box 351, Cedar Rapids, IA 52406 (Address) Sheet 1 of 2

2. Plant Duane Arnold Energy Center (Name) Unit 1

3277 DAEC Rd. Palo, IA 52324 (Address) CMAR #98669 (EMA) (Repair Organization P.O.No.,Job No.)

3. Work Performed by Iowa Electric (Name) Type Code Symbol Stamp None

Authorization No. None

3277 DAEC Road Palo, IA 52324 (Address) Expiration Date None

4. Identification of System RHR Line 2"-GBB-3 (class 2)

5. (a)Applicable Const. Code ASME Section III 19 71 Edition, W72 Addenda, N/A Code Case
(b)Applicable Edition of Section XI Utilized for Repairs or Replacements 1980 W81 class 2

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacture	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired Replaced, or Replacement	ASME Code Stamped (Yes or No)
Valve V-19-46	Velan Valve Co.	38.1	N/A	2" EBB-GT	1974	Replacement	YES
Weld 4C1	Iowa Electric	N/A	N/A	2" GBB-3	1990	Replacement	NO
Weld 5C1 *	Iowa Electric	N/A	N/A	2" GBB-3	1990	Replacement	NO

7. Description of Work Replaced velve V-19-46. *Nonclass weld attached to class 2 valve (FYI)

8. Tests Conducted: Hydrostatic [x] Pneumatic [ ] Nominal Operation Pressure [ ]
Other [ ] Pressure 533 psi Test Temp. 82 °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.

ANII Review 9-5-90

NIS2 NO. 10-90-31

FORM NIS-2 (Back) sheet 2 of 2

9. Remarks Replaced valve due to extrema internal galling. Performed PT on welds 4C1 and 6C1. VT-2 with hydrostatic
Applicable Manufacturer's Data Reports to be attachad

test under ISI report # 90-301.

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

Signed Surinder Sharma Codes & Materials, TGL Date 9 - 1 - , 19 90
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 Hartford Steam Boiler I&I Co of Hartford, Connecticut have inspected the components described in this Owner's Report during the period 8-2-90 to 9-5-90, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in the 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, expressad or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his emblover shall be liable in any menner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Scott Parker Commissions NB 8829(I)(N) 941-IA
Inspectors Signature National Board, State, Province, and Endorsements

Date 9-5 19 90

NIS2 NO. 10-90-32

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 September 12,1990

P.O.Box 351, Cedar Rapids, IA 52406 (Address) Sheet 1 of 2

2. Plant Duane Arnold Energy Center (Name) Unit 1

3277 DAEC Rd. Palo, IA 52324 (Address) DCP 1464, CMAR #A 03257 (Repair Organization P.O.No.,Job No.)

3. Work Performed by Iowa Electric (Name) Type Code Symbol Stamp None

Authorization No. None

3277 DAEC Roed Palo, IA 52324 (Address) Expiration Date None

4. Identification of System Reactor Water Cleanup line (4" DCA- 6 & 4" DCA-14) (Class 1)

5. (a)Applicable Const. Code ANSI B31.7 19 69 Edition, 1971 Addenda, N/A Code Case
(b)Applicable Edition of Section XI Utilized for Repairs or Replecements 1980 W81

6. Identification of Components Repairod or Replaced and Replacement Components

Nema of Component	Name of Manufacture	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired Replaced, or Replacement	ASME Code Stamped (Yes or No)
Weld CUA-A-01	Iowa Electric	N/A	N/A	FW-1	1990	Replacement	No
Weld CUB-A-01	Iowa Electric	N/A	N/A	FW-14	1990	Replacement	No
Variable Support	Bergen-Patterson	(pert no.) VS1B-6	N/A	DCA-14-H-A2	1971	Replaced	No
Sway Strut	NPS Industries	SR5-06-RO	N/A	DCA-14-SR-A2	1990	Replacement	No
Variable Support	Bergan-Paterson	(pert no.) VS1B-6	N/A	DCA-14-H33	1990	Modified	No

7. Description of Work Replacod Non-class RWCU line and modified two class 1 supports

8. Tests Conducted: Hydrostatic [x] Pneumatic [ ] Nominal Operation Pressure [ ]
Other [ ] Pressure 1175 psi Test Tamp. >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.

ANII Review 9-18-92

FORM NIS-2 (Back) sheet 2 of 2

9. Remarks Replacement of non-class RWCU line added two welds ajoining class 1 valves MO 2701 & MO 2740. Also two
Applicable Manufacturer's Data Reports to be attachad

hangers ware modified for better supporting purposes. Welds were RT, PT and UT(90-66 & 90-81) preserviced examined.

Hanger DCA-14-SR-A2 was VT-3/4 preservice examined (90-351) as was DCA-14-H33 (90-352). VT-2 was performed under

ISI # 90-365.

CERTIFICATE OF COMPLIANCE

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

Type Code Symbol Stamp None

Certificate of Authorization No. None Expiration Date ________

Signed [signature] Codes & Materials, TGL Date 9-14-, 19 90
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 Hartford Steam Boiler I&I Co of Hartford, Connecticut have inspected the components described in this Owner's Report during the period 7-3-90 to 9-18-90, and state that to the best of my knowledge and belief, the Owner has berformed examinetions and taken corrective measures described in the Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate noither the Inspector nor his employer makes any warranty, expressad 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 connectod with this inspection.

[signature] Commissions NB 8829(I)(N) 941-IA
Inspectors Signature National Board, State, Province, and Endorsements

Date 9-18 19 90

NIS2 NO. 10-90-34

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 September 5, 1990

P.O.Box 351, Cedar Rapids, IA 52406 (Address) Sheet 1 of 2

2. Plant Duane Arnold Energy Center (Name) Unit 1

3277 DAEC Rd. Palo, IA 52324 (Address) CMAR #90609 (EMA), P.O.s49610 (Repair Organization P.O.No.,Job No.)

3. Work Performed by Iowa Electric (Name) Type Code Symbol Stamp None

Authorization No. None

3277 DAEC Road Palo, IA 52324 (Address) Expiration Date None

4. Identification of System HPCI line 12"-DLA-1 (Class 1)

5. (a)Applicable Const. Code ASME PUMP & VALVE CODE 19 68 Edition, Addenda, N/A Code Case
(b)Applicable Edition of Section XI Utilized for Repairs or Replacements 1980 W81
(c)Construction Code of Replacement Section III 19 86 Edition, 88 Addenda*
* which meets or exceeds 1986 Edition.

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacture	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired Replacod, or Replacement	ASME Code Stamped (Yes or No)
Valve Disk	ANCHOR Darling	U5107	N/A	MO-2312	1990	Replacement	Yes

7. Description of Work Replaced valve disk and remachined bonnet for proper fit.

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operation Pressure ☒
Other ☐ Pressure 1026 psi Test Temp. 206 °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.

ANII Review 12-27-90

NIS2 NO. 10-90-34

FORM NIS-2 (Back) sheet 2 of 2

9. Remarks Replaced disk and remachined bonnet for proper fit. A Vt-3 inspection was performed under ISI report no. 89-20. A VT-2 inspection was performed under 89-13.

Applicable Manufacturer's Data Reports to be attached

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

Signed Owner or Owner's Designee, Title Codes & Materials, TGL Date 10-25-, 1990

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 Hartford Steam Boiler I&I Co of Hartford, Connecticut have inspected the components described in this Owner's Report during the period 6-26-90 to 10-29-90, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in the Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer mekes 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.

Inspectors Signature Commissions NB 8829(I)(N) 941-IA
National Board, State, Province, and Endorsements

Date Oct 29 19 90

(20)

FORM N-2 CERTIFICATE HOLDERS' DATA REPORT FOR IDENTICAL NUCLEAR PARTS AND APPURTENANCES*

As Required by the Provisions of the ASME Code, Section III

Not to Exceed One Day's Production

Manufactured and certified by Anchor/Darling Valve Co., 701 First St., Williamsport, PA 17701
(name and address of NPT Certificate Holder)

Manufactured for Iowa Electric Light & Power Co., P.O. Box 351, Cedar Rapids, Iowa 52406
(name and address of Purchaser)

Location of Installation Duane Arnold Energy Center, 3277 Daec Road, Palo, Iowa 52324
(name and address)

Type: D8032 (drawing no.) | SA216-WCB (mat'l. spec. no.) | 70,000 (tensile strength) | N/A (CRN) | 1990 (year built)

ASME Code, Section III, Division 1: 1986 (edition) | 1988 (addenda date) | 1 (class) | N/A (Code Case no.)

Fabricated in accordance with Const. Spec. (Div. 2 only) N/A (no.) Revision N/A Date N/A

Remarks: 12"-900#-Gate

A/DV Shop Order P-F650-1

Note: No Disc Hydro Performed

Nom. thickness (in.) 3-3/4 Min. design thickness (in.) 1.25 Dia. ID (ft & in.) N/A Length overall (ft & in.) N/A

When applicable, Certificate Holders' Data Reports are attached for each item of this report:

	Part or Appurtenance Serial Number	National Board No. in Numerical Order
(1)	U5107	N/A
(2)		
(3)		
(4)		
(5)		
(6)		
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(49)		
(50)		

Design pressure 2220 psi. Temp. 100 °F. Hydro. test pressure N/A (when applicable) at temp. °F

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

This form (E00040) may be obtained from the Order Dept., ASME, 22 Law Drive, Box 2300, Fairfield, NJ 07007-2300.

Certificate Holder's Serial Nos. U5107 through ---

CERTIFICATION OF DESIGN

gn specifications certified by N/A (when applicable) P.E. State _____ Reg. no. _____

gn report* certified by N/A (when applicable) P.E. State _____ Reg. no. _____

CERTIFICATE OF COMPLIANCE

ertify that the statements made in this report are correct and that this (these) Disc

orms to the rules of construction of the ASME Code, Section III, Division 1.

Certificate of Authorization No. N1713 Expires 4/15/92

2/23/90 Name Anchor/Darling Valve Company (NPT Certificate Holder) Signed R L Stannett (authorized representative)

CERTIFICATE OF INSPECTION

e undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State ~~of~~ of nnsylvania and employed by Commercial Union Insurance Company Boston, Mass. have inspected these items described in this Data Report on 10-23-89 to 2-23-90 and state that to the of my knowledge and belief, the Certificate Holder has fabricated these parts or appurtenances in accordance with the ASME Code, Section ivision 1. Each part listed has been authorized for stamping on the date shown above.

igning this certificate, neither the inspector nor his employer makes any warranty, expressed or implied, concerning the equipment described is Data Report. Furthermore, neither the inspector nor his employer shall be liable in any manner for any personal injury or property dama of any kind arising from or connected with this inspection.

2-23-90 Signed Charles Young (Authorized Inspector) Commissions Pennsylvania 2392 (Nat'l. Bd. (incl. endorsements) and state or prov. and no.)

Charles Young

NIS2 NO. 10-90-35

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 September 13, 1990

P.O.Box 351, Cedar Rapids, IA 52406 (Address) Sheet 1 of 3

2. Plant Duane Arnold Energy Center (Name) Unit 1

3277 DAEC Rd. Palo, IA 52324 (Address) see CRD table op cyc 10/11 (Repair Organization P.O.No., Job No.)

3. Work Performed by Iowa Electric (Name) Type Code Symbol Stamp None

Authorization No. None

3277 DAEC Rd. Palo, IA 52324 (Address) Expiration Date None

4. Identification of System Control Rod Drives (Class 1)

5. (a)Applicable Const. Code ASME Section III 19 74 Edition, w75 Addenda, 1361-2 Code Case
(b)Applicable Edition of Section XI Utilized for Repairs or Replacements 1980 W81
(c) Original Construction Code ASME III 1968 Edtion W68 Addenda per GE Construction Quality Requirements 22A2534

6. Identification of Components Repaired or Repleced and Replacement Components

Name of Component	Name of Manufacture	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired Replaced, or Replacement	ASME Code Stamped (Yes or No)
CRD Housing	General Electric	see CRD Table op cyc 10/11	NA	see CRD Table op cyc 10/11	1990	Replacement	Yes
CRD Bolting(8 each)	Rockford	Ht No. 72M100	NA	see * on page 3	1972	Replacement	No

7. Description of Work Replacement of CRD Housing

8. Tests Conducted: Hydrostatic Pneumatic Nominal Operating Pressure X

Other Pressure 1026 psi Test Tamp. 206 °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.

AP
10-1-90

NIS2 NO. 10-90-35

FORM NIS-2 (Back) sheet 2 of 3

9. Remarks Replacement of CRD Housing. VT-2 of the pressure retaining components were performed under ISI report
Applicable Manufacturer's Data Reports to be attached

89-13. VT-1 NDE is listed in table CRD op cyc 10/11.

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this replacement (repair or 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 Surinder Shangari Codes & Materials, TGL Date 9-26-90, 19 90
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 Hartford Steem Boiler I&I Co. of Hartford, Connecticut have inspected the components described in this Owner's Report during the period 7-10-90 to 8-1-90, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in the 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.

Scott Fuller Commissions NB 8829(I)(N) 941-IA
Inspectors Signature National Board, State, Province, and Endorsements

Date Oct. 1 19 90

1. Owner Iowa Electric Light & Power (Name) Date September 13, 1990
P.O. Box 351, Cedar Rapids, IA 52406 (Address) Sheet 3 of 3
Plant Duane Arnold Energy Center (Name) Unit 1
3277 DAEC Road, Palo, IA 52324 (Address) See below, P.O. S51281 (P.O. KE1069) (Repair Organ. P.O. No., Job No. etc.)
3. Work performed by Iowa Electric (Name) Type Code Symbol Stamp N/A
3277 DAEC Road, Palo, IA 52324 (Address) Authorization No. N/A
Expiration Date N/A
4. Idenfication of System see below
5. (a) Applicabla Const. Code ASME III 1974 Edition, W75 Addenda 1361-2 Code Case
(b) Applicable Edition of Section XI Utilized for Repairs or Replacement 1980 W/81
(c) Original Construction Code ASME III 1968 Edition W68 Addenda per GE Construction Quality Requirements 22A2534
6. Identification of Components Repairad or Replacad and Roplacement Components

Name of Comp.	Name of Manufac.	Board No.	Other Identif.	Year Built (Rep.)	ASME Code Repaired Replaced or Replacement	Stamped (Yes or No)
CRD Housing	General Electric	None	See Below	1990	Replacement	Yes

Table CRD-op cyc 10/11 (class1)

Installation Organization	Manufac. Serial No. (Replacad)	Manufac. Serial No. (Replacement)	Other Identification	Preservice VT-1 Bolting
1044234	S/N A3267	S/N A4549	IR215 (38-11)	ISI #90-50
*PMAR 1044019	S/N A4448	S/N A4018	IR215 (02-19)	ISI #90-36
*PMAR 1044137	S/N A4777	S/N A5075	IR215 (34-15)	ISI #90-291
PMAR 1044030	S/N A4796	S/N A4619	IR215 (10-11)	ISI #90-45
PMAR 1044032	S/N A4016	S/N A4286	IR215 (10-19)	ISI #90-32
PMAR 1044034	S/N A4022	S/N A3994	IR215 (10-27)	ISI #90-46
PMAR 1044036	S/N A3945	S/N A2552	IR215 (10-35)	ISI #90-33
PMAR 1044037	S/N A4591	S/N A8882	IR215 (10-39)	ISI #90-38
PMAR 1044040	S/N A4442	S/N A4493	IR215 (14-15)	ISI #90-39
PMAR 1044063	S/N A3975	S/N A4464	IR215 (22-23)	ISI #90-47
PMAR 1044068	S/N A4539	S/N A8883	IR215 (22-43)	ISI #90-29
PMAR 1044072	S/N A4480	S/N A5623	IR215 (26-19)	ISI #90-48
PMAR 1044083	S/N A4516	S/N A4291	IR215 (30-23)	ISI #90-41
PMAR 1044090	S/N A3818	S/N A5685	IR215 (34-31)	ISI #90-31
PMAR 1044100	S/N A4549	S/N A3813	IR215 (42-19)	ISI #90-35
PMAR 1044020	S/N A4017	S/N A4525	IR215 (02-23)	ISI #90-44
PMAR 1044101	S/N A4494	S/N A2122	IR215 (42-23)	ISI #90-43
A01953	S/N A4589	S/N A5538	IR215 (18-15)	ISI #90-271
PMAR 1044022	S/N A4562	S/N A2182	IR215 (06-11)	ISI #90-37

10-1-90

FORM N-2 NPT CERTIFICATE HOLDERS' DATA REPORT FOR NUCLEAR PART AND APPURTENANCE
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. 284
(Name and Address of NPT Certificate Holder)

Manufactured for: Duane Arnold Palo, Iowa 52
(Name and Address of N Certificate Holder for completed nuclear comp

2. Identification-Certificate Holders's S/N of Part: A5538 Nat'l Bd. No. N

(a) Constructed According to Drawing No: 761E387G012 Rev 21 Dwg. Prepared by D. L. Pet

(b) Description of Part Inspected: CONTROL ROD DRIVE, MODEL # 7RDB144EG001

(c) Applicable ASME Code: Section III, Edition 1974, Addenda Date W'75, Case No. 1361-2 N207 C

3. REMARKS: Standard part for use with Reactor. Hydrostatically tested at 1825 psi. min.
(Brief description of service for which component was designed)

Sheet 1

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

DATE: 5/17 ,19 90 Signed GE-NEBG-NF&CM-QA By
(NPT Certificate Holder) SQC-QA REPRESENTATIVE

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

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. 15
DC22A6254 Rev. 1
Stress analysis report certified by EDWARD YOSHIO Prof. Eng. State CALIF. Reg. No. MO

CERTIFICATION OF SHOP INSPECTION

I, the undersigned, holding a valid commission by the National Board of Boiler and Pres Inspectors and/or the State or Province of NORTH CAROLINA and employed by DEPARTMENT OF L of STATE OF NORTH CAROLINA have inspected the part of a pressure vessel described in Part al Data Report on 5-17 1990, and state that to the best of my knowl and belief, the NPT Certificate Holder has constructed this part in accordance with the Code Section III.

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

DATE 5-17 ,1990 Duane P. Evans Inspector's Signature N.C. 1231 National Board, State, Province and

Supplemental sheets in form of lists, sketches or drawing may be used provided (1) is 8-1/2" X 11", (2) information in 1-2 on this Data Report is included on each sheet, and (each sheet is numbered and number of sheets is recorded in Item 3. "REMARKSs"

(10/77)

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. Corrosion Allowance___ in Dia.___ ft.___ in. Length___ ft.___ in.
(Kind & Spec.No.) (Min. of Range Specified)

5. Seams: Long____ M.T.[1]____ R.T.____ Efficiency____ %

Girth____ M.T.[1]____ R.T.____ No. of Courses____

6. Heads: (a) Material____ T.S.____ (b) Material____ T.S.____

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[2] 1250 psi at 575 °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____ inches 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. Corrosion Allowance___ in. Dia.___ ft.___ in Length___ ft.___ in.
(Kind&Spec.No.) (Min. of Range Specified)

12. Seams: Long____ M.T.[1]____ R.T.____ Efficiency____ %
Girth____ M.T.[1]____ R.T.____ No. of Courses____

13. Heads (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.)

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[2]____ psi at____ °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)

[1] If Postweld Heat-Treated.

[2] 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. I

1. Manufactured & Certified by: GE Company, 2117 Castle Hayne Rd., Wilmington, N.C. 28
(Name and Address of NPT Certificate Holder)

(b) Manufactured for: Duane Arnold Palo, Iowa 52
(Name and Address of N Certificate Holder for completed nucle

2. Identification-Certificate Holders's S/N of Part: A5538 Nat'l Bd. N. N/

(a) Constructed According to Drawing No: 761E387G012 Rev 21 Dwg. Prepared by D. L. Pet

(b) Description of Part Inspected: CONTROL ROD DRIVE, MODEL # 7RDB144EG001

(C) Applicable ASME Code: Section III, Edition 1974, Addenda Date W'75, Case No. 1361-2 N207 C

Sheet 2 of 2

1. Cap 167A2343P1
SA182-F304
3/8 thick X 1 1/16 OD

2. Indicator Tube 104B1336P3
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 129B3539P3,P5
SA182-F304
3.0 OD x .884 ID

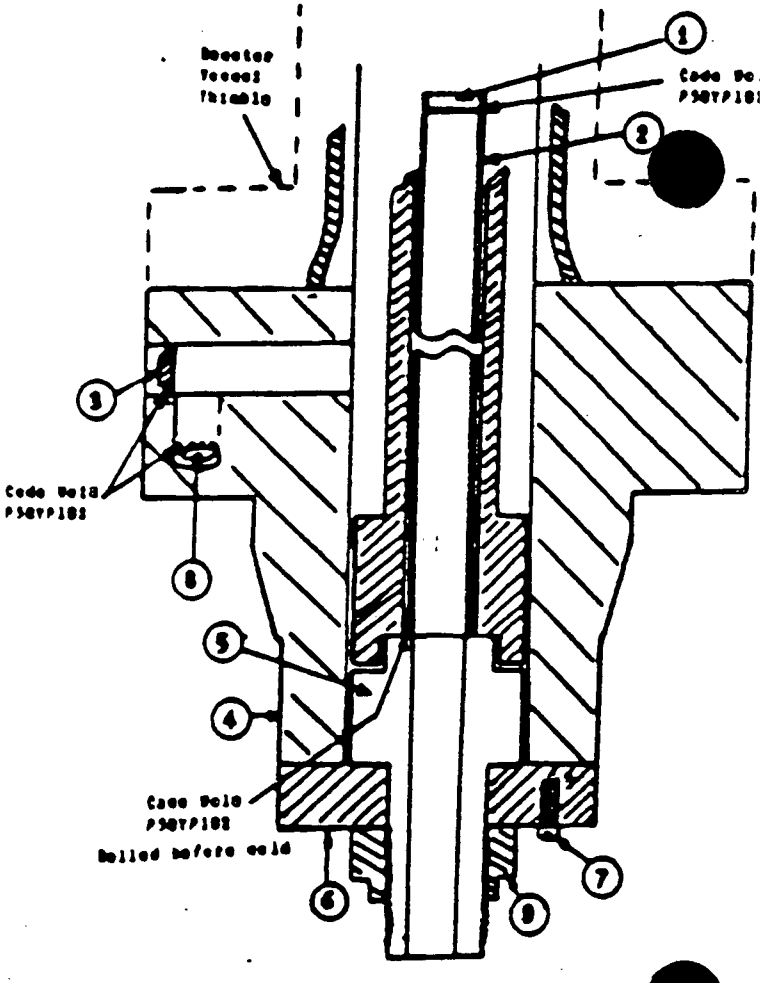
6. Ring Flange 114B5122P2
SA182-F304
1" thick x 5.0 OD x 1.75 ID

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.

9. Nut 114B5460P1
SA193-B8A
1.30 thick x 2.62 dia.

CONTROL ROD DRIVE
DWG - 761E387



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. I

1. Manufactured & Certified by: GE Company, 2117 Castle Hayne Rd., Wilmington, N.C. 28401
(Name and Address of NPT Certificate Holder)
Manufactured for: DUANE ARNOLD PALO, IOWA 52324
(Name and Address of N Certificate Holder for completed nuclear componer

2. Identification-Certificate Holders's S/N of Part: A2182 Nat'l Bd. No. N/A

(a) Constructed According to Drawing No: 761E387G012 Dwg. Prepared by D. L. Peterso

(b) Description of Part Inspected: CONTROL ROD DRIVE, MODEL # 7RDB144EG001 N207

(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. min.
(Brief description of service for which component was designed)

Sheet 1 of 2

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

DATE: 3/30, 19 90 Signed GE-NEBG-NF&CM-QA By
(NPT Certificate Holder) SCO-QA REPRESENTATIVE

Certificate Of Authorization Expires: 6/16/90 Certification of Authorization No.: NPT N-115

CERTIFICATION OF DESIGN FOR APPORTENANCE

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. M0186

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 3/30 1990, 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 damages or a loss of any kind arising from or connected with this inspection.

3/30, 1990 Jerome P. Evers NC 1231
DATE Inspector's Signature National Board, State, Province and NC

*Supplemental sheets in form of lists, sketches or drawing may be used provided (1) size is 8½ 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. "REMARKSs"

0/77)

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. Corrosion Allowance___ in Dia.___ ft.___ in. Length___ ft.___ in.
(Kind & Spec.No) (Min. of Range Specified)

5. Seams: Long_____ M.T.[1]_____ R.T._____ Efficiency_____ %

Girth_____ M.T.[1]_____ R.T._____ No. of Courses_____

6. Heads: (a) Material_____ T.S._____ (b) Material_____ T.S._____

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[2] 1250 psi at 575 °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_____ inches 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. Corrosion Allowance___ in. Dia.___ ft.___ in Length___ ft.___ in.
(Kind&Spec.No.) (Min. of Range Specified)

12. Seams: Long_____ M.T.[1]_____ R.T._____ Efficiency_____ %
Girth_____ M.T.[1]_____ R.T._____ No. of Courses_____

13. Heads (a) Material_____ T.S._____ (b) Material_____ T.S._____

Location (a) Top, Bottom, End (b) Channel	Thickness	Crown Radius	Knucle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Press (Conv. or Conc.)

If removable, bolts used (a)_____ (b)_____ (c)_____ Other fastening_____
(Describe or attach sketch)

14. Design pressure[2]_____ 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_____ Legs_____ Other_____ Attached_____
(Yes or No) (Number) (Number) (Describe) (Where & How)

[1] If Postweld Heat-Treated.

[2] 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. I

. 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 PALO, IOWA 52324
(Name and Address of N Certificate Holder for completed nuclear component

2. Identification-Certificate Holders's S/N of Part: A2182 Nat'l Bd. N. N/A

(a) Constructed According to Drawing No: 761E387G012 Dwg. Prepared by D. L. Peterson

(b) Description of Part Inspected: CONTROL ROD DRIVE, MODEL # 7RDB144EG001

(C) Applicable ASME Code: Section III, Edition 1974, Addenda Dete W'75, Case No. 1361-2 N207 Class

Sheet 2 of 2

1. Cap 167A2343P1
SA182-F304
3/8 thick X 1 1/16 OD

2. Indicator Tube 104B1336P3
SA312-TP316
3/4 sch 40-seamless pipe
0.113 wall thickness
1.065 max. dia.

3. [redacted]ug 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 129B3539P3,P5
SA182-F304
3.0 OD x .884 ID

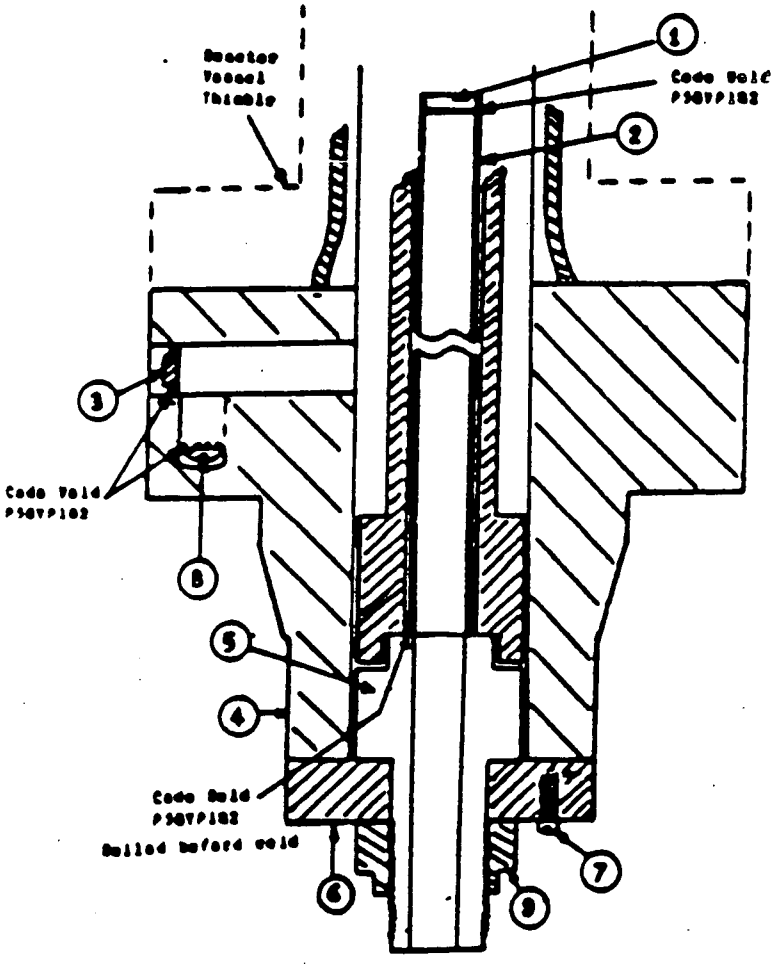
6. Ring Flange 114B5122P2
SA182-F304
1" thick x 5.0 OD x 1.75 ID

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.

. [redacted] 114B5460P1
[redacted]193-B8A
1.30 thick x 2.62 dia.

CONTROL ROD DRIVE
DWG - 761E387



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. I

1. Manufactured & Certified by: GE Company, 2117 Castle Hayne Rd., Wilmington, N.C. 2840
(Name and Address of NPT Certificate Holder)

(b) Manufactured for: DUANE ARNOLD PALO, IOWA 52324
(Name and Address of N Certificate Holder for completed nuclear [redacted] por

2. Identification-Certificate Holders's S/N of Part: A2122 Nat'l Bd. No. N/

(a) Constructed According to Drawing No: 761E387G012 Dwg. Prepared by D. L. Pete

(b) Description of Part Inspected: CONTROL ROD DRIVE, MODEL # 7RDB144EG001

(c) Applicable ASME Code: Section III, Edition 1974, Addenda Date W'75, Case No. 1361-2 N207 Cla

3. REMARKS: Standard part for use with Reactor. Hydrostatically tested at 1825 psi. min.
(Brief description of service for which component was designed)

Sheet 1 o

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

DATE: 3/30, 19 90 Signed GE-NEBG-NF&CM-QA By [signature]
(NPT Certificate Holder) SCO-QA REPRESENTATIVE

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

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. 15
DC22A6254 Rev 0.
Stress analysis report certified by EDWARD YOSHIO Prof. Eng. State CALIF. Reg. No. MO

CERTIFICATION OF SHOP INSPECTION

I, the undersigned, holding a valid commission by the National Board of Boiler and Pres Inspectors and/or the State or Province of NORTH CAROLINA and employed by DEPARTMENT OF L of STATE OF NORTH CAROLINA have inspected the part of a pressure vessel described in Partial Data Report on 3/30 1990, and state that to the best of my knowle and belief, the NPT Certificate Holder has constructed this part in accordance with the Code Section III.

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

DATE 3/30, 1990 Inspector's Signature [signature] NC 1231 National Board, State, Province an

Supplemental sheets in form of lists, sketches or drawing may be used provided (1) size i 8-1/2" X 11", (2) information in 1-2 on this Data Report is included on each sheet, [redacted] (each sheet is numbered and number of sheets is recorded in Item 3. "REMARKSs"

0/77)

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. Corrosion Allowance ___ in Dia. ___ ft. ___ in. Length ___ ft. ___ in.
(Kind & Spec.No) (Min. of Range Specified)

5. Seams: Long _____ M.T.[1] _____ R.T. _____ Efficiency _____ %

Girth _____ M.T.[1] _____ R.T. _____ No. of Courses _____

6. Heads: (a) Material _____ T.S. _____ (b) Material _____ T.S. _____

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[2] 1250 psi at 575 °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 _____ inches 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. Corrosion Allowance ___ in. Dia. ___ ft. ___ in Length ___ ft. ___ in.
(Kind&Spec.No.) (Min. of Range Specified)

12. Seams: Long _____ M.T.[1] _____ R.T. _____ Efficiency _____ %
Girth _____ M.T.[1] _____ R.T. _____ No. of Courses _____

13. Heads (a) Material _____ T.S. _____ (b) Material _____ T.S. _____

Location (a) Top, Bottom, End (b) Channel	Thickness	Crown Radius	Knucle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Press (Conv. or Conc.)

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[2] _____ psi at _____ °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: Skirt _____ Lugs _____ Legs _____ Other _____ Attached _____
(Yes or No) (Number) (Number) (Describe) (Where & How)

[1] If Postweld Heat-Treated.

[2] 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. I

Manufactured & Certified by: GE Company, 2117 Castle Hayne Rd., Wilmington, N.C. 2840
(Name and Address of NPT Certificate Holder)

(b) Manufactured for: DUANE ARNOLD PALO, IOWA 52324
(Name and Address of N Certificate Holder for completed nuclear [redacted]pc

2. Identification-Certificate Holders's S/N of Part: A2122 Nat'l Bd. N. N/A

(a) Constructed According to Drawing No: 761E387G012 Dwg. Prepared by D. L. Pete

(b) Description of Part Inspected: CONTROL ROD DRIVE, MODEL # 7RDB144EG001

(C) Applicable ASME Code: Section III, Edition 1974, Addenda Date W'75, Case No. 1361-2 N207 Cl.

1. Cap 167A2343P1
   SA182-F304
   3/8 thick X 1 1/16 OD

2. Indicator Tube 104B1336P3
   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 129B3539P3,P5
   SA182-F304
   3.0 OD x .884 ID

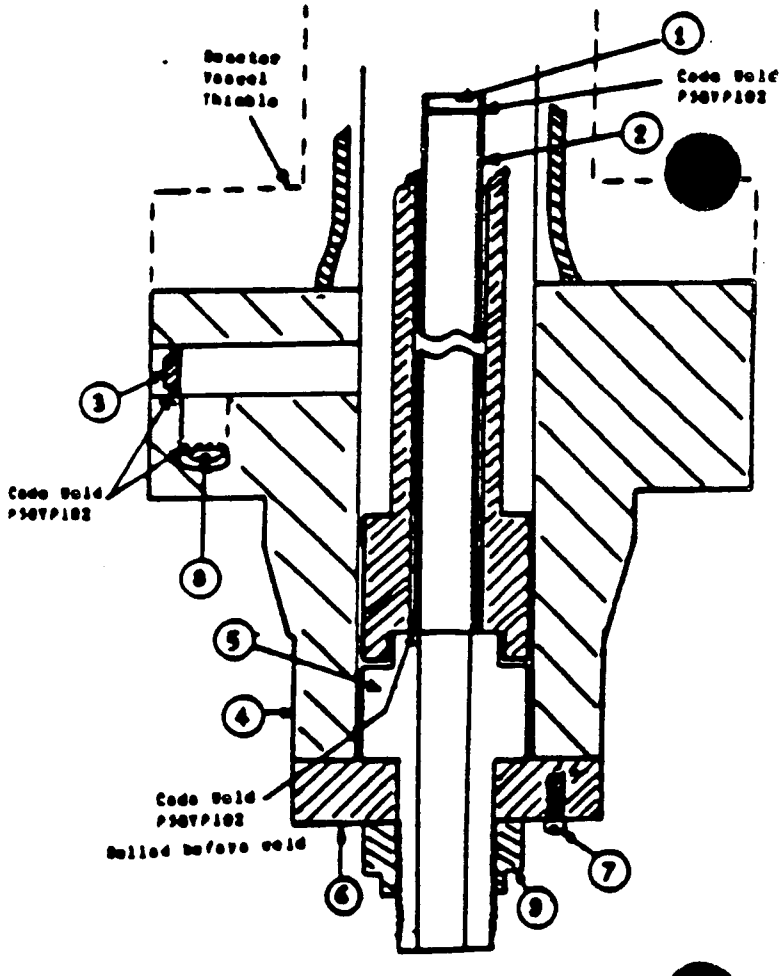
6. Ring Flange 114B5122P2
   SA182-F304 .
   1" thick x 5.0 OD x 1.75 ID

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.

9. Nut 114B5460P1
   SA193-B8A
   1.30 thick x 2.62 dia.

CONTROL ROD DRIVE
DWG - 761E387



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. I

(a) 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 Palo, Iowa 52324
(Name and Address of N Certificate Holder for completed nuclear component)

Identification-Certificate Holders's S/N of Part: A4525 Nat'l Bd. No. N/A

(a) Constructed According to Drawing No: 761E387G012 Rev 21 Dwg. Prepared by D. L. Peterson

(b) Description of Part Inspected: CONTROL ROD DRIVE, MODEL # 7RDB144EG001

(c) Applicable ASME Code: Section III, Edition 1974, Addenda Date W'75, Case No. N207 1361-2 Class 1

REMARKS: Standard part for use with Reactor. Hydrostatically tested at 1825 psi. min.
(Brief description of service for which component was designed)

Sheet 1 of 2

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

TE: 5/29, 19 90 Signed GE-NEBG-NF&CM-QA By
(NPT Certificate Holder) SCO-CA REPRESENTATIVE

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

CERTIFICATION OF DESIGN FOR APPURTENANCES

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

ress analysis report on file at GE COMPANY SAN JOSE CALIFORNIA
22A6253 Rev. 0

sign specification certified by BJORN HAABERG Prof. Eng. State CALIF. Reg. No. 15570
22A6254 Rev. 1

ress analysis report certified by EDWARD YOSHIO Prof. Eng. State CALIF. Reg. No. M0186

CERTIFICATION OF SHOP INSPECTION

I, the undersigned, holding a valid commission by the National Board of Boiler and Pressur spectors and/or the State or Province of NORTH CAROLINA and employed by DEPARTMENT OF LABO STATE OF NORTH CAROLINA have inspected the part of a pressure vessel described in thi rtial Data Report on 5-29 1990, and state that to the best of my knowledg d belief, the NPT Certificate Holder has constructed this part in accordance with the ASM de Section III.

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

5-29, 1990 Inspector's Signature N.C. 1231 National Board, State, Province and No

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

)

FORM U-2 (back)

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. Corrosion Allowance___ in Dia.___ ft.___ in. Length___ ft.___ in.
(Kind & Spec.No.) (Min. of Range Specified)

5. Seams: Long_____ M.T.[1]_____ R.T._____ Efficiency_____ %

Girth_____ M.T.[1]_____ 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 [2] 1250 psi at 575 °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_____ inches 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. Corrosion Allowance___ in. Dia.___ ft.___ in Length___ ft.___ in.
(Kind&Spec.No.) (Min. of Range Specified)

12. Seams: Long_____ M.T.[1]_____ R.T._____ Efficiency_____ %
Girth_____ M.T.[1]_____ R.T._____ No. of Courses_____

13. Heads (a) Material_____ T.S._____ (b) Material_____ T.S._____

Location (a) Top, Bottom, End	Thickness	Crown Radius	Knucle 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[2]_____ psi at_____ °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: Skirt_____ Lugs_____ Lugs_____ Other_____ Attached_____
(Yes or No) (Number) (Number) (Describe) (Where & How)

[1] If Postweld Heat-Treated.

[2] 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. I

(a) 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 Palo, Iowa 52324
(Name and Address of N Certificate Holder for completed nuclear compone

. Identification-Certificate Holders's S/N of Part: A4525 Nat'l Bd. N. N/A

(a) Constructed According to Drawing No: 761E387G012 Rev 21 Dwg. Prepared by D. L. Peters

(b) Description of Part Inspected: CONTROL ROD DRIVE, MODEL # 7RDB144EG001

(C) Applicable ASME Code: Section III, Edition 1974, Addenda Date W'75, Case No. 1361-2 N207 Clas 1

Sheet 2 of 2

. Cap 167A2343P1
SA182-F304
3/8 thick X 1 1/16 OD

. Indicator Tube 104B1336P3
SA312-TP316
3/4 sch 40-seamless pipe
[redacted] wall thickness
[redacted] max. dia.

Plug 159A1176P1
SA182-F304
1/4 thick x 0.812 OD

Flange 919D610P1 (719E474)
SA182-F304
3.37 thick x 9 5/8 OD

Head 129B3539P3,P5
SA182-F304
3.0 OD x .884 ID

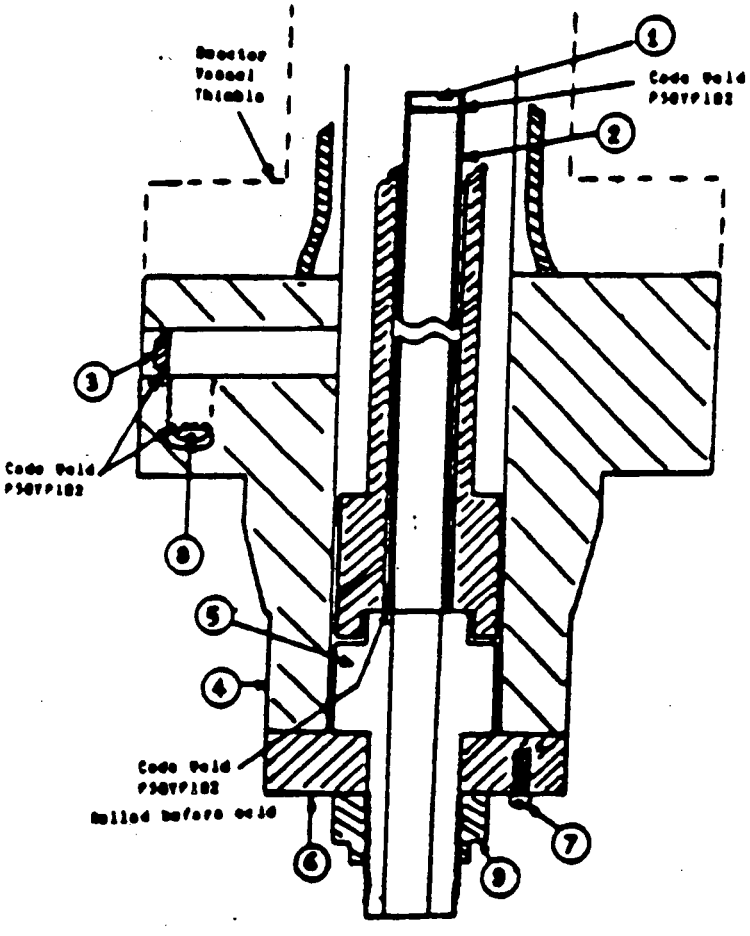
Ring Flange 114B5122P2
SA182-F304
1" thick x 5.0 OD x 1.75 ID

Cap Screw 117C4516P2
SA193-B6
6 ea. 1/2 dia. on 4 1/8 bolt circle

Plug 175A7961P1
SA182-F304
0.38 thick x 1.307 dia.

[redacted]B5460P1
SA193-B8A
1.30 thick x 2.62 dia.

CONTROL ROD DRIVE
DWG - 761E387



FORM N-2 NPT CERTIFICATE HOLDERS' DATA REPORT FOR NUCLEAR PART AND APP[URTENANCES]*
As required by the Provision of the ASME Code Rules, Section II[I] Div. 1

1. Manufactured & Certified by: GE Company, 2117 Castle Hayne Rd., Wilmington, [NC] 2840[1]
(Name and Address of NPT Certificate H[older])

(b) Manufactured for: Duane Arnold Palo, Iowa [52324]
(Name and Address of N Certificate Holder for completed nuc[lear] component)

2. Identification-Certificate Holders's S/N of Part: A3813 Nat'l Bd. [No.] N/A

(a) Constructed According to Drawing No: 761E387G012 Rev 21 Dwg. Prepared by [J.] Peterson

(b) Description of Part Inspected: CONTROL ROD DRIVE, MODEL # 7RDB144EG[A]

(c) Applicable ASME Code: Section III, Edition 1974, Addenda Date W'75, Case No. [1]-2 Class 1

3. REMARKS: Standard part for use with Reactor. Hydrostatically tested at 1825 p[si] min.
(Brief description of service for which component was designe[d])

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 responsibil[ity] of the NPT Certificate Holder for parts. An NPT Certification Holder for appurtenances i[s] responsible for furnishing a separate Design Specification and Stress Report if the appurt[enan]ce is not included in the component Design Specification and Stress Report).

DATE: 5/29, 19 90 Signed GE-NEBG-NF&CM-QA By [signature]
(NPT Certificate Holder) SQA-QA REPRE[SENT]ATIVE

Certificate Of Authorization Expires: 6/16/90 Certification of Authorization No. [NP]T N-1151

CERTIFICATION OF DESIGN FOR APPORTENANCE

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. Re[g. No.] 15570
DC22A6254 Rev. 1

Stress analysis report certified by EDWARD YOSHIO Prof. Eng. State CALIF. Re[g. No.] 4018646

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 DEPARTM[ENT] OF LABOR of STATE OF NORTH CAROLINA have inspected the part of a pressure vessel desc[ribed] in this Partial Data Report on 5-29 1990, 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 a[ny] warranty, expressed or implied, concerning the part described in the Partial Data Report. [Furth]ermore, neither the Inspector nor his employer shall be liable in any manner for any pers[onal] injury or property damages or a loss of any kind arising from or connected with this ins[pection].

DATE 5-29, 1990 [signature] N.C. 123[1]
Inspector's Signature National Board, State, Pro[vince] and No.

Supplemental sheets in form of lists, sketches or drawing may be used provided (1) [size] is 8-[1]/2" X 11", (2) information in 1-2 on this Data Report is included on each shee[t] (3) each sheet is numbered and number of sheets is recorded in Item 3. "REMARKSs"

/77)

FORM U-2 (back)

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. Corrosion Allowance___ in Dia.___ ft.___ in. Length___ ft.___ in.
(Kind & Spec.No.) (Min. of Range Specified)

5. Seams: Long____ M.T.[1]____ R.T.____ Efficiency____ %

Girth____ M.T.[1]____ R.T.____ No. of Courses____

6. Heads: (a) Material____ T.S.____ (b) Material____ T.S.____

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____ (Material, Spec. No., T.S. Size Number) Other fastening____ (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[2] 1250 psi at 575 °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.____ inches 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. Corrosion Allowance___ in. Dia.___ ft.___ in Length___ ft.___ in.
(Kind&Spec.No.) (Min. of Range Specified)

12. Seams: Long____ M.T.[1]____ R.T.____ Efficiency____ %
Girth____ M.T.[1]____ R.T.____ No. of Courses____

13. Heads (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.)

If removable, bolts used (a)____ (b)____ (c)____ Other fastening____ (Describe or attach sketch)

14. Design pressure[2]____ 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____

Supports: Skirt____ Legs____ Legs____ Other____ Attached____
(Yes or No) (Number) (Number) (Describe) (Where & How)

[1] If Postweld Heat-Treated.

[2] List other internal or external pressure with coincident temperature when applicable.

FORM N-2 N[illegible] CERTIFICATE HOLDERS' DATA REPORT FOR NUCLEAR PART AND APPURTE
As r[illegible]quired by the Provision of the ASME Code Rules, Section III, D

Manufactured & C[illegible]ified by: GE Company, 2117 Castle Hayne Rd., Wilmington, N.C
(Name and Address of NPT Certificate Hold

(b) Manufactured [illegible]r: Duane Arnold Palo, Iowa 52
Name and Address of N Certificate Holder for completed nuclea

2. Identification-Ce[illegible]ificate Holders's S/N of Part: A3813 Nat'l Bd. N

(a) Constructed Ac[illegible]rding to Drawing No: 761E387G012 Rev 21 Dwg. Prepared by D. [illegible]

(b) Description of [illegible]art Inspected: CONTROL ROD DRIVE, MODEL # 7RDB144EG001

(C) Applicable ASM[illegible] Code: Section III, Edition 1974, Addenda Date W'75, Case No. 136 N2(

Sheet 2

1. Cap 167A2343P1
SA182-F304
3/8 thick X 1 1/[illegible] OD

2. Indicator Tube 1[illegible]B1336P3
SA312-TP316
3/4 sch 40-seaml[illegible]s pipe
0.113 wall thick[illegible]ss
1.065 max. dia.

3. Plug 159A1176P1
SA182-F304
1/4 thick x 0.81[illegible]OD

4. Flange 919D610P1 (719E474)
SA182-F304
3.37 thick x 9 5/[illegible] OD

5. Head 129B3539P3,P[illegible]
SA182-F304
3.0 OD x .884 ID

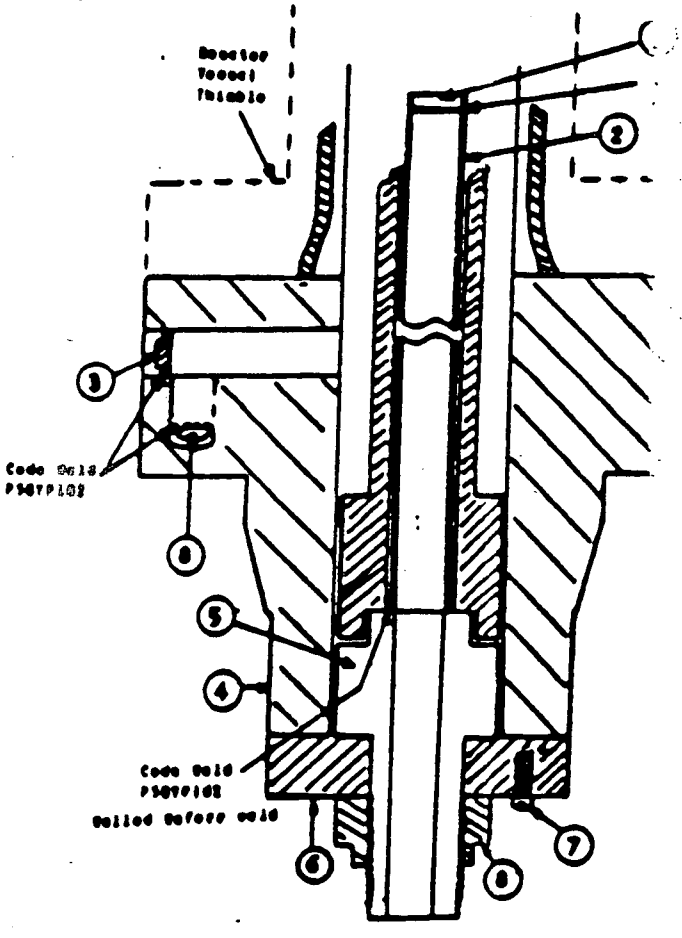
6. Ring Flange 114B5[illegible]2P2
SA182-F304
1" thick x 5.0 OD [illegible] 1.75 ID

7. Cap Screw 117C45[illegible]P2
SA193-B6
6 ea. 1/2 dia. on [illegible] 1/8 bolt circle

8. Plug 175A7961P1
SA182-F304
0.38 thick x 1.30[illegible]dia.

9. [illegible]ut 114B5460P1
SA193-B8A
1.30 thick x 2.62 [illegible]a.

CONTROL ROD DRIVE
DWG - 761E387



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. I

[redacted]actured & Certified by: GE Company, 2117 Castle Hayne Rd., Wilmington N.C. 28401
(Name and Address of NPT Certificate Holder)

(b) Manufactured for: Duane Arnold Palo, Iowa 52324
(Name and Address of N Certificate Holder for complete nuclear component)

. Identification-Certificate Holders's S/N of Part: A5685 Nat'l Bd. No. N/A

(a) Constructed According to Drawing No: 761E387G012 Rev 21 Dwg. Prepared by D. L. Peterson

(b) Description of Part Inspected: CONTROL ROD DRIVE, MODEL # 7RD[illegible]001

(c) Applicable ASME Code: Section III, Edition 1974, Addenda Date W'75, Case No. N207 1361-2 Class 1

. REMARKS: Standard part for use with Reactor. Hydrostatically tested at [illegible] psi. min.
(Brief description of service for which component was designed)

Sheet 1 of 2

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

TE: 5/29, 19 90 Signed GE-NEBG-NF&CM-QA By [signature]
(NPT Certificate Holder) SQC-QA REPRESENTATIVE

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

CERTIFICATION OF DESIGN FOR APPORTENANCE

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

tress analysis report on file at GE COMPANY, SAN JOSE, CALIFORNIA
C22A6253 Rev. 0
esign specification certified by BJORN HAABERG Prof. Eng. State CAL. Reg. No. 15570
C22A6254 Rev. 1
tress analysis report certified by EDWARD YOSHIO Prof. Eng. State CAL. Reg. No M018646

CERTIFICATION OF SHOP INSPECTION

I, the undersigned, holding a valid commission by the National Board of [illegible] and Pressure nspectors and/or the State or Province of NORTH CAROLINA and employed by STATE OF NORTH CAROLINA DEPARTMENT OF LABOR have inspected the part of a pressure vessel described in this rtial Data Report on 5-29 1990, and state that to the best of my knowledge id belief, the NPT Certificate Holder has constructed this part in accordance with the ASME de Section III.

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

E 5-29, 1990 [signature] N.C. 123
Inspector's Signature National Board, State, Province and No.

pplemental 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) t is numbered and number of sheets is recorded in Item 3. "REMARKS."

7)

FORM U-2 (back)

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. Corrosion Allowance___ in Dia.___ ft.___ in. Length___ ft.___ in.
(Kind & Spec.No.) (Min. of Range Specified)

5. Seams: Long_____ M.T.[1]_____ R.T._____ Efficiency_____ %

Girth_____ M.T.[1]_____ R.T._____ No. of Courses_____

6. Heads: (a) Material_____ T.S._____ (b) Material_____ T.S._____

Location (Top Bottom, Ends)	Thickness	Crown Radius	Knuckle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pre. (conv. or co.
(a)								
(b)								

If removable, bolts used_____ Other fastening_____
(Material, Spec. No., T.S. Size Number) (Describe or attach sketch)

7. Jacket Closure:_____
(Describe as apex and weld, bar, etc. If bar give dimensions, if bolts, describe or sho

8. Design Pressure[2] 1250 psi at 575 °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, Bolte

Floating. Material_____ Dia._____ Thickness___ in. Attachment_____

10. Tubes: Material_____ O.D.____ in. Thickness_____ inches or gage. Number____ Type_____
(Str. or U)

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

11. Shell: Material____ T.S.____ Nominal Thickness__ in. Corrosion Allowance__ in. Dia.__ ft.__ in__ Length__ ft.__ in.
(Kind&Spec.No.) (Min. of Range Specified)

12. Seams: Long_____ M.T.[1]_____ R.T._____ Efficiency_____ %
Girth_____ M.T.[1]_____ R.T._____ No. of Courses_____

13. Heads (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 Pres (Conv. or Conc

If removable, bolts used (a)____ (b)____ (c)____ Other fastening_____
(Describe or attach sketch

Drop Weight_____
Charpy Impact_____ ft-l
14. Design pressure[2]_____ psi at_____ °F 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	Attache

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)

[1] If Postweld Heat-Treated.

[2] List other internal or external pressure with coincident temperature when applicable.

FORM N-2 NPT CERTIFICATE HOLDERS' DATA REPORT FOR NUCLEAR PART AND APPUR[illegible]NCES*
As required by the Provision of the ASME Code Rules, Section III, [illegible] I

[illegible]actured & Certified by: GE Company, 2117 Castle Hayne Rd., Wilmington, N. 28401
(Name and Address of NPT Certificate Ho[illegible])

(b) Manufactured for: Duane Arnold Palo, Iowa [illegible]
(Name and Address of N Certificate Holder for completed nucle[illegible] component)

. Identification-Certificate Holders's S/N of Part: A5685 Nat'l Bd. N/A

(a) Constructed According to Drawing No: 761E387G012 Rev 21 Dwg. Prepared by D. Peterson

(b) Description of Part Inspected: CONTROL ROD DRIVE, MODEL # 7RDB144EG001

(C) Applicable ASME Code: Section III, Edition 1974, Addenda Date W'75, Case No. 1 -2 Class 1

Sheet [illegible] f 2

1. Cap 167A2343P1
SA182-F304
3/8 thick X 1 1/16 OD

2. Indicator Tube 104B1336P3
SA312-TP316
3/4 sch 40-seamless pipe
[illegible]3 wall thickness
[illegible] 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 129B3539P3,P5
SA182-F304
3.0 OD x .884 ID

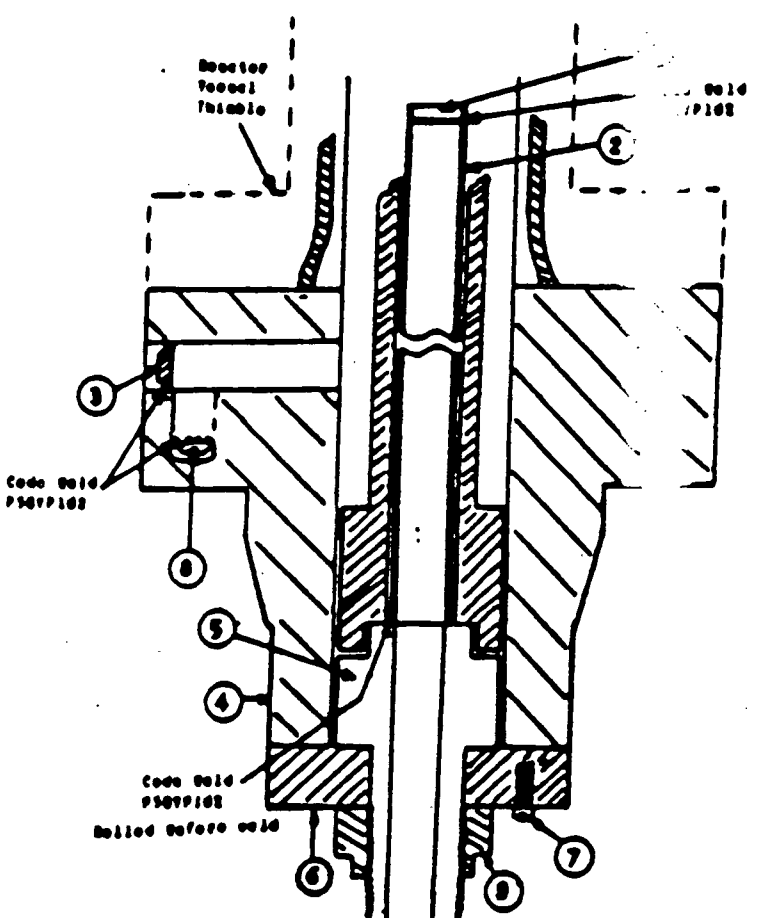
Ring Flange 114B5122P2
SA182-F304
1" thick x 5.0 OD x 1.75 ID

Cap Screw 117C4516P2
SA193-B6
6 ea. 1/2 dia. on 4 1/8 bolt circle

Plug 175A7961P1
SA182-F304
0.38 thick x 1.307 dia.

[illegible]4B5460P1
SA193-B8A
1.30 thick x 2.62 dia.

CONTROL ROD DRIVE
DWG - 761E387



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

1. Manufactured & Certified by: GE Company, 2117 Castle Hayne Rd., Wilmington, N.C. 284
(Name and Address of NPT Certificate Holder)

(b) Manufactured for: Duane Arnold Palo, Iowa 52
(Name and Address of N Certificate Holder for completed nuclea mp

2. Identification-Certificate Holders's S/N of Part: A4291 Nat'l Bd. No. N/

(a) Constructed According to Drawing No: 761E387G012 Rev 21 Dwg. Prepared by D. L. Pete

(b) Description of Part Inspected: CONTROL ROD DRIVE, MODEL # 7RDB144EG001
N207

(c) Applicable ASME Code: Section III, Edition 1974 , Addenda Date W'75, Case No. 1361-2 C

3. REMARKS: Standard part for use with Reactor. Hydrostatically tested at 1825 psi. min.
(Brief description of service for which component was designed)

Sheet 1 c

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

DATE: 5/17 ,19 90 Signed GE-NEBG-NF&CM-QA By
(NPT Certificate Holder) SQC-QA REPRESENTATIVE

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

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. 15
DC22A6254 Rev. 1
Stress analysis report certified by EDWARD YOSHIO Prof. Eng. State CALIF. Reg. No. M0

CERTIFICATION OF SHOP INSPECTION

I, the undersigned, holding a valid commission by the National Board of Boiler and Pres Inspectors and/or the State or Province of NORTH CAROLINA and employed by DEPARTMENT OF L of STATE OF NORTH CAROLINA have inspected the part of a pressure vessel described in Partial Data Report on 5-17 1990, and state that to the best of my knowle and belief, the NPT Certificate Holder has constructed this part in accordance with the Code Section III.

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

5-17 ,1990 Jeanne P. Evers N.C. 1231
DATE Inspector's Signature National Board, State, Province and

Supplemental sheets in form of lists, sketches or drawing may be used provided (1) is 8-1/2" X 11", (2) information in 1-2 on this Data Report is included on each sheet, (each sheet is numbered and number of sheets is recorded in Item 3. "REMARKSs"

)/77)

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. Corrosion Allowance ___ in Dia. ___ ft. ___ in. Length ___ ft. ___ in.
(Kind & Spec. No.) (Min. of Range Specified)

5. Seams: Long ____ M.T.[1] ____ R.T. ____ Efficiency ____ %

Girth ____ M.T.[1] ____ R.T. ____ No. of Courses ____

6. Heads: (a) Material ____ T.S. ____ (b) Material ____ T.S. ____

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 ____ (Material, Spec. No., T.S. Size Number) Other Fastening ____ (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[2] 1250 psi at 575 °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 ____ inches 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. Corrosion Allowance ___ in. Dia. ___ ft. ___ in. Length ___ ft. ___ in.
(Kind & Spec. No.) (Min. of Range Specified)

12. Seams: Long ____ M.T.[1] ____ R.T. ____ Efficiency ____ %

Girth ____ M.T.[1] ____ R.T. ____ No. of Courses ____

13. Heads (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.)

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[2] ____ psi at ____ °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: Skirt ____ (Yes or No) Lugs ____ (Number) Lugs ____ (Number) Other ____ (Describe) Attached ____ (Where & How)

[1] If Postweld Heat-Treated.

[2] 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. I

Manufactured & Certified by: GE Company, 2117 Castle Hayne Rd., Wilmington, N.C. 2840
(Name and Address of NPT Certificate Holder)

(b) Manufactured for: Duane Arnold Palo, Iowa 52324
(Name and Address of N Certificate Holder for completed nuclea[illegible] po

2. Identification-Certificate Holders's S/N of Part: A4291 Nat'l Bd. N. N/A

(a) Constructed According to Drawing No: 761E387G012 Rev 21 Dwg. Prepared by D. L. Pete

(b) Description of Part Inspected: CONTROL ROD DRIVE, MODEL # 7RDB144EG001

(C) Applicable ASME Code: Section III, Edition 1974, Addenda Date W'75, Case No. 1361-2 N207 Cl

Sheet 2 of 2

1. Cap 167A2343P1
SA182-F304
3/8 thick X 1 1/16 OD

2. Indicator Tube 104B1336P3
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 129B3539P3,P5
SA182-F304
3.0 OD x .884 ID

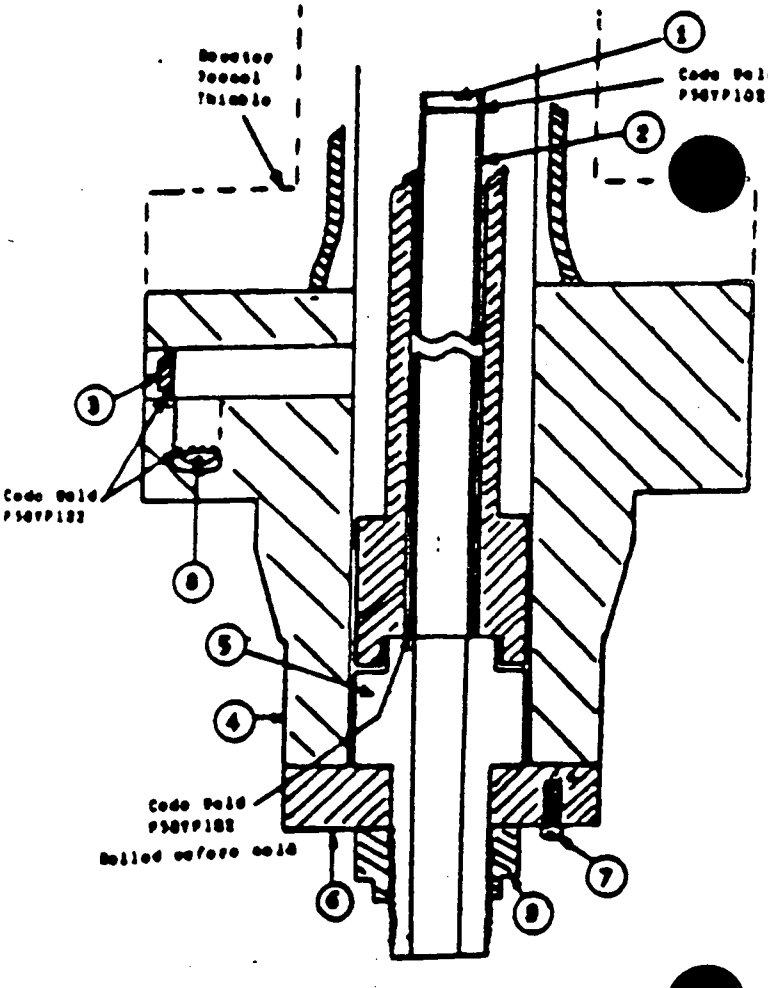
6. Ring Flange 114B5122P2
SA182-F304
1" thick x 5.0 OD x 1.75 ID

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.

9. Nut 114B5460P1
SA193-B8A
1.30 thick x 2.62 dia.

CONTROL ROD DRIVE
DWG - 761E387



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. I

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 Palo, Iowa 52324
(Name and Address of N Certificate Holder for completed nuclear component)

Identification-Certificate Holders's S/N of Part: A5623 Nat'l Bd. No. N/A

(a) Constructed According to Drawing No: 761E387G012 Rev 21 Dwg. Prepared by D. L. Peterson

(b) Description of Part Inspected: CONTROL ROD DRIVE, MODEL # 7RDB144EG001

(c) Applicable ASME Code: Section III, Edition 1974, Addenda Date W'75, Case No. N207 1361-2 Class 1

REMARKS: Standard part for use with Reactor. Hydrostatically tested at 1825 psi. min.
(Brief description of service for which component was designed)

Sheet 1 of 2

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

TE: 5/29, 19 90 Signed GE-NEBG-NF&CM-QA By
(NPT Certificate Holder) SQC-QA REPRESENTATIVE

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

CERTIFICATION OF DESIGN FOR APPURTENANCE

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

tress analysis report on file at GE COMPANY, SAN JOSE, CALIFORNIA
C22A6253 Rev. 0
esign specification certified by BJORN HAABERG Prof. Eng. State CALIF. Reg. No. 15570
C22A6254 Rev. 1
tress 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 nspectors and/or the State or Province of NORTH CAROLINA and employed by DEPARTMENT OF LABOR STATE OF NORTH CAROLINA have inspected the part of a pressure vessel described in this rtial Data Report on 5-29 1990, and state that to the best of my knowledge nd belief, the NPT Certificate Holder has constructed this part in accordance with the ASME de Section III.

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

E 5-29, 1990 Inspector's Signature N.C. 123 National Board, State, Province and No.

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

7)

FORM U-2 (back)

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. Corrosion Allowance ___ in Dia. ___ ft. ___ in. Length ___ ft. ___ in.
(Kind & Spec.No.) (Min. of Range Specified)

5. Seams: Long _____ M.T.[1] _____ R.T. _____ Efficiency _____ %

Girth _____ M.T.[1] _____ R.T. _____ No. of Courses _____

6. Heads: (a) Material _____ T.S. _____ (b) Material _____ T.S. _____

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[2] 1250 psi at 575 °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 _____ inches or gage. Number ___ Type _____
(Str. or U)

Items 11-18 incl. to be completed for inner chambers of jacketed vessels, or channels of heat exchangers

11. Shell: Material ___ T.S. ___ Nominal Thickness ___ in. Corrosion Allowance ___ in. Dia. ___ ft. ___ in. Length ___ ft. ___ in.
(Kind&Spec.No.) (Min. of Range Specified)

12. Seams: Long _____ M.T.[1] _____ R.T. _____ Efficiency _____ %
Girth _____ M.T.[1] _____ R.T. _____ No. of Courses _____

13. Heads (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.)

If removable, bolts used (a) ___ (b) ___ (c) ___ Other Fastening _____
(Describe or attach sketch)

14. Design pressure[2] _____ 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: Skirt _____ Lugs _____ Lugs _____ Other _____ Attached _____
(Yes or No) (Number) (Number) (Describe) (Where & How)

[1] If Postweld Heat-Treated.

[2] 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. I

(a) Manufactured & Certified by: GE Company, 2117 Castle Hayne Rd., Wilmington, N.C. 2840
(Name and Address of NPT Certificate Holder)

(b) Manufactured for: Duane Arnold Palo, Iowa 52324
(Name and Address of N Certificate Holder for completed nuclear compo)

1. Identification-Certificate Holders's S/N of Part: A5623 Nat'l Bd. N. N/A

(a) Constructed According to Drawing No: 761E387G012 Rev 21 Dwg. Prepared by D. L. Pete

(b) Description of Part Inspectod: CONTROL ROD DRIVE, MODEL # 7RDB144EG001

(C) Applicable ASME Code: Section III, Edition 1974, Addenda Date W'75, Case No. 1361-2 N207 Cla 1

Sheet 2 of 2

2. Cap 167A2343P1
SA182-F304
3/8 thick X 1 1/16 OD

3. Indicator Tube 104B1336P3
SA312-TP316
3/4 sch 40-seamless pipe
0.113 wall thickness
[redacted] max. dia.

Plug 159A1176P1
SA182-F304
1/4 thick x 0.812 OD

Flange 919D610P1 (719E474)
SA182-F304
3.37 thick x 9 5/8 OD

Head 129B3539P3,P5
SA182-F304
3.0 OD x .884 ID

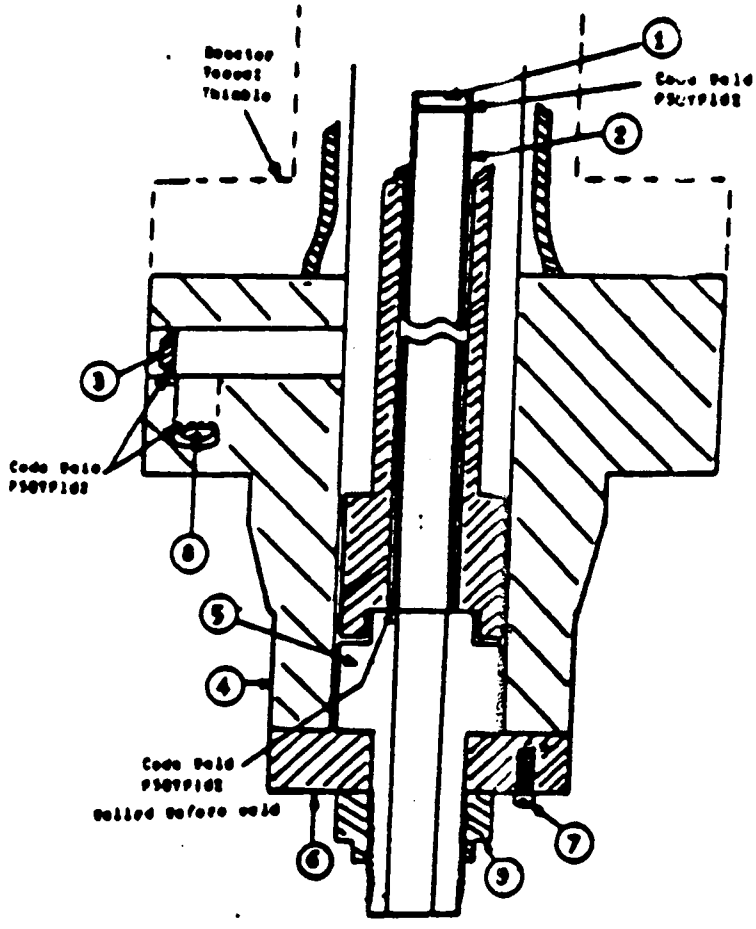
Ring Flange 114B51[illegible]P2
SA182-F304
1" thick x 5.0 OD x 1.75 ID

Cap Screw 117C4516[illegible]2
SA193-B6
6 ea. 1/2 dia. on [illegible]/8 bolt circle

Plug 175A7961P1
SA182-F304
0.38 thick x 1.307 dia.

[redacted]B5460P1
SA[redacted]B8A
1.30 thick x 2.62 dia.

CONTROL ROD DRIVE
DWG - 761E387



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. I

1. Manufactured & Certified by: GE Company, 2117 Castle Hayne Rd., Wilmington, N.C. 284(
(Name and Address of NPT Certificate Hold
(i Manufactured for: DUANE ARNOLD PALO, IOWA 52324
(Name and Address of N Certificate Holder for completed nuclear compo

2. Identification-Certificate Holders's S/N of Part: A8883 Nat'l Bd. No. N/

(a) Constructed According to Drawing No: 761E387G012 Dwg. Prepared by D. L. Pete

(b) Description of Part Inspected: CONTROL ROD DRIVE, MODEL # 7RDB144EG001
N207

(c) Applicable ASME Code: Section III, Edition 1974, Addenda Date W'75, Case No. 1361-2 Cl

3. REMARKS: Standard part for use with Reactor. Hydrostatically tested at 1825 psi. min.
(Brief description of service for which component was designed)

Sheet 1 c

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

DATE: 3/30, 19 90 Signed GE-NEBG-NF&CM-QA By
(NPT Certificate Holder) SCO-QA REPRESENTATIVE

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

CERTIFICATION OF DESIGN FOR APPURTENANCES

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. 15
DC22A5254 Rev. 0.
Stress analysis report certified by EDWARD YOSHIO Prof. Eng. State CALIF. Reg. No. M0

CERTIFICATION OF SHOP INSPECTION

I, the undersigned, holding a valid commission by the National Board of Boiler and Press Inspectors and/or the State or Province of NORTH CAROLINA and employed by DEPARTMENT OF LA of STATE OF NORTH CAROLINA have inspected the part of a pressure vessel described in t Partial Data Report on 3-30 1990, and state that to the best of my knowle and belief, the NPT Certificate Holder has constructed this part in accordance with the A Code Section III.

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

DATE 3/30, 1990 Inspector's Signature NC 1231
National Board, State, Province and

Supplemental sheets in form of lists, sketches or drawing may be used provided (1) is 8-1/2" X 11", (2) information in 1-2 on this Data Report is included on each sheet, (3 each sheet is numbered and number of sheets is recorded in Item 3. "REMARKSs"

)/77)

FORM U-2 (back)

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. Corrosion Allowance ___ in Dia. ___ ft. ___ in. Length ___ ft. ___ in.
(Kind & Spec.No) (Min. of Range Specified)

5. Seams: Long _____ M.T.[1] _____ R.T. _____ Efficiency _____ %

Girth _____ M.T.[1] _____ R.T. _____ No. of Courses _____

6. Heads: (a) Material _____ T.S. _____ (b) Material _____ T.S. _____

Location (Top Bottom, Endo)	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 [2] 1250 psi at 575 °F Drop Weight _____ Cherpy 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 _____ inches 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. Corrosion Allowance ___ in. Dia. ___ ft. ___ in Length ___ ft. ___ in.
(Kind&Spec.No.) (Min. of Range Specified)

12. Seams: Long _____ M.T.[1] _____ R.T. _____ Efficiency _____ %

Girth _____ M.T.[1] _____ R.T. _____ No. of Courses _____

13. Heads (a) Material _____ T.S. _____ (b) Material _____ T.S. _____

Location	Thickness	Crown Radius	Knucle 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

Drop Weight _____

14. Design pressure[2] _____ psi at _____ °F Cherpy 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 _____ Legs _____ Other _____ Attached _____
(Yes or No) (Number) (Number) (Describe) (Where & How)

[1] If Postweld Heat-Treated.

[2] 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. I

. Manufactured & Certified by: GE Company, 2117 Castle Hayne Rd., Wilmington, N.C. 284(
(Name and Address of NPT Certificate Holder)

(b) Manufactured for: DUANE ARNOLD PALO, IOWA 52324
(Name and Address of N Certificate Holder for completed nuclea[redacted]pc

2. Identification-Certificate Holders's S/N of Part: A8883 Nat'l Bd. N. N/A

(a) Constructed According to Drawing No: 761E387G012 Dwg. Prepared by D. L. Pete

(b) Description of Part Inspected: CONTROL ROD DRIVE, MODEL # 7RDB144EG001

(C) Applicable ASME Code: Section III, Edition 1974, Addenda Date W'75, Case No. 1361-2 N207 Cl

Sheet 2 of 2

1. Cap 167A2343P1
SA182-F304
3/8 thick X 1 1/16 OD

2. Indicator Tube 104B1336P3
SA312-TP316
3/4 sch 40-seamless pipa
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 129B3539P3,P5
SA182-F304
3.0 OD x .884 ID

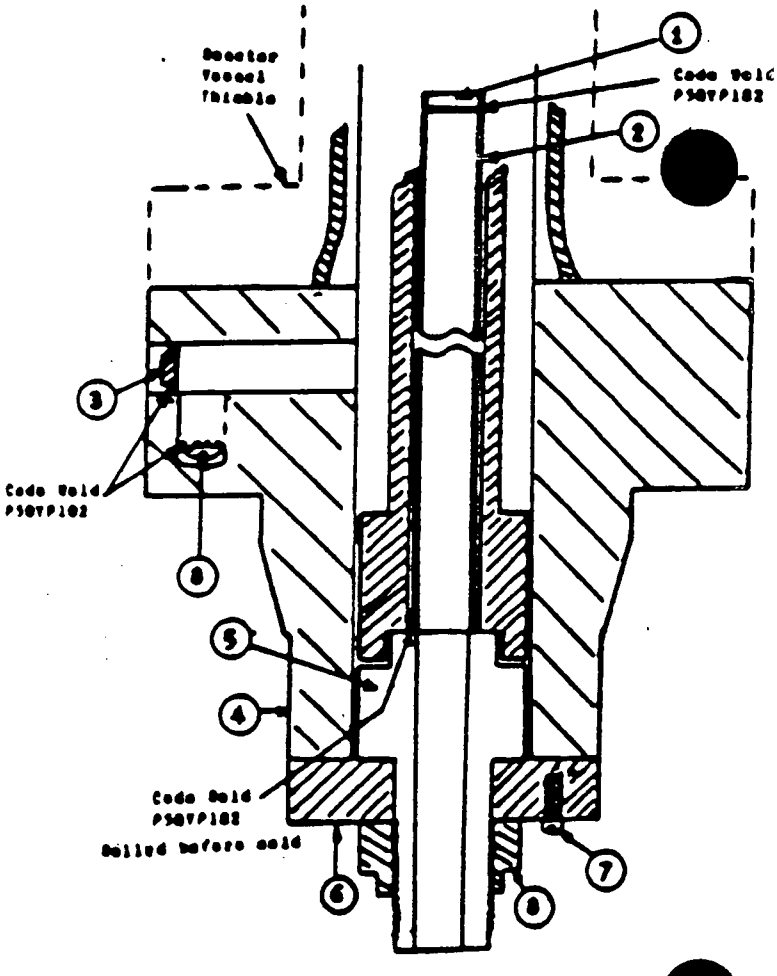
6. Ring Flange 114B5122P2
SA182-F304.
1" thick x 5.0 OD x 1.75 ID

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.

. Nut 114B5460P1
SA193-B8A
1.30 thick x 2.62 dia.

CONTROL ROD DRIVE
DWG - 761E387



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. I

1. Manufactured & Certified by: GE Company, 2117 Castle Hayne Rd., Wilmington, N.C. 28401
(Name and Address of NPT Certificate Holder)
Manufactured for: DUANE ARNOLD PALO, IOWA 52324
(Name and Address of N Certificate Holder for completed nuclear component

2. Identification-Certificate Holders's S/N of Part: A4464 Nat'l Bd. No. N/A

(a) Constructed According to Drawing No: 761E387G012 Dwg. Prepared by D. L. Peterson

(b) Description of Part Inspected: CONTROL ROD DRIVE, MODEL # 7RDB144EG001

(c) Applicable ASME Code: Section III, Edition 1974, Addenda Date W'75, Case No. 1361-2 Class N207

3. REMARKS: Standard part for use with Reactor. Hydrostatically tested at 1825 psi. min.
(Brief description of service for which component was designed)

Sheet 1 of 2

We certify that the statements in this report are correct and this vessel part or appurtenanc 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 NP 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 nc included in the component Design Specification and Stress Report).

DATE: 3/30, 19 90 Signed GE-NEBG-NF&CM-QA By
(NPT Certificate Holder) SCO-QA REPRESENTATIVE

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
DC22A62 Rev. 0

Design specification certified by BJORN HAABERG Prof. Eng. State CALIF. Reg. No. 15570
DC22A62 Rev. 0.

Stress analysis report certified by EDWARD YOSHIO Prof. Eng. State CALIF. Reg. No. M01864

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 3/30 1990, 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 damages or a loss of any kind arising from or connected with this inspection.

DATE 3/30, 1990 Inspector's Signature NC 1231 National Board, State, Province and No

Additional sheets in form of lists, sketches or drawing may be used provided (1) size is 8½ 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. "REMARKSs"

(1/77)

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

4. Shell: Material _____ T.S. _____ Nominal Thickness ___ in. Corrosion Allowance ___ in Dia. ___ ft. ___ in. Length ___ ft. ___ in.
(Kind & Spec.No.) (Min. of Range Specified)

5. Seams: Long _____ M.T.[1] _____ R.T. _____ Efficiency _____ %

Girth _____ M.T.[1] _____ R.T. _____ No. of Courses _____

6. Heads: (a) Material _____ T.S. _____ (b) Material _____ T.S. _____

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 [2] 1250 psi at 575 °F Drop Weight _____ Cherpy 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 _____ inches or gage. Number ___ Type _____
(Str. or U)

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

11. Shell: Material ___ T.S. ___ Nominal Thickness ___ in. Corrosion Allowance ___ in. Dia. ___ ft. ___ in Length ___ ft. ___ in.
(Kind&Spec.No.) (Min. of Range Specified)

12. Seams: Long _____ M.T.[1] _____ R.T. _____ Efficiency _____ %
Girth _____ M.T.[1] _____ R.T. _____ No. of Courses _____

13. Heads (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.)
	_____	_____	_____	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____	_____	_____	_____

If removable, bolts used (a) _____ (b) _____ (c) _____ Other Fastening _____
(Describe or attach sketch

Drop Weight _____
Cherpy Impact _____ ft-lb
at temp. of _____ °F

14. Design pressure [2] _____ psi at _____ °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 _____ Legs _____ Other _____ Attached _____
(Yes or No) (Number) (Number) (Describe) (Where & How)

[1] If Postweld Heat-Treated.

[2] 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. I

1. Manufactured & Certified by: GE Company, 2117 Castle Hayne Rd., Wilmington, N.C. 28401
(Name and Address of NPT Certificate Holder)

Manufactured for: DUANE ARNOLD PALO, IOWA 52324
(Name and Address of N Certificate Holder for completed nuclear componen

2. Identification-Certificate Holders's S/N of Part: A4464 Nat'l Bd. N. N/A

(a) Constructed According to Drawing No: 761E387G012 Dwg. Prepared by D. L. Petersc

(b) Description of Part Inspected: CONTROL ROD DRIVE, MODEL # 7RDB144EG001

(C) Applicable ASME Code: Section III, Edition 1974, Addenda Date W'75, Case No. 1361-2 N207 Class

Sheet 2 of 2

1. Cap 167A2343P1
SA182-F304
3/8 thick X 1 1/16 OD

2. Indicator Tube 104B1336P3
SA312-TP316
1/4 sch 40-seamless pipe
.113 wall thickness
.065 max. dia.

3. Plug 159A1176P1
SA182-F304
1/4 thick x 0.812 OD

4. Flange 919D610P1 (719E474)
SA182-F304
1.37 thick x 9 5/8 OD

5. Head 129B3539P3,P5
SA182-F304
3.0 OD x .884 ID

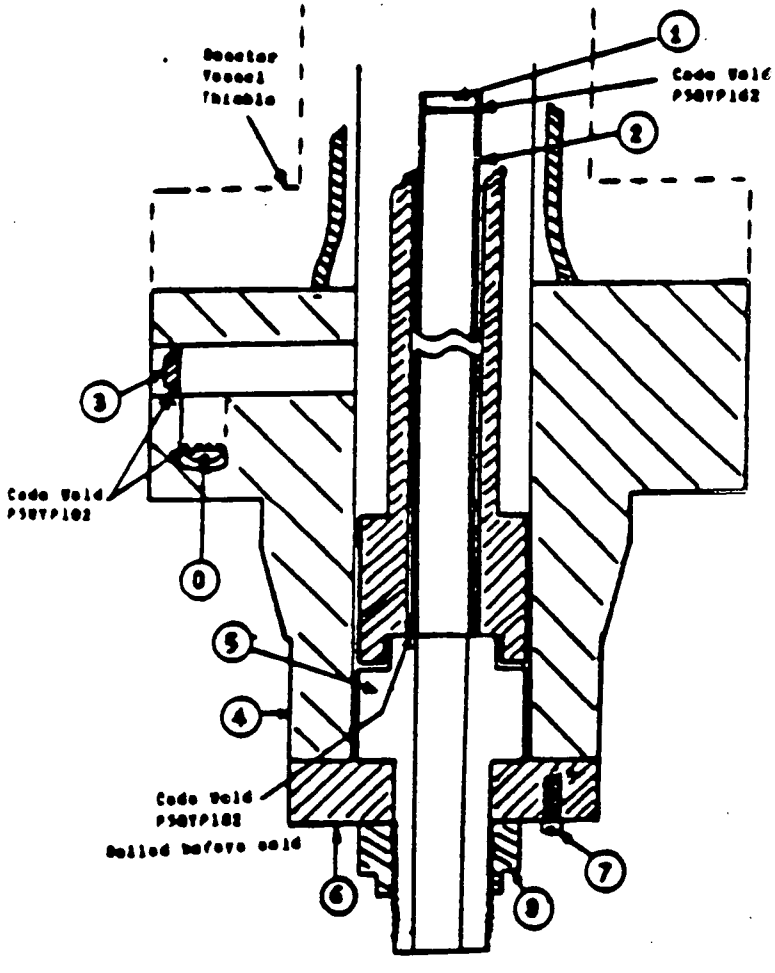
6. Ring Flange 114B5122P2
SA182-F304.
1" thick x 5.0 OD x 1.75 ID

7. Cap Screw 117C4516P2
SA193-B6
8 ea. 1/2 dia. on 4 1/8 bolt circle

8. Plug 175A7961P1
SA182-F304
0.38 thick x 1.307 dia.

9. Nut 114B5460P1
SA193-B8A
1.30 thick x 2.62 dia.

CONTROL ROD DRIVE
DWG - 761E387



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 Rayne Rd., Wilmington, N.C. 284
(Name and Address of NPT Certificate Holder)
Manufactured for: Duane Arnold Palo, Iowa 52
Name and Address of N Certificate Holder for completed nuclear compo

2. Identification-Certificate Holders's S/N of Part: A4493 Nat'l Bd. No. N/
(a) Constructed According to Drawing No: 761E387G012 Rev 21 Dwg. Prepared by D. L. Pete
(b) Description of Part Inspected: CONTROL ROD DRIVE, MODEL # 7RDB144EG001
(c) Applicable ASME Code: Section III, Edition 1974, Addenda Date W'75, Case No. 1361-2 N207 Cl

3. REMARKS: Standard part for use with Reactor. Hydrostatically tested at 1825 psi. min.
(Brief description of service for which component was designed)

Sheet 1 o

We certify that the statements in this report are correct and this vessel part or appurte as designed in the co conforms to the rules of construction of the ASME Code Section (The applicable Design Specification and Stress Report are not the responsibility of th Certificate Holder fo parts. An NPT Certification Holder for appurtenances is respons for nishing a sepa ate Design Specification and Stress Report if the appurtenance is incl d in the compo nt Design Specification and Stress Report).

DATE 5/17 ,19 90 Signed GE-NEBG-NF&CM-QA By
(NPT Certificate Holder) SQC-QA REPRESENTATIVE

Cert ate Of Author ation Expires: 6/16/90 Certification of Authorization No.: NPT N-

CERTIFICATION OF DESIGN FOR APPURTENANCES

Des information o file at GE COMPANY, SAN JOSE, CALIFORNIA

Stre analysis repo on file at GE COMPANY, SAN JOSE, CALIFORNIA
DC2 253 Rev. 0
Des specification ertified by BJORN HAABERG Prof. Eng. State CALIF. Reg. No. 155
DC22 254 Rev. 1
Stre analysis repo certified by EDWARD YOSHIO Prof. Eng. State CALIF. Reg. No. M01

CERTIFICATION OF SHOP INSPECTION

I, e undersigned, olding a valid commission by the National Board of Boiler and Press Insp ors and/or the State or Province of NORTH CAROLINA and employed by DEPARTMENT OF LA of ATE OF NORTH C ROLINA have inspected the part of a pressure vessel described in t Part Data Report o 5-17 1990, and state that to the best of my knowle and ief, the NPT ertificate Holder has constructed this part in accordance with the A Code ection III.

By gning this cer ficate, neither the Inspector nor his employer makes any warran expr ed or implied, oncerning the part described in the Partial Data Report. Furthermo neit the Inspector or his employer shall be liable in any manner for any personal inju or p erty damages o a loss of any kind arising from or connected with this inspection.

ATE 5-17 ,19 9 Inspector's Signature N.C. 1231 National Board, State, Province and

Supp ental sheets i form of lists, sketches or drawing may be used provided (1) s -1/ X 11", (2) info mation in 1-2 on this Data Report is included on each sheet, (3) each eet is numbered and number of sheets is recorded in Item 3. "REMARKSs"

/77)

Manufac

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. Corrosion Allowance___ in Dia.___ ft.___ in. Length___ ft.___ in.
(Kind & Spec.No.) (Min. of Range Specified)

5. Seams: Long_____ N.T.[1]_____ R.T._____ Efficiency_____ %

Girth_____ N.T.[1]_____ R.T._____ No. of Courses_____

6. Heads: (a) Material_____ T.S._____ (b) Material_____ T.S._____

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 taper and weld, bar, etc. If bar give dimensions, if bolts, describe or sketch)

8. Design Pressure[2] 1250 psi at 575 °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____ inches 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. Corrosion Allowance___ in. Dia.___ ft.___ in Length___ ft.___ in.
(Kind&Spec.No.) (Min. of Range Specified)

12. Seams: Long_____ M.T.[1]_____ R.T._____ Efficiency_____ %
Girth_____ M.T.[1]_____ R.T._____ No. of Courses_____

13. Heads (a) Material_____ T.S._____ (b) Material_____ T.S._____

Location (a) Top, Bottom, End (b) Channel	Thickness	Crown Radius	Knucle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Press (Conv. or Conc.)

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[2]_____ psi at_____ °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____ Legs____ Other____ Attached____
(Yes or No) (Number) (Number) (Describe) (Where & How)

[1] If Postweld Heat-Treated.

[2] 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. I

Manufactured & Certified by: GE Company, 2117 Castle Hayne Rd., Wilmington, N.C. 284(
(Name and Address of NPT Certificate Holder)

(b) Manufactured for: Duane Arnold Palo, Iowa 52324
(Name and Address of N Certificate Holder for completed nuclea[redacted]mpo

2. Identification-Certificate Holders's S/N of Part: A4493 Nat'l Bd. N. N/A

(a) Constructed According to Drawing No: 761E387G012 Rev 21 Dwg. Prepared by D. L. Pete

(b) Description of Part Inspected: CONTROL ROD DRIVE, MODEL # 7RDB144BG001

(C) Applicable ASME Code: Section III, Edition 1974, Addenda Date W'75, Case No. 1361-2 N207 Cl

Sheet 2 of 2

1. Cap 167A2343P1
SA182-F304
3/8 thick X 1 1/16 OD

2. Indicator Tube 104B1336P3
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 719D610P1 (719E474)
SA182-F304
3.37 thick x 9 5/8 OD

5. Head 129D3539P3,P5
SA182-F304
3.0 OD x .884 ID

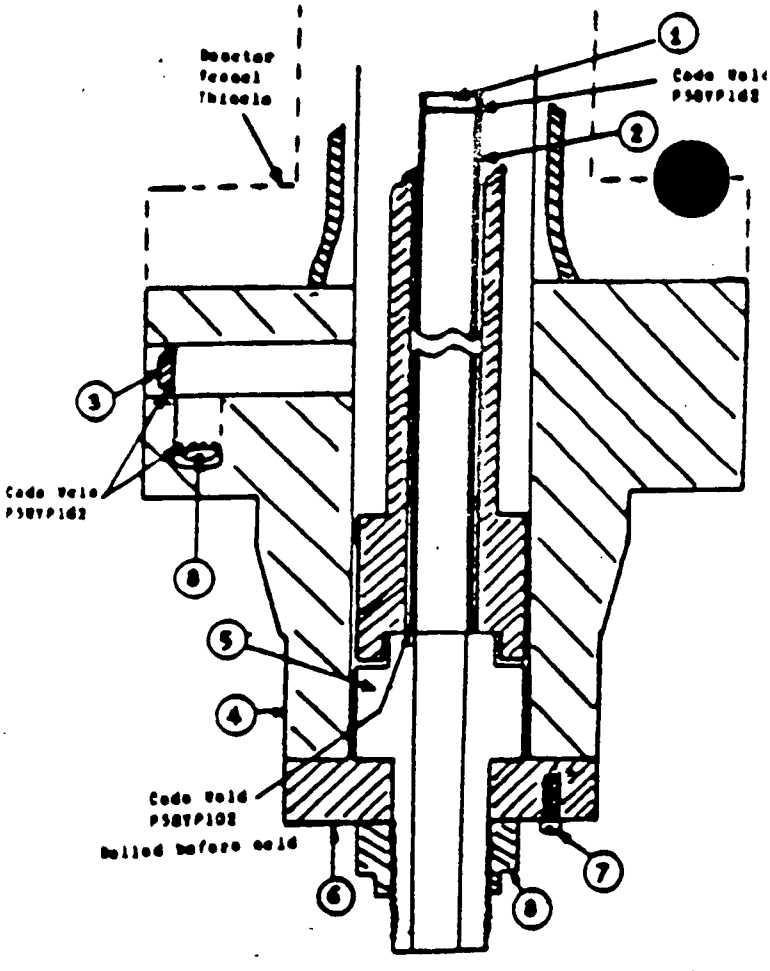
6. Ring Flange 114B5122P2
SA182-F304
1" thick x 5.0 OD x 1.75 ID

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.

Nut 114B5460P1
SA193-B8A
1.30 thick x 2.62 dia.

CONTROL ROD DRIVE
DWG - 761E387



FORM N-2 NPT CERTIFICATE HOLDERS' DATA REPORT FOR NUCLEAR PA[illegible] AND APPURTENANCES*
As required by the Provision of the ASME Code Rules, [illegible]ction III, Div. I

1. M[illegible]ufactured & Certified by: GE Company, 2117 Castle Hayne Rd., Wi[illegible]ington, N.C. 28401
(Name and Address of NPT Cer[illegible]ficate Holder)
Manufactured for: DUANE ARNOLD PALO, IOWA 52324
(Name and Address of N Certificate Holder for com[illegible]eted nuclear componen

2. Id[illegible]ntification-Certificate Holders's S/N of Part: A8882 Nat'l Bd. No. N/A

(a) Constructed According to Drawing No: 761E387G012 Dwg. Pr[illegible]ared by D. L. Peterso

(b) Description of Part Inspected: CONTROL ROD DRIVE, MODEL # RDB144EG001

(c) Applicable ASME Code: Section III, Edition 1974, Addenda Date W'7[illegible] N207 Case No. 1361-2 Class

3. RE[illegible]ARKS: Standard part for use with Reactor. Hydrostatically teste[illegible]t 1825 psi. min.
(Brief description of service for which component [illegible]s designed)

Sheet 1 of 2

We ce[illegible]tify [illegible]hat the statements in this report are correct and this ve[illegible]l part or appurtenanc as de[illegible]in in the code conforms to the rules of construction of the [illegible]SME Code Section III (The [illegible]able Designed Specification and Stress Report are not the [illegible]sponsibility of the NP Certi[illegible]te Holder for parts. An NPT Certification Holder for appur[illegible]nances is responsible for [illegible]nishing a separate Design Specification and Stress Report if [illegible]e appurtenance is nc included in the component Design Specification and Stress Report).

DATE: 3/30, 19 90 Signed GE-NEBG-NF&CM-QA By [illegible]
(NPT Certificate Holder) S[illegible]-QA REPRESENTATIVE

Certi[illegible]cate Of Authorization Expires: 6/16/90 Certification of Authori[illegible]tion No.: NPT N-1151

CERTIFICATION OF DESIGN FOR APPURTENANCES

Desi[illegible] information on file at GE COMPANY, SAN JOSE, CALIFORNIA

Stre[illegible] analysis report on file at GE COMPANY, SAN JOSE, CALIFORNIA
DC22[illegible]253 Rev. 0

Desi[illegible] specification certified by BJORN HAABERG Prof. Eng. State [illegible]ALIF. Reg. No. 15570
DC22[illegible]254 Rev. 0.

Stre[illegible] analysis report certified by EDWARD YOSHIO Prof. Eng. State [illegible]ALIF. Reg. No. M01864

CERTIFICATION OF SHOP INSPECTION

I, [illegible]he undersigned, holding a valid commission by the National Board [illegible]f Boiler and Pressure Inspe[illegible]tors and/or the State or Province of NORTH CAROLINA and employed [illegible]y DEPARTMENT OF LABOR of [illegible]STATE OF NORTH CAROLINA have inspected the part of a pressure ve[illegible]sel described in this Part[illegible]I Data Report on 3/30 1990, and state that to th[illegible] best of my knowledge and [illegible]elief, the NPT Certificate Holder has constructed this part in ac[illegible]ordance with the ASME Code [illegible]ection III.

By [illegible]igning this certificate, neither the Inspector nor his employer [illegible]makes any warranty, expr[illegible]ssed or implied, concerning the part described in the Partial Data [illegible]Report. Furthermore, neit[illegible]r the Inspector nor his employer shall be liable in any manner fo[illegible] any personal injury or p[illegible]operty damages or a loss of any kind arising from or connected wit[illegible] this inspection.

[illegible]ATE 3/30, 1980 Inspector's Signature NC 1231 National Board, [illegible]tate, Province and No.

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

[illegible]/77)

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. Corrosion Allowance___ in Dia.___ ft.___ in. Length___ ft.___ in.
(Kind & Spec.No) (Min. of Range Specified)

5. Seams: Long_____ H.T.[1]_____ R.T._____ Efficiency_____ %

Girth_____ H.T.[1]_____ R.T._____ No. of Courses_____

6. Heads: (a) Material_____ T.S._____ (b) Material_____ T.S._____

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 open end weld, bar, etc. If bar give dimensions, if bolts, describe or sketch)

8. Design Pressure [2] 1250 psi at 575 °F

Drop Weight_____
Cherpy 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.____ inches 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. Corrosion Allowance___ in. Dia.___ ft.___ in Length___ ft.___ in.
(Kind&Spec.No.) (Min. of Range Specified)

12. Seams: Long_____ H.T.[1]_____ R.T._____ Efficiency_____ %

Girth_____ H.T.[1]_____ R.T._____ No. of Courses_____

13. Heads (a) Material_____ T.S._____ (b) Material_____ T.S._____

Location (a) Top, Bottom, End (b) Channel	Thickness	Crown Radius	Knucle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Press (Conv. or Conc.)

If removable, bolts used (a)____ (b)____ (c)____ Other Fastening_____
(Describe or attach sketch

Drop Weight_____
Cherpy Impact_____ ft-lb
at temp. of_____ °F

14. Design pressure[2]_____ psi at_____ °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: Skirt____ Lugs____ Legs____ Other____ Attached____
(Yes or No) (Number) (Number) (Describe) (Where & How)

[1] If Postweld Heat-Treated.

[2] 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. I

. Manufactured & Certified by: GE Company, 2117 Castle Hayne Rd., Wilmington, N.C. 28401
(Name and Address of NPT Certificate Holder)

(. Manufactured for: DUANE ARNOLD PALO, IOWA 52324
(Name and Address of N Certificate Holder for completed nuclear component

2. Identification-Certificate Holders's S/N of Part: A8882 Nat'l Bd. N. N/A

(a) Constructed According to Drawing No: 761E387G012 Dwg. Prepared by D. L. Peterson

(b) Description of Part Inspected: CONTROL ROD DRIVE, MODEL # 7RDB144EG001

(C) Applicable ASME Code: Section III, Edition 1974, Addenda Date W'75, Case No. 1361-2 N207 Class

Sheet 2 of 2

1. Cap 167A2343P1
SA182-F304
5/8 thick X 1 1/16 OD

2. Indicator Tube 104B1336P3
SA312-TP316
1/4 sch 40-seamless pipe
.113 wall thickness
.065 max. dia.

3. Plug 159A1176P1
SA182-F304
3/4 thick x 0.812 OD

4. Flange 919D610P1 (719E474)
SA182-F304
1.37 thick x 9 5/8 OD

5. Head 129B3539P3,P5
SA182-F304
5.0 OD x .884 ID

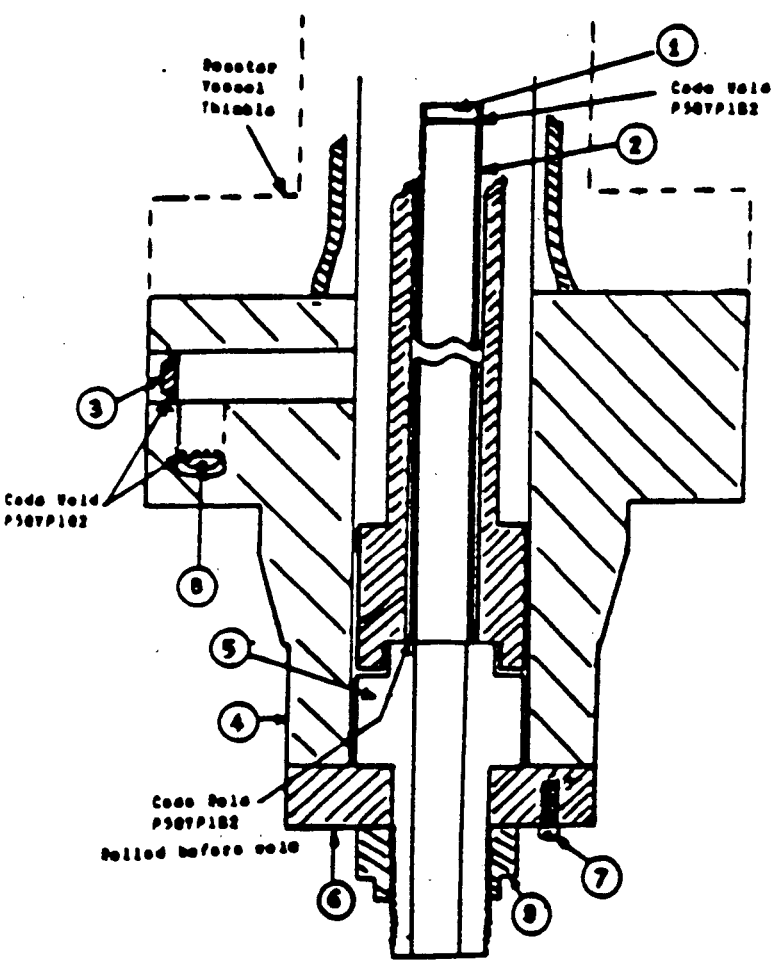
6. Ring Flange 114B5122P2
SA182-F304
1" thick x 5.0 OD x 1.75 ID

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.

[redacted] 114B5460P1
193-B8A
1.30 thick x 2.62 dia.

CONTROL ROD DRIVE
DWG - 761E387



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. I

1. Manufactured & Certified by: GE Company, 2117 Castle Hayne Rd., Wilmington, N.C. 2840
(Name and Address of NPT Certificate Hold
(b) Manufactured for: DUANE ARNOLD PALO, IOWA 52324
(Name and Address of N Certificate Holder for completed nuclear compo

2. Identification-Certificate Holders's S/N of Part: A2552 Nat'l Bd. No. N/
(a) Constructed According to Drawing No: 761E387G012 Dwg. Prepared by D. L. Pete
(b) Description of Part Inspected: CONTROL ROD DRIVE, MODEL # RDB144EG001
N207
(c) Applicable ASME Code: Section III, Edition 1974, Addenda Date W'75, Case No. 1361-2 Cl

3. REMARKS: Standard part for use with Reactor. Hydrostatically tested at 1825 psi. min.
(Brief description of service for which component was designed)

Sheet 1 c

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

DATE: 3/30, 19 90 Signed GE-NEBG-NF&CM-QA (NPT Certificate Holder) By [signature] SCC-QA REPRESENTATIVE

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

CERTIFICATION OF DESIGN FOR APPURTENANCES

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. 15
DC22A6254 Rev. 0.
Stress analysis report certified by EDWARD YOSHIO Prof. Eng. State CALIF. Reg. No. M0

CERTIFICATION OF SHOP INSPECTION

I, the undersigned, holding a valid commission by the National Board of Boiler and Pres Inspectors and/or the State or Province of NORTH CAROLINA and employed by DEPARTMENT OF I of STATE OF NORTH CAROLINA have inspected the part of a pressure vessel described in Partial Data Report on 3/30 1990, and state that to the best of my knowl and belief, the NPT Certificate Holder has constructed this part in accordance with the Code Section III.

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

3/30, 1990 [signature] NC 1231
DATE Inspector's Signature National Board, State, Province an

Supplemental sheets in form of lists, sketches or drawing may be used provided (1) i 8-1/2" X 11", (2) information in 1-2 on this Data Report is included on each sheet, (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 wall vessels, jackets vessels, or shells of heat exchangers.

4. Shell: Material _____ T.S. _____ Nominal Thickness ___ in. Corrosion Allowance ___ in Dia. ___ ft. ___ in. Length ___ ft. ___ in.
(Kind & Spec. No.) (Min. of Range Specified)

5. Seams: Long _____ H.T.[1] _____ R.T. _____ Efficiency _____ %

Girth _____ H.T.[1] _____ R.T. _____ No. of Courses _____

6. Heads: (a) Material _____ T.S. _____ (b) Material _____ T.S. _____

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 apex and weld, bar, etc. If bar give dimensions, if bolts, describe or sketch)

8. Design Pressure[2] 1250 psi at 575 °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 _____ inches 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. Corrosion Allowance ___ in. Dia. ___ ft. ___ in Length ___ ft. ___ in.
(Kind&Spec. No.) (Min. of Range Specified)

12. Seams: Long _____ H.T.[1] _____ R.T. _____ Efficiency _____ %
Girth _____ H.T.[1] _____ R.T. _____ No. of Courses _____

13. Heads (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.)

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[2] _____ psi at _____ °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: Skirt _____ Lugs _____ Legs _____ Other _____ Attached _____
(Yes or No) (Number) (Number) (Describe) (Where & How)

[1] If Postweld Heat-Treated.

[2] 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. I

Manufactured & Certified by: GE Company, 2117 Castle Hayne Rd., Wilmington, N.C. 284
(Name and Address of NPT Certificate Holder)

(b) Manufactured for: DUANE ARNOLD PALO, IOWA 52324
(Name and Address of N Certificate Holder for completed nuclea mp

2. Identification-Certificate Holders's S/N of Part: A2552 Nat'l Bd. N. N/A

(a) Constructed According to Drawing No: 761E387G012 Dwg. Prepared by D. L. Pete

(b) Description of Part Inspected: CONTROL ROD DRIVE, MODEL # 7RDB144EG001
N207

(C) Applicable ASME Code: Section III, Edition 1974, Addenda Date W'75, Case No. 1361-2 Cl

Sheet 2 of 2

1. Cap 167A2343P1
SA182-F304
3/8 thick X 1 1/16 OD

2. Indicator Tube 104B1336P3
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 129B3539P3,P5
SA182-F304
3.0 OD x .884 ID

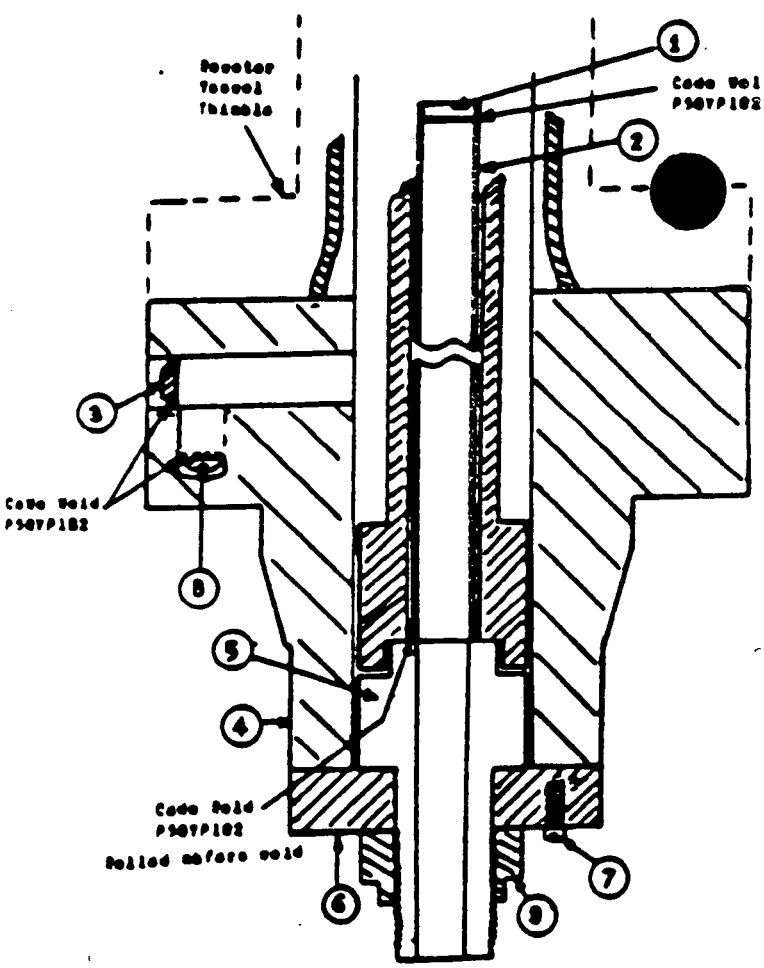
6. Ring Flange 114B5122P2
SA182-F304
1" thick x 5.0 OD x 1.75 ID

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.

9. Nut 114B5460P1
SA193-B8A
1.30 thick x 2.62 dia.

CONTROL ROD DRIVE
DWG - 761E387



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. I

1. Manufactured & Certified by: GE Company, 2117 Castle Hayne Rd., Wilmington, N.C. 28401
(Name and Address of NPT Certificate Holder)
( ) Manufactured for: Duane Arnold Palo, Iowa 52324
(Name and Address of N Certificate Holder for completed nuclear compon

2. Identification-Certificate Holders's S/N of Part: A3994 Nat'l Bd. No. N/A

(a) Constructed According to Drawing No: 761E387G012 Rev 21 Dwg. Prepared by D. L. Peter

(b) Description of Part Inspected: CONTROL ROD DRIVE, MODEL # 7RDB144EG001 N207

(c) Applicable ASME Code: Section III, Edition 1974, Addenda Date W'75, Case No. 1361-2 Cla

3. REMARKS: Standard part for use with Reactor. Hydrostatically tested at 1825 psi. min.
(Brief description of service for which component was designed)

Sheet 1 of

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

DATE 5/17, 19 90 Signed GE-NEBG-NF&CM-QA By
(NPT Certificate Holder) SCO-QA REPRESENTATIVE

Certificate Of Authorization Expires: 6/16/90 Certification of Authorization No.: NPT N-1

CERTIFICATION OF DESIGN FOR APPORTENANCE

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

Stress analysis report on file at GE COMPANY, SAN JOSE, CALIFORNIA
DC2 A6253 Rev. 0
Design specification certified by BJORN HAABERG Prof. Eng. State CALIF. Reg. No. 155
DC2 A6254 Rev. 1
Stress analysis report certified by EDWARD YOSHIO Prof. Eng. State CALIF. Reg. No. M018

CERTIFICATION OF SHOP INSPECTION

I the undersigned, holding a valid commission by the National Board of Boiler and Pressu Inspectors and/or the State or Province of NORTH CAROLINA and employed by DEPARTMENT OF LAB of STATE OF NORTH CAROLINA have inspected the part of a pressure vessel described in th Partial Data Report on 5-17 1990, and state that to the best of my knowled and belief, the NPT Certificate Holder has constructed this part in accordance with the AS Code Section III.

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

DATE 5-17, 1990 Inspector's Signature Eugene P. Evers N. C. 1231 National Board, State, Province and

*Supplemental sheets in form of lists, sketches or drawing may be used provided (1) size is 8-1/2" 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 wall vessels, jackets vessels, or shells of heat exchangers.

4. Shell: Material____ T.S.____ Nominal Thickness__ in. Corrosion Allowance___ in Dia.___ ft.__ in. Length__ ft [redacted] in.
(Kind & Spec.No.) (Min. of Range Specified)

5. Seams: Long____ M.T.[1]____ R.T.____ Efficiency____ %

Girth____ M.T.[1]____ R.T.____ No. of Courses____

6. Heads: (a) Material____ T.S.____ (b) Material____ T.S.____

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____ (Material, Spec. No., T.S. Size Number) Other fastening____ (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[2] 1250 psi at 575 °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____ inches 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. Corrosion Allowance__ in. Dia.__ ft.__ in Length__ ft.__ [redacted]
(Kind&Spec.No.) (Min. of Range Specified)

12. Seams: Long____ M.T.[1]____ R.T.____ Efficiency____ %

Girth____ M.T.[1]____ R.T.____ No. of Courses____

13. Heads (e) Material____ T.S.____ (b) Material____ T.S.____

Location (e) 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.)

If removable, bolts used (e)____ (b)____ (c)____ Other Fastening____ (Describe or attach sketch)

Drop Weight____

14. Design pressure[2]____ psi at____ °F 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____ [redacted]

18. Supports: Skirt____ (Yes or No) Lugs____ (Number) Legs____ (Number) Other____ (Describe) Attached____ (Where & How)

[1] If Postweld Heat-Treated.

[2] 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. I

1. Manufactured & Certified by: GE Company, 2117 Castle Hayne Rd., Wilmington, N.C. 2840
(Name and Address of NPT Certificate Holder)
Manufactured for: Duane Arnold Palo, Iowa 52324
(Name and Address of N Certificate Holder for completed nuclear compon

2. Identification-Certificate Holders's S/N of Part: A3994 Nat'l Bd. N. N/A

(a) Constructed According to Drawing No: 761E387G012 Rev 21 Dwg. Prepared by D. L. Peter

(b) Description of Part Inspected: CONTROL ROD DRIVE, MODEL # 7RDB144EG001

(C) Applicable ASME Code: Section III, Edition 1974, Addenda Date W'75, Case No. 1361-2 N207 Cla

Sheet 2 of 2

1. Cap 167A2343P1
SA182-F304
3/8 thick X 1 1/16 OD

2. Indicator Tube 104B1336P3
SA312-TP316
1/4 sch 40-seamless pipe
.113 wall thickness
.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 129B3539P3,P5
SA182-F304
3.0 OD x .884 ID

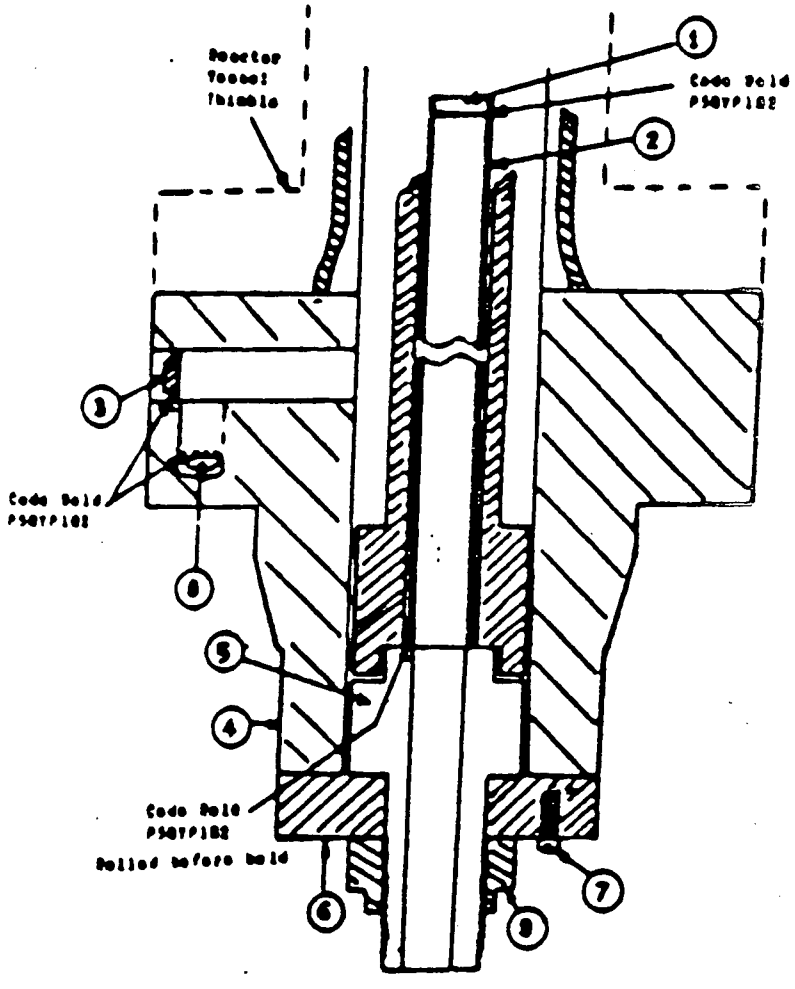
6. Ring Flange 114B5122P2
SA182-F304
1 thick x 5.0 OD x 1.75 ID

7. Cap Screw 117C4516P2
SA193-B6
6 ea. 1/2 dia. on 4 1/8 bolt circle

8. Plug 175A7961P1
SA182-F304
.8 thick x 1.307 dia.

9. Nut 114B5460P1
SA193-B8A
1.30 thick x 2.62 dia.

CONTROL ROD DRIVE
DWG - 761E387



FORM N-2 N... CERTIFICATE HOLDERS' DATA REPORT FOR NUCLEAR PART AND APPUR...NCES*
As ...quired by the Provision of the ASME Code Rules, Section III, ...I

1. Manufactured & Ce...fied by: GE Company, 2117 Castle Hayne Rd., Wilmington, N.C 2840...
(Name and Address of NPT Certificate Holder)
(b) Manufactured ...: Duane Arnold Palo, Iowa 52...
...ame and Address of N Certificate Holder for completed nuclea...compone...

2. Identification-Ce...ficate Holders's S/N of Part: A4286 Nat'l Bd. N... N/A

(a) Constructed Ac...ding to Drawing No: 761E387G012 Rev 21 Dwg. Prepared by D. Peters...

(b) Description of ...rt Inspected: CONTROL ROD DRIVE, MODEL # 7RDB144EG00...

(c) Applicable ASM... ode: Section III, Edition 1974, Addenda Date W'75, Case No. ... 2 Class...

3. REMARKS: Standard ...rt for use with Reactor. Hydrostatically tested at 1825 psi ...in.
...ief description of service for which component was designed

Sh... 1 of 2

...e certify that the ...tements in this report are correct and this vessel part or ...urtenan... is defined in the c... conforms to the rules of construction of the ASME Code ...ion II. The applicable Desig... Specification and Stress Report are not the responsibilit... of the N... Certificate Holder f... parts. An NPT Certification Holder for appurtenances is ...onsibl... for furnishing a sep...ate Design Specification and Stress Report if the appurte...e is n... included in the compo...nt Design Specification and Stress Report).

DATE: 5/29 ,19 90 Signed GE-NEBG-NF&CM-QA By ...
(NPT Certificate Holder) SCO...A REPRESE...TIVE

Certificate Of Author...ation Expires: 6/16/90 Certification of Authorization No.: ...N-11...

CERTIFICATION OF DESIGN FOR APPURTENANCES

Design information c... file at GE COMPANY, SAN JOSE, CALIFORNIA

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

Design specification ...ertified by BJORN HAABERG Prof. Eng. State CALIF. Reg. 15570
DC22A6254 Rev. 1

Stress analysis repo... certified by EDWARD YOSHIO Prof. Eng. State CALIF. Reg. M0186

CERTIFICATION OF SHOP INSPECTION

I, the undersigned ...olding a valid commission by the National ...ard of Boiler an... ...ressur... Inspectors and/or th... ...tate or Province of NORTH CAROLINA and employed by DEPARTMEN... ...F LABO... of STATE OF NORTH ... OLINA have inspected the part of a pressure vessel describ... in thi... Partial Data Report ... 5-29 1990, and state that to the best of my ...owledg... and belief, the NPT ...rtificate Holder has constructed this part in accordance with ...he ASM... Code Section III.

By signing this cer...ficate, neither the Inspector nor his employer makes any ...rranty expressed or implied, ...oncerning the part described in the Partial Data Report. Fu...ermore neither the Inspecto... or his employer shall be liable in any manner for any persona... injury or property damages ... a loss of any kind arising from or connected with this inspec...on.

DATE 5-29 ,19... Inspector's Signature N.C. 1231 National Board, State, Provin... and N...

Supplemental sheets i... form of lists, sketches or drawing may be used provided (1) s... e is 8-...!" X 11", (2) inf...mation in 1-2 on this Data Report is included on each sheet, ...d (3) ea... sheet is numbere... and number of sheets is recorded in Item 3. "REMARKSs"

...77)

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. Corrosion Allowance___ in Dia.___ ft.___ in. Length___ ft.___ in.
(Kind & Spec.No) (Min. of Range Specified)

5. Seams: Long____ M.T.[1]____ R.T.____ Efficiency____ %

Girth____ M.T.[1]____ R.T.____ No. of Courses___ ___

6. Heads: (a) Material____ T.S.____ (b) Material____ T.S.____

Location (Top Bottom, Endo)	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____ (Material, Spec. No., T.S. Size Number) Other fastening____ (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[2] 1250 psi at 575 °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.____ inches 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. Corrosion Allowance___ in. Dia.___ ft.___ in Length___ ft.___ in.
(Kind&Spec.No.) (Min. of Range Specified)

12. Seams: Long____ M.T.[1]____ R.T.____ Efficiency____ %
Girth____ M.T.[1]____ R.T.____ No. of Courses____

13. Heads (a) Material____ T.S.____ (b) Material____ T.S.____

Location (a) Top, Bottom, End (b) Channel	Thickness	Crown Radius	Knucle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Press (Conv. or Conc.)

If removable, bolts used (a)____ (b)____ (c)____ Other Fastening____
(Describe or attach sketch)

14. Design pressure[2]____ 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____ Legs____ Legs____ Other____ Attached____
(Yes or No) (Number) (Number) (Describe) (Where & How)

[1] If Postweld Heat-Treated.

[2] List other internal or external pressure with coincident temperature when applicable.

FORM N-2 NPT CERTIFICATE HOLDERS' DATA REPORT FOR NUCLEAR PART A ORTENANCES
As required by the Provision of the ASME Code Rules, Sect I, Div. I

Manufactured & Certified by: GE Company, 2117 Castle Hayne Rd., Wilmi N.C. 284
(Name and Address of NPT Certif Holder)

(b) Manufactured for: Duane Arnold Palo, Iow 52324
Name and Address of N Certificate Holder for complet clear compo t)

2. Identification-Certificate Holders's S/N of Part: A4286 Na d. N. N/A

(a) Constructed According to Drawing No: 761E387G012 Rev 21 Dwg. Prepar D. L. Pete n

(b) Description of Part Inspected: CONTROL ROD DRIVE, MODEL # 7RDB144E

(C) Applicable ASME Code: Section III, Edition 1974, Addenda Date W'75, Ca N207 1361-2 Cl 1

Sheet 2 of 2

1. Cap 167A2343P1
SA182-F304
3/8 thick X 1 1/16 OD

2. Indicator Tube 104B1336P3
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 ID

4. Flange 919D610P1 (719E474)
SA182-F304
3.37 thick x 9 5/8 OD

5. Head 129B3539P3,P5
SA182-F304
3.0 OD x .884 ID

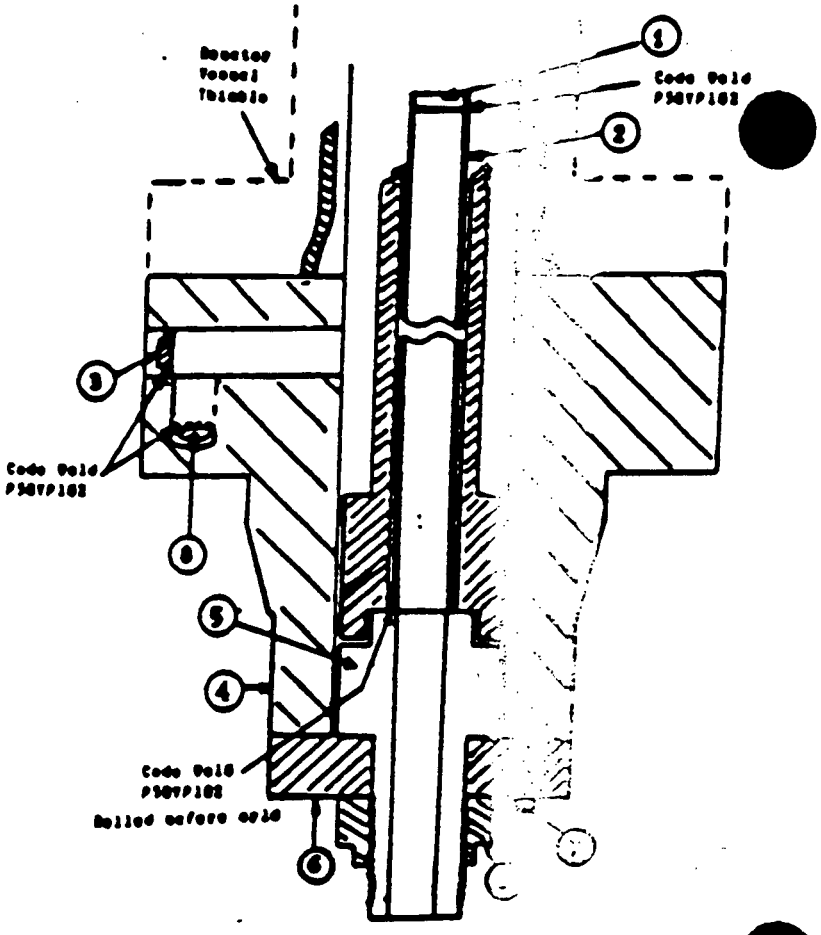
6. Ring Flange 114B5122P2
SA182-F304
1" thick x 5.0 OD x 1.75 ID

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.

9. Nut 114B5460P1
SA193-B8A
1.30 thick x 2.62 dia.

CONTROL ROD DRIVE
DWG - 761E



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. I

1. Manufactured & Certified by: GE Company, 2117 Castle Hayne Rd., Wilmington, N.C. 28401
(Name and Address of NPT Certificate Holder)

Manufactured for: DUANE ARNOLD PALO, IOWA 52324
(Name and Address of N Certificate Holder for completed nuclear componen

2. Identification-Certificate Holders's S/N of Part: A4619 Nat'l Bd. No. N/A

(a) Constructed According to Drawing No: 761E387G012 Dwg. Prepared by D. L. Peterso

(b) Description of Part Inspected: CONTROL ROD DRIVE, MODEL # 7RDB144EG001

(c) Applicable ASME Code: Section III, Edition 1974, Addenda Date W'75, Case No. 1361-2 N207 Class

3. REMARKS: Standard part for use with Reactor. Hydrostatically tested at 1825 psi. min.
(Brief description of service for which component was designed)

Sheet 1 of 2

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

DATE: 3/30, 19 90 Signed GE-NEBG-NF&CM-QA By
(NPT Certificate Holder) SCO-QA REPRESENTATIVE

Certificate Of Authorization Expires: 6/16/90 Certification of Authorization No.: NPT N-115

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. M0186

CERTIFICATION OF SHOP INSPECTION

I, the undersigned, holding a valid commission by the National Board of Boiler and Pressur Inspectors and/or the State or Province of NORTH CAROLINA and employed by DEPARTMENT OF LABO of STATE OF NORTH CAROLINA have inspected the part of a pressure vessel described in thi Partial Data Report on 3/30 1990, and state that to the best of my knowledg and belief, the NPT Certificate Holder has constructed this part in accordance with the ASM 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 damages or a loss of any kind arising from or connected with this inspection.

DATE 3/30, 1990 Jerome P Evans NC 1231
Inspector's Signature National Board, State, Province and N

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

0/77)

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. Corrosion Allowance__ in Dia.__ ft.__ in. Length__ ft.__ in.
(Kind & Spec.No) (Min. of Range Specified)

5. Seams: Long____ M.T.[1]____ R.T.____ Efficiency____ %

Girth____ M.T.[1]____ R.T.____ No. of Courses____

6. Heads: (a) Material____ T.S.____ (b) Material____ T.S.____

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 taper and weld, bar, etc. If bar give dimensions, if bolts, describe or sketch)

8. Design Pressure[2] 1250 psi at 575 °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____ inches 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. Corrosion Allowance__ in. Dia.__ ft.__ in Length__ ft.__ in.
(Kind&Spec.No.) (Min. of Range Specified)

12. Seams: Long____ M.T.[1]____ R.T.____ Efficiency____ %
Girth____ M.T.[1]____ R.T.____ No. of Courses____

13. Heads (a) Material____ T.S.____ (b) Material____ T.S.____

Location (a) Top, Bottom, End (b) Channel	Thickness	Crown Radius	Knucle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Press (Conv. or Conc.)

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[2]____ psi at____ °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: Skirt____ Lugs____ Legs____ Other____ Attached____
(Yes or No) (Number) (Number) (Describe) (Where & How)

[1] If Postweld Heat-Treated.

[2] 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. I

1. Manufactured & Certified by: GE Company, 2117 Castle Hayne Rd., Wilmington, N.C. 28401
(Name and Address of NPT Certificate Holder)

Manufactured for: DUANE ARNOLD PALO, IOWA 52324
(Name and Address of N Certificate Holder for completed nuclear componen

2. Identification-Certificate Holders's S/N of Part: A4619 Nat'l Bd. N. N/A

(a) Constructed According to Drawing No: 761E387G012 Dwg. Prepared by D. L. Peterso

(b) Description of Part Inspected: CONTROL ROD DRIVE, MODEL # 7RDB144EG001

(C) Applicable ASME Code: Section III, Edition 1974, Addenda Date W'75, Case No. 1361-2 N207 Class

Sheet 2 of 2

1. Cap 167A2343P1
SA182-F304
3/8 thick X 1 1/16 OD

2. Indicator Tube 104B1336P3
SA312-TP316
3/4 sch 40-seamless pipe
0.113 wall thickness
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 129B3539P3,P5
SA182-F304
3.0 OD x .884 ID

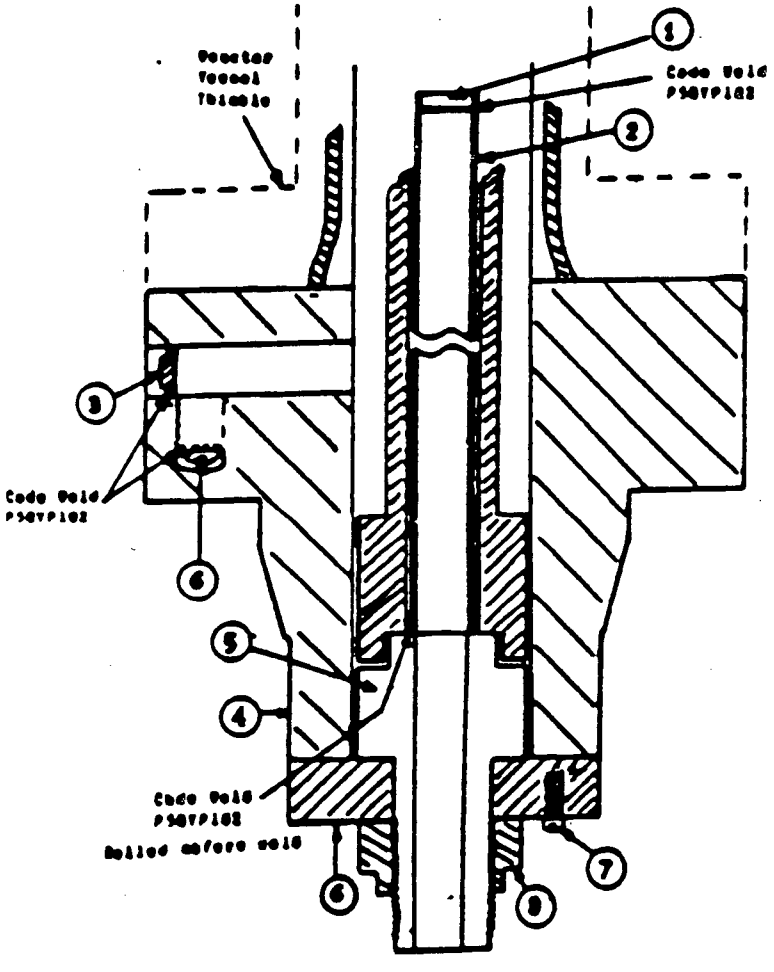
6. Ring Flange 114B5122P2
SA182-F304
1" thick x 5.0 OD x 1.75 ID

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.

9. t 114B5460P1
SA193-B8A
1.30 thick x 2.62 dia.

CONTROL ROD DRIVE
DWG - 761E387



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. I

1. Manufactured & Certified by: GE Company, 2117 Castle Hayne Rd., Wilmington, N.C. 2840
(Name and Address of NPT Certificate Holder)
(2) Manufactured for: DUANE ARNOLD PALO, IOWA 52324
(Name and Address of N Certificate Holder for completed nuclear [illegible])

2. Identification-Certificate Holders's S/N of Part: A5075 Nat'l Bd. No. N/A
(a) Constructed According to Drawing No: 761E387G012 Dwg. Prepared by D. L. Pete
(b) Description of Part Inspected: CONTROL ROD DRIVE, MODEL # 7RDB144EG001
(c) Applicable ASME Code: Section III, Edition 1974, Addenda Date W'75, Case No. 1361-2 CL N207

3. REMARKS: Standard part for use with Reactor. Hydrostatically tested at 1825 psi. min.
(Brief description of service for which component was designed)

Sheet 1 o

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

DATE: 3/30, 19 90 Signed GE-NEBG-NF&CM-QA By
(NPT Certificate Holder) SCO-QA REPRESENTATIVE

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

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
DC22 5253 Rev. 0
Design specification certified by BJORN HAABERG Prof. Eng. State CALIF. Reg. No. 15
DC22 5254 Rev. 0.
Stress analysis report certified by EDWARD YOSHIO Prof. Eng. State CALIF. Reg. No. M0

CERTIFICATION OF SHOP INSPECTION

I, the undersigned, holding a valid commission by the National Board of Boiler and Press Inspectors and/or the State or Province of NORTH CAROLINA and employed by DEPARTMENT OF LA of STATE OF NORTH CAROLINA have inspected the part of a pressure vessel described in t Partial Data Report on 3/30 1990, and state that to the best of my knowle and belief, the NPT Certificate Holder has constructed this part in accordance with the A Code Section III.

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

DATE 3/30, 1990 Inspector's Signature NC 1231 National Board, State, Province and

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

10/77)

FORM U-2 (back)

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. Corrosion Allowance ___ in Dia. ___ ft. ___ in. Length ___ ft. ___ in.
(Kind & Spec.No) (Min. of Range Specified)

5. Seams: Long _____ M.T.[1] _____ R.T. _____ Efficiency _____ %

Girth _____ M.T.[1] _____ R.T. _____ No. of Courses _____

6. Heads: (a) Material _____ T.S. _____ (b) Material _____ T.S. _____

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 _____ (Material, Spec. No., T.S. Size Number) Other fastening _____ (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[2] 1250 psi at 575 °F Drop Weight _____ Cherpy 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 _____ inches 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. Corrosion Allowance ___ in. Dia. ___ ft. ___ in Length ___ ft. ___ in.
(Kind&Spec.No.) (Min. of Range Specified)

12. Seams: Long _____ M.T.[1] _____ R.T. _____ Efficiency _____ %
Girth _____ M.T.[1] _____ R.T. _____ No. of Courses _____

13. Heads (a) Material _____ T.S. _____ (b) Material _____ T.S. _____

Location (a) Top, Bottom, End / (b) Channel	Thickness	Crown Radius	Knucle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Press (Conv. or Conc.)

If removable, bolts used (a) ____ (b) ____ (c) ____ Other Fastening _____
(Describe or attach sketch)

Drop Weight _____,
Cherpy Impact _____ ft-lb
14. Design pressure[2] _____ psi at _____ °F 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: Skirt _____ Lugs _____ Legs _____ Other _____ Attached _____
(Yes or No) (Number) (Number) (Describe) (Where & How)

[1] If Postweld Heat-Treated.

[2] 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. I

1. Manufactured & Certified by: GE Company, 2117 Castle Hayne Rd., Wilmington, N.C. 2840
(Name and Address of NPT Certificate Holder)

(b) Manufactured for: DUANE ARNOLD PALO, IOWA 52324
(Name and Address of N Certificate Holder for completed nuclear [illegible]

2. Identification-Certificate Holders's S/N of Part: A5075 Nat'l Bd. N. N/A

(a) Constructed According to Drawing No: 761E387G012 Dwg. Prepared by D. L. Pete

(b) Description of Part Inspected: CONTROL ROD DRIVE, MODEL # 7RDB144EG001

(C) Applicable ASME Code: Section III, Edition 1974, Addenda Date W'75, Case No. 1361-2 N207 Cl

Sheet 2 of 2

1. Cap 167A2343P1
SA182-F304
1/8 thick X 1 1/16 OD

2. Indicator Tube 104B1336P3
SA312-TP316
1/4 sch 40-seamless pipe
.113 wall thickness
.065 max. dia.

3. Plug 159A1176P1
SA182-F304
4 thick x 0.812 OD

4. Flange 919D610P1 (719E474)
SA182-F304
1 37 thick x 9 5/8 OD

5. Head 129B3539P3,P5
SA182-F304
[illegible] 0 OD x .884 ID

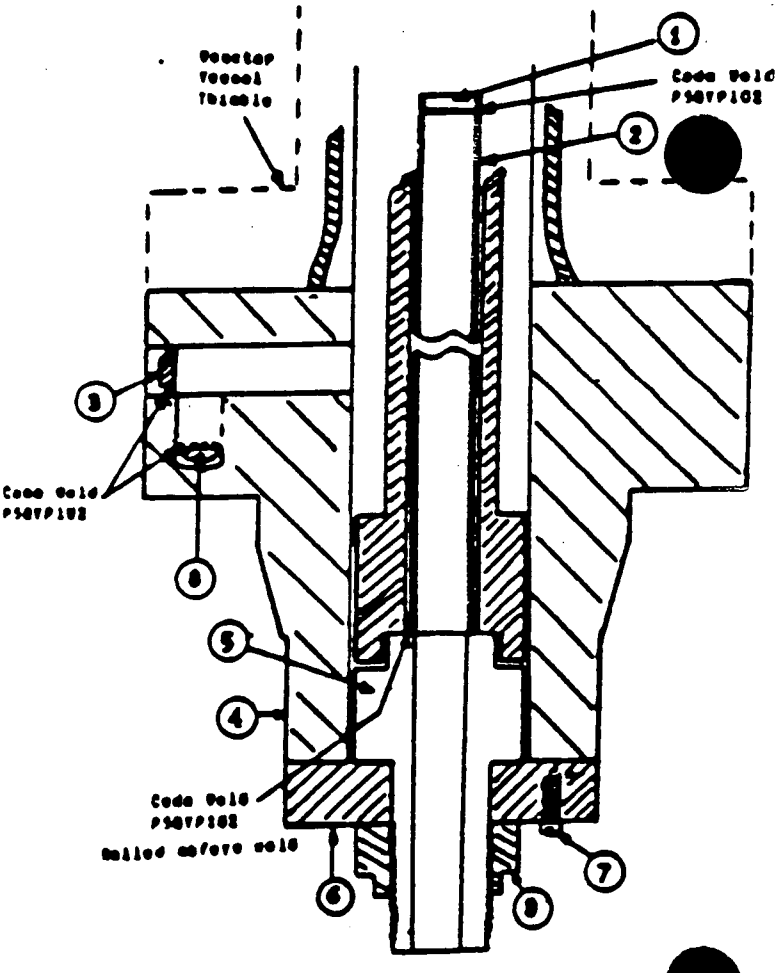
6. Ring Flange 114B5122P2
SA 182-F304.
[illegible] thick x 5.0 OD x 1.75 ID

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.

9. Nut 114B5460P1
SA193-B8A
1.30 thick x 2.62 dia.

CONTROL ROD DRIVE
DWG - 761E387



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. I

Manufactured & Certified by: GE Company, 2117 Castle Hayne Rd., Wilmington, N.C. 2840
(Name and Address of NPT Certificate Holder)

(b) Manufactured for: Duane Arnold Palo, Iowa 52324
(Name and Address of N Certificate Holder for completed nuclear component)

Identification-Certificate Holders's S/N of Part: A4018 Nat'l Bd. No. N/

(a) Constructed According to Drawing No: 761E387G012 Rev 21 Dwg. Prepared by D. L. Peterson

(b) Description of Part Inspected: CONTROL ROD DRIVE, MODEL # 7RDB144EG00[illegible]
N207

(c) Applicable ASME Code: Section III, Edition 1974, Addenda Date W'75, Case No. 1361-2 Class 1

REMARKS: Standard part for use with Reactor. Hydrostatically tested at 1825 psi. min.
(Brief description of service for which component was designed)

Sheet 1 of 2

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

TE: 5/29, 19 90 Signed GE-NEBG-NF&CM-QA By
(NPT Certificate Holder) SOC-OA REPRESENTATIVE

rtificate Of Authorization Expires: 6/16/90 Certification of Authorization No.: NPT N-151

CERTIFICATION OF DESIGN FOR APPURTENANCE

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

ress analysis report on file at GE COMPANY, SAN JOSE, CALIFORNIA
22A6253 Rev. 0

esign specification certified by BJORN HAABERG Prof. Eng. State CALIF. Reg. No. 15[illegible]
22A6254 Rev. 1

ress analysis report certified by EDWARD YOSHIO Prof. Eng. State CALIF. Reg. No. M0[illegible]546

CERTIFICATION OF SHOP INSPECTION

I, the undersigned, holding a valid commission by the National Board of Boiler and Pressure spectors and/or the State or Province of NORTH CAROLINA and employed by DEPARTMENT OF LABOR STATE OF NORTH CAROLINA have inspected the part of a pressure vessel described in this rtial Data Report on 5-29 1990, and state that to the best of my knowledge d belief, the NPT Certificate Holder has constructed this part in accordance with the ASME de Section III.

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

5-29, 1990 Duane P Evers NC. 1231
Inspector's Signature National Board, State, Province and No.

pplemental sheets in form of lists, sketches or drawing may be used provided (1) size is 2[illegible]1", (2) information in 1-2 on this Data Report is included on each sheet and (3) [illegible]t is numbered and number of sheets is recorded in Item 3. "REMARKSs"

7)

FORM U-2 (back)

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. Corrosion Allowance ___ in Dia. ___ ft. ___ in. Length ___ ft. ___ in.
(Kind & Spec.No) (Min. of Range Specified)

5. Seams: Long _____ M.T.[1] _____ R.T. _____ Efficiency _____ %

Girth _____ M.T.[1] _____ R.T. _____ No. of Courses _____

6. Heads: (a) Material _____ T.S. _____ (b) Material _____ T.S. _____

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 end weld, bar, etc. If bar give dimensions, if bolts, describe or sketch)

8. Design Pressure:[2] 1250 psi at 575 °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 _____ inches 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. Corrosion Allowance ___ in. Dia. ___ ft. ___ in Length ___ ft. ___ in.
(Kind & Spec. No.) (Min. of Range Specified)

12. Seams: Long ____ M.T.[1] _____ R.T. _____ Efficiency _____ %
Girth ____ M.T.[1] _____ R.T. _____ No. of Courses _____

13. Heads (a) Material _____ T.S. _____ (b) Material _____ T.S. _____

Location (a) Top, Bottom, End (b) Channel	Crown Radius	Knuckle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Press (Conv. or Conc.)

If removable, bolts used (a) ____ (b) ____ (c) ____ Other Fastening _____
(Describe or attach sketch)

Drop Weight _____
Charpy Impact _____ ft-lb
14. Design pressure[2] _____ psi at _____ °F 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)

[1] If Pootweld Heat-Treated.

[2] 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. I

[redacted]factured & Certified by: GE Company, 2117 Castle Hayne Rd., Wilmington, N.C. 28
(Name and Address of NPT Certificate Holder)

(b) Manufactured for: Duane Arnold Palo, Iowa 52324
(Name and Address of N Certificate Holder for completed nuclear com

2. Identification-Certificate Holders's S/N of Part: A4018 Nat'l Bd. N. N/

(a) Constructed According to Drawing No: 761E387G012 Rev 21 Dwg. Prepared by D. L. Pet

(b) Description of Part Inspected: CONTROL ROD DRIVE, MODEL # 7RDB144EG001

(C) Applicable ASME Code: Section III, Edition 1974, Addenda Date W'75, Case No. 1361-2 N207 C

Sheet 2 of

1. Cap 167A2343P1
SA182-F304
3/8 thick X 1 1/16 OD

2. Indicator Tube 104B1336P3
SA312-TP316
3/4 sch 40-seamless pipe
[redacted]3 wall thickness
[redacted]5 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

Head 129B3539P3,P5
SA182-F304
3.0 OD x .884 ID

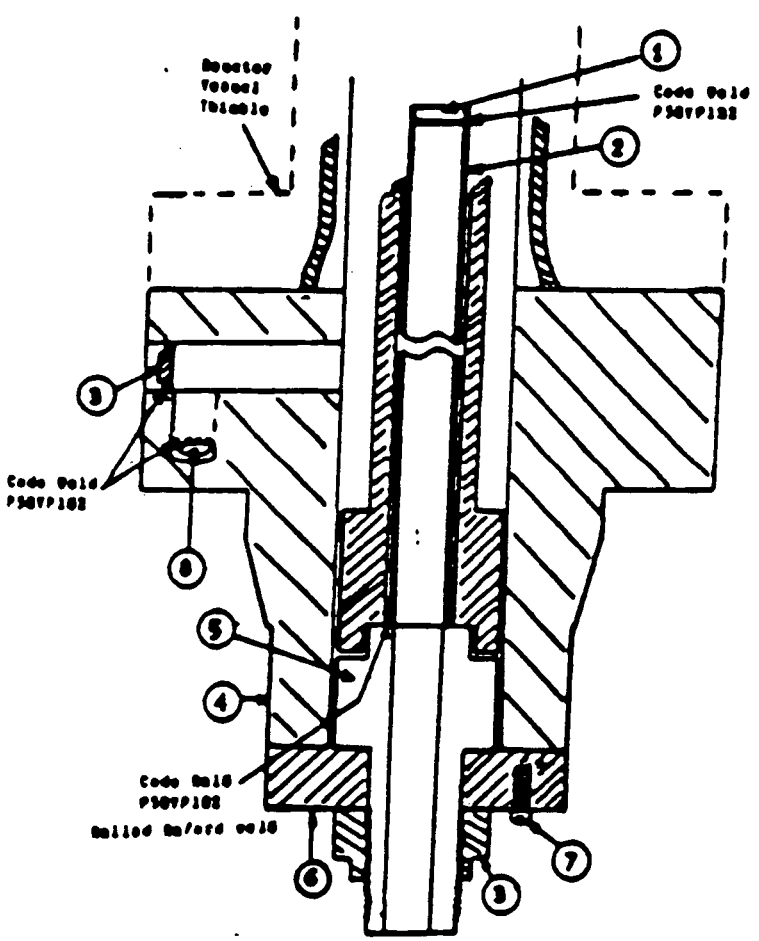
Ring Flange 114B5122P2
SA182-F304
1" thick x 5.0 OD x 1.75 ID

Cap Screw 117C4516P2
SA193-B6
6 ea. 1/2 dia. on [redacted]4 1/8 bolt circle

Plug 175A7961P1
SA182-F304
0.38 thick x 1.307 dia.

[redacted]4B5460P1
SA193-B8A
1.30 thick x 2.62 dia.

CONTROL ROD DRIVE
DWG - 761E387



FORM N-2 NPT CERTIFICATE HOLDERS' DATA REPORT FOR NUCLEAR PART AND APPURTENANCE
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. 284
(Name and Address of NPT Certificate Holder)

(1) Manufactured for: DUANE ARNOLD PALO, IOWA 324
(Name and Address of N Certificate Holder for complete nuclear comp

2. Identification-Certificate Holders's S/N of Part: A4549 N't'l Bd. No. N

(a) Constructed According to Drawing No: 761E387G012 Dwg. Prepared by D. L. Pet

(b) Description of Part Inspected: CONTROL ROD DRIVE, MODEL # 7[illegible]8144EG001

(c) Applicable ASME Code: Section III, Edition 1974, Addenda Date W'75, N207 ase No. 1361-2 C

3. REMARKS: Standard part for use with Reactor. Hydrostatically tested a 1825 psi. min.
(Brief description of service for which component was designed)

Sheet 1 o

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

DATE: 3/30, 19 90 Signed GE-NEBG-NF&CM-QA By [signature]
(NPT Certificate Holder) SCO- A REPRESENTATIVE

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

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
DC22A5253 Rev. 0
Design specification certified by BJORN HAABERG Prof. Eng. State CALIF. Reg. No. 15
DC22[illegible]254 Rev. 0.
Stress analysis report certified by EDWARD YOSHIO Prof. Eng. State CALIF. Reg. No. MO

CERTIFICATION OF SHOP INSPECTION

I, the undersigned, holding a valid commission by the National Board of Boiler and Pres Inspectors and/or the State or Province of NORTH CAROLINA and employed by DEPARTMENT OF L of STATE OF NORTH CAROLINA have inspected the part of a pressure vessel described in Partial Data Report on 3/30 1990, and state that to the best of my knowl and belief, the NPT Certificate Holder has constructed this part in accordance with the Code Section III.

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

DATE 3/30, 1990 [signature] NC 1231
Inspector's Signature National Board, State, Province an

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

/77)

FORM U-2 (back)

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. Corrosion Allowance___ in Dia.___ ft.___ in. Length___ ft.___ in.
(Kind & Spec.No) (Min. of Range Specified)

5. Seams: Long_____ M.T.[1]_____ R.T._____ Efficiency_____ %

Girth_____ M.T.[1]_____ R.T._____ No. of Courses_____

6. Heads: (a) Material_____ T.S._____ (b) Material_____ T.S._____

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 [2] 1250 psi at 575 °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_____ inches 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. Corrosion Allowance___ in. Dia.___ ft.___ in Length___ ft.___ in.
(Kind&Spec.No.) (Min. of Range Specified)

12. Seams: Long_____ M.T.[1]_____ R.T._____ Efficiency_____ %
Girth_____ M.T.[1]_____ R.T._____ No. of Courses_____

13. Heads (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.)

If removable, bolts used (a)_____ (b)_____ (c)_____ Other Fastening_____
(Describe or attach sketch)

14. Design pressure[2]_____ 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_____ Legs_____ Other_____ Attached_____
(Yes or No) (Number) (Number) (Describe) (Where & How)

[1] If Postweld Heat-Treated.

[2] 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. I

. Manufactured & Certified by: GE Company, 2117 Castle Hayne Rd., Wilmington, N.C. 2840
(Name and Address of NPT Certificate Holder)

(b) Manufactured for: DUANE ARNOLD PALO, IOWA 52324
(Name and Address of N Certificate Holder for completed nuclear [illegible]

2. Identification-Certificate Holders's S/N of Part: A4549 Nat'l Bd. N. N/A

(a) Constructed According to Drawing No: 761E387G012 Dwg. Prepared by D. L. Pete

(b) Description of Part Inspected: CONTROL ROD DRIVE, MODEL # 7RDB144EG001
N207

(C) Applicable ASME Code: Section III, Edition 1974, Addenda Date W'75, Case No. 1361-2 Cl

Sheet 2 of 2

1. Cap 167A2343P1
SA182-F304
[illegible]/8 thick X 1 1/16 OD

2. Indicator Tube 104B1336P3
SA312-TP316
[illegible]/4 sch 40-seamless pipe
[illegible].113 wall thickness
[illegible].065 max. dia.

3. Plug 159A1176P1
[illegible]182-F304
[illegible]/4 thick x 0.812 OD

4. Flange 919D610P1 (719E474)
[illegible]182-F304
[illegible].37 thick x 9 5/8 OD

5. Head 129B3539P3,P5
SA182-F304
[illegible].0 OD x .884 ID

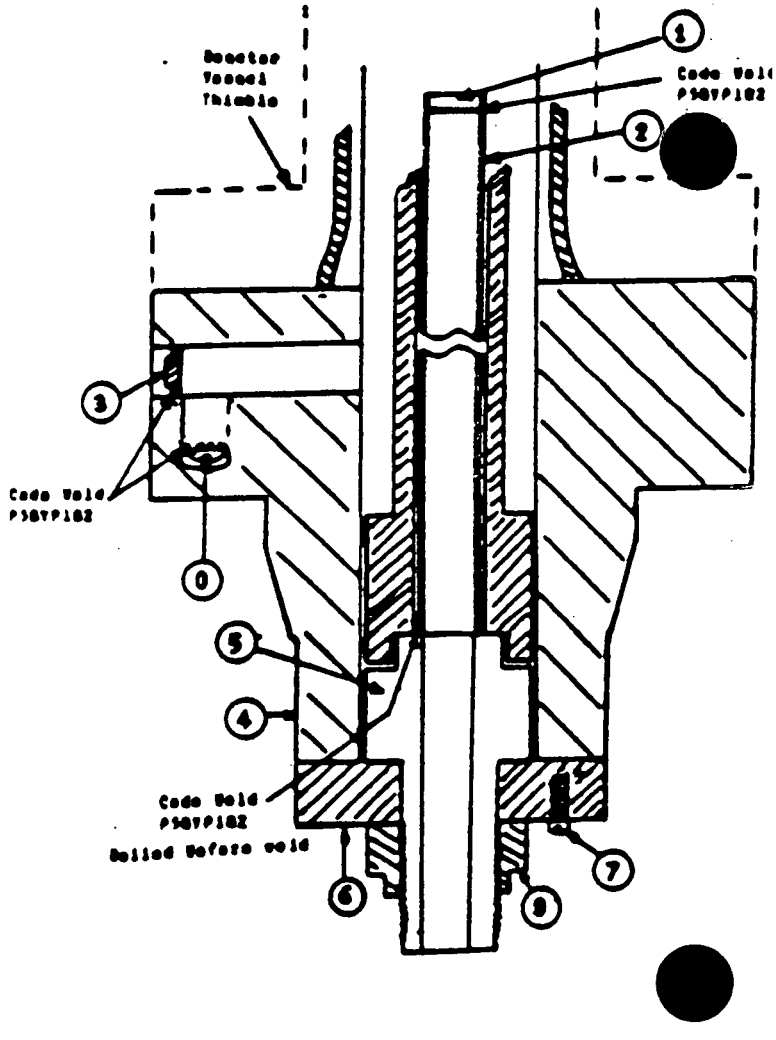
6. Ring Flange 114B5122P2
SA182-F304.
[illegible]" thick x 5.0 OD x 1.75 ID

7. Cap Screw 117C4516P2
SA193-B6
6 req. 1/2 dia. on 4 1/8 bolt circle

8. Plug 175A7961P1
SA182-F304
0.38 thick x 1.307 dia.

9. Nut 114B5460P1
SA193-B8A
1.30 thick x 2.62 dia.

CONTROL ROD DRIVE
DWG - 761E387



NIS2 NO. 10-90-36

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 September 6, 1990

P.O.Box 351, Cedar Rapids, IA 52406 (Address) Sheet 1 of 2

2. Plant Duane Arnold Energy Center (Name) Unit 1

3277 DAEC Rd. Palo, IA 52324 (Address) CMAR #A 02913 (Repair Organization P.O.No.,Job No.)

3. Work Performed by Iowa Electric (Name) Type Code Symbol Stamp None

Authorization No. None

3277 DAEC Road Palo, IA 52324 (Address) Expiration Date None

4. Identification of System Recirc Riser "F" , line 1" DCA-19 (class 2)

5. (a)Applicable Const. Code ANSI B31.7 19 69 Edition, 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 Manufacture	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired Replaced, or Replacement	ASME Code Stamped (Yes or No)
Socket Weld 4F3	Bechtel	n/a	N/A	1" DCA-19	1990	Repair	No

7. Description of Work Weld repair of 1" socket weld

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operation Pressure ☒
Other ☐ Pressure 1026 psi Test Temp. 206 °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.

ANII Review 9-11-90

NIS2 NO. 10-90-36

FORM NIS-2 (Back) sheet 2 of 2

9. Remarks 1/16" groove was found on socket weld it is assumed that the weld was marred by wiring wrapped around
Applicable Manufacturer's Data Reports to be attached
coupling. Weld repair defects, performed PT and VT-2 (see ISI report 89-13 for details)

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

Signed Surinder Sharma Codes & Materials, TGL Date 9-6-, 19
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 Hartford Steam Boiler I&I Co of Hartford, Connecticut have inspected the components described in this Owner's Report during the period 6-5-90 to 9-11-90, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in the 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.

Scott R Fowler Commissions NB 8829(I)(N) 941-IA
Inspectors Signature National Board, State, Province, and Endorsements

Date 9-11 19 90

NIS2 NO. 10-90-37

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

Owner Iowa Electric Light and Power (Name) Date September 10 1990

P.O.Box 351, Cedar Rapids, IA 52406 (Address) Sheet 1 of 2

2. Plant Duane Arnold Energy Center (Name) Unit 1

3277 DAEC Rd. Palo, IA 52324 (Address) CMAR #91523 (Repair Organization P.O.No.,Job No.)

3. Work Performed by Iowa Electric (Name) Type Code Symbol Stamp None

Authorization No. None

3277 DAEC Roed Palo, IA 52324 (Address) Expiration Date None

4. Identification of System Reactor Vessel Vent Flange N7 Nozzle (class 1)

5. (a)Applicable Const. Code ANSI B 31.7 19 69 Edition, Addenda, N/A Code Case
(b)Applicable Edition of Section XI Utilized for Repoirs or Replacements 1980 W81

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Msnufacture	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired Replaced, or Replacement	ASME Code Stamped (Yes or No)
N7 vent flange	C B & I	39-1	N/A	Vessel 1T201	1969	REPAIRED	YES

7. Description of Work Machined flange for better fit.

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operation Pressure ☒
Other ☐ Pressure 1026 psi Test Temp. 206 °F

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8½ in. x 11 in.,(2)informotion 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.

ANII Review AP 10-1-90

NIS2 NO. 10-90-37

FORM NIS-2 (Back) sheet 2 of 2

9. Remarks Machined flange for better fit. VT-1 was performed on flange and was accepted. As a note the flange has a rough mating surface. VT-2 was performed under ISI no. 89-13 and was acceptable.

Applicable Manufacturer's Data Reports to be attached

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. Nons Expiration Date

Signed Surinder Sharma Codes & Materials, TGL Date 9-26-, 19
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 Hartford Steam Boiler I&I Co of Hartford, Connecticut have inspected the components described in this Owner's Report during the period 5-5-90 to 10-1-90, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in the 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.

Scott Parker Commissions NB 8829(I)(N) 941-IA
Inspectors Signature National Board, State, Province, and Endorsements

Date Oct. 1 19 90

NIS2 NO. 10-90-38

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 November 9, 1990

P.O.Box 351, Cedar Rapids, IA 52406 (Address) Sheet 1 of 2

2. Plant Duane Arnold Energy Center (Name) Unit 1

3277 DAEC Rd. Palo, IA 52324 (Address) PMAR #1043329, P.O. F16672 (Repoir Organization P.O.No.,Job No.)

3. Work Performed by Iowa Electric (Name) Type Code Symbol Stamp None

Authorization No. None

3277 DAEC Roed Palo, IA 52324 (Address) Expiration Date None

4. Identification of System Heed Vent line Flange (lower) line 2" DBA-9 (class 1) "Item 5 on FSK-4042"

5. (a)Applicable Const. Code ANSI B 31.7 19 69 Edition, n/a Addenda, N/A Code Case
(b)Applicable Edition of Section XI Utilized for Repoirs or Replacements 1980 W81

6. Identification of Components Repoired or Replaced and Replacement Components

Name of Component	Name of Manufacture	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired Replaced, or Replacement	ASME Code Stamped (Yes or No)
8 studs	Daniel Bolt	Ht Code 217	N/A	2" DBA-9	1973	Replacement	No
16 nuts	Daniel Bolt	Ht Code 312	N/A	2" DBA-9	1973	Replacement	No

7. Description of Work Replaced studs and nuts.

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operation Pressure ☐
Other ☐ Pressure n/a psi Test Tamp. n/a °F

NOTE: Supplemental sheets in form of lists, sketches, or drawings mey 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 racorded at the top of this form.

11-5-90

NIS2 NO. 10-90-38

FORM NIS-2 (Back) sheet 2 of 2

9. Remarks Studs and nuts replaced see NCR 90-124 for further comments. Commitment Control Number A90338 has been written to tract the VT-1 requirements for the next refueling outage.

Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

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

Type Code Symbol Stamp None

Certificate of Authorization No. None Expiration Date

Signed S S Shanafelt Codes & Materials, TGL Date 11-13-
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 Hartford Steam Boiler I&I Co of Hartford, Connecticut have inspected the components described in this Owner's Report during the period 9-7-90 to 11-13-90, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in the Owner's Report in accordence with the requirements of the ASME Code, Section XI.

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

Scott Foushee Commissions NB 8829(I)(N) 941-IA
Inspectors Signature Nationel Board, State, Province, and Endorsements

Date Nov 13 19 90

NIS2 NO. 10-90-39

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 September 10, 1990

P.O.Box 351, Cedar Rapids, IA 52406 (Address) Sheet 1 of 2

2. Plant Duane Arnold Energy Center (Name) Unit 1

3277 DAEC Rd. Palo, IA 52324 (Address) CMAR #93919 (EMA) (Repoir Organization P.O.No.,Job No.)

3. Work Performed by Iowa Electric (Name) Type Code Symbol Stamp None

Authorization No. None

3277 DAEC Road Palo, IA 52324 (Address) Expiration Date None

4. Identification of System Reactor Vessel vent line 2"DBA-9 (class 1)

5. (a)Applicable Const. Code ASME Section III 19 71 Edition, S71 Addenda, N/A Code Case (valve) Const. Code for piping B 31.7, 1967 Edition 1969 Addenda class 1
(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 Manufacture	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired Replaced, or Replacement	ASME Code Stamped (Yes or No)
Valve V-14-006	Rockwell	n/a	n/a	2" CCA-GB	1972	Replaced	Yes
Valve V-14-006	Anchor	EA742-3-1	N/A	2" CCA-GT	1988	Replacement	YES
2" pipe	Tioga Pipe Co.	HT# L61715	N/A	2" DBA-9	1990	Replacement	NO
Welds W32, W33, W34 W35,W36,W37,W38	Iowa Electric	N/A	N/A	2" DBA-9	1990	Replacement	NO

* Nonclass attachment weld to class1 valve V-14-6

7. Description of Work Replaced valve V-14-006 and associated piping.

8. Tests Conducted: Hydrostatic [x] Pneumatic [ ] Nominal Operation Pressure [ ]
Other [ ] Pressure 1026 psi Test Temp. 206 °F

NOTE: Supplemental sheets in form of lists, sketches, or drawings mey 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 tep of this form.

AIP
11-14-90

NIS2 NO. 10-90-39

FORM NIS-2 (Back) sheet 2 of 2

Remarks Replaced valve due to extreme bypass leakage. Performed PT on welds. VT-2 with Hydrostatic test under ISI
Applicable Manufacturer's Data Reports to be attached

report number 90-360 and 89-13 (see NIS2 10-90-40 for further details)

CERTIFICATE OF COMPLIANCE

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

Type Code Symbol Stamp None

Certificate of Authorization No. None Expiration Date

Signed S Shangari Codes & Materials, TGL Date 11-13-, 19 90
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 Hartford Steam Boiler I&I Co of Hartford, Connecticut have inspected the components described in this Owner's Report during the period 5-15-90 to 4-5-90, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in the 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.

Inspectors Signature Commissions NB 8829(I)(N) 941-IA
National Board, State, Province, and Endorsements

Date Nov 14 19 90

FORM NPV-1 (back)

Mark No.	Material Spec. No.	Manufacturer	Remarks
(c) Bolting			
N/A			
(d) Other Parts			
Disc HT.#9563	AMS-5387A	Deloro Stellite,	Inc.

0011802

8. Hydrostatic test 5400 psi.

CERTIFICATION OF DESIGN

Design information on file at Anchor/Darling Valve Co., Williamsport, PA 17701

Stress analysis report on file at Anchor/Darling Valve Co., Williamsport, PA 17701

Design specifications certified by R. S. Powell (1) Prof. Eng. State CA Reg. No. 14420

Stress analysis report certified by R. S. Farrell (1) Prof. Eng. State PA Reg. No. 35216-E

(1) Signature not required. List name only.

We certify that the statements made in this report are correct.

Date 9127 19 88 Signed Anchor/Darling Valve Co. (Manufacturer) By R J Stannett

Certificate of Authorization No. N1712 expires 4/15/89

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 Pennsylvania and employed by Commercial Union Insurance Co. of Boston, Mass. have inspected the equipment described in this Data Report on 2-27 thru 9-27 19 88, and state that to the best of my knowledge and belief, the Manufacturer has constructed this equipment in accordance with the applicable Subsections of ASME Code, Section III.

By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the equipment described in this 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 9-27 19 88

Charles Young (Inspector)

Commissions Pennsylvania 2392 (National Board, State, Province and No.)

Charles Young

NIS2 NO. 10-90-40

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 September 10, 1990

P.O.Box 351, Cedar Rapids, IA 52406 (Address) Sheet 1 of 2

2. Plant Duane Arnold Energy Center (Name) Unit 1

3277 DAEC Rd. Palo, IA 52324 (Address) CMAR #93923 (EMA) (Repair Organization P.O.No.,Job No.)

3. Work Performed by Iowa Electric (Name) Type Code Symbol Stamp None

Authorization No. None

3277 DAEC Roed Palo, IA 52324 (Address) Expiration Date None

4. Identification of System Reactor Vessel vent line 2"DBA-9 (class 1)

5. (a)Applicable Const. Code ASME Section III 19 71 Edition, S71 Addenda, N/A Code Case (valve)
(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 Manufacture	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired Replaced, or Replacement	ASME Code Stamped (Yes or No)
Valve V-14-005	Rockwell	n/a	n/a	2" CCA-GB	1972	Replaced	Yes
Valve V-14-005	Anchor	EA742-3-2	N/A	2" CCA-GT	1988	Replacement	YES
2" pipe	Tioga Pipe Co.	HT # L61715	N/A	2" DBA-9	1990	Replacement	NO

7. Description of Work Replaced valve V-14-005 and associated piping.

8. Tests Conducted: Hydrostatic [x] Pneumatic [ ] Nominal Operation Pressure [ ]
Other [ ] Pressure 1026 psi Test Temp. 206 °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.

11-14-90

NIS2 NO. 10-90-40

FORM NIS-2 (Back) sheet 2 of 2

9. Remarks Replaced valve due to extreme bypass leakage. Performed PT on welds. VT-2 with Hydrostatic test under ISI
Applicable Manufacturer's Data Reports to be attached

89-13 (see nis2 10-90-39 for further details)

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 Stemp None

Certificate of Authorization No. None Expiration Date

Signed S Shanyan Codes & Materials, TGL Date 11-13-, 19 90
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 Hartford Steam Boiler I&I Co of Hartford, Connecticut have inspected the components described in this Owner's Report during the period 5-15-78 to 11-13-90, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective maasures described in the 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.

Inspectors Signeture Commissions NB 8829(I)(N) 941-IA
National Board, State, Province, and Endorsements

Date June 14 19 90

FORM NPV-1 MANUFACTURERS' DATA REPORT FOR NUCLEAR PUMPS OR VALVES

As Required by the Provisions of the ASME Code Rules

1. Manufactured by Anchor/Darling Valve Company, 701 First St., Williamsport, PA 17701 (Name & Address of Manufacturer) Order No. EA742

2. Manufactured for Iowa Electric Light & Power Company, P.O. Box 351, Cedar Rapids, Iowa 52406 (Name and Address) Order No. S42237

3. Owner Iowa Electric Light & Power Company

4. Location of Plant Duane Arnold Energy Center, 3277 DAEC Rd., Palo, Iowa 52324

5. ~~PXXXXX~~ Valve Identification EA742-3-2

2"-1500#-DD Gate Valve w/10" Teel Handle
(Brief description of service for which equipment was designed)

(a) Drawing No. W8822831 R/A Prepared by Anchor/Darling Valve Company

(b) National Board No. N/A

6. Design Conditions 3600 (Pressure) psi 100 (Temperature) °F

7. The material, design, construction, and workmanship complies with ASME Code Section III. Class 1

Edition 1971, Addenda Date Summer 1971, Case No. -----

Mark No.	Material Spec. No.	Manufacturer	Remarks
(a) Castings			
Body HT.#1876	SA351-CF8M	Valcast	
S/N 876			
Bonnet HT.#Y2458	SA351-CF8M	Quaker Alloy Casting Company	
S/N 3			
(b) Forgings			
N/A			

FORM NPV-1 (back)

Mark No.	Material Spec. No.	Manufacturer	Remarks
(c) Bolting			
N/A			
(d) Other Parts			
Disc H .	S 5387A	Deloro Stellite,	Inc.

8. Hydrostatic test 5400 psi.

CERTIFICATION OF DESIGN

Design information on file at Anchor/Darling Valve Co., Williamsport, PA 17701

Stress analysis report on file at Anchor/Darling Valve Co., Williamsport, PA 17701

Design specifications certified by R. S. Powell (1) Prof. Eng. State CA Reg. No. 14420

Stress analysis report certified by R. S. Farrell (1) Prof. Eng. State PA Reg. No. 35216-E

(1) Signature not required. List name only.

We certify that the statements made in this report are correct.

Date 9/27 19 88 Signed Anchor/Darling Valve Co. (Manufacturer) By R L Stannett

Certificate of Authorization No. N1712 expires 4/15/89

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 Pennsylvania and employed by Commercial Union Insurance Co. of Boston, Mass. have inspected the equipment described in this Data Report on 2.27th 9.27 19 88, and state that to the best of my knowledge and belief, the Manufacturer has constructed this equipment in accordance with the applicable Subsections of ASME Code, Section III.

By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the equipment described in this 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 9-27 19 88

Charles Young (Inspector) Charles Young Commissions Pennsylvania 2392 (National Board, State, Province and No.)

Printed in U.S.A. (7/71)

This form (E37) is obtainable from the ASME, 345 E. 47th St., New York, N.Y. 10017

0001804

NIS2 NO. 10-90-41

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 September 11, 1990
   P.O.Box 351, Cedar Rapids, IA 52406 (Address) Sheet 1 of 2
2. Plant Duane Arnold Energy Center (Name) Unit 1
   3277 DAEC Rd. Palo, IA 52324 (Address) CMAR #A 01133 (EMA) (Repair Organization P.O.No.,Job No.)
3. Work Performed by Iowa Electric (Name) Type Code Symbol Stamp None
   Authorization No. None
   3277 DAEC Road Palo, IA 52324 (Address) Expiration Date None
4. Identification of System 1 1/4" Relief valve line for HPCI Barometeric Condenser (Class 2)
5. (a)Applicable Const. Code ANSI B31.7 19 67 Edition, ____ Addenda, N/A Code Case
   (b)Applicable Edition of Section XI Utilized for Repairs or Replacements 1980 W81
   (c)Construction Code of Replacement item Section III 1974 Edition, S75 Addenda with Code Case ____ (pipe)
   Sect. III 1977 Edition, S78 Addenda(flange); Section III 1983 Edition S85 Addenda (studs, nuts)
6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacture	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired Replaced, or Replacement	ASME Code Stamped (Yes or No)
1 1/4" pipe (sch 80)	Bechtel	n/a	n/a	relief valve line	1972	Replaced	No
1 1/4" pipe (sch 80)	Chicago-Tube & Iron	n/a	n/a	1 1/4" HBB-*	1979	Replacement	No
2- 150# Flanges	Hub Inc.	Ht. Code ARPN-Coffer	n/a	1 1/4" HBB-*	1990	Replacement	No
4 - studs	Cardinal	Ht. No. X5698	n/a	1 1/4" HBB-*	1986	Replacement	No
8 - nuts	Cardinal	Ht. No. KC 8972	n/a	1 1/4" HBB-*	1986	Replacement	No
Welda W1A, W1B	Iowa Electric	n/a	n/a	1 1/4" HBB-*	1990	Replacement	No

7. Description of Work Replaced pipe with pipe and flange connections
8. Tests Conducted: Nydrostatic [x] Pneumatic [ ] Nominal Operation Pressure [ ]
   Other [ ] Pressure 18.75 psi Test Tamp. 74.5 °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 repart is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

ANII Review 10-15-90

NIS2 NO. 10-90-41

FORM NIS-2 (Back) sheet 2 of 2

9. Remarks Replacement of pipe with pipe, flange connection. Welds were PT examined and the new line was hydrostatic
Applicable Manufacturer's Data Reports to be attached

tested with VT-2 personnel under ISI report # 90-323.

* line designation not identified in Betchel M-190.

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

Signed Surinder Sharma Codes & Materials, TGL Date 10-5-, 19 90
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 employad by Hartford Steem Boiler I&I Co of Hartford, Connecticut have inspected the components described in this Owner's Report during the period 2-14-90 to 10-15-90, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in the 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, expressad 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.

Scott Fowler Commissions NB 8829(I)(N) 941-IA
Inspectors Signature National Board, State, Province, and Endorsements

Date Oct 15 19 90

NIS2 NO. 10-90-42

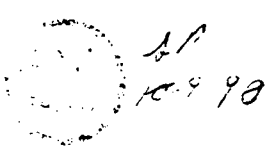
FORM NIS-2 OWNER'S REPORT FOR REPAIRS OR REPLACEMENTS
As Required by the Provisions of the ASME Code Section XI

1. Owner Iowa Electric Light and Power (Name) — Date Sept. 11,1990
   P.O.Box 351, Cedar Rapids, IA 52406 (Address) — Sheet 1 of 2
2. Plant Duane Arnold Energy Center (Name) — Unit 1
   3277 DAEC Rd. Palo, IA 52324 (Address) — PMAR 1043210 & CMAR 093812 (Repair Organization P.O.No.,Job No.)
3. Work Performed by Iowa Electric (Name) — Type Code Symbol Stamp None
   Authorization No. None
   3277 DAEC Rd. Palo, IA 52324 (Address) — Expiration Date None
4. Identification of System Main Steam (class 1)
5. * (a)Applicable Const. Code SECT. III 19 68 Edition, W68 Addenda, N A / Code Case
   (b)Applicable Edition of Section XI Utilized for Repairs or Replacements 1980 W81
   *GE Spec 21A9206 Rev 6 & 7
6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacture	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired Replaced, or Replacement	ASME Code Stamped (Yes or No)
MSRV Pilot Valve	Target Rock	S/N 199	N/A	PSV-4407	1975	Replaced	Yes
MSRV Pilot Valve	Target Rock	S/N 202	N/A	PSV-4407	1975	Replacement	Yes
MSRV Main Body	Target Rock	Unknown	N/A	PSV-4407	1975	Replaced	Yes
MSRV Main Body	Target Rock	S/N 202	N/A	PSV-4407	1975	Replacement	Yes

7. Description of Work MSRV Pilot/Main Body was replaced with new MSRV Pilot/Main Body S/N 202.
8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒
   Other ☐ Pressure 1026 psi Test Temp. 206 °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.



NIS2 NO. 10-90-42

FORM NIS-2 (Back) sheet 2 of 2

9. Remerks The MSRV Pilot/Main Body assemply was removed and replaced by a new MSRV Pilot/Main Body assembly S/N 202
Applicable Manufacturer's Data Reports to be attached
purchased from Commonwealth Edison (P.O.E9-18747-N-RG). A VT-1 (Rpt#s 89-18 & 90-200) was performed and accepted. A VT-3 (Rpt# 90-202) was performed on the Pilot Valve. NCR 90-099 was written because the preservice VT-3 exam on the Main Body S/N 202 was not performed. The NCR was dispositioned "USE AS IS". A VT-2 exem (89-13) was accepted after installation.

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this replacement (repair or 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 Surinder Sharma Codes & Materials, TGL Date 10-5-, 19 90
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 Hartford Steam Boiler I&I Co. of Hartford, Connecticut have inspected the components described in this Owner's Report during the period 6-13-90 to 10-9-90, and state that to the best of my knowledge and belief, the Owner has performed exeminations and taken corrective measures described in the Owner's Repart 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 exeminations 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.

Inspectors Signature Commissions NB 8829(I)(N) 941-IA
Nationsl Board, State, Province, and Endorsements

Date Oct 9 19 90

NIS2 NO. 10-90-43

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 Sept. 11,1990

P.O.Box 351, Cedar Rapids, IA 52406 (Address) Sheet 1 of 2

2. Plant Duane Arnold Energy Center (Name) Unit 1

3277 DAEC Rd, Palo, IA 52324 (Address) PMAR 1043208 (Repair Organization P.O.No.,Job No.)

3. Work Performed by Iowa Electric (Name) Type Code Symbol Stamp None

Authorizstion No. None

3277 DAEC Rd. Palo, IA 52324 (Address) Expiration Date None

4. Identification of System Main Steam (class 1)

5. * (a)Applicable Const. Code SECT. III 19 68 Edition, W68 Addenda, N/A Code Case
(b)Applicable Edition of Section XI Utilized for Repairs or Replacements 1980 W81
*GE Spec 21A9206 Rev 6 & 7

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacture	Manufacturer Serial No.	National Board No.	Other Identification	Yesr Built	Repaired Replaced, or Replacement	ASME Code Stamped (Yes or No)
MSRV Pilot Valve	Target Rock	S/N 176	N/A	PSV-4405	1975	Replaced	Yes
MSRV Pilot Valve	Target Rock	S/N 141	N/A	PSV-4405	1975	Replacement	Yes

7. Description of Work MSRV Pilot Valve S/N was replaced by repaired Pilot Valve S/N 141.

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒
Other ☐ Pressure 1026 psi Test Tamp. 206 °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 itame 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.

AP
10-15-90

NIS2 NO. 10-90-43

FORM NIS-2 (Back) sheet 2 of 2

9. Remarks The MSRV Pilot Valve S/N 141 was repaired at Wyle Labs (ref. NIS-2 10-90-04). This pilot valve was
Applicable Manufacturer's Data Reparts to be attached
installed in location PSV-4405. A VT-2 examination was performed (89-13) and accepted.

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 Surinder Sharma Codes & Materials, TGL Date 10-3-, 19 90
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 Hartford Steem Boiler I&I Co. of Hartford, Connecticut have inspected the components described in this Owner's Report during the period 6-15-89 to 10-15-90, and state that to the best of my knowledge and belief, the Owner has performed exeminations and taken corrective maasures described in the Owner's Repart in accordance with the requirements of the ASME Code, Section XI.

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

Scott Carlson Commissions NB 8829(I)(N) 941-IA
Inspectors Signature Nationsl Board, State, Province, and Endorsements

Date Oct 15 19 90

NIS2 NO. 10-90-44

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 Sept. 11,1990

P.O.Box 351, Cedar Rapids, IA 52406 (Address) Sheet 1 of 2

2. Plant Duane Arnold Energy Center (Name) Unit 1

3277 DAEC Rd., Palo, IA 52324 (Address) PMAR 1043205 (Repair Organization P.O.No.,Job No.)

3. Work Performed by Iowa Electric (Name) Type Code Symbol Stamp None

Authorization No. None

3277 DAEC Rd. Palo, IA 52324 (Address) Expiration Date None

4. Identification of System Main Steam (class 1)

5. * (a)Applicable Conat. Code SECT. III 19 68 Edition, W68 Addenda, N/A Code Case

(b)Applicable Edition of Section XI Utilized for Repairs or Replacements 1980 W81

*GE Spec 21A9206 Rev 6 & 7

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacture	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repeired Replaced, or Replacement	ASME Code Stamped (Yes or No)
Hex Bolt (8 ea)	Cardinal	HT#211916	N/A	PSV-4402	1989	Replacement	No
Nut-Flexloc (12 ea)	Target Rock	Part # 00FC1812	N/A	PSV-4402	unknown	Replacement	No

7. Description of Work Replaced 12 Hex Bolts and Nuts on PSV-4402 during installation.

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒

Other ☐ Pressure 1026 psi Test Tamp. 206 °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.

AP
12-15-92

NIS2 NO. 10-90-44

FORM NIS-2 (Back) sheet 2 of 2

9. Remarks MSRV Pilot Valve S/N 200 was removed for testing. S/N 218 was installed. During installation it was required to replace the Hex Bolts and Nuts due to damage. A preservice VT-1 (Rpt# 90-195) of the replacement belting and a VT-2 (Rpt# 89-13) was conducted and accepted. The installed pilot valve S/N 218 was repaired during testing at Wyle Labs (ref. NIS-2 10-90-05).

Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the repart are correct and this replacement (repair or 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 Surinder Sharma Codes & Materials, TGL Date 10-1-90
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 Hartford Steam Boiler I&I Co. of Hartford, Connecticut have inspected the components described in this Owner's Report during the period 5-13-90 to 10-15-90, and state that to the best of my knowledge and belief, the Owner has performed exeminations and taken corrective measures described in the Owner's Repart 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 maasures described in this Owner's Report. Furthermore, neither the Inspector nor his amployer 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.

Scott Pruden Commissions NB 8829(I)(N) 941-IA
Inspectors Signature Nationel Board, State, Province, and Endorsements

Date Oct 15 19 90

NIS2 NO. 10-90-45

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 September 11,1990

P.O.Box 351, Cedar Rapids, IA 52406 (Address) Sheet 1 of 2

2. Plant Duane Arnold Energy Center (Name) Unit 1

3277 DAEC Rd. Palo, IA 52324 (Address) CMAR #095115 (Repair Orgenization P.O.No.,Job No.)

3. Work Performed by Iowa Electric (Name) Type Code Symbol Stamp None

Authorization No. None

3277 DAEC Roed Palo, IA 52324 (Address) Expiration Date None

4. Identification of System HPCI Steam outboard valve 10"-DLA-3 (class 1)

5. (a)Applicable Const. Code ASME PUMP & VALVE CODE 19 68 Edition, Addenda, N/A Code Case
(b)Applicable Edition of Section XI Utilized for Repairs or Replacements 1980 W81 class 1

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacture	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired Replaced, or Replacement	ASME Code Stamped (Yes or No)
MO-2239	ANCHOR Valve Co.	IN-003	N/A	10"-DLA-GT	1972	REPAIRED	YES

7. Description of Work Machining of disc tee slot

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operation Pressure ☒
Other ☐ Pressure 1026 psi Test Temp. 206 °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.

AP
10-15-90

NIS2 NO. 10-90-45

FORM NIS-2 (Back) sheet 2 of 2

9. Remarks After disassembly of MO-2239 it was necessary machine the disc for proper fit. Pressure test was performed

Applicable Manufacturer's Data Reports to be attached

under ISI leskage test No. 89-13. ISI VT-3 was performed under 90-006.

CERTIFICATE OF COMPLIANCE

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

Type Code Symbol Stamp None

Certificate of Authorization No. None Expiration Date

Signed Owner or Owner's Designee, Title Codes & Materials, TGL Date 10-5-, 19 90

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the Nationsl Board of Boiler and Pressure Vessel Inspectors and the State or Province of Iowa and employed by Hartford Steam Boiler I&I Co of Hartford, Connecticut have inspected the components described in this Owner's Report during the period 7-24-90 to 10-15-90, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in the Owner's Report in accordance with the requirements of the ASME Code, Saction 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 damege or a loss of any kind arising from or connected with this inspection.

Inspectors Signature Commissions NB 8829(I)(N) 941-IA
National Board, State, Province, and Endorsements

Date Oct 15 19 90

NIS2 NO. 10-90-46

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 September 12,1990

P.O.Box 351, Cedar Rapids, IA 52406 (Address) Sheet 1 of 2

2. Plant Duane Arnold Energy Center (Name) Unit 1

3277 DAEC Rd. Palo, IA 52324 (Address) CMAR #098624 (EMA), P.O. S55713,S53552 (Repair Organization P.O.No.,Job No.)

3. Work Performed by Iowa Electric (Name) Type Code Symbol Stamp None

Authorizstion No. None

3277 DAEC Road Palo, IA 52324 (Address) Expiration Date None

4. Identification of System Recirc '8" Discharge valve By-pass (class 1)

5. (a)Applicable Const. Code ASME PUMP & VALVE CODE 19 68 Edition, Addenda, N/A Code Case
(b)Applicable Edition of Section XI Utilized for Repairs or Replacements 1980 W81 class 1
(c)Replacement code of construction Section III1983 Edition N/AAddenda, Class 1

6. Identification of Components Repaired or Replecad and Replacement Components

Name of Component	Name of Manufacture	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired Roplaced, or Replacement	ASME Code Stamped (Yes or No)
Disc	ANCHOR Darling	s/n 7	N/A	MO-4630	1983	Replacement	YES
10 - STUDS	Anchor Darling	W-2936	N/A	MO-4630	1990	Replacement	NO
20 - NUTS	Anchor Darling	W-1466	N/A	MO-4630	1990	Replacement	NO

7. Description of Work Replaced disc, studs and nuts. Some areas machined for proper fit.

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operation Pressure ☒
Other ☐ Pressure 1026 psi Test Tamp. 206 °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 repart is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

AF
9-21-90

NIS2 NO. 10-90-46

FORM NIS-2 (Back) sheet 2 of 2

9. Remarks After disassembly of MO-4630 it was necessary replace the disc, bonnet studs and bonnet nuts. Some of the Applicable Manufacturer's Data Reports to be atteched valve internals were also machined for proper fit. Valves were vt-3 and PT inspected. Vt-1 of bolting and nuts were performed under ISI # 90-238. Valve was VT-2 inspected under ISI # 89-13.

CERTIFICATE OF COMPLIANCE

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

Type Code Symbol Stamp None

Certificate of Authorization No. None Expiration Date

Signad [signature] Codes & Materials, TGL (Owner or Owner's Designee, Title) Date , 19 90

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Bosrd of Boiler and Pressure Vessel Inspectors and the State or Province of Iowa and employad by Hartford Steam Boiler I&I Co of Hartford, Connecticut have inspectad the components described in this Owner's Report during the period 6-22-90 to 9-21-90, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in the Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer mekes any warranty, expressad 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 NB 8829(I)(N) 941-IA
Inspectors Signature National Board, State, Province, and Endorsements

Date Sept 21 19 90

NIS2 NO. 10-90-47

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 September 12,1990

P.O.Box 351, Cedar Rapids, IA 52406 (Address) Sheet 1 of 2

2. Plant Duane Arnold Energy Center (Name) Unit 1

3277 DAEC Rd. Palo, IA 52324 (Address) CMAR #098621 (EMA), P.O. S55713,S53552 (Repair Organization P.O.No.,Job No.)

3. Work Performed by Iowa Electric (Name) Type Code Symbol Stamp None

Authorization No. None

3277 DAEC Road Palo, IA 52324 (Address) Expiration Date None

4. Identification of System Recirc 'A" Discharge valve By-pass (class 1)

5. (a)Applicable Const. Code ASME PUMP & VALVE CODE 19 68 Edition, Addenda, N/A Code Case
(b)Applicable Edition of Section XI Utilized for Repairs or Replacements 1980 W81 class 1
(c)Replacement code of construction Section III 1983 Edition N/A Addenda, Class 1

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacture	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired Replaced, or Roplacement	ASME Code Stamped (Yes or No)
Disc	Darling Valve	unknown	N/A	MO-4629	1968	Replacad	YES
Disc	ANCHOR Darling	s/n 6	N/A	MO-4629	1983	Replacement	YES
10 - STUDS	Anchor Darling	W-2936	N/A	MO-4629	1990	Replacement	NO
20 - NUTS	Anchor Darling	W-1466	N/A	MO-4629	1990	Replacement	NO
10 - STUDS	Darling Valve Manufacturing	unknown	N/A	MO-4629	1968	Replaced	NO
20 - NUTS	Darling Valve Manufacturing	unknown	N/A	MO-4629	1968	Replaced	NO

7. Description of Work Replecad disc, studs and nuts. Some areas machined for proper fit.

8. Tests Conductad: Hydrostatic ☐ Pneumatic ☐ Nominal Operation Pressure ☒
Other ☐ Pressure 1026 psi Test Tamp. 206 °F

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

AP
10-15-90

NIS2 NO. 10-90-47

FORM NIS-2 (Back) sheet 2 of 2

9. Remarks After disassembly of MO-4629 it was necessary replace the disc, bonnet studs and bonnet nuts. Some of the Applicable Manufacturer's Data Reports to be attached valve internals were also machined for proper fit. Valve was VT-3 (90-230) and PT inspected VT-1 of bolting & nuts were performed under ISI # 90-229. Valve was VT-2 inspected under ISI # 89-13.

CERTIFICATE OF COMPLIANCE

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

Type Code Symbol Stamp None

Certificate of Authorization No. None Expiration Date

Signed Surinder Sharma Codes & Materials, TGL Date 9-29-, 19 90
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 Hartford Steem Boiler I&I Co of Hartford, Connecticut have inspectad the components described in this Owner's Report during the period 6-22-88 to 10-15-90, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in the Owner's Repart 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 maasures 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.

Scott Poulsen Commissions NB 8889( )N 941-IA
Inspectors Signature National Board, State, Province, and Endorsements

Date Oct 15 19 90

FORM N-2 NPT CERTIF .E HOLDERS' DATA REPORT FOR NUCL 'ART 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 177[redacted]
(Name and address of NPT Certificate Holder)

(b) Manufactured for Iowa Electric Light & Power Co., P.O. Box 351, Cedar Rapids, Iowa 5[illegible]
(Name and address of N Certificate Holder for completed nuclear component)

2. Identification-Certificate Holder's Serial No. of Part S/N 6 & 7 Nat'l Bd. No. N/A

(a) Constructed According to Drawing No. B49497 R/A Drawing Prepared by Anchor/Darling Valve Comp

(b) Description of Part Inspected Disc W/Stellite, (2 Pcs.) Heat No. H3520 SA182-F304[illegible]

(c) Applicable ASME Code: Section III, Edition 1983, Addenda date ---, Case No. N/A Class 1

3. Remarks: 4"-S150W-DD
(Brief description of service for which component was designed)
A/DV S.O. P-G586-5

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 included in the component Design Specification and Stress Report.)

Date 6/29 19 90 Signed Anchor/Darling Valve Co. By [signature]
(NPT Certificate Holder)

Certificate of Authorization Expires 4/15/92 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 ~~or Province~~ 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 6-22-90 thru 6-29-90 19__, 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 6-29 19 90

[signature]
Charles Young

Commissions Pennsylvania 2392
National Board, State, Province and No.

*Supplemental sheets in form of lists, sketches or drawings may be used provided (1) size is 8½" x 11", (2) information in items 1-3 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) This form (E00040) may be obtained from the Order Dept., ASME, 345 E. 47th St., New York, N.Y. 100[illegible]

NIS2 NO. 10-90-48

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 September 14, 1990

P.O.Box 351, Cedar Rapids, IA 52406 (Address) Sheet 1 of 2

2. Plant Duane Arnold Energy Center (Name) Unit 1

3277 DAEC Rd. Palo, IA 52324 (Address) CMAR A 03259, P.O. S57418 (Repair Organization P.O.No.,Job No.)

3. Work Performed by Iowa Electric (Name) Type Code Symbol Stamp None

Authorization No. None

3277 DAEC Rd. Palo, IA 52324 (Address) Expiration Date None

4. Identification of System Control Rod Drives (Class 1)

5. (a)Applicable Const. Code ASME Section III 19 77 Edition, S77 Addenda, N/A Code Case
(b)Applicable Edition of Section XI Utilized for Repairs or Replacements 1980 W81
(c) Original Construction Code ASME III 1968 Edtion W68 Addenda per GE Construction Quality Requirements 22A2534

6. Identification of Components Repaired or Replaced and Replecement Components

Name of Component	Name of Manufacture	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired Replaced, or Replacement	ASME Code Stamped (Yes or No)
CRD Housing Bolts (8ea)	General Electric	Ht. Code KOG	N/A	1R215(22-19)	1990	Replacement	Yes

7. Description of Work Replecement of CRD Housing Bolting

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒
Other ☐ Pressure 1025 psi Test Temp. 202 °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 eech sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

AP
9-21-90

NIS2 NO. 10-90-48

FORM NIS-2 (Back) sheet 2 of 2

9. Remsrks Replacement of CRD Housing bolting VT-2 leakage test was performed under 90-362. VT-1 preservice inspection
Applicable Manufacturer's Data Reports to be attached

was performed under ISI # 90-363.

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 Nona

Certificate of Authorization No. Nene Expiration Date None

Signed Surinder Sharma Codes & Materials, TGL Date 9-18-
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 Hartford Steam Boiler I&I Co. of Hartford, Connecticut have inspected the components described in this Owner's Report during the period 7-5-90 to 9-21-90, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in the 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 personsl injury or property damege or a loss of any kind arising from or connected with this inspection.

Scott Fowler Commissions NB 8829(I)(N) 941-IA
Inspectors Signature National Board, State, Province, and Endorsements

Date Sept 21 19 90

NIS2 NO. 10-90-49

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 Sept. 12 1990

P.O.Box 351, Cedar Rapids, IA 52406 (Address) Sheet 1 of 2

2. Plant Duane Arnold Eneg Center (Name) Unit 1

3277 DAEC Rd. Palo, IA 52324 (Address) PMAR 1043209 (Repair Orgenization P.O.No.,Job No.)

3. Work Performed by Iowa Electric (Name) Type Code Symbol Stamp None

Authorization No. None

3277 DAEC Rd. Palo, IA 52324 (Address) Expiration Date None

4. Identification of System Main Steam class 1( )

5. * (a)Applicable Const. Code SECT. III 19 68 Edition, W68 Addenda, N/A Code Case
(b)Applicable Edition of Section XI Utilized for Repoirs or Replacements 1980 W81
*GE Spec 21A9206 Rev 6 & 7

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacture	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired Replaced, or Replacement	ASME Code Stamped (Yes or No)
Hex Bolt (8 ea)	Cardinal	HT#211916	N/A	PSV-4406	1989	Replacement	No
Nut-Flexloc (12 ea)	Target Rock	Part # 00FC1812	N/A	PSV-4406	unknown	Replacement	No

7. Description of Work Replaced 8 Hex Bolts and 12 Nuts on PSV-4406 during installation.

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒
Other ☐ Pressure 1026 psi Test Tamp. 206 °F

NOTE: Supplemental sheets in form of lists, sketchos, 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.

AP
10-1-90

NIS2 NO. 10-90-49

FORM NIS-2 (Back) sheet 2 of 2

9. Remarks MSRV Pilot Valve S/N 227 was removed for testing. S/N 203 was installed. During installation it was
Applicable Manufacturer's Data Reports to be attached
required to replece the Hex Bolts and Nuts due to damage. A preservice VT-1 (Rpt# 90-198) of the replacement bolting and a VT-2 (Rpt# 89-13) was conducted and accepted. The installed pilot valve S/N 203 was repaired during testing at Wyle Labs (ref. HIS-2 10-90-06).

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 Nona

Certificate of Authorization No. None Expiration Date None

Signed Surinder Shangari Codes & Materials, TGL Date 9-26-
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 Hartford Steem Boiler I&I Co. of Hartford, Connecticut have inspected the components described in this Owner's Report during the period 8-17-90 to 12-1-90, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in the 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.

Scott Carlson Commissions NB 8829(I)(N) 941-IA
Inspectors Signature National Board, State, Province, and Endorsements

Date Oct. 1 19 90

NIS2 NO. 10-90-54

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

Owner Iowa Electric Light and Power (Name) Date September 26, 1990

P.O.Box 351, Cedar Rapids, IA 52406 (Address) Sheet 1 of 2

2. Plant Duane Arnold Energy Center (Name) Unit 1

3277 DAEC Rd. Palo, IA 52324 (Address) – DCP 1457, P.O. B02368 (Repair Organization P.O.No., Job No.)

3. Work Performed by Iowa Electric (Name) Type Code Symbol Stamp None

Authorization No. None

3277 DAEC Road Palo, IA 52324 (Address) Expiration Date None

4. Identification of System Recirc Pump A (Claas 1)

5. (a)Applicable Const. Code ASME Section III 19 68 Edition, W68 Addenda, N/A Code Case (class C)
(b)Applicable Edition of Section XI Utilized for Repairs or Replacements 1980 W81 class 2
(c)Fabrication of Item performed under Section III 1983 Edition, S84 Addenda (class 1)

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacture	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired Replaced, or Replacement	ASME Code Stamped (Yes or No)
Cover/Heat Exchanger Assembly*	BW/IP Intl. INC.	206873	N/A	1P-201A	1990	Replacement	No
Case Stud (16 each)	BW/IP Intl. INC.	HT # 94910	N/A	1P-201A	1990	Replacement	No
Case Nut (16 each)	BW/IP Intl. INC.	HT # B5499	N/A	1P-201A	1990	Replacement	No

*Section XI items of the assembly include the pump cover, Ht. Exch. cover and HT. exch. coil

7. Description of Work Replacod Cover/Heat Exchanger Assembly for Recirc Pump

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operation Pressure ☒
Other ☐ Pressure 1026 psi Test Temp. 206 °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.

ANII Review

11-19-92

NIS2 NO. 10-90-54

FORM NIS-2 (Back) sheet 2 of 2

9. Remarks Replacement of cover/heat exchanger assembly. VT-2 of recirc pump was performed under ISI report no. 89-13.
Applicable Manufacturer's Data Reports to be attached

Preservice of the pump studs were performed under 89-278. Preservice VT-1 of the flange surface, pump nuts and screws was preformed under ISI numbers 89-279, 89-282, and 89-283. For information on recirc pump 1P-201B see NIS2 10-90-55.

CERTIFICATE OF COMPLIANCE

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

Type Cede Symbol Stamp None

Certificate of Authorization No. None Expiration Date

Signed Surinder Sharma Codes & Materials, TGL Date 11-16-90, 19 90
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 Hartford Steam Boiler I&I Co of Hartford, Connecticut have inspected the components described in this Owner's Report during the period 7-20-89 to 11-16-90, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in the 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.

Scott Preston Commissions NB 8829(I)(N) 941-IA
Inspectors Signature National Board, State, Province, and Endorsements

Date Nov. 19 19 90

1. Owner IOWA ELECTRIC LIGHT & POWER — Date 3/31/90 — Sheet 1 of 1

2. Plant DUANE ARNOLD ENERGY CENTER (Name) — Unit DAEC UNIT ONE

Palo, Iowa 52324 (Address)

Repair Organization, PO No. Job No. etc:
Type Code Symbol Stamp NONE
Authorization No. ---------
Expiration Date ----------

3. Work Performed By BW/IP INTL., INC.
2300 E. VERNON AVE., VERNON, CA 90058 (Address)

4. Identification of Syetem RECIRCULATION PUMP

5. (a)Applicable Const. Code CL.C 1968 Edition WINTER Addenda 1968 Code Case N/A
(b)Applicable Edition of ASME XI Used for Repairs or Replacement 19 N/A
(c) Original Const Code CL.C 19 68 Edition, WINTER Addenda 1968 Code Case N/A

6. Identification of Component Repaired or Replaced and Replaced Components

Name of Component	Name of Manuf.	Manuf. S/N	Nat. Board No.	Other Ident.	Year Built	Repaired, Replaced, Replacement	ASME Code Stamped Yes/No
COVER/HEAT EXCHANGER ASSEMBLY	BW/IP INTL. INC.	206873	N/A	891-L-8509	1990	REPLACEMENT	NO

7. Description of Work FABRICATION OF NEW COVER/HEAT EXCHANGER ASSEMBLY

8. Test Conducted (X)Hydrostatic ( )Pneumatic Nominal Operating Pressure 1030
( )Other _____ Pressure 1875 psi Test Temp. 68 °F

9. Remarks ITEM HAS BEEN FABRICATED IN ACCORDANCE WITH ASME SECTION III, CL.1 1983 ED S'84 ADD.
Applicable Manufacturers Data Report to Be Attached

CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and this ITEM conforms to the statements of P.O.# 205-89E500 Repaired, Replaced (or Modified)
Signed _____ Date 31 March 90.
Repair Org. Designee/Title

CERTIFICATE OF SHOP INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Provence of CALIFORNIA and employed by FARKWRIGHT MUTUAL INS CO of NORWOOD, MASS have inspected the components described in this repair organization report during the period 10-25-89 to 3-31-90, and state that to the best of my knowledge and belief, the Repair Organization has performed examinations and taken corrective measures described in the Repair Organization Report in accordance with the requirements of the Owner's P.O. B02368 REV.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 Repair Organization Report. Furthermore, neither the Inspector or his employer shall be liable in any manner for any personal injury or property damage or loss of any kind arising from or connected with this inspection.

_____ Commissions 1275 CA. Date 3-31-90
Inspectors Signature — NB, State, Provence, Endorse.

NIS2 NO. 10-90-55

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 September 26, 1990

P.O.Box 351, Cedar Rapids, IA 52406 (Address) Sheet 1 of 2

2. Plant Duane Arnold Energy Center (Name) Unit 1

3277 DAEC Rd. Palo, IA 52324 (Address) – DCP 1457, P.O. B02368 (Repair Organization P.O.No.,Job No.)

3. Work Performed by Iowa Electric (Name) Type Code Symbol Stamp None

Authorization No. None

3277 DAEC Road Palo, IA 52324 (Address) Expiration Date None

4. Identification of System Recirc Pump B (Claas 1)

5. (a)Applicable Const. Code ASME Section III 19 68 Edition, W68 Addenda, N/A Code Case (class C)
(b)Applicable Edition of Section XI Utilized for Repairs or Replacements 1980 W81 class 2
(c)Fabrication of Item performed under Section III 1983 Edition, S84 Addenda (class 1)

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacture	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired Replaced, or Replacement	ASME Code Stamped (Yes or No)
Cover/Heat Exchanger Assembly*	BW/IP Intl. INC.	206812	N/A	1P-2018	1990	Replacement	No
Case Stud (16 each)	BW/IP Intl. INC.	HT # 94910	N/A	1P-2018	1990	Replacement	No
Case Nut (16 each)	BW/IP Intl. INC.	HT # B5499	N/A	1P-2018	1990	Replacement	No

*Section XI items of the assembly include the pump cover, Ht. Exch. cover and HT. exch. coil

7. Description of Work Replaced Cover/Heat Exchanger Assembly for Recirc Pump

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operation Pressure ☒
Other ☐ Pressure 1026 psi Test Temp. 206 °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.

ANII Review 11-19-90

NIS2 NO. 10-90-55

FORM NIS-2 (Back) sheet 2 of 2

9. Remarks Replacement of cover/heat exchanger assembly. VT-2 of recirc pump was performed under ISI report no. 89-13.
Applicable Manufacturer's Data Reports to be attached

Preservice of the pump studs were performed under 89-277. Preservice VT-1 of the flange surface, pump nuts and screws was preformed under ISI numbers 89-280, 89-281, and 89-284. For information on recirc pump 1P-201A see NIS2 10-90-54.

CERTIFICATE OF COMPLIANCE

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

Type Code Symbol Stamp None

Certificate of Authorization No. None Expiration Date

Signed Surinder Sharma (Owner or Owner's Designee, Title) Codes & Materials, TGL Date 11-16-, 19 90

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 Hartford Steam Boiler I&I Co of Hartford, Connecticut have inspected the components described in this Owner's Report during the period 7-20-90 to 11-19-90, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in the Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate naither 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.

Inspectors Signature Commissions NB 8829(I)(N) 941-IA
Nationel Board, State, Province, and Endorsements

Date Nov. 19 19 90

1. Owner IOWA ELECTRIC LIGHT & POWER Date 30 Mar 90 Sheet 1 of 1

2. Plant DUANE ARNOLD ENERGY CENTER Unit DAEC UNIT ONE
Name
Palo, Iowa 52324 Repair Organization, PO No. Job No. etc
Address Type Code Symbol Stamp NONE

3. Work Performed By BW/IP INTL., INC Authorization No. --------
2300 E. VERNON AVE, VERNON, CA 90058 Expiration Date --------
Address

4. Identification of System RECIRCULATION PUMP

5. (a) Applicable Const. Code CL.C 1968 Edition WINTER Addenda 1968 Code Case N/A
(b) Applicable Edition of ASME XI Used for Repairs or Replacement 19 N/A
(c) Original Const Code CL.C 1968 Edition, WINTER Addenda 1968 Code Case N/A

6. Identification of Component Repaired or Replaced and Replaced Components

Name of Component	Name of Manuf.	Manuf. S/N	Nat. Board No.	Other Ident.	Year Built	Repaired, Replaced, Replacement	ASME Cod Stamped Yes/No
COVER/HEAT EXCHANGER ASSEMBLY	BW/IP INTL. INC.	206812	N/A	891-L-8509	1990	REPLACEMENT	NO

7. Description of Work FABRICATION OF NEW COVER/HEAT EXCHANGER ASSEMBLY

8. Test Conducted (X) Hydrostatic ( ) Pneumatic Nominal Operating Pressure 1030
( ) Other _____ Pressure 1875 psi Test Temp. 68

9. Remarks ITEM HAS BEEN FABRICATED IN ACCORDANCE WITH ASME SECTION III, CL.1, 1983
Applicable Manufacturers Data Report to Be Attached

CERTIFICATE OF COMPLIANCE

We certify that the statements made in this report are correct and this ITEM conforms to the statements of P.O.# 205-89E500 Repaired, Replaced (or Modified

Signed _____ Date 30 MARCH 90
Repair Org. Designee/Title

CERTIFICATE OF SHOP INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Provence of CALIFORN and employed by ARKWRIGHT MUTUAL INS. CO of NORWOOD, MASS have inspected the components described in this repair organization report during the period 10-25-89 to 3-30-90, and state that to the best of my knowledge and belief, the Repair Organization has performed examinations and taken corrective measures described in the Repair Organization Report in accordanc with the requirements of the Owner's P.O. B02368 REV.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 Repair Organization Report. Furthermore, neither the Inspector or his employer shall be liable in any manner for any personal injury or property damage or loss of any kind arising from or connected with this inspection.

_____ Commissions 1275 CA. Date 3-
Inspectors Signature NB, State, Provence, Endorse.

NIS2 NO. 10-90-56

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 Oct 1, 1990

P.O.Box 351, Cedar Rapids, IA 52406 (Address) Sheet 1 of 2

2. Plant Duane Arnold Energy Center (Name) Unit 1

3277 DAEC Rd. Palo, IA 52324 (Address) PMAR 1043204 (Repair Organization P.O.No.,Job No.)

3. Work Performed by Iowa Electric (Name) Type Code Symbol Stamp None

Authorization No. None

3277 DAEC Rd. Palo, IA 52324 (Address) Expiration Date None

4. Identification of System Main Steem (class 1)

5. * (a)Applicable Const. Code SECT. III 19 68 Edition, W68 Addenda, N/A Code Case

(b)Applicable Edition of Section XI Utilized for Repairs or Replacements 1980 W81

*GE Spec 21A9206 Rev 6 & 7

6. Identification of Components Repaired or Repleced and Replacement Components

Name of Component	Name of Manufacture	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired Replaced, or Replacement	ASME Code Stamped (Yes or No)
MSRV Pilot Valve	Target Rock	S/N 226	N/A	PSV-4401	1975	Replaced	Yes
MSRV Pilot Valve	Target Rock	S/N 201	N/A	PSV-4401	1975	Replacement	Yes

7. Description of Work Replaced MSRV Pilot Valve s/n 226 with new Pilot Valve s/n 201.

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒

Other ☐ Pressure 1026 psi Test Tamp. 206 °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 repart is included on eech sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

AI
10-15-90

NIS2 NO. 10-90-56

FORM NIS-2 (Back) sheet 2 of 2

9. Remarks Replacement MSRV S/N 201 was VT-3 inspected (ISI Rpt# 90-190) and accepted. A VT-1 inspection (ISI Rpt# 90-189 was performed on the Bolting and accepted. After installation a system pressure test (ISI Rpt# 89-13)(VT-2) was performed with no leaks.

Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this replacement (repair or 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 Surinder Shangari Codes & Materials, TGL Date 10-2
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 Hartford Steem Boiler I&I Co. of Hartford, Connecticut have inspected the components described in this Owner's Report during the period 6-13-90 to 10-13-90, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in the 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 exeminations 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.

Scott D Pauler Commissions NB 8829(I)(N) 941-IA
Inspectors Signature Nationel Board, State, Province, and Endorsements

Date Oct 15 19 90

NIS2 NO. 10-90-57

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 Oct. 4, 1990
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 — PMAR 1043206
Address — Repair Organization P.O.No.,Job No.

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 Main Steam (class 1)

5. (a)Applicable Const. Code SECT. III 19 68 Edition, S69 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 Manufacture	Manufacture Serial No.	National Board No.	Other Identification	Year Built	Repaired Replaced, or Replacement	ASME Code Stamped (Yes or No)
Mtuds (6ea)	Tardinal	HT#8869139	N/A	PSV-4403	1989	Replacement	No
Muts (12es)	Tardinal	HT#KB4290	N/A	PSV-4403	1989	Replacement	No

7. Description of Work Replaced 12 Nuts and 6 Studs on PSV-4403 during installation.

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒
Other ☐ Pressure 1026 psi Test Tamp. 206 °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 esch sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

ANII Review

JP
10-15-90

NIS2 NO. 10-90-57

FORM NIS-2 (Back) sheet 2 of 2

9. Remarks PSV-4403 was removed for testing. During installation it was required to replace the studs and nuts due to damage. A preservice VT-1 (Rpt# 90-008) of the replacement belting and a VT-3 (Rpt# 90-009) of the valve body was performed and accepted. After installation a VT-2 (Rpt# 89-13) was conducted and accepted.

Applicable Manufacturer's Data Reports to be attached

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the repart 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 Owner or Owner's Designee, Title Codes & Materials, TGL Date 10-15-90

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 Hartford Steam Boiler I&I Co. of Hartford, Connecticut have inspected the components described in this Owner's Report during the period 5-14-90 to 10-15-90, and state that to the best of my knowledge and belief, the Owner has performed exeminationa and taken corrective maasures described in the 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 examinationa 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.

Inspectors Signature Commissions NB 8829(I)(N) 941-IA
National Board, State, Province, and Endorsements

Date Oct 15 19 90

NIS2 NO. 10-90-58

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 November 14,1990

P.O.Box 351, Cedar Rapids, IA 52406 (Address) Sheet 1 of 2

2. Plant Duane Arnold Energy Center (Name) Unit 1

3277 DAEC Rd. Palo, IA 52324 (Address) DCP-1476 (Repair Organization P.O.No.,Job No.)

3. Work Performed by General Electric Co. (Name) Type Code Symbol Stamp None

Authorization No. None

2311 W. 22nd ST., Oak Brook IL. 60521 (Address) Expiration Date None

4. Identification of System Main Steam 'A' (class 1)

5. (a)Applicable Const. Code *ANSI B31.1 19 67 Edition, N/A Addenda, N/A Code Case
(b)Applicable Edition of Section XI Utilized for Repairs or Replacements 1980 W81
*Base Code - GE Spec. 21A9230 Rev. 2.

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacture	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired Replaced, or Replacament	ASME Code Stamped (Yes or No)
Disc-piston assembly	General Elect.	215585-6	N/A	CV-4412	1990	Replacement	No
Disc	General Elect.	6062065-62	N/A	CV-4412	1985	Replaced	No
Piston	General Elect.	6062065-50	N/A	CV-4412	1985	Replaced	No
Stem Disc	General Elect.	214856-21	N/A	CV-4412	1990	Replacement	No
Bonnet	General Elect.	214856-17	N/A	CV-4412	1990	Replacemant	No
Bonnet	General Elect.	N/A	N/A	CV-4412	1971	Replaced	No
Stem\stem disc assemb.	General Elect.	6053657-125	N/A	CV-4412	1988	Replaced	No
Additional Guide Pads	General Elect.	N/A	N/A	CV-4412	1990	Repaired	No
Studs (2ea)		RI-V823	N/A	CV-4412		Replacement	No
Nuts (4ea)	Castle Metals	Ht#IN85326	N/A	CV-4412		Replacement	No

7. Description of Work The bonnet, disk-piston, and stem disc for CV-4412 were replaced and additional guide ribs were added under DCP-1476

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒
Other ☐ Pressure 1026 psi Test Temp. 206 °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.

AP 11-19-92

FORM NIS-2 (Back) sheet 2 of 2

9. Remarks MSIV, CV-4412 was modified per DCP-1476. The bonnet, stem disc, disc-piston assembly were replaced.
Applicable Manufacturer's Data Reports to be attached

Additionally, four guide pads were welded on the valve body to assist in centering the disc. Bonnet studs (2ea) and Nuts (4ea) were required to be replaced during re-assembly. A VT-1(90-246) and VT-3(90-247) examination was performed and accepted. A VT-2(89-13) was completed and accepted after re-assembly.

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this replacement (repair or 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 Surinder Shrangai Codes & Materials, TGL Date 11-16-, 19
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 Hartford Steam Boiler I&I Co. of Hartford, Connecticut have inspected the components described in this Owner's Report during the period 7-9-90 to 11-19-90, and state that to the bost of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in the 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 NB 8829(I)(N) 941-IA
Inspectors Signature National Board, State, Province, and Endorsements

Date Nov. 19 1990

NIS2 NO. 10-90-59

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 November 14, 1990
P.O.Box 351, Cedar Rapids, IA 52406 (Address) Sheet 1 of 2

2. Plant Duane Arnold Energy Center (Name) Unit 1
3277 DAEC Rd. Palo, IA 52324 (Address) DCP-1476 (Repair Organization P.O.No.,Job No.)

3. Work Performed by General Electric Co. (Name) Type Code Symbol Stamp None
Authorization No. None
2311 W. 22nd ST., Oak Brook IL. 60521 (Address) Expiration Date None

4. Identification of System Main Steam 'A' (class 1)

5. (a)Applicable Const. Code *ANSI B31.1 19 67 Edition, N/A Addenda, N/A Code Case
(b)Applicable Edition of Section XI Utilized for Repairs or Replacements 1980 W81
*Base Code - GE Spec. 21A9230 Rev. 2.

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacture	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired Replaced, or Replacemant	ASME Code Stamped (Yes or No)
Disc-piston assembly	General Elect.	215585-12	N/A	CV-4413	1990	Replacement	No
Disc	General Elect.	6062065-63	N/A	CV-4413	1985	Replaced	No
Piston	General Elect.	6062065-55	N/A	CV-4413	1985	Replaced	No
Stem Disc	General Elect.	214856-20	N/A	CV-4413	1990	Replacement	No
Bonnet	General Elect.	214856-10	N/A	CV-4413	1990	Replacement	No
Bonnet	General Elect.	N/A	N/A	CV-4413	1971	Replaced	No
Stem\stem disc assemb.	General Elect.	6062065-30	N/A	CV-4413	1988	Replaced	No
Additional Guide Pads	General Elect.	N/A	N/A	CV-4413	1990	Repaired	No
Studs (1ea)		RI-VB23-C195	N/A	CV-4413		Replacement	No

7. Description of Work The bonnet, disc-piston, and stem disc for CV-4413 were replaced and additional guide ribs were added under DCP-1476

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒
Other ☐ Pressure 1026 psi Test Temp. 206 °F

NOTE: Supplamental 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.

NIS2 NO. 10-90-59

FORM NIS-2 (Back) sheet 2 of 2

9. Remarks MSIV, CV-4413 was modified per DCP-1476. The bonnet, stem disc, and disc-piston assembly were replaced. Applicable Manufacturer's Data Reports to be attached

Additionally, four guide pads were welded on the valve body to assist in centering the disc. 1 bonnet stud needed to be replaced during re-assembly. A VT-1 (90-248) and VT-3 (90-249) examinations were performed and accepted. A VT-2 (89-13) was completed and accepted after re-assembly.

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this replacement (repair or 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 Surinder Sharma Codes & Materials, TGL Date 11-18-
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 Hartford Steam Boiler I&I Co. of Hartford, Connecticut have inspected the components described in this Owner's Report during the pariod [illegible] to [illegible], and state that to the best of my knowledge and bolief, the Owner has performed examinations and taken corrective measures described in the 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 proporty damage or a loss of any kind arising from or connected with this inspection.

[signature] Commissions NB 8829(I)(N) 941-IA
Inspectors Signature National Board, State, Province, and Endorsements

Date [illegible] 19 90

NIS2 NO. 10-90-60

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 November 14, 1990

P.O.Box 351, Cedar Rapida, IA 52406 (Address) Sheet 1 of 2

2. Plant Duane Arnold Energy Center (Name) Unit 1

3277 DAEC Rd. Palo, IA 52324 (Address) DCP-1476 (Repair Organization P.O.No.,Job No.)

3. Work Performed by General Electric Co. (Name) Type Code Symbol Stamp None

Authorization No. None

2311 W. 22nd ST., Oak Brook IL. 60521 (Address) Expiration Date None

4. Identification of System Main Steam 'B' (class 1)

5. (a)Applicable Const. Code *ANSI B31.1 19 67 Edition, N/A Addenda, N/A Code Case
(b)Applicable Edition of Section XI Utilized for Repairs or Replacements 1980 W81
*Base Code - GE Spec. 21A9230 Rev. 2.

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacture	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired Replaced, or Replacement	ASME Code Stamped (Yes or No)
Disc-piston assembly	General Elect.	215585-11	N/A	CV-4415	1990	Replacement	No
Disc	General Elect.	6053657-123	N/A	CV-4415	1988	Replaced	No
Piston	General Elect.	6062065-53	N/A	CV-4415	1985	Replaced	No
Stem Disc	General Elect.	214856-22	N/A	CV-4415	1990	Replacement	No
Bonnet	General Elect.	214856-11	N/A	CV-4415	1990	Replacament	No
Bonnet	General Elect.	N/A	N/A	CV-4415	1971	Replaced	No
Stem\stem disc assemb.	General Elect.	6053657-126	N/A	CV-4415	1988	Replaced	No
Additional Guide Pads	General Elect.	N/A	N/A	CV-4415	1990	Repaired	No

7. Description of Work The bonnet, disc-piston, and stem disc for CV-4415 were replaced and additional guide ribs were added under DCP-1476

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒
Other ☐ Pressure 1026 psi Test Temp. 206 °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.

11-19-92

NIS2 NO. 10-90-60

FORM NIS-2 (Back) sheet 2 of 2

9. Remarks MSIV, CV-4415 was modified per DCP-1476. The bonnet, stem disc and piston assembly
Applicable Manufacturer's Data Reports to be attached
were replaced. Additionally, four guide pads were welded on the valve body to assist in centering the disc. A valve body bese metal repair was performed (ref. NCR 90-062) and accepted(VT-3 90-326). A VT-1(90-250) and VT-3(90-251) was performed and accepted. A VT-2(89-13) was also performed and accepted after re-assembly.

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this replacement (repair or 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 Surinder Sharma Codes & Materials, TGL Date 11-16-
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 Hartford Steam Boiler I&I Co. of Hartford, Connecticut have inspected the components described in this Owner's Report during the period 7-7-90 to 11-15-90, and state that to the best of my knowledge and belief, the Owner has performod examinations and taken corrective measures described in the 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 insbection.

Inspectors Signature

Commissions NB 8829(I)(N) 941-IA
National Board, State, Province, and Endorsements

Date Nuer 19 1990

NIS2 NO. 10-90-61

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 November 14,1990

P.O.Box 351, Cedar Rapids, IA 52406 (Address) Sheet 1 of 2

2. Plant Duane Arnold Energy Center (Name) Unit 1

3277 DAEC Rd. Palo, IA 52324 (Address) DCP-1476 (Repair Organization P.O.No.,Job No.)

3. Work Performed by General Electric Co. (Name) Type Code Symbol Stamp None

Authorization No. None

2311 W. 22nd ST., Oak Brook IL. 60521 (Address) Expiration Date None

4. Identification of Systam Main Steam 'B' (class 1)

5. (a)Applicable Const. Code *ANSI B31.1 19 67 Edition, N/A Addenda, N/A Code Case
(b)Applicable Edition of Section XI Utilized for Repairs or Replacements 1980 W81
*Base Code - GE Spec. 21A9230 Rev. 2.

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacture	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired Replaced, or Replacement	ASME Code Stamped (Yes or No)
Disc-piston assembly	General Elect.	215585-5	N/A	CV-4416	1990	Replacament	No
Disc	General Elect.	6062065-61	N/A	CV-4416	1985	Replaced	No
Piston	General Elect.	6062065-51	N/A	CV-4416	1985	Replaced	No
Stem Disc	General Elect.	214856-19	N/A	CV-4416	1990	Replacement	No
Bonnet	General Elect.	214856-14	N/A	CV-4416	1990	Replacement	No
Bonnet	General Elect.	N/A	N/A	CV-4416	1971	Replaced	No
Stem\stem disc assemb.	General Elect.	6062065-29	N/A	CV-4416	1985	Replaced	No
Additional Guide Pads	General Elect.	N/A	N/A	CV-4416	1990	Repaired	No
Studs (4ea)		RI-VB23-C195	N/A	CV-4416		Replacement	No
Nuts (1ea)	Castle Metals	HT#IN85326	N/A	CV-4416		Replacement	No

7. Description of Work The bonnet, disc-piston, and stem disc for CV-4416 were replaced and additional guide ribs were added under DCP-1476

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒
Other ☐ Pressure 1026 psi Test Temp. 206 °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.

11-14-90

NIS2 NO. 10-90-61

FORM NIS-2 (Back) sheet 2 of 2

9. Remerks MSIV, CV-4416 was madified per DCP-1476. The bonnet, stem disc, and disc-piston assembly were replaced.
Applicable Manufecturer's Data Reports to be attached

Additionally, four guide pads were welded on the valve body to assist in centering the disc. Bonnet bolts (4ea) and Nuts (1ea) were required to be replaced during re-assembly. A VT-1(90-252) and VT-3(90-253) examination was performed and accepted. A VT-2(89-13) was completed and accepted after re-assembly.

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 Surinder Sharma Codes & Materials, TGL Date 11-16-
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 Hartford Steam Boiler I&I Co. of Hartford, Connecticut have inspected the components described in this Owner's Report during the period 2-2-90 to 11-12-90, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in the 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 Repert. Furthermore, neither the Inspoctor 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.

Scott Crowder Commissions NB 8829(I)(N) 941-IA
Inspectors Signature National Board, State, Province, and Endorsements

Date Nov. 19 19 90

NIS2 NO. 10-90-62

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 November 14, 1990

P.O.Box 351, Cedar Rapids, IA 52406 (Address) Sheet 1 of 2

2. Plant Duane Arnold Energy Center (Name) Unit 1

3277 DAEC Rd. Palo, IA 52324 (Address) DCP-1476 (Repair Organization P.O.No.,Job No.)

3. Work Performed by General Electric Co. (Name) Type Code Symbol Stamp None

Authorization No. None

2311 W. 22nd ST., Oak Brook IL. 60521 (Address) Expiration Date None

4. Identification of System Main Steam 'C' (class 1)

5. (a)Applicable Const. Code *ANSI B31.1 19 67 Edition, N/A Addenda, N/A Code Case
(b)Applicable Edition of Section XI Utilized for Repairs or Replacements 1980 W81
*Base Code - GE Spec. 21A9230 Rev. 2.

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacture	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repoired Replaced, or Replacament	ASME Code Stamped (Yes or No)
Disc-piston assembly	General Elect.	215585-9	N/A	CV-4418	1990	Replacement	No
Disc	General Elect.	6062065-57	N/A	CV-4418	1985	Replaced	No
Piston	General Elect.	6062065-52	N/A	CV-4418	1985	Replaced	No
Stem Disc	General Elect.	214856-23	N/A	CV-4418	1990	Replacament	No
Bonnet	General Elect.	214856-16	N/A	CV-4418	1990	Replacement	No
Bonnet	General Elect.	N/A	N/A	CV-4418	1971	Replaced	No
Stem\stem disc assemb.	General Elect.	6062065-34	N/A	CV-4418	1985	Replaced	No
Additional Guide Pads	General Elect.	N/A	N/A	CV-4418	1990	Repaired	No

7. Description of Work The bonnet, disc-piston, and stem disc for CV-4418 were replaced and additional guide ribs were added under DCP-1476

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒
Other ☐ Pressure 1026 psi Test Temp. 206 °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.

11-19-90

NIS2 NO. 10-90-62

FORM NIS-2 (Back) sheet 2 of 2

9. Remarks MSIV, CV-4418 was modified per DCP-1476. The bonnet, stem disc, disc-piston assembly
Applicable Manufacturer's Data Reports to be attached
were replaced. Additionally, four guide pads were welded on the valve body to assist in centering the disc. A VT-1 (90-254) and VT-3 (90-255) was performed and accepted. A VT-2 (89-13) examination was performed and accepted after re-assembly.

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this replacement (repair or 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 Owner or Owner's Designee, Title Codes & Materials, TGL Date 11-16-, 19[illegible]

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 Hartford Steam Boiler I&I Co. of Hartford, Connecticut have inspected the components described in this Owner's Report during the period 7-7-90 to 11-19-90, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in the 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.

Inspectors Signature Commissions NB 8829(I)(N) 941-IA
National Board, State, Province, and Endorsements

Date Nov. 19 19 90

NIS2 NO. 10-90-63

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 November 14, 1990
P.O.Box 351, Cedar Rapids, IA 52406 (Address) Sheet 1 of 2

2. Plant Duane Arnold Energy Center (Nema) Unit 1
3277 DAEC Rd. Palo, IA 52324 (Address) DCP-1476 (Repair Organization P.O.No., Job No.)

3. Work Performed by General Electric Co. (Name) Type Code Symbol Stamp None
Authorization No. None
2311 W. 22nd ST. ,Oak Brook IL. 60521 (Address) Expiration Date None

4. Identification of System Main Steam 'C' (class 1)

5. (a)Applicable Const. Code *ANSI B31.1 19 67 Edition, N/A Addenda, N/A Code Case
(b)Applicable Edition of Section XI Utilized for Repairs or Replacements 1980 W81
*Base Code - GE Spec. 21A9230 Rev. 2.

6. Identification of Components Repaired or Repleced and Replacement Components

Name of Component	Name of Manufacture	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired Replaced, or Replacament	ASME Code Stamped (Yes or No)
Disc-piston assembly	General Elect.	215585-8	N/A	CV-4419	1990	Replacement	No
Disc	General Elect.	6062065-59	N/A	CV-4419	1985	Replaced	No
Piston	General Elect.	6062065-49	N/A	CV-4419	1985	Replaced	No
Stem Disc	General Elect.	214856-18	N/A	CV-4419	1990	Replacement	No
Bonnet	General Elect.	214856-13	N/A	CV-4419	1990	Replacement	No
Bonnet	General Elect.	N/A	N/A	CV-4419	1971	Replaced	No
Stem\stem disc assemb.	General Elect.	6062065-28	N/A	CV-4419	1985	Replaced	No
Additional Guide Pads	General Elect.	N/A	N/A	CV-4419	1990	Repaired	No

7. Description of Work The bonnet, disc-piston, and stem disc for CV-4419 were replaced and additional guide ribs were added under DCP-1476

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒
Other ☐ Pressure 1026 psi Test Temp. 206 °F

NOTE: Supplemantal 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.

11-19-90

NIS2 NO. 10-90-63

FORM NIS-2 (Back) sheet 2 of 2

9. Remarks MSIV, CV-4419 was modified per DCP-1476. The bonnet, stem disc, and disc-piston assembly
Applicable Manufecturer's Data Reports to be attached
were replaced. Additionally, four guide pads were welded on the valve body to assist in centering the disc. A valve body repair was performed (ref. NCR 90-045) and accepted (VT-3 90-302). A VT-1(90-256) and VT-3(257) examination was performed and accepted. A VT-2(89-13) was also conducted and accepted after re-assembly.

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 Surinder Sharma Codes & Materials, TGL Date 11-16-92
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 Hartford Steam Boiler I&I Co. of Hartford, Connecticut have inspected the components described in this Owner's Report during the period 7-3-92 to 11-19-92, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in the 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.

Scott Greaves Commissions NB 8829(I)(N) 941-IA
Inspectors Signature National Board, State, Province, and Endorsements

Date Nov 19 19 92

NIS2 NO. 10-90-60

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 November 14, 1990

P.O.Box 351, Cedar Rapids, IA 52406 (Address) Sheet 1 of 2

2. Plant Duane Arnold Energy Center (Name) Unit 1

3277 DAEC Rd. Palo, IA 52324 (Address) DCP-1476 (Repair Organization P.O.No.,Job No.)

3. Work Performed by General Electric Co. (Name) Type Code Symbol Stamp None

Authorization No. None

2311 W. 22nd ST., Oak Brook IL. 60521 (Address) Expiration Date None

4. Identification of System Main Steam 'D' (class 1)

5. (a)Applicable Const. Code *ANSI B31.1 19 67 Edition, N A Addenda, N/A Code Case
(b)Applicable Edition of Section XI Utilized for Repairs or Replacements 1980 W81
*Base Code - GE Spec. 21A9230 Rev. 2.

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacture	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired Replaced, or Replacemant	ASME Code Stamped (Yes or No)
Disc-piston assembly	General Elect.	215585-7	N/A	CV-4420	1990	Replacement	No
Disc	General Elect.	6053657-124	N/A	CV-4420	1988	Replaced	No
Piston	General Elect.	6053657-127	N/A	CV-4420	1988	Replaced	No
Stem Disc	General Elect.	214856-24	N/A	CV-4420	1990	Replacement	No
Bonnet	General Elect.	214856-15	N/A	CV-4420	1990	Replacement	No
Bonnet	General Elect.	N/A	N/A	CV-4420	1971	Replaced	No
Stem\stem disc assemb.	General Elect.	6062065-27	N/A	CV-4420	1985	Replaced	No
Additional Guide Pads	General Elect.	N/A	N/A	CV-4420	1990	Repaired	No

7. Description of Work The bonnet, disc-piston, and stem disc for CV-4420 were replaced and additional guide ribs were added under DCP-1476

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒
Other ☐ Pressure 1026 psi Test Temp. 206 °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.

AP 11-19-90

NIS2 NO. 10-90-64

FORM NIS-2 (Back) sheet 2 of 2

9. Remarks MSIV, CV-4420 was modified per DCP-1476. The bonnet, stem disc, and disc-piston assembly
Applicable Manufacturer's Data Reports to be attached
were replaced. Additionally, four guide pads were welded on the valve body to assist in centering the disc. A valve body repair was performed (ref. NCR 90-063) and accepted (VT-3 90-327). A VT-1(90-258) and VT-3(259) examination was performed and accepted. A VT-2(89-13) was also conducted and accepted after re-assembly.

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 Surinder Sharma Codes & Materials, TGL Date 11-16-, 1990
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 Hartford Steem Boiler I&I Co. of Hartford, Connecticut have inspected the components described in this Owner's Report during the period 7-2-90 to 11-16-90, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in the 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 porsonal injury or property damage or a loss of any kind arising from or connected with this inspection.

Commissions NB 8829(I)(N) 941-IA
Inspectors Signature National Board, State, Province, and Endorsements

Date Nov 19 1990

NIS2 NO. 10-90-65

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 November 14, 1990

P.O.Box 351, Cedar Rapids, IA 52406 (Address) Sheet 1 of 2

2. Plant Duane Arnold Energy Center (Name) Unit 1

3277 DAEC Rd. Palo, IA 52324 (Address) DCP-1476 (Repair Organization P.O.No.,Job No.)

3. Work Performed by General Electric Co. (Name) Type Code Symbol Stamp None

Authorization No. None

2311 W. 22nd ST., Oak Brook IL. 60521 (Address) Expiration Date None

4. Identification of System Main Steam 'D' (class 1)

5. (a)Applicable Const. Code *ANSI B31.1 19 67 Edition, N/A Addenda, N/A Code Case
(b)Applicable Edition of Section XI Utilized for Repairs or Replacements 1980 W81
*Base Code - GE Spec. 21A9230 Rev. 2.

6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacture	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired Replaced, or Replacement	ASME Code Stamped (Yes or No)
Disc-piston assembly	General Elect.	215585-10	N/A	CV-4421	1990	Replacement	No
Disc	General Elect.	6062065-56	N/A	CV-4421	1985	Replaced	No
Piston	General Elect.	6062065-48	N/A	CV-4421	1985	Replaced	No
Stem Disc	General Elect.	214856-25	N/A	CV-4421	1990	Replacement	No
Bonnet	General Elect.	214856-12	N/A	CV-4421	1990	Replacement	No
Bonnet	General Elect.	N/A	N/A	CV-4421	1971	Replaced	No
Stem\stem disc assemb.	General Elect.	6062065-26	N/A	CV-4421	1985	Replaced	No
Additional Guide Pads	General Elect.	N/A	N/A	CV-4421	1990	Repaired	No

7. Description of Work The bonnect, disc-piston, and stem disc for CV-4421 were replacad and additional guide ribs were added under DCP-1476

8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒
Other ☐ Pressure 1026 psi Test Temp. 206 °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.

ANI AP 11-19-90

FORM NIS-2 (Back) sheet 2 of 2

9. Remarks MSIV, CV-4421 was modified per DCP-1476. The bonnet, stem disc, and disc-piston assembly
Applicable Manufacturer's Data Reports to be attached
were replaced. Additionally, four guide pads were welded on the valve body to assist in centering the disc. A VT-1 (90-260) and VT-3 (90-261) was performed and accepted. A VT-2 (89-13) was conducted and accepted after re-assembly

CERTIFICATE OF COMPLIANCE

We certify that the statements mode 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 Surinder Sharma Codes & Materials, TGL Date 11-16-, 19
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 Hartford Steam Boiler I&I Co. of Hartford, Connecticut have inspected the components described in this Owner's Report during the period 7-2-90 to 11-19-90, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in the 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 NB 8829(I)(N) 941-IA
Inspectors Signature National Board, State, Province, and Endorsements

Date Nov 19 19 90

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 52324

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 Measurers 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 F 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 December 28, 1988 through September 10, 1990.

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 52324

3) Plant Unit #1

4) Owners Certificate of Authorization (if required) N/A

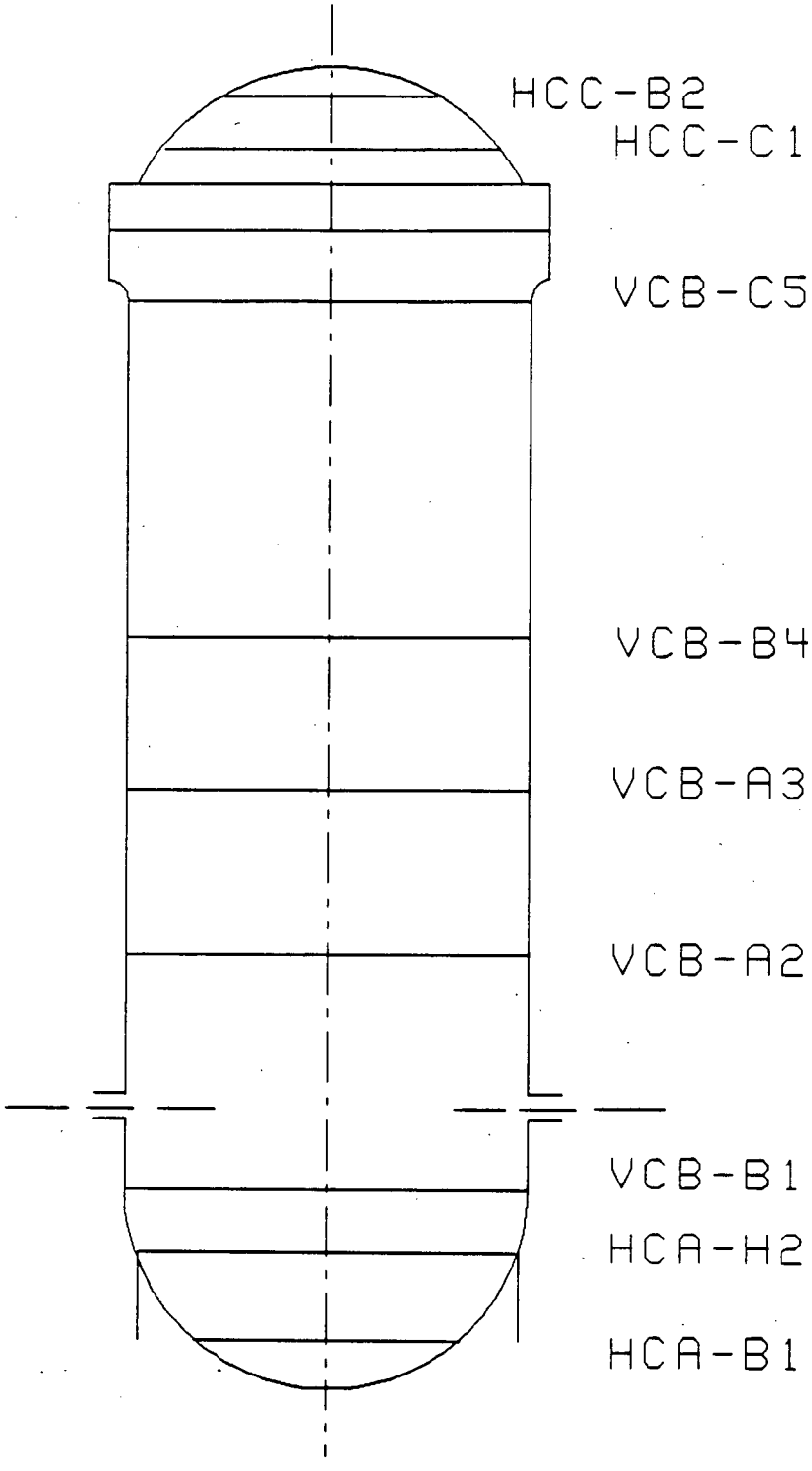
5) Commerial Service Date 2-1-75

6) National Board Number of Unit N/A

GROSS GENERATING CAPACITY: 565 MWE

ISI FIGURES AND ISOMETERICS

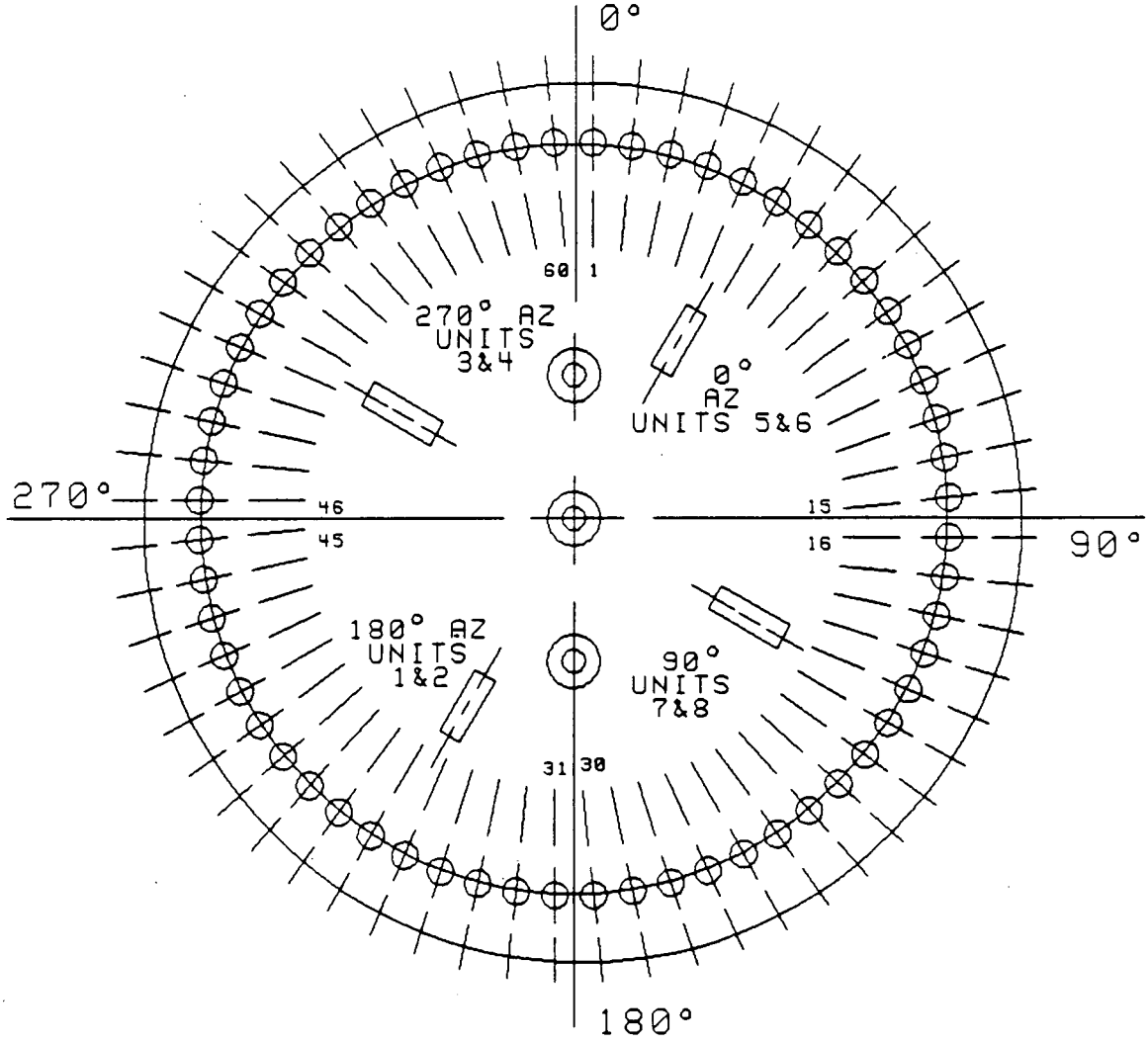
PLEASE NOTE: ISI Figures & Isometrics is listed in Part B of this report



CIRCUMFERENTIAL SEAM WELDS

Figure No. 1.1-3

DRAWING RELEASE RECORD					
REV	DATE	PREPARED	REVIEWED	APPRDVED	PURPOSE
1	4-3-86	SML	SML	RCM	ISO'S FOR 2nd 10 YEAR PLAN
2	9-24-90				ISO'S TO CAD FORMAT AS PER NG-89-0794

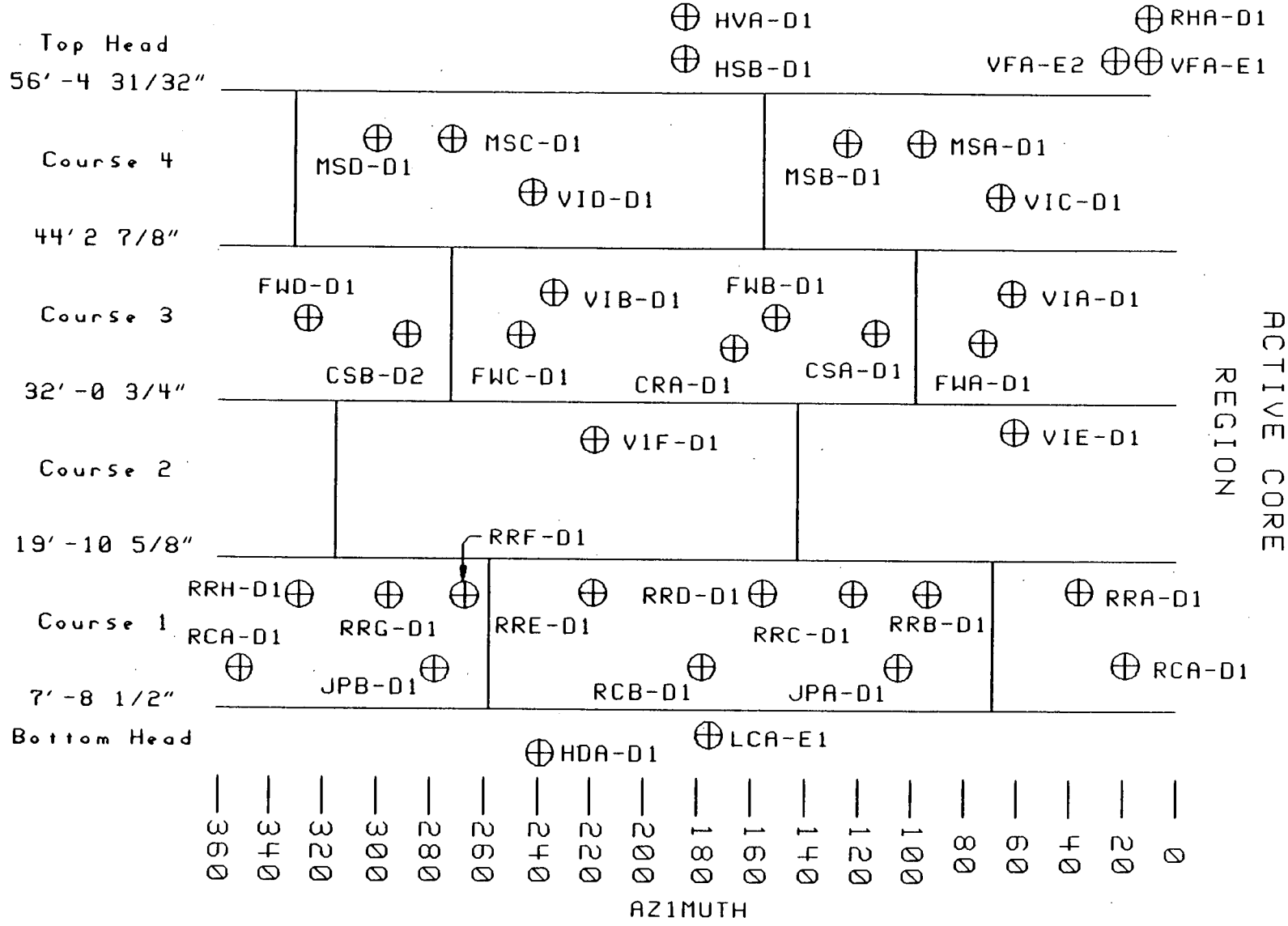


VESSEL STUD AND LIGAMENT LOCATION

Figure No. 1.1-5

PR-Pressure Retaining
A-Studs
B-Nuts
C-Bushings
D-Washers
E-Ligaments

DRAWING RELEASE RECORD					
REV	DATE	PREPARED	REVIEWED	APPROVED	PURPOSE
1	4-3-86	SML	SML	RCM	ISO'S FOR 2nd 10 YEAR PLAN
2	9-24-90				ISO'S TO CAD FORMAT AS PER NG-89-0794



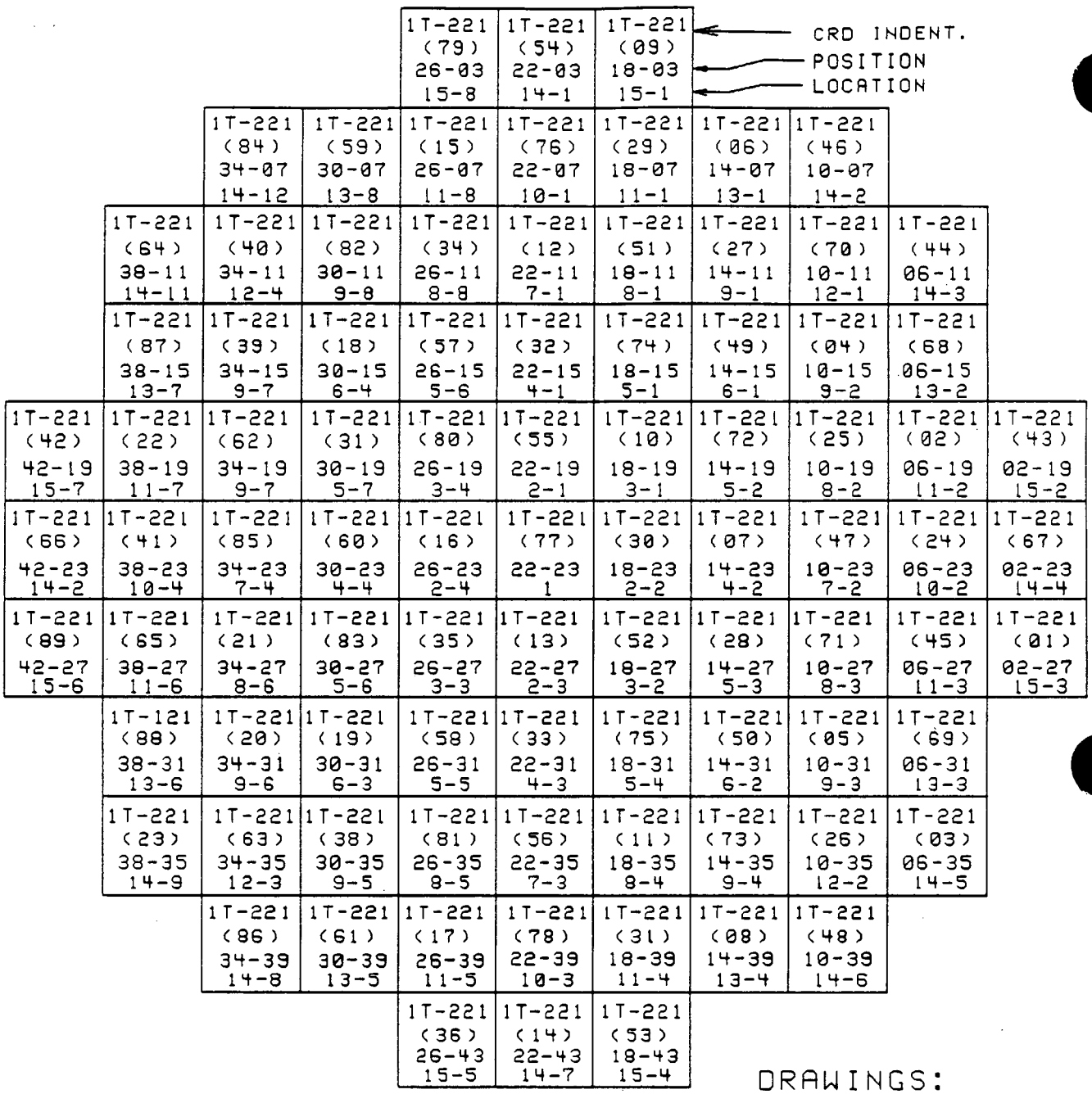
VESSEL NOZZLE LOCATION

FIGURE NO. 1.1-6

REV	DATE	PREPARED	REVIEWED	APPROVED	PURPOSE
1	4-3-86	SML	SML	RCM	ISO'S FOR 2nd 10 YEAR PLAN
2	9-24-90				ISO'S TO CAD FORMAT AS PER NG-85-0794

DRAWING RELEASE RECORD

DAEC INSERVICE INSPECTION ASME SECTION XI ISOMETRIC



DRAWINGS:
7884-M115-15-2
7884-M115-16-2

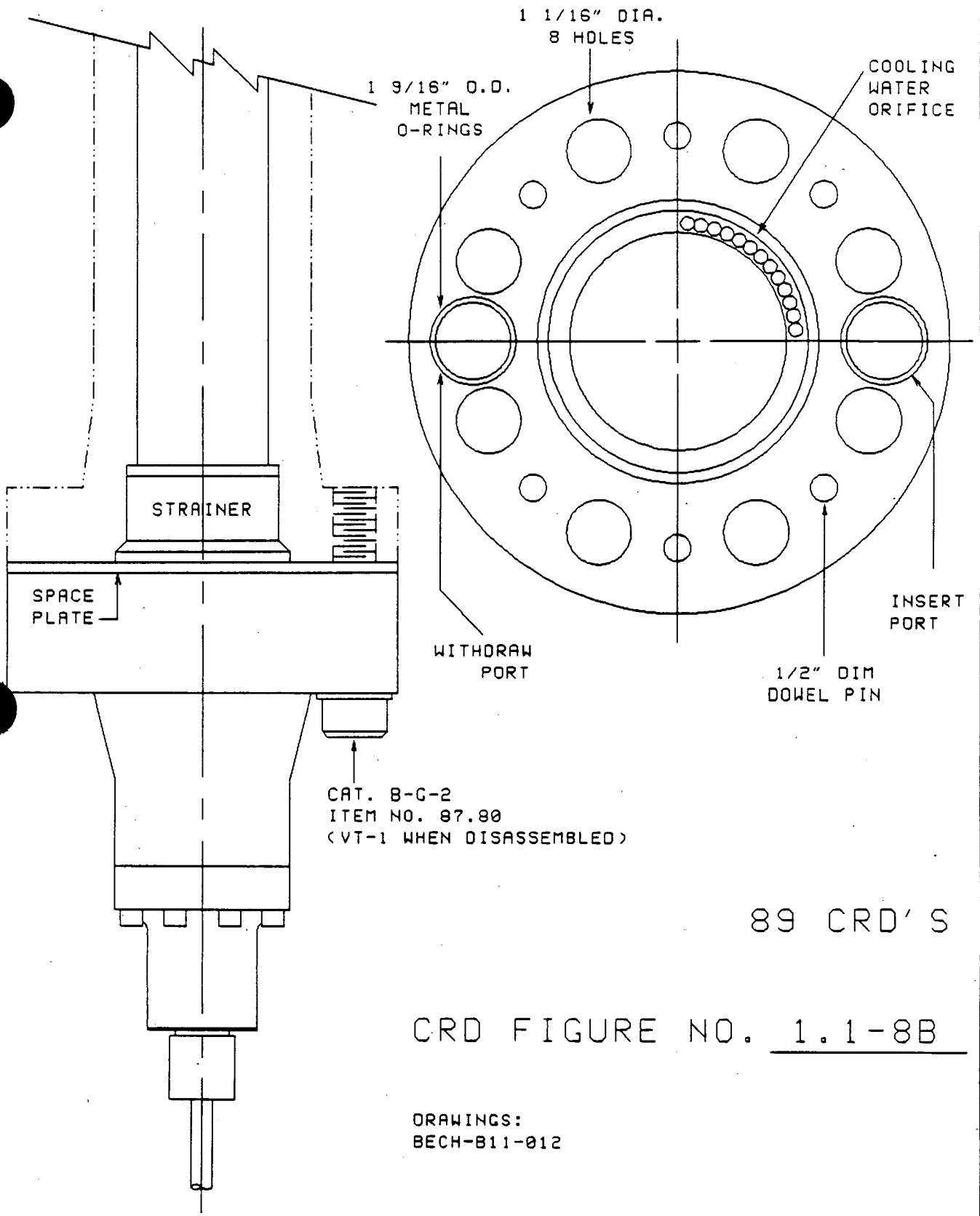
CRD LOCATION

FIGURE NO. 1.1-8A

8 BOLTS PER CRD

DRAWING RELEASE RECORD

REV	DATE	PREPARED	REVIEWED	APPROVED	PURPOSE
1	4-3-86	SML	SML	RCM	ISO'S FOR 2nd 10 YEAR PLAN
2	9-24-90				ISO'S TO CAD FORMAT AS PER NG-89-0794



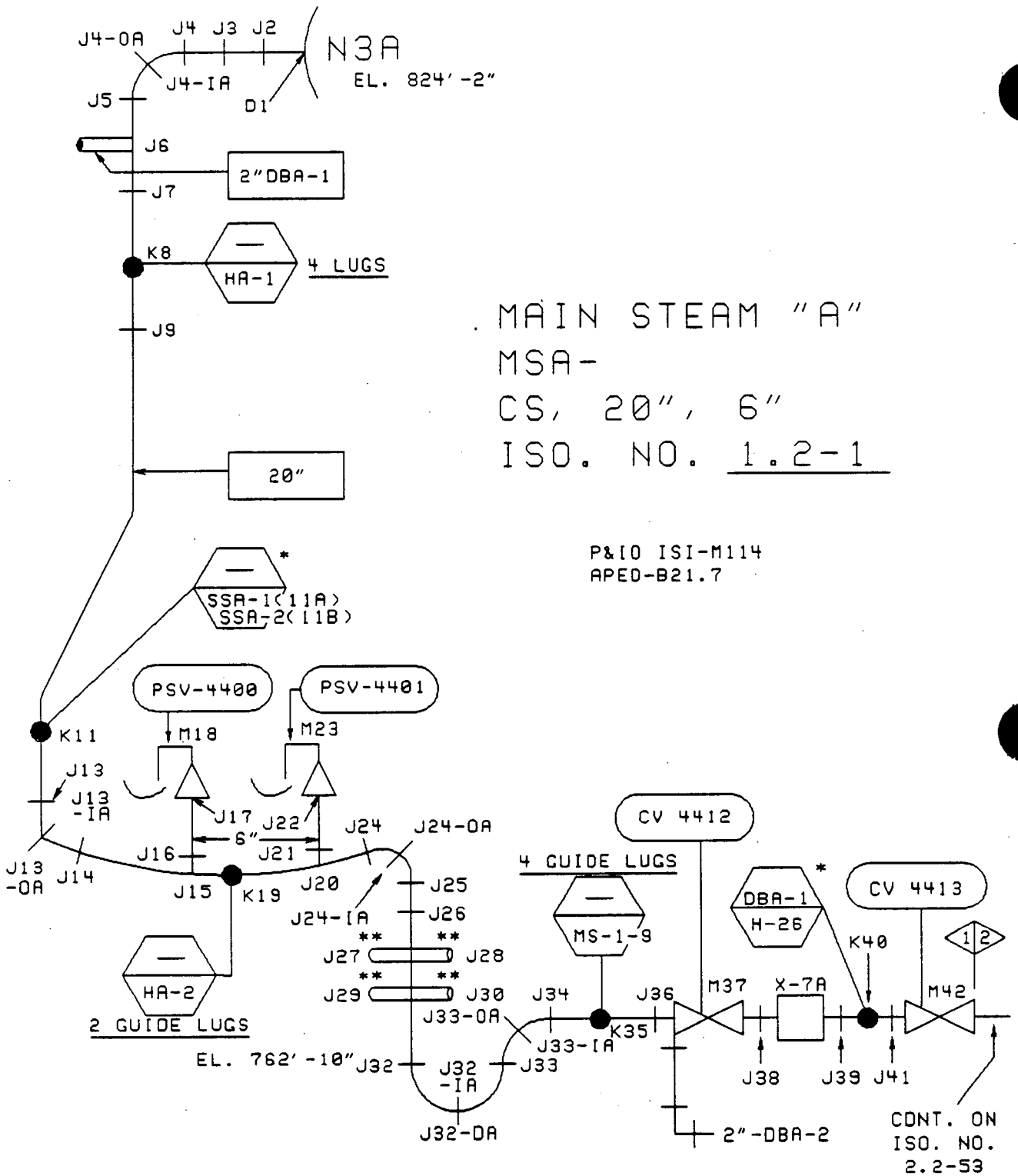
89 CRD'S

CRD FIGURE NO. 1.1-8B

DRAWINGS:
BECH-B11-012

DRAWING RELEASE RECORD

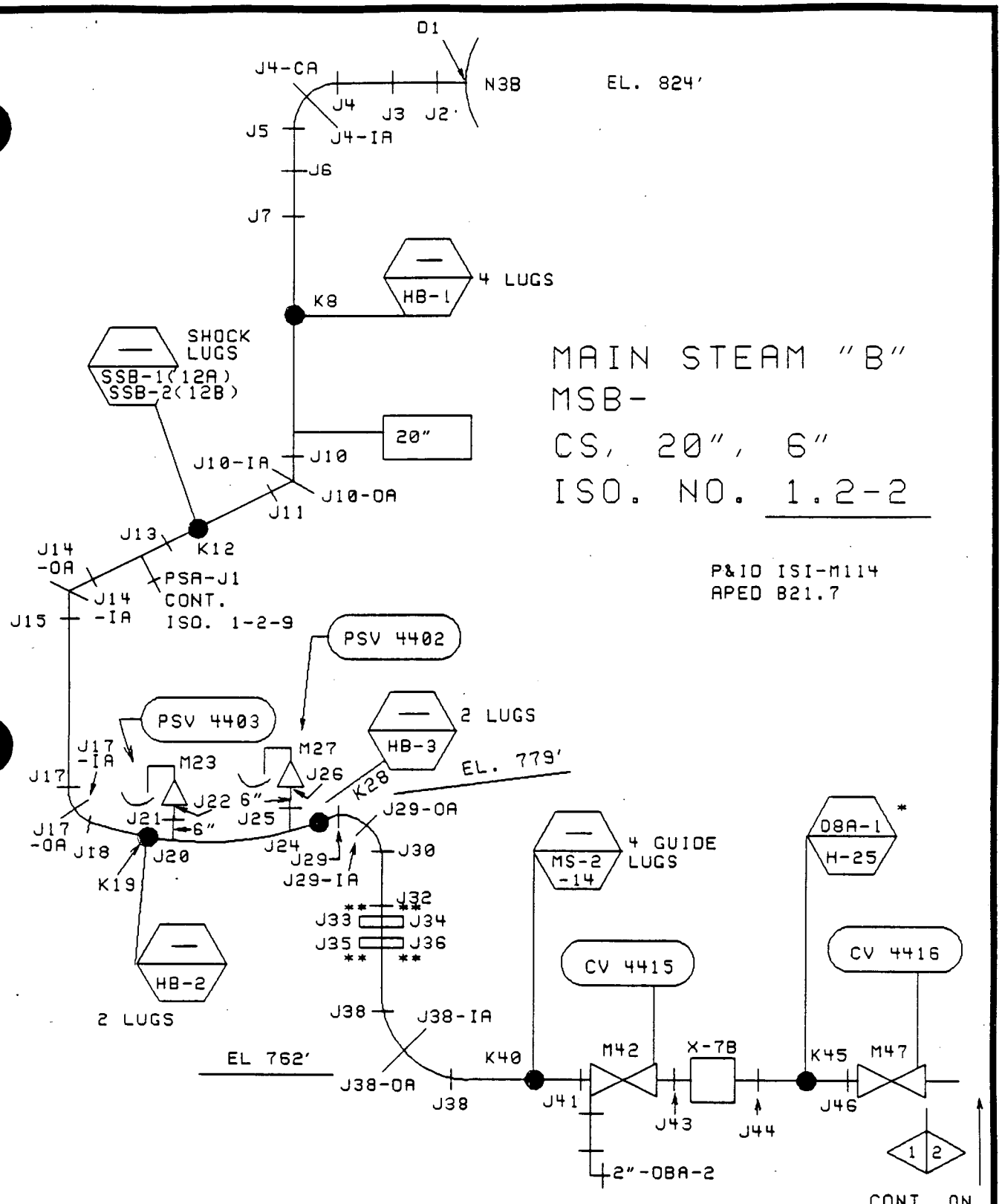
REV	DATE	PREPARED	REVIEWED	APPROVED	PURPOSE
1	9-24-90				ISO'S TO CAD FORMAT AS PER NG-89-0794



* - NON INTEGRAL
** - 1" FLOW ELEMENT LINE

DRAWING RELEASE RECORD

REV	DATE	PREPARED	REVIEWED	APPROVED	PURPOSE
1	3-6-86	SML	SML	RCM	ISO'S FOR 2nd 10 YEAR PLAN
2	9-24-90				ISO'S TO CAD FORMAT AS PER NG-69-0794



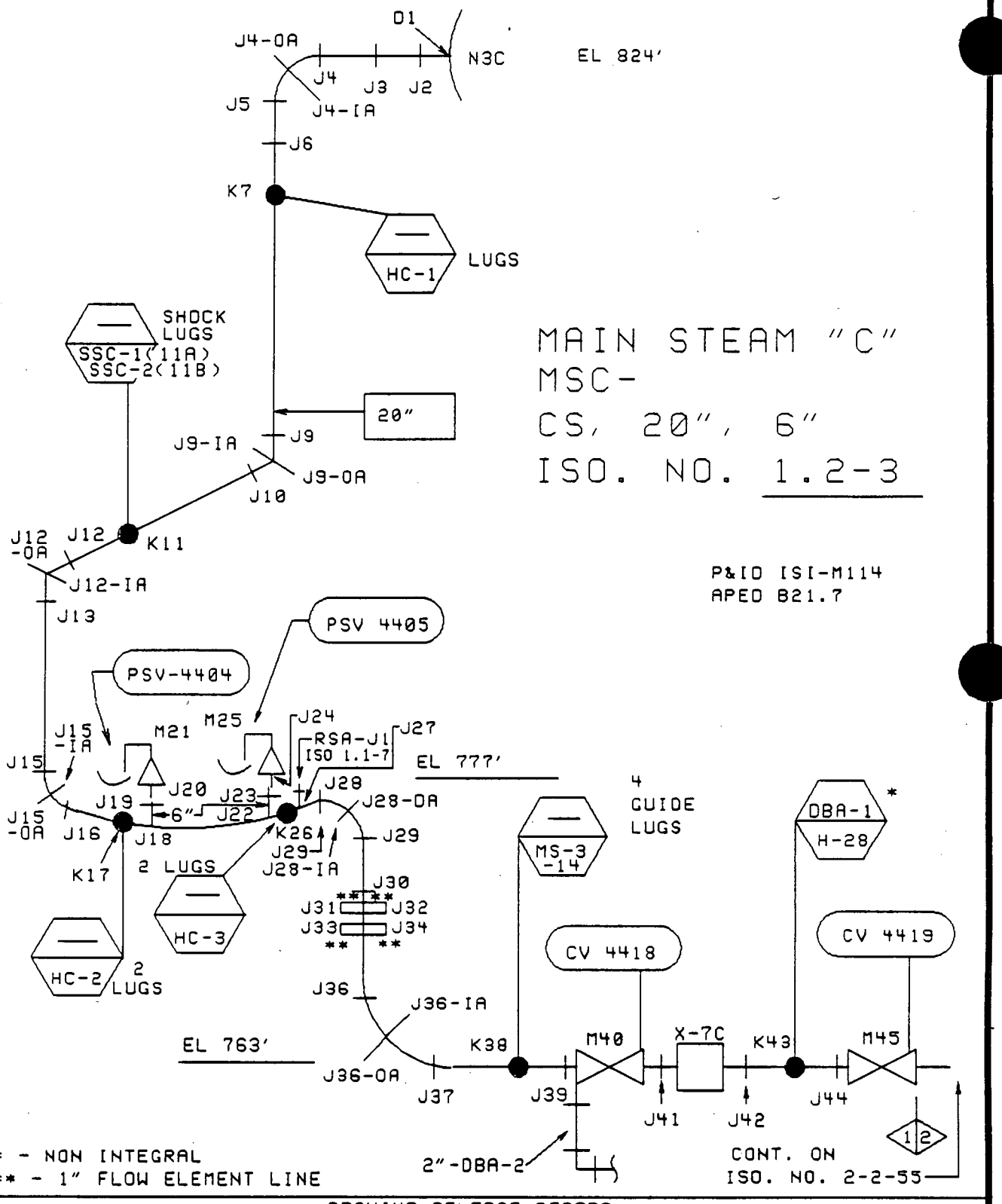
MAIN STEAM "B"
MSB-
CS, 20", 6"
ISO. NO. 1.2-2

P&ID ISI-M114
APED B21.7

* - NON INTEGRAL
** - 1" FLOW ELEMENT LINE

DRAWING RELEASE RECORD

REV	DATE	PREPARED	REVIEWED	APPROVED	PURPOSE
1	3-6-86	SML	SML	RCM	ISO'S FOR 2nd 10 YEAR PLAN
2	9-24-90				ISO'S TO CAD FORMAT AS PER NG-89-0794



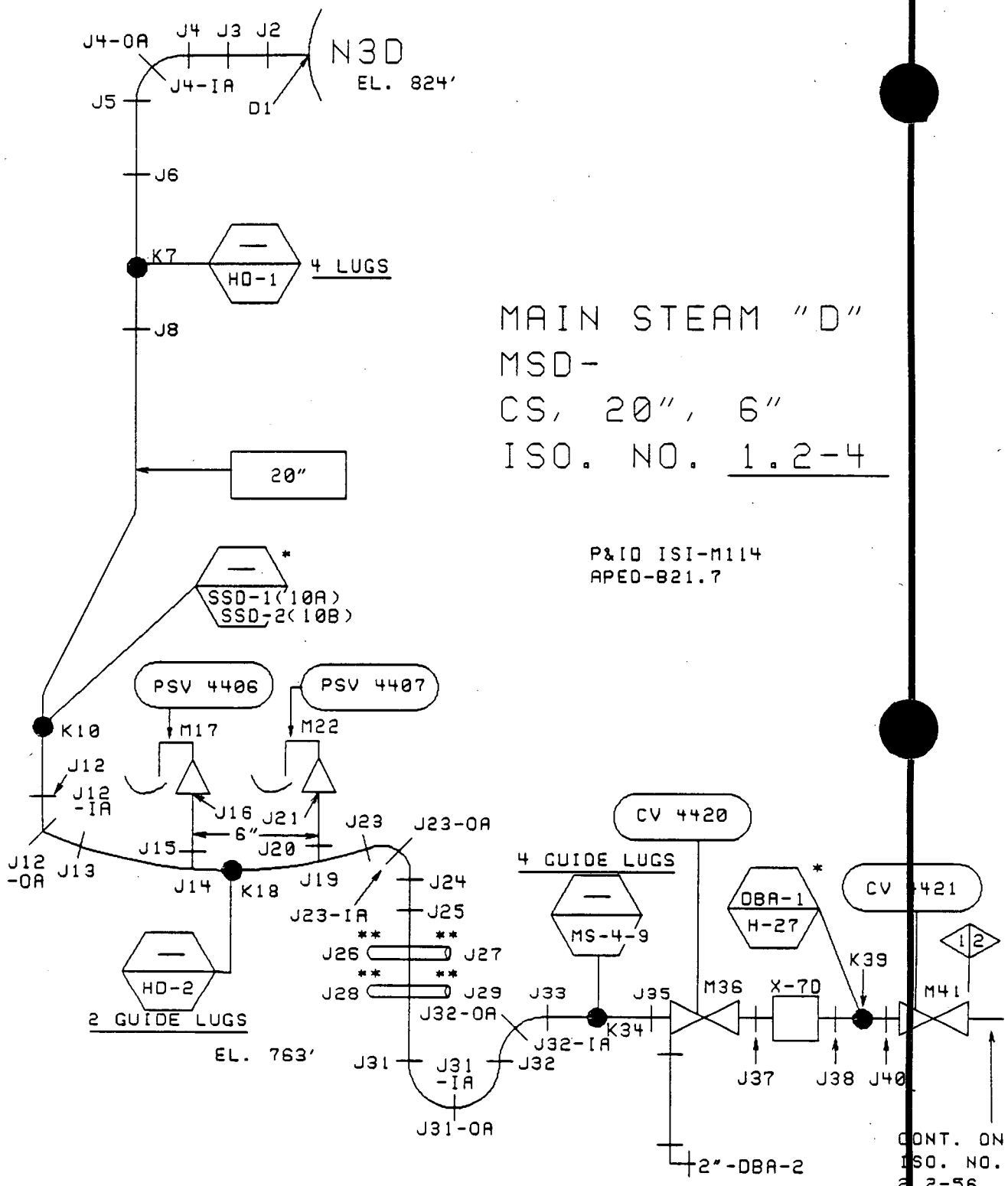
MAIN STEAM "C"
MSC-
CS, 20", 6"
ISO. NO. 1.2-3

P&ID ISI-M114
APED B21.7

* - NON INTEGRAL
** - 1" FLOW ELEMENT LINE

DRAWING RELEASE RECORD

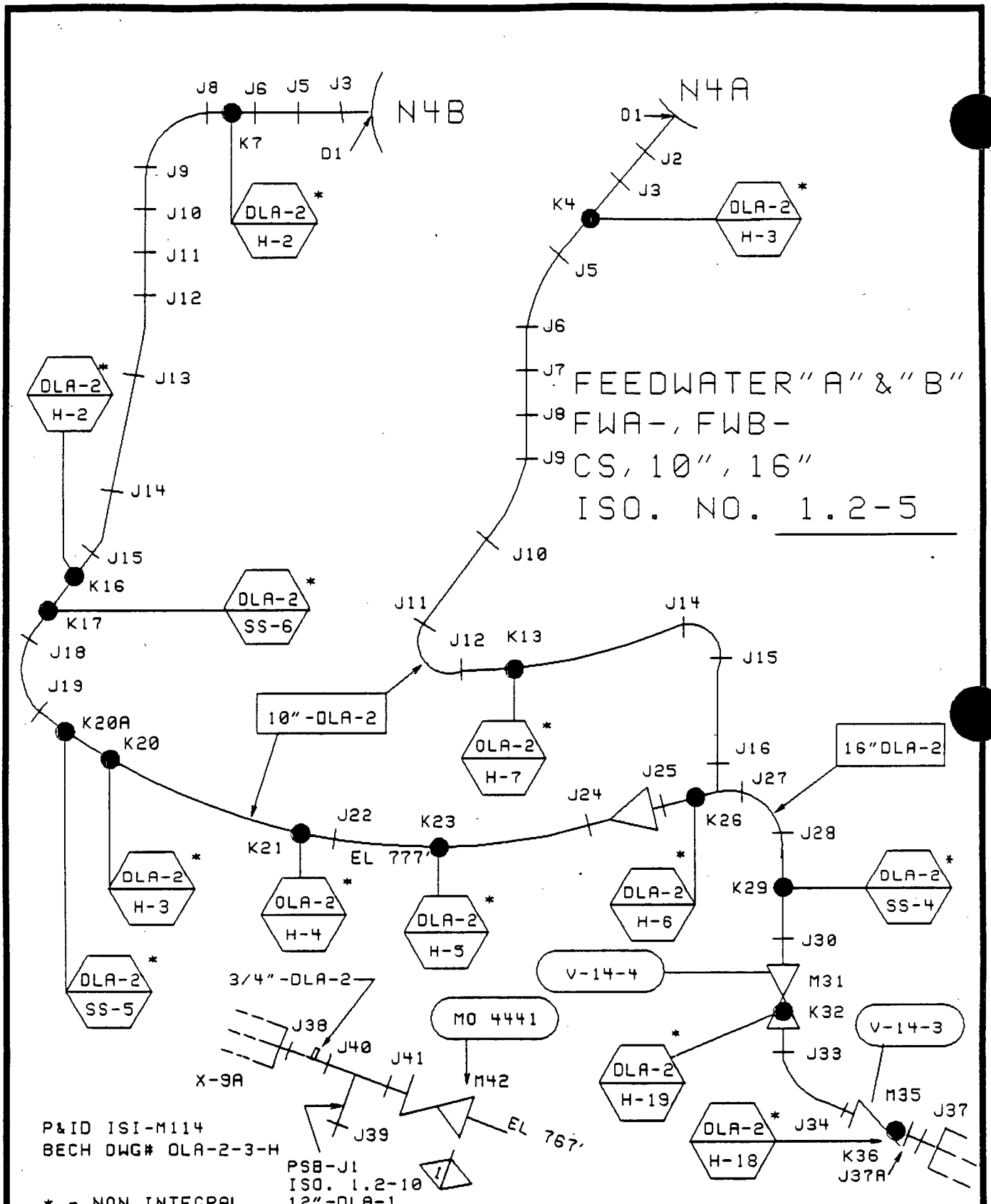
REV	DATE	PREPARED	REVIEWED	APPROVED	PURPOSE
1	3-7-86	SML	SML	RCM	ISO'S FOR 2nd 10 YEAR PLAN
2	9-24-90			RKM	ISO'S TO CAD FORMAT AS PER NG-89-0794



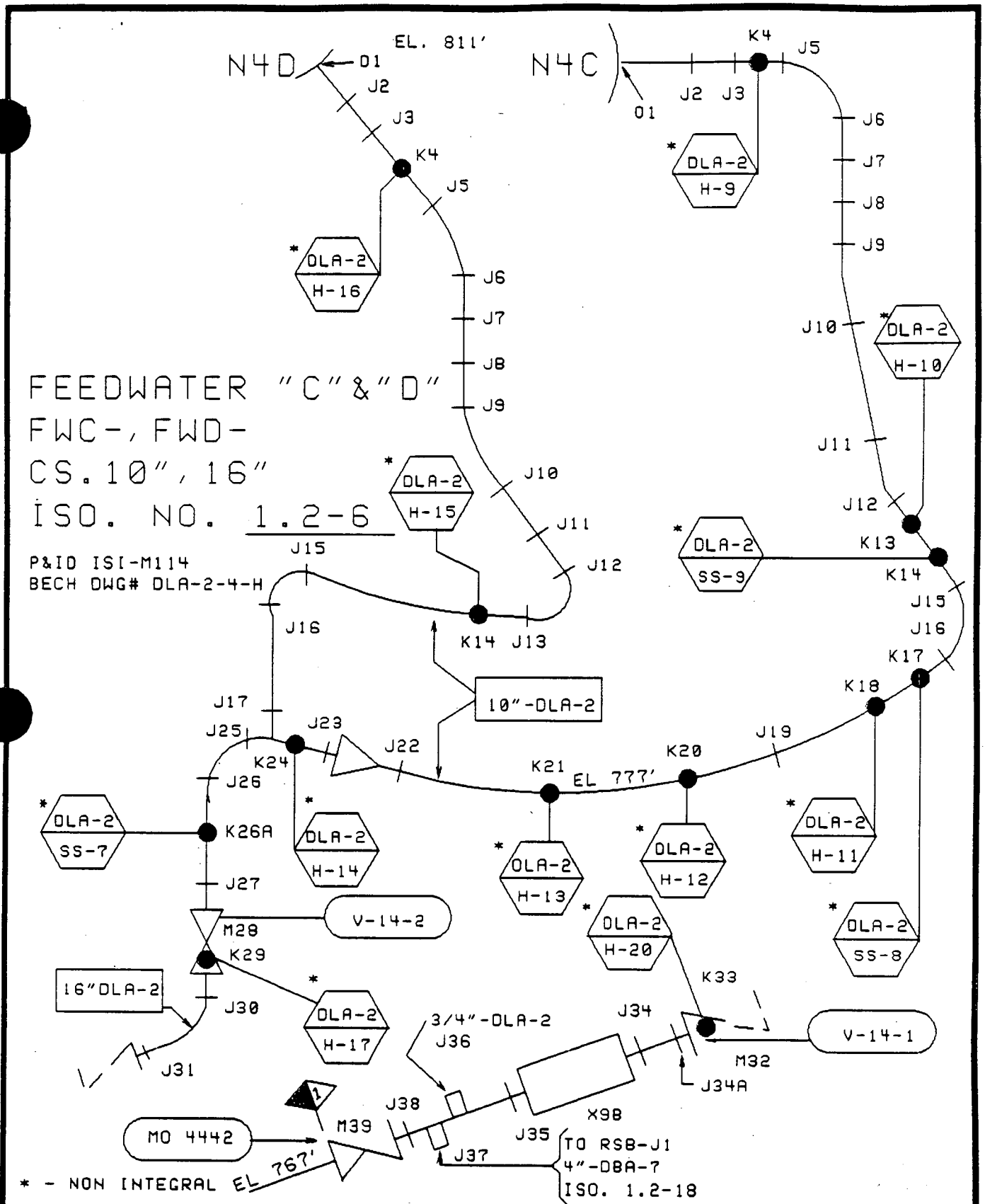
* - NON INTEGRAL
** - 1" FLOW ELEMENT LINE

DRAWING RELEASE RECORD

REV	DATE	PREPARED	REVIEWED	APPROVED	PURPOSE
1	3-[illegible]86	[illegible]	ML	RCM	ISO'S FOR 2nd 10 YEAR PLAN
4 2	-[illegible]90	[illegible]	[illegible]	[illegible]	ISO'S TO CAD FORMAT AS PER NG-8[illegible]84



DRAWING RELEASE RECORD					
REV	DATE	PREPARED	REVIEWED	APPROVED	PURPOSE
1	3-10-86	SML	SML	RCM	ISO'S FOR 2nd 10 YEAR PLAN
2	9-24-90				ISO'S TO CAD FORMAT AS PER NG-89-0794

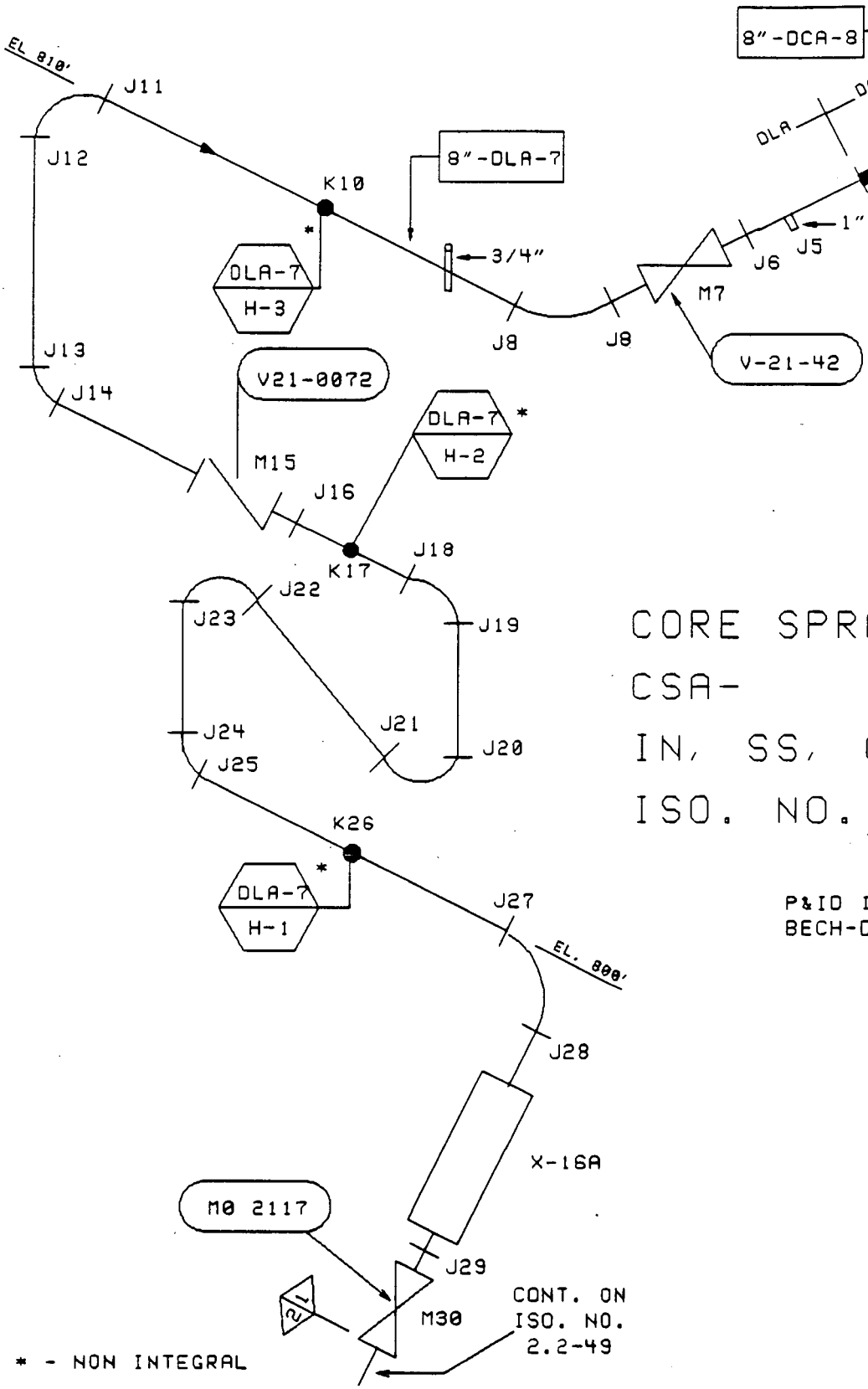


FEEDWATER "C"&"D"
FWC-, FWD-
CS. 10", 16"
ISO. NO. 1.2-6

P&ID ISI-M114
BECH DWG# DLA-2-4-H

* - NON INTEGRAL

DRAWING RELEASE RECORD					
REV	DATE	PREPARED	REVIEWED	APPROVED	PURPOSE
1	3-11-86	SML	SML	RCM	ISO'S FOR 2nd 10 YEAR PLAN
2	9-24-90				ISO'S TO CAD FORMAT AS PER NG-89-0794



CORE SPRAY "A"

CSA-

IN, SS, CS, 8"

ISO. NO. 1.2-7

P&ID ISI-M121
BECH-DLA-7-1-H

DRAWING RELEASE RECORD					
REV	DATE	PREPARED	REVIEWED	APPROVED	PURPOSE
1	3-12-86	SML	SML	RCM	ISO'S FOR 2nd 10 YEAR PLAN
2	9-24-90				ISO'S TO CAD FORMAT AS PER NG-85-0794

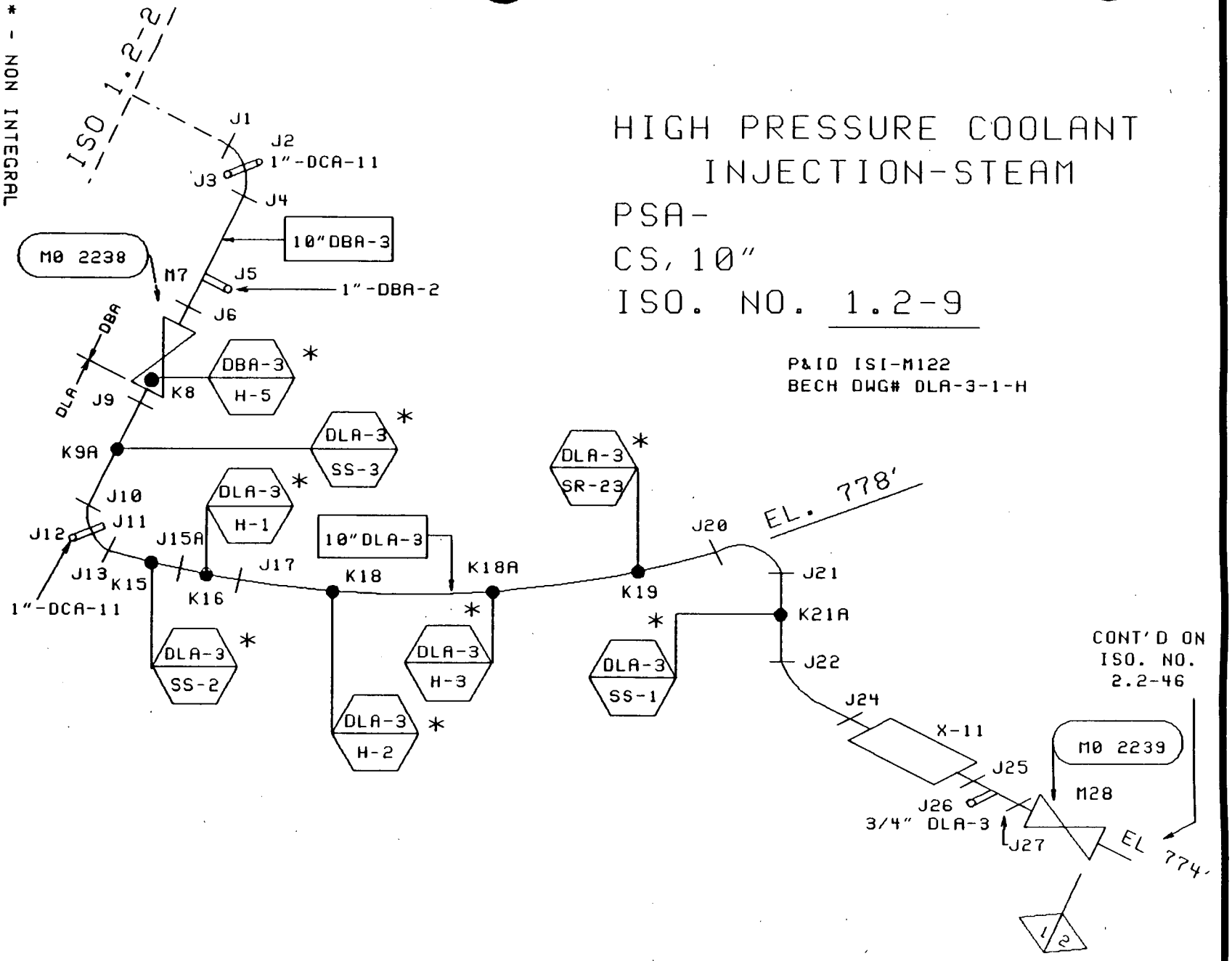
HIGH PRESSURE COOLANT INJECTION-STEAM

PSA-

CS, 10"

ISO. NO. 1.2-9

P&ID ISI-M122
BECH DWG# DLA-3-1-H

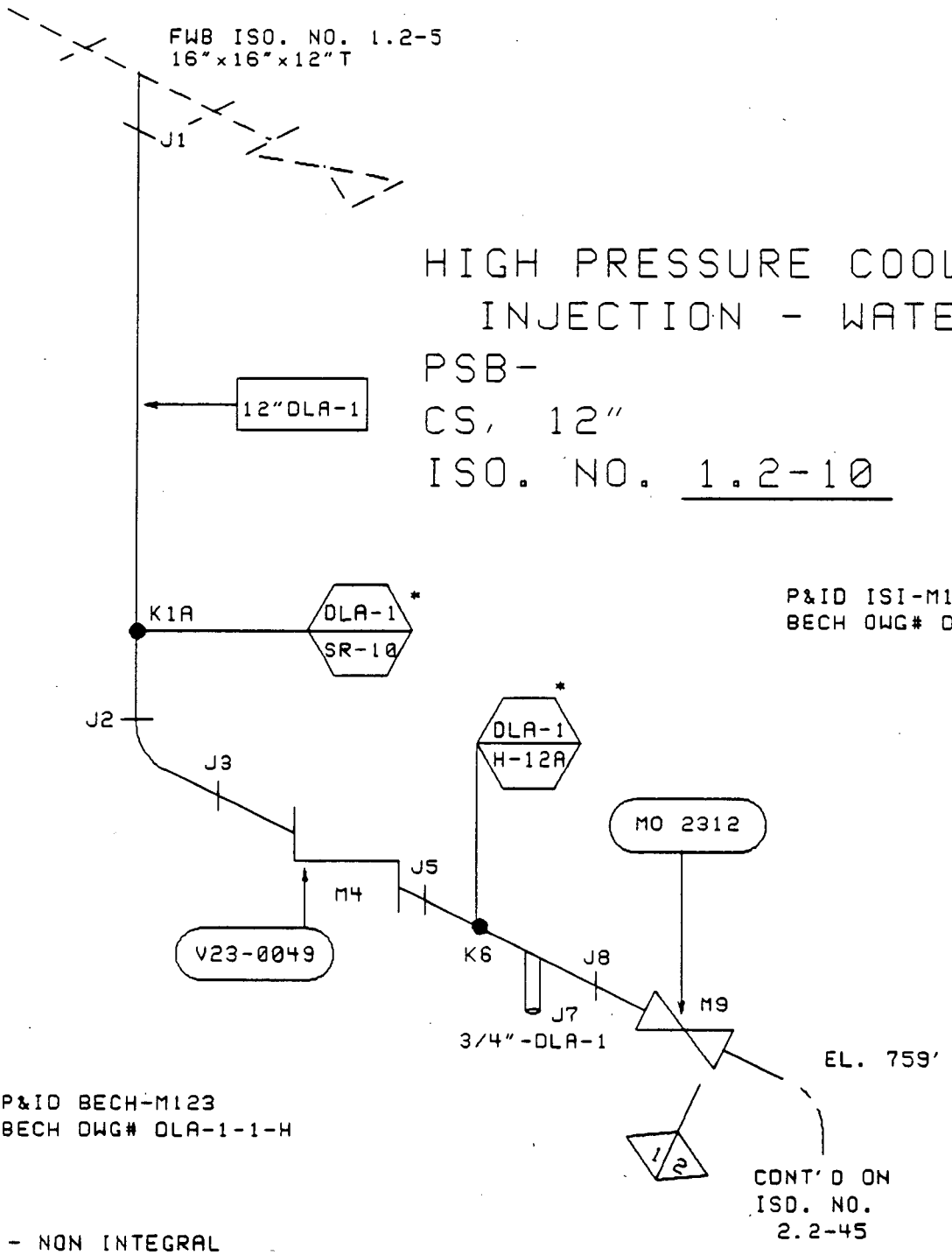


* - NON INTEGRAL

REV	DATE	PREPARED	REVIEWED	APPROVED	PURPOSE
1	3-12-86	SML	SML	RCM	ISO'S FOR 2nd 10 YEAR PLAN
2	9-24-90				ISO'S TO CAD FORMAT AS PER NG-89-0794

DRAWING RELEASE RECORD

DAEC INSERVICE INSPECTION ASME SECTION XI ISOMETRIC



HIGH PRESSURE COOLANT INJECTION - WATER

PSB-

CS, 12"

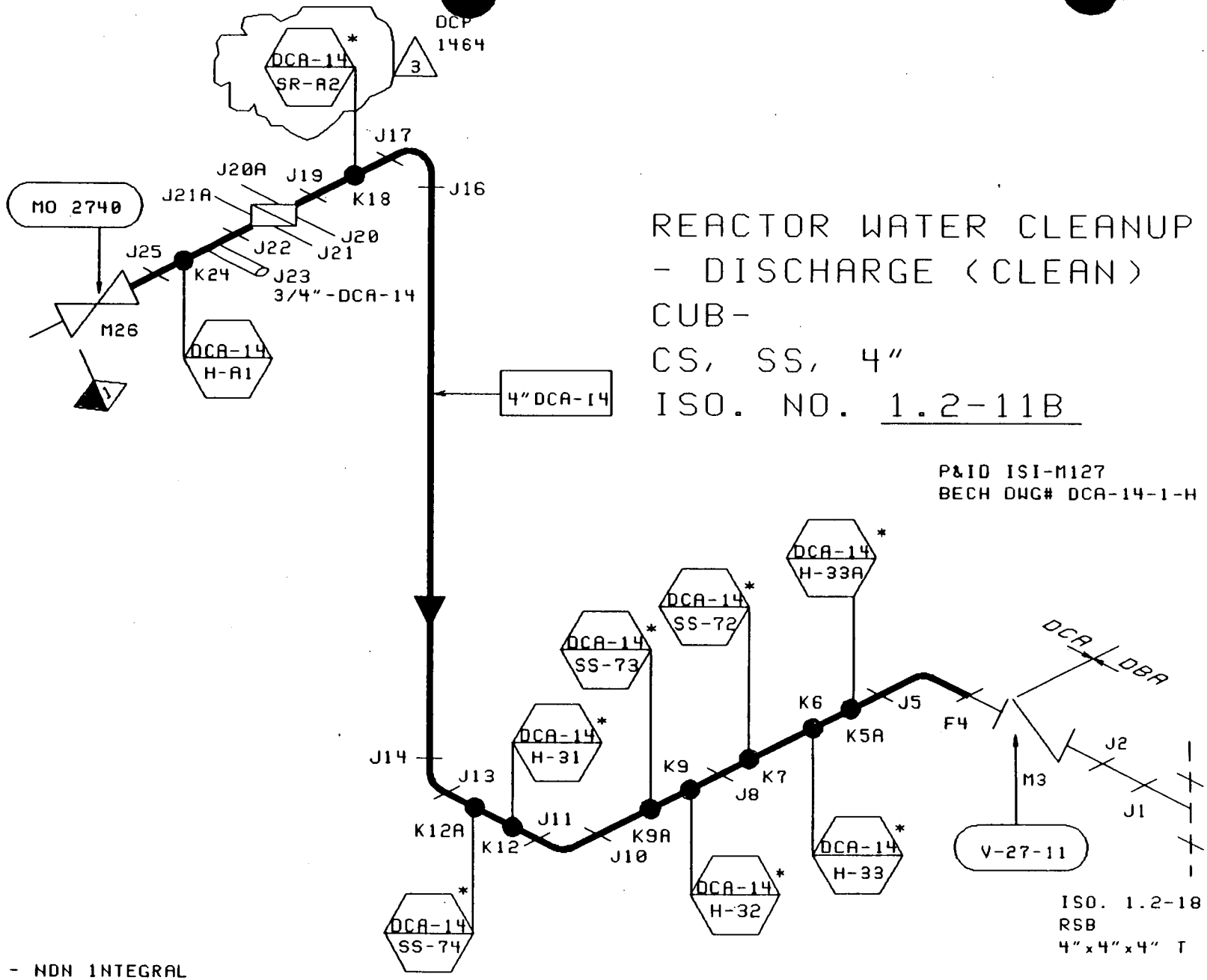
ISO. NO. 1.2-10

P&ID ISI-M123
BECH DWG# DLA-1-1-H

P&ID BECH-M123
BECH DWG# DLA-1-1-H

* - NON INTEGRAL

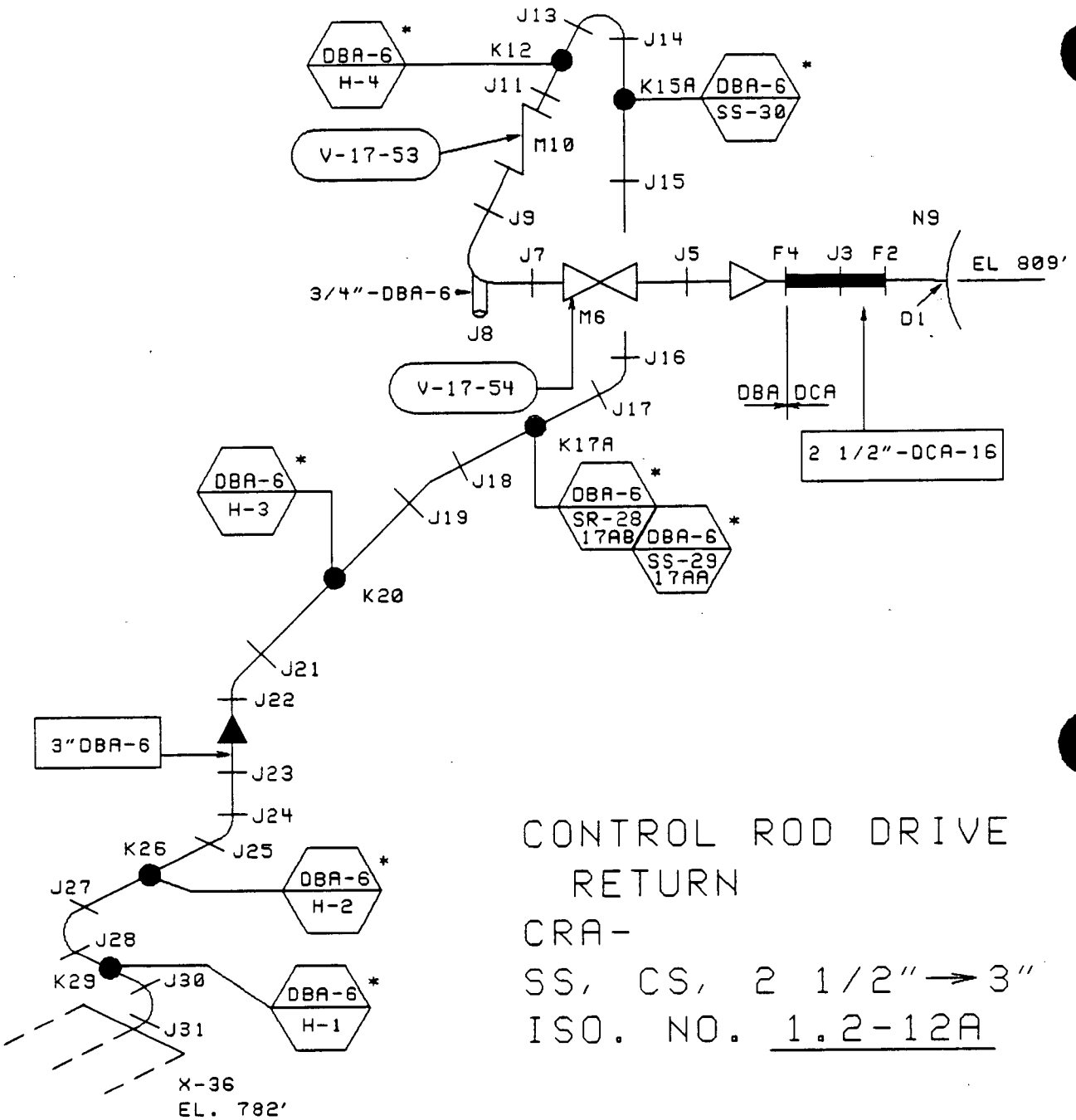
DRAWING RELEASE RECORD					
REV	DATE	PREPARED	REVIEWED	APPROVED	PURPOSE
1	3-12-86	SML	SML	RCM	ISO'S FOR 2nd 10 YEAR PLAN
2	9-24-90				ISO'S TO CAD FORMAT AS PER NG-89-0794



REV	DATE	PREPARED	REVIEWED	APPROVED	PURPOSE
1	3-13-86	SML	SML	RCM	ISO'S FOR 2nd 10 YEAR PLAN
2	4-24-90				ISO'S TO CAD FORMAT AS PER NG-89-0794
3	9-24-90				DCP 1464, RWCU NONCLASS REPLACEMENT

DRAWING RELEASE RECORD

OAEC INSERVICE INSPECTION ASME SECTION XI ISOMETRIC



CONTROL ROD DRIVE RETURN

CRA-

SS, CS, 2 1/2" → 3"

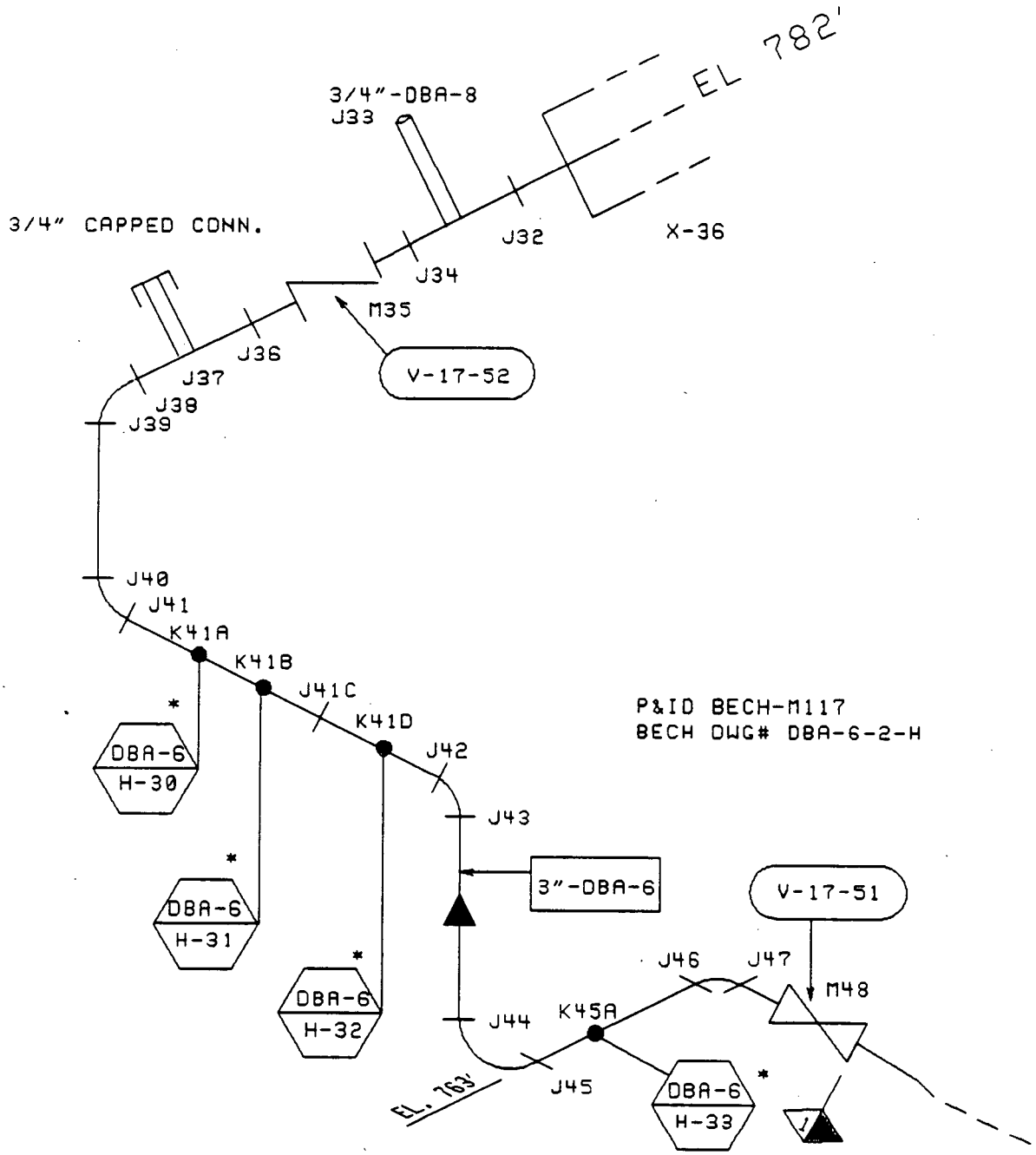
ISO. NO. 1.2-12A

CONT. ON
ISO. NO. 1.2-12B

P&IS ISI-M117
BECH. DWG# DBA-6-1-H

DRAWING RELEASE RECORD

REV	DATE	PREPARED	REVIEWED	APPROVED	PURPOSE
1	3-13-86	SML	SML	RCM	ISO'S FOR 2nd 10 YEAR PLAN
2	9-24-90				ISO'S TO CAD FORMAT AS PER NG-89-0794



CONTROL ROD DRIVE RETURN

CRA-

CS, 3"

ISO. NO. 1.2-12B

* - NON INTEGRAL

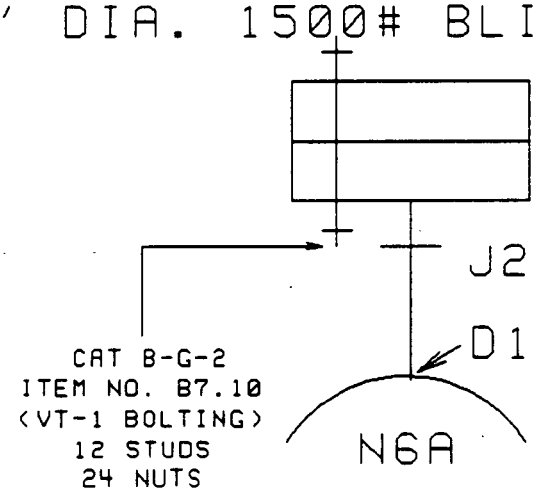
DRAWING RELEASE RECORD

REV	DATE	PREPARED	REVIEWED	APPROVED	PURPOSE
1	3-13-86	SHL	ML	RCM	ISO'S FOR 2nd 10 YEAR PLAN
2	9-24-90				ISO'S TO CAD FORMAT AS PER NG-89-0794

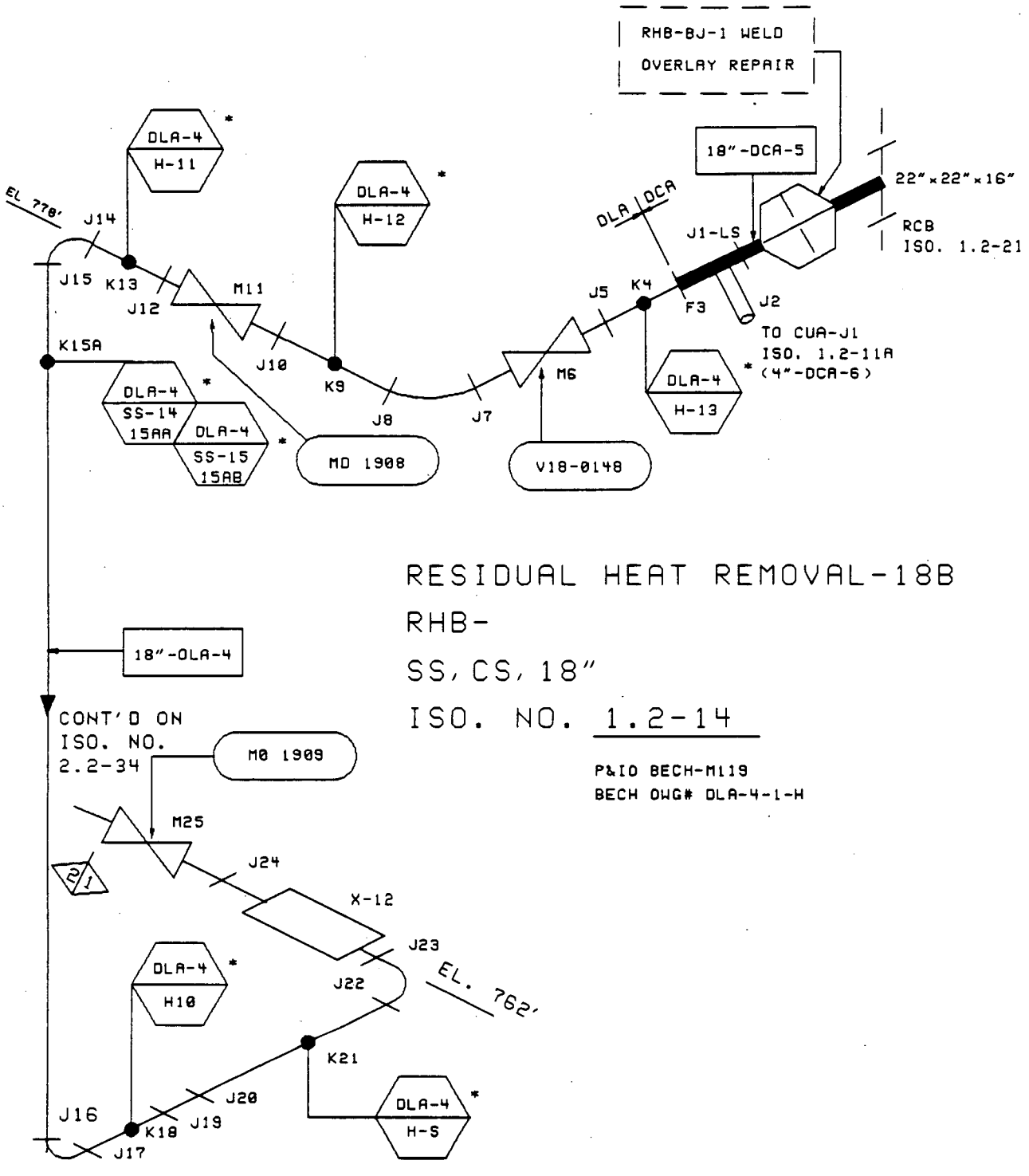
RHR-HEADSPRAY
RHA
C.S.-6"
ISO. NO. 1.2-13

P&ID-M119
BECH DWG# DBA-5-1-H

6" DIA. 1500# BLIND FLANGE



DRAWING RELEASE RECORD					
REV	DATE	PREPARED	REVIEWED	APPROVED	PURPOSE
1	3-14-86	SML	SML	RCM	ISO'S FOR 2nd 10 YEAR PLAN
2	10-26-87	JPM	RCM	REL	PORTION OF SYSTEM REMOVAL PER DCP 1385, 1987 RFO
3	9-24-90				ISO'S TO CAD FORMAT AS PER NG-89-0794



RESIDUAL HEAT REMOVAL-18B

RHB-

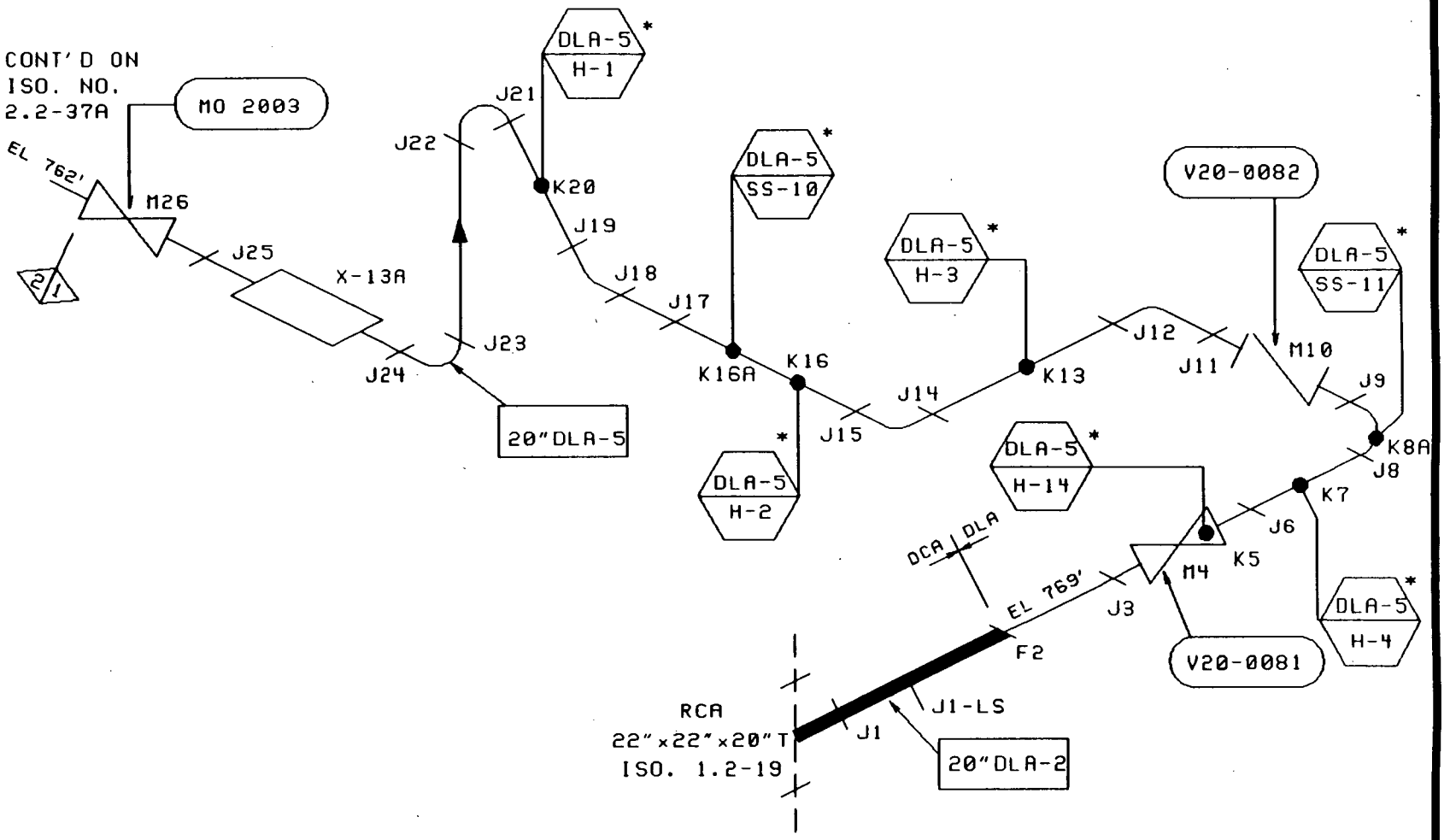
SS, CS, 18"

ISO. NO. 1.2-14

P&ID BECH-M119
BECH DWG# DLA-4-1-H

* - NON INTEGRAL

DRAWING RELEASE RECORD					
REV	DATE	PREPARED	REVIEWED	APPROVED	PURPOSE
1	3-17-86	SML	SML	RCM	ISO'S FOR 2nd 10 YEAR PLAN
2	9.24-90				ISO'S TO CAD FORMAT A9 PER NG-89-0794



RESIDUAL HEAT REMOVAL-20A

RHC-

SS, CS, 20"

ISO. NO. 1.2-15

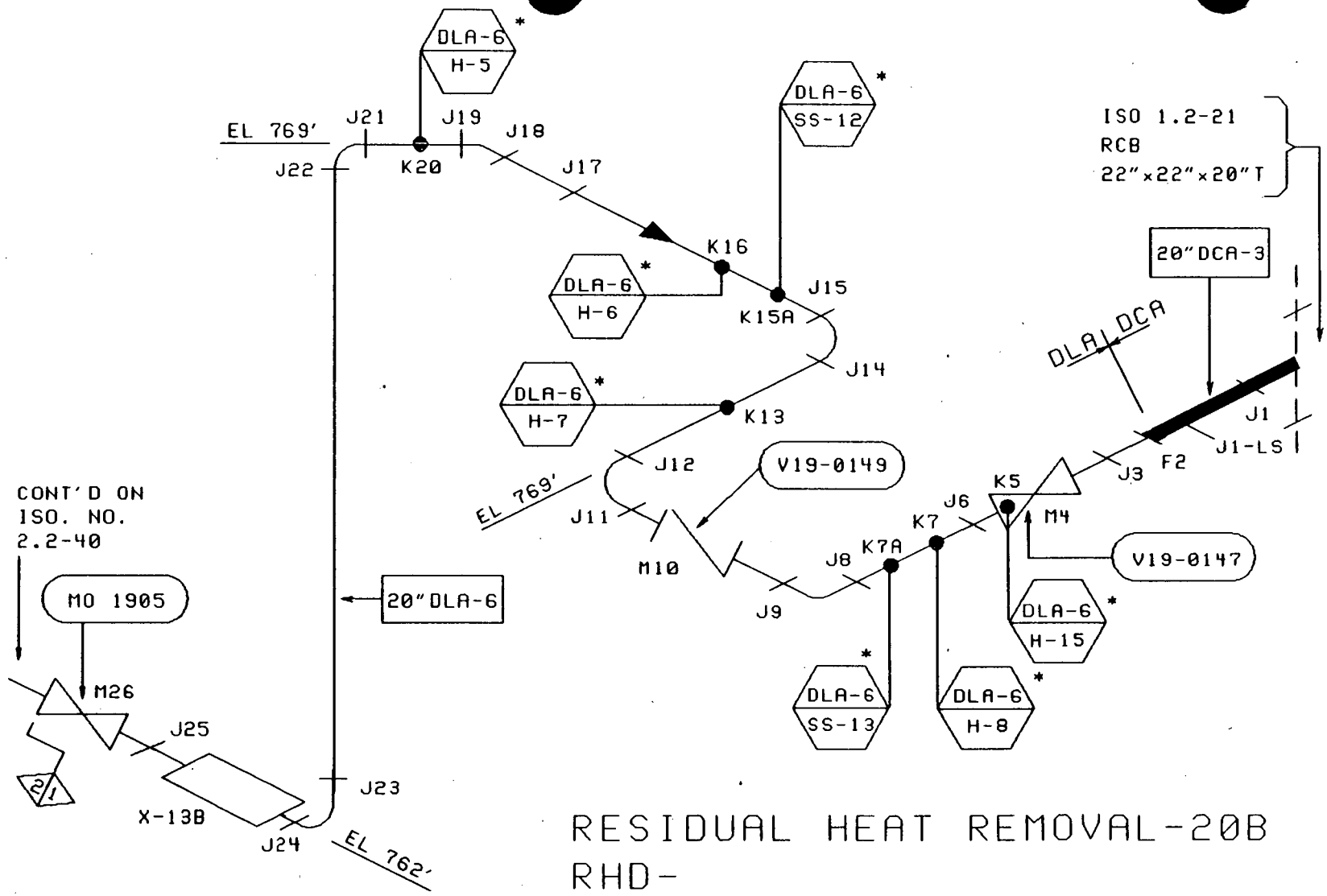
P&ID BECH-M120
BECH DWG# DLA-5-1-H

* - NON INTEGRAL

REV	DATE	PREPARED	REVIEWED	APPROVED	PURPOSE
1	3-17-86	SML	SML	RCM	ISO'S FOR 2nd 10 YEAR PLAN
2	9-24-90				ISO'S TO CAD FORMAT AS PER NG-89-0794

DRAWING RELEASE RECORD

DAEC INSERVICE INSPECTION ASME SECTION XI ISOMETRIC



P&ID BECH-MI19
BECH DWG# DLA-6-1-H

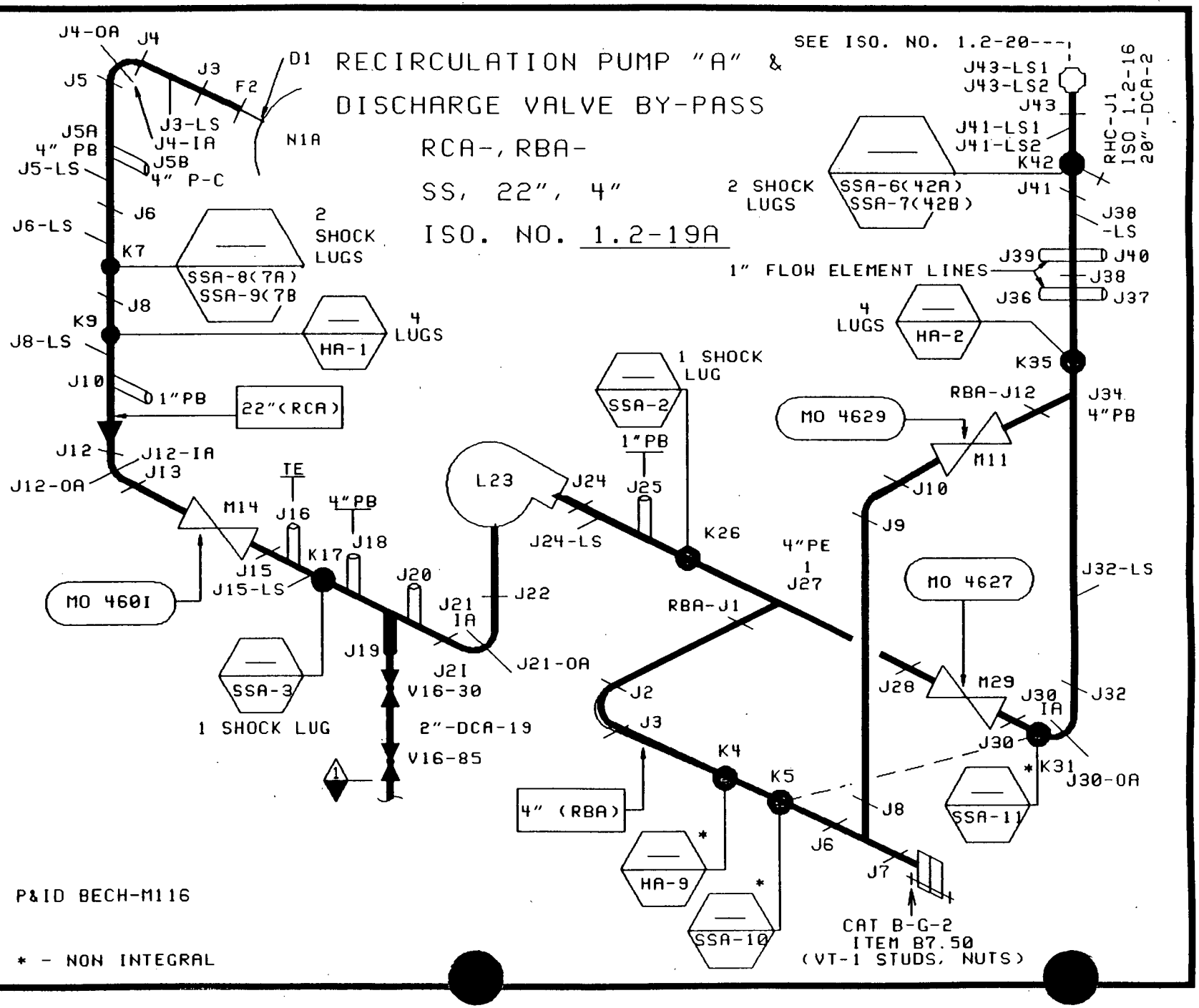
* - NON INTEGRAL

RESIDUAL HEAT REMOVAL-20B
RHD-
SS, CS, 20"
ISO. NO. 1.2-16

DRAWING RELEASE RECORD

REV	DATE	PREPARED	REVIEWED	APPROVED	PURPOSE
1	3-18-86	SML	SML	RCM	ISO'S FOR 2nd 10 YEAR PLAN
2	9-24-90				ISO'S TO CAD FORMAT AS PER NC-89-0794

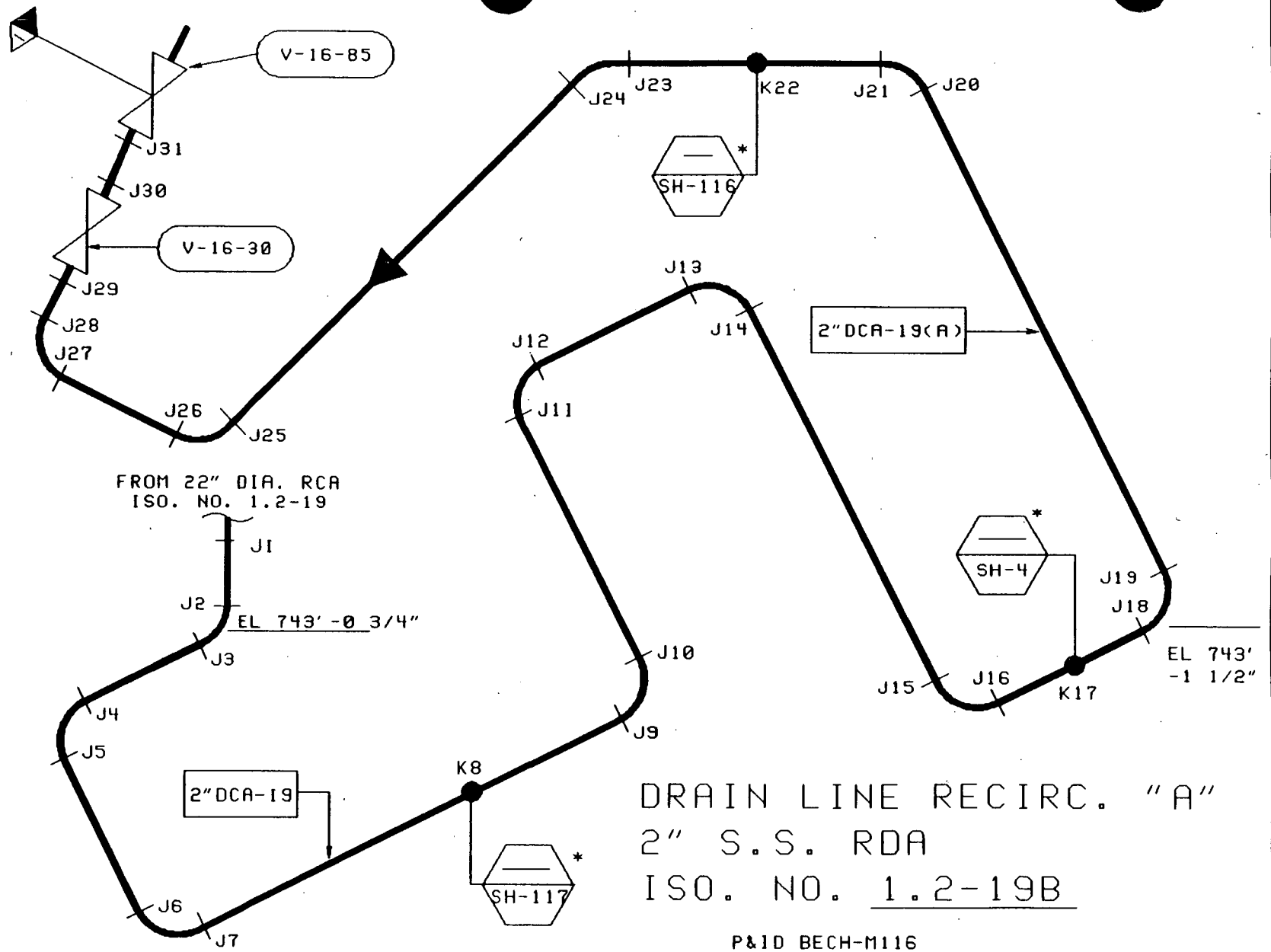
OAEC INSERVICE INSPECTION ASME SECTION XI ISOMETRIC



REV	DATE	PREPARED	REVIEWED	APPROVED	PURPOSE
1	3-19-86	SML	SML	RCM	ISO'S FOR 2nd 10 YEAR PLAN
2	4-24-90				ISO'S TO CAD FORMAT AS PER NG-89-0794

DRAWING RELEASE RECORD

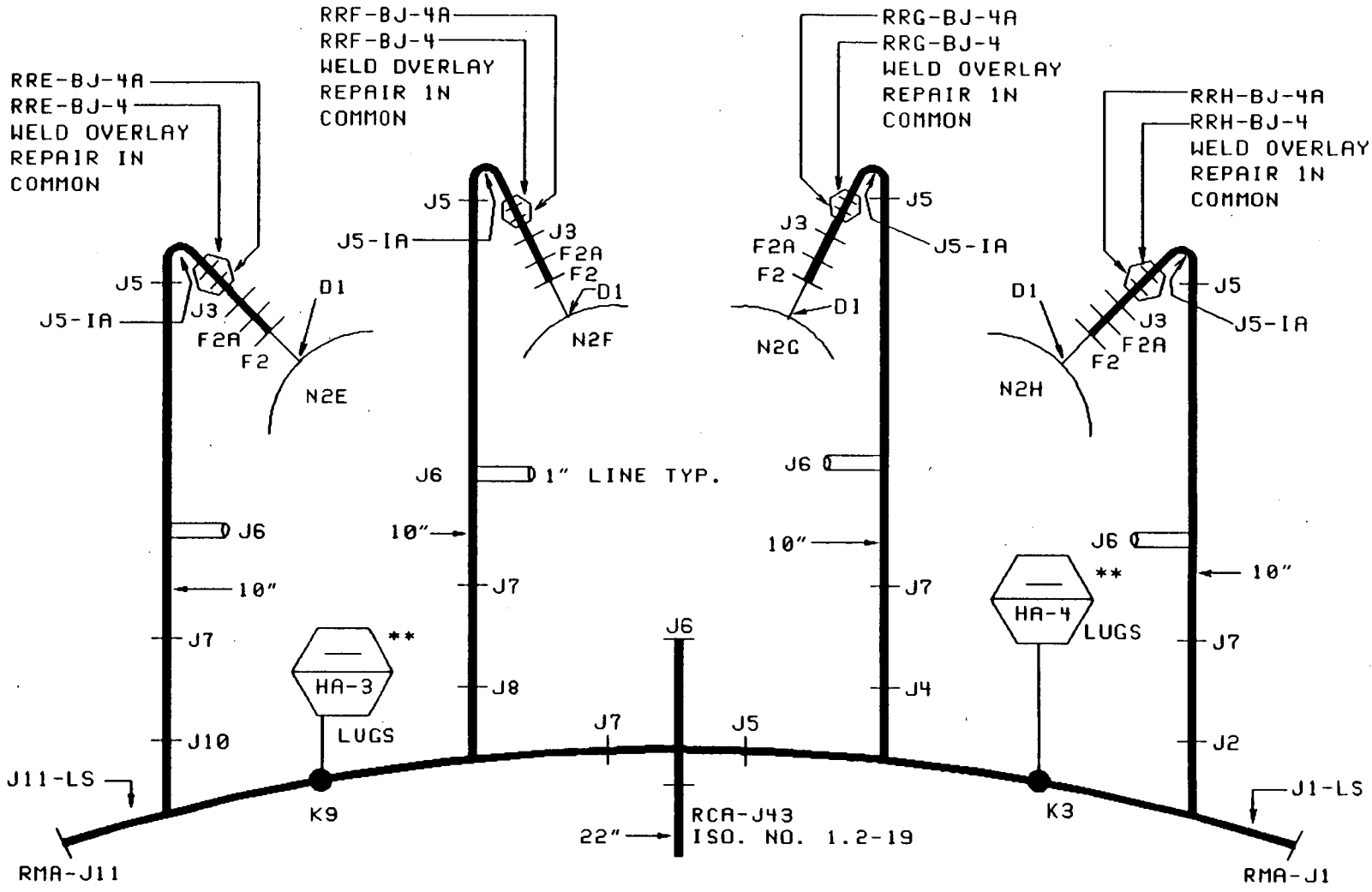
DAEC INSERVICE INSPECTION ASME SECTION XI ISOMETRIC



DRAWING RELEASE RECORD

REV	DATE	PREPARED	REVIEWED	APPROVED	PURPOSE
1	3-19-86	SML	SML	RCM	ISO'S FOR 2nd 10 YEAR PLAN
2	9-24-90				ISO'S TO CAD FORMAT AS PER NG-89-0794

OAEC INSERVICE INSPECTION ASME SECTION XI ISOMETRIC



RECIRCULATION MANIFOLD "A" & RISERS E, F, G, H

RMA-, RRE-, RRF-, RRG-, RRH-

SS, 16", 10"

ISO. NO. 1.2-20

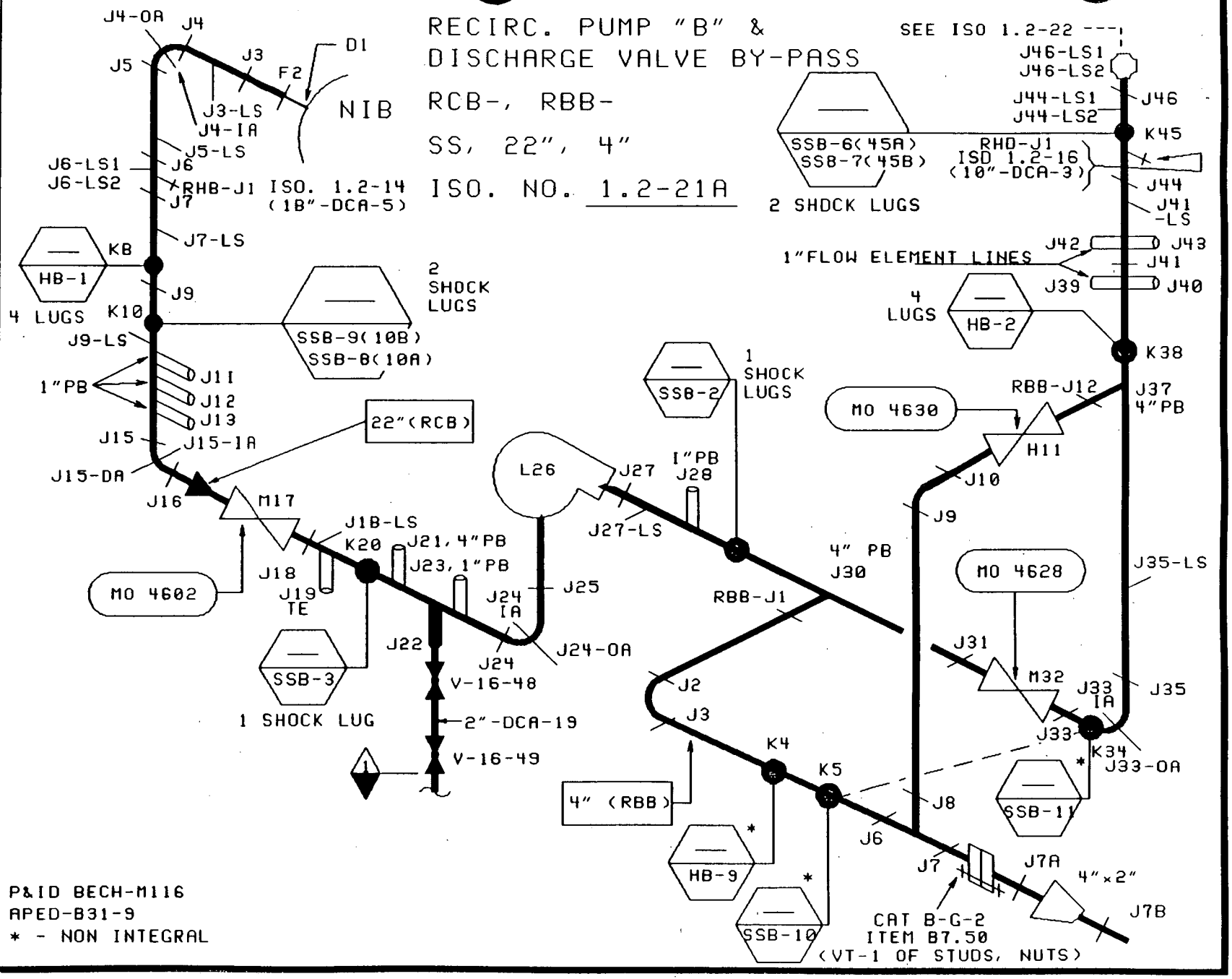
P&ID BECH-M116
APED-B31-9

** - LUG EXEMPT <5/8"

REV	DATE	PREPARED	REVIEWED	APPROVED	PURPOSE
1	3-20-86	STL	STL	RCM	ISO'S FOR 2nd 10 YEAR PLAN
2	9-24-90				ISO'S TO CAD FORMAT AS PER NC-89-0794

DRAWING RELEASE RECORD

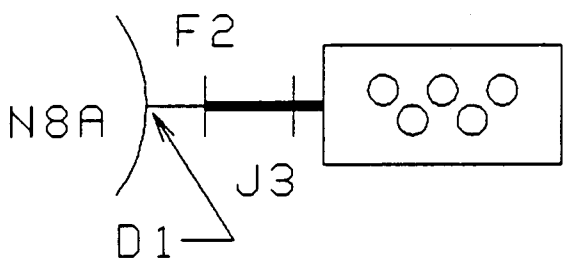
DAEC INSERVICE INSPECTION ASME SECTION XI ISOMETRIC



REV	DATE	PREPARED	REVIEWED	APPROVED	PURPOSE
1	3-21-86	SML	SML	RCM	ISO'S FOR 2nd 10 YEAR PLAN
2	8-2-89	P	CCP	KKM	ADDED HYDROGEN MONITOR, OCP1434
3	9-24-90				ISO'S TO CAD FORMAT AS PER NG-89-0794

DRAWING RELEASE RECORD

DAEC INSERVICE INSPECTION ASME SECTION XI ISOMETRIC



JET PUMP INSTRUMENTATION "A"

JPA-

SS, 4"

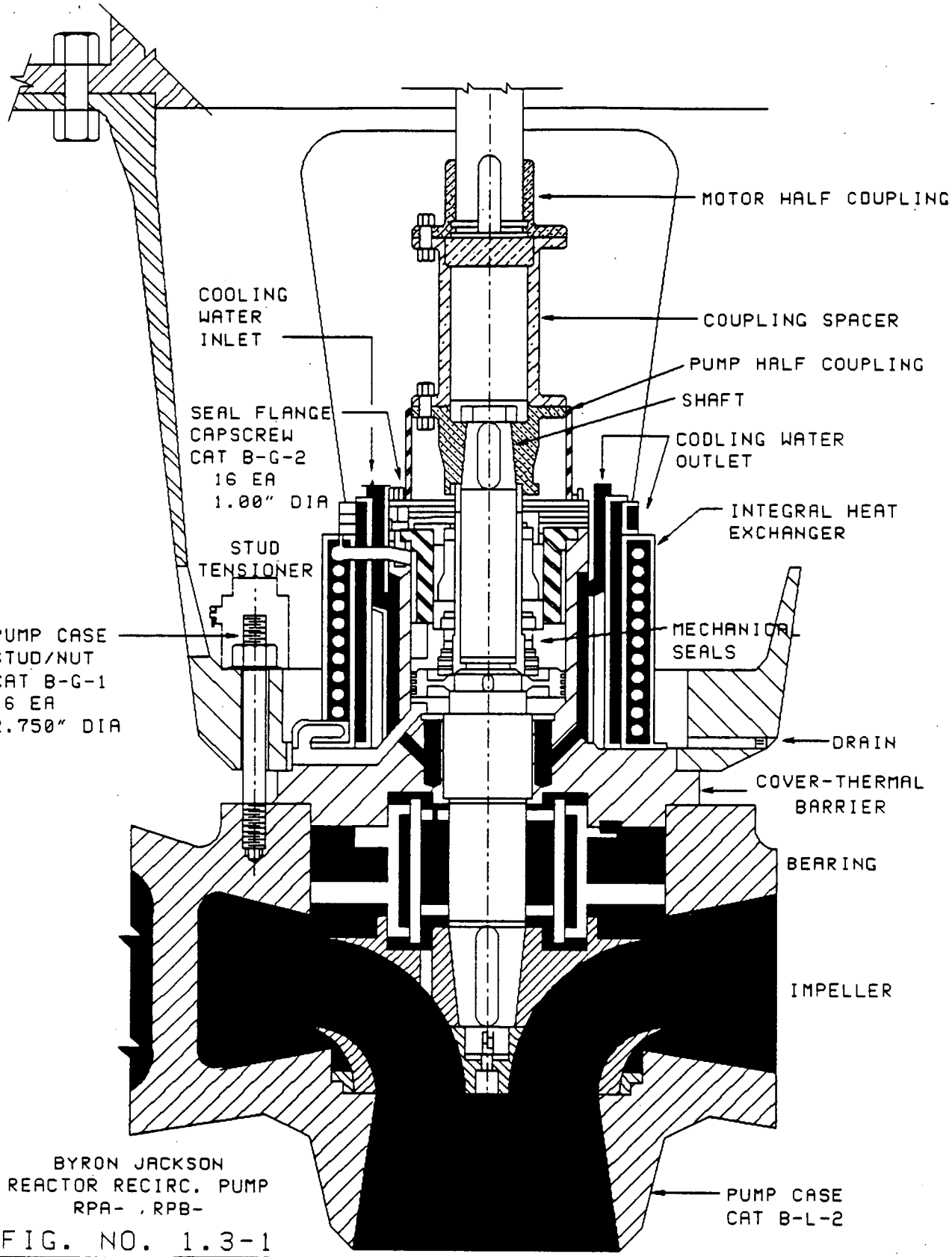
ISO. NO. 1.2-25

P&ID BECH-M115
APED-B11-2655-105-4

DRAWING RELEASE RECORD

REV	DATE	PREPARED	REVIEWED	APPROVED	PURPOSE
1	3-26-86	SML	SML	RCM	ISO'S FOR 2nd 10 YEAR PLAN
2	9-24-90				ISO'S TO CAD FORMAT AS PER NC-85-0794

DAEC INSERVICE INSPECTION ASME SECTION XI ISOMETRIC

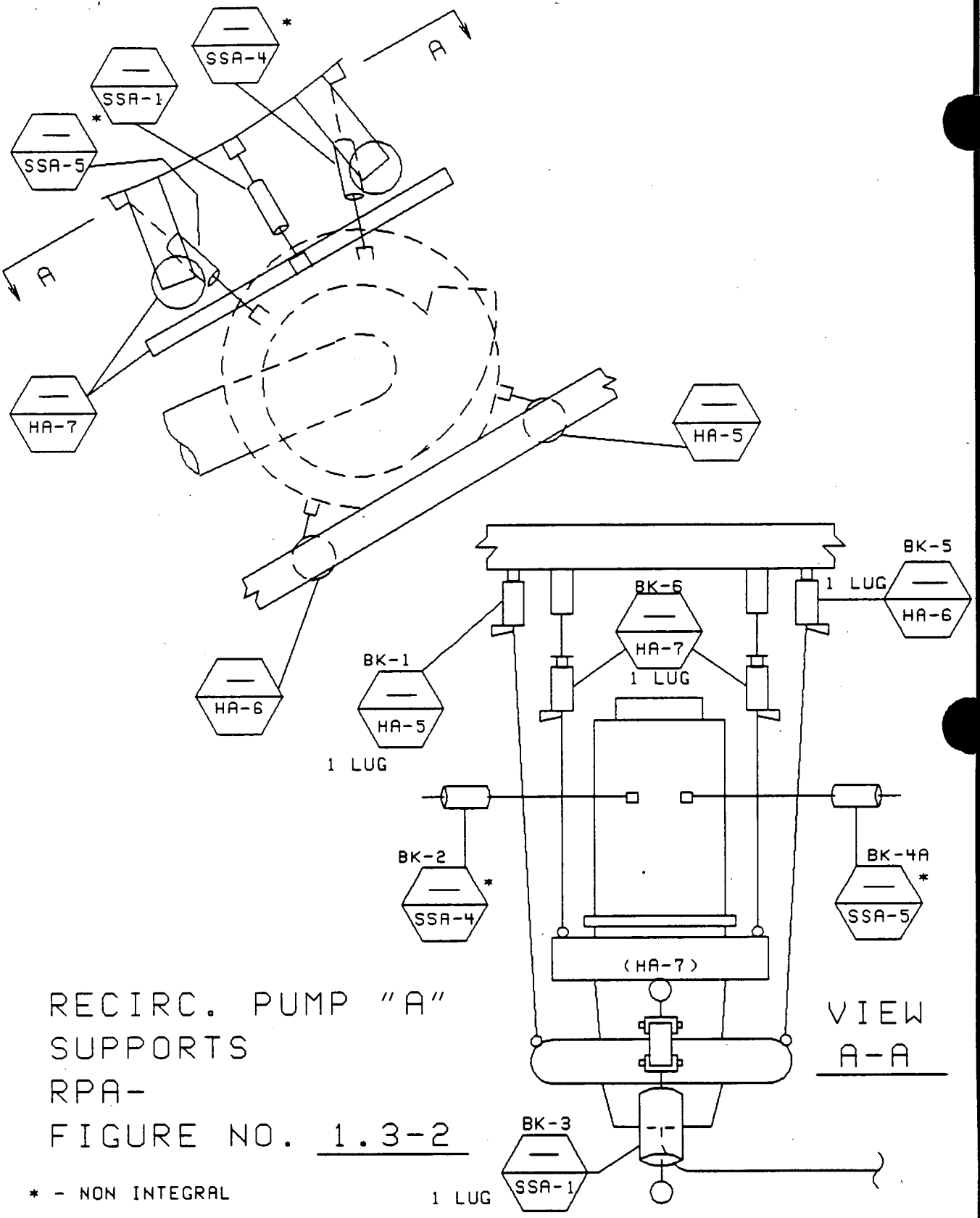


BYRON JACKSON
REACTOR RECIRC. PUMP
RPA- , RPB-

FIG. NO. 1.3-1

DRAWING RELEASE RECORD

REV	DATE	PREPARED	REVIEWED	APPROVED	PURPOSE
1	10-26-87	JPM	RCM	REL	ISO'S FOR 2nd 10 YEAR PLAN
2	9-24-90				ISO'S TO CAD FORMAT AS PER NG-99-0794

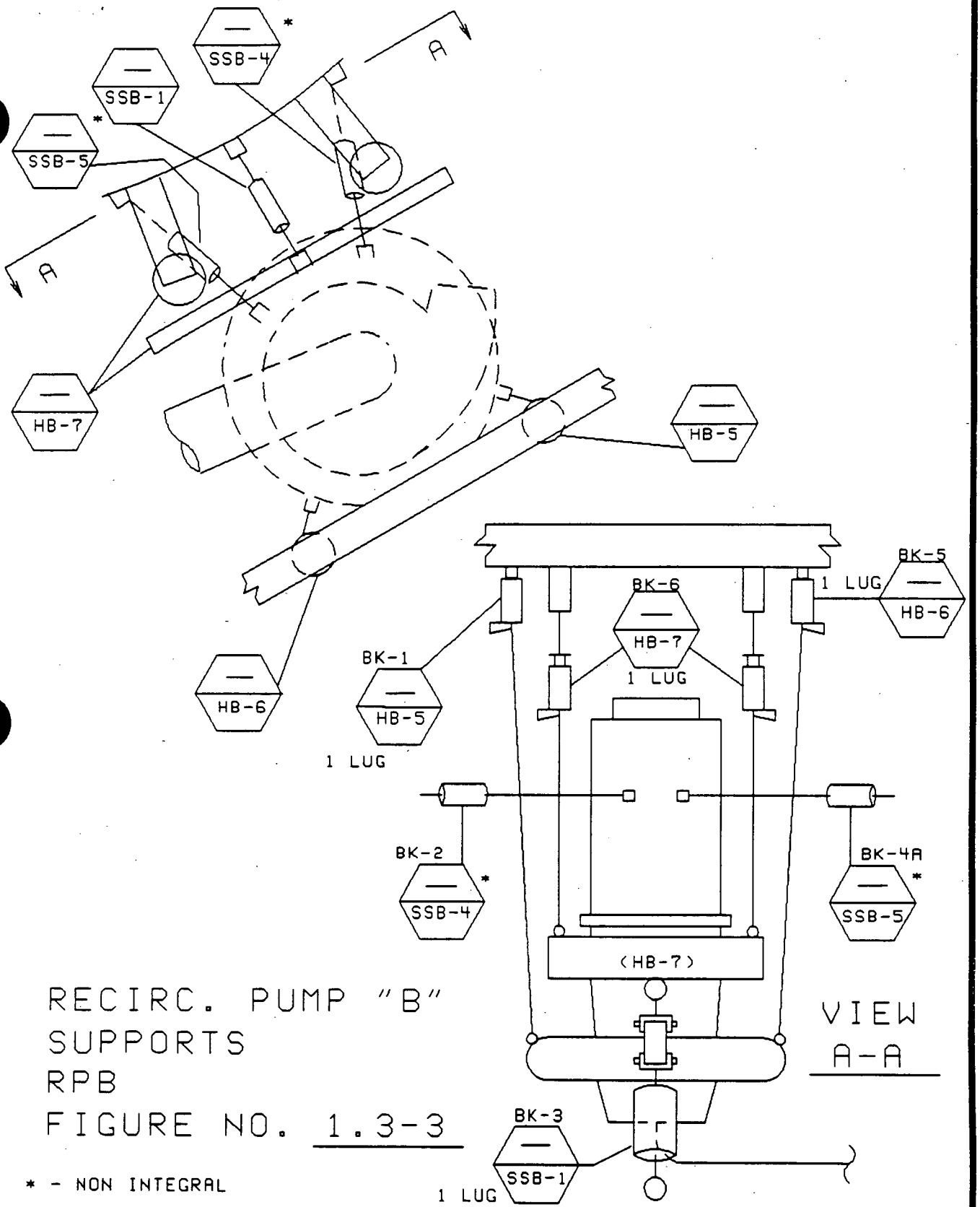


RECIRC. PUMP "A" SUPPORTS RPA- FIGURE NO. 1.3-2

VIEW A-A

* - NON INTEGRAL

DRAWING RELEASE RECORD					
REV	DATE	PREPARED	REVIEWED	APPROVED	PURPOSE
1	10-26-87	JPM	RCM	REL	ISO'S FOR 2nd 10 YEAR PLAN
2	9-24-90				ISO'S TO CAD FORMAT AS PER NG-89-0794

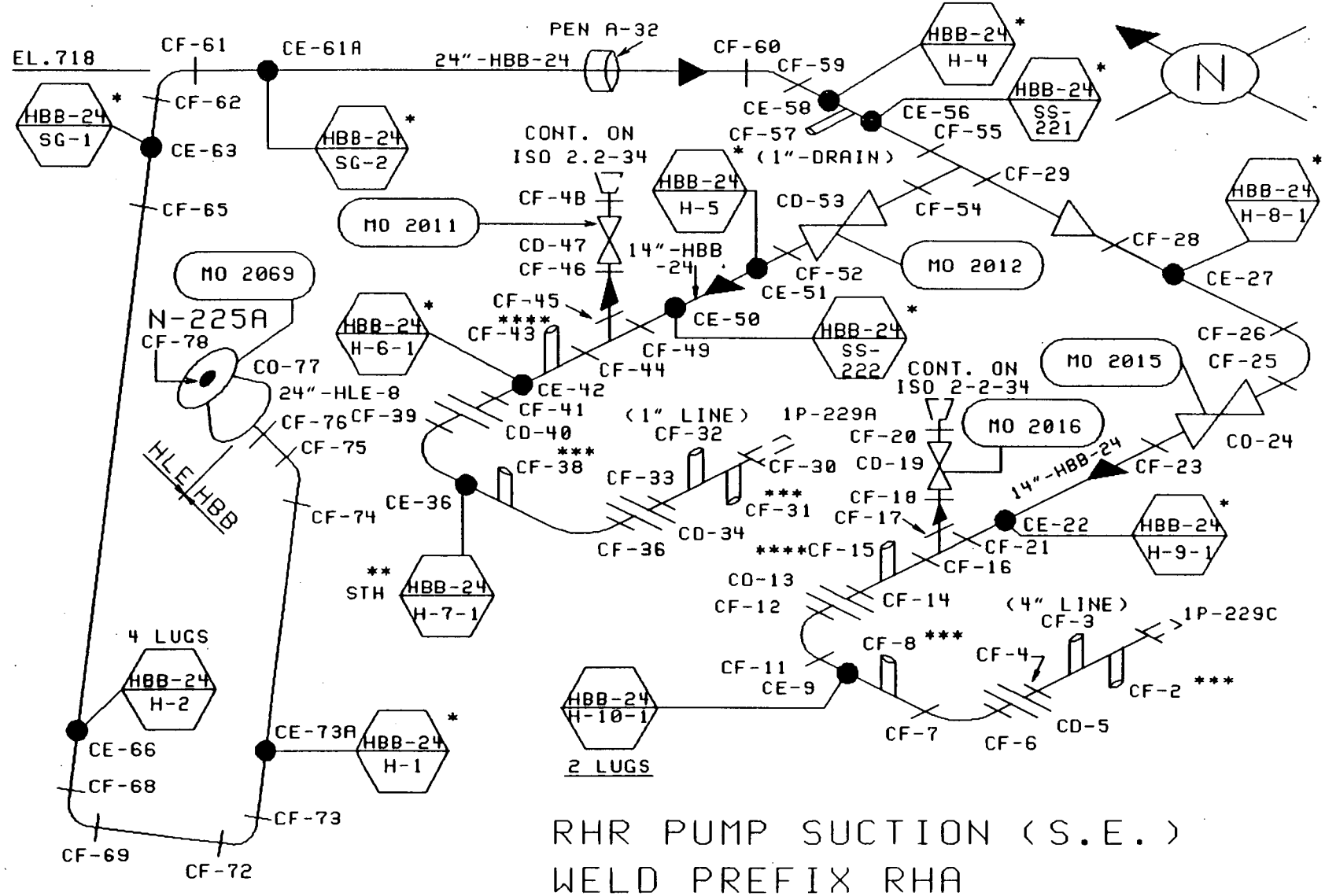


RECIRC. PUMP "B" SUPPORTS RPB FIGURE NO. 1.3-3

VIEW A-A

* - NON INTEGRAL

DRAWING RELEASE RECORD					
REV	DATE	PREPARED	REVIEWED	APPROVED	PURPOSE
1	10-26-87	JRM	RCM	REL	ISO'S FOR 2nd 10 YEAR PLAN
2	9-24-90				ISO'S TO CAD FORMAT AS PER NG-89-0794



* - NON INTEGRAL
** - EXEMPT < 3/4"
*** - INST. LINE
**** - PSV LINE (1")

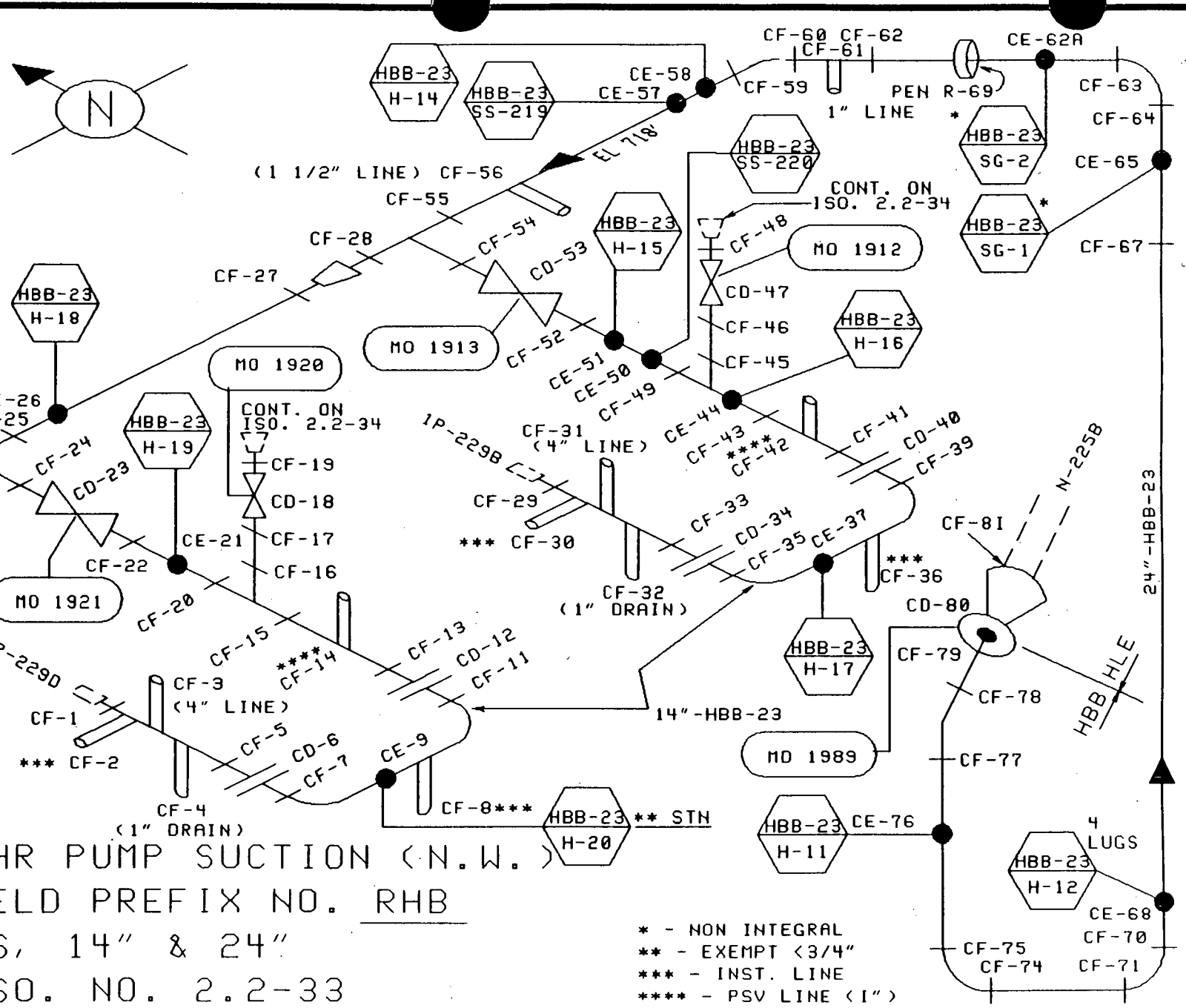
RHR PUMP SUCTION (S.E.)
WELD PREFIX RHA
CS, 14" & 24"
ISO. NO. 2.2-32

P&ID ISI-M120
MECH. DWG# M-712-H

REV	DATE	PREPARED	REVIEWED	APPROVED	PURPOSE
1	4-21-86	SML	SDL	RCM	ISO'S FOR 2nd 10 YEAR PLAN
2	9-18-90				ISO'S TO CAD FORMAT AS PER NG-89-0794

DRAWING RELEASE RECORD

DAEC INSERVICE INSPECTION ASME SECTION XI ISOMETRIC



RHR PUMP SUCTION (N.W.)

WELD PREFIX NO. RHB

CS, 14" & 24"

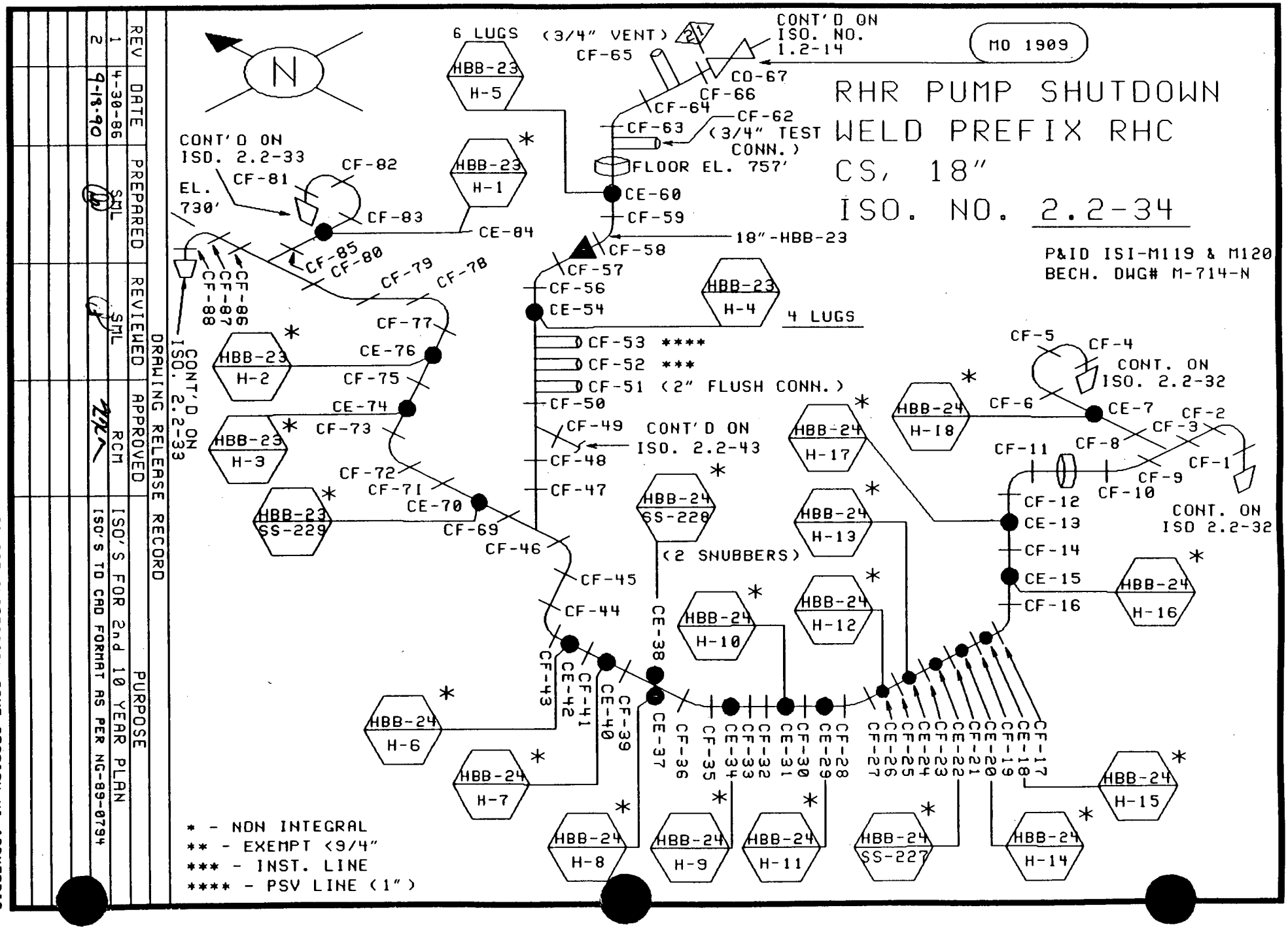
ISO. NO. 2.2-33

* - NON INTEGRAL
** - EXEMPT <3/4"
*** - INST. LINE
**** - PSV LINE (1")

DRAWING RELEASE RECORD

REV	DATE	PREPARED	REVIEWED	APPROVED	PURPOSE
1	4-25-86	SML	SML	RCM	ISO'S FOR 2nd 10 YEAR PLAN
2	9-18-90				ISO'S TO CAD FORMAT AS PER NG-8S-0794

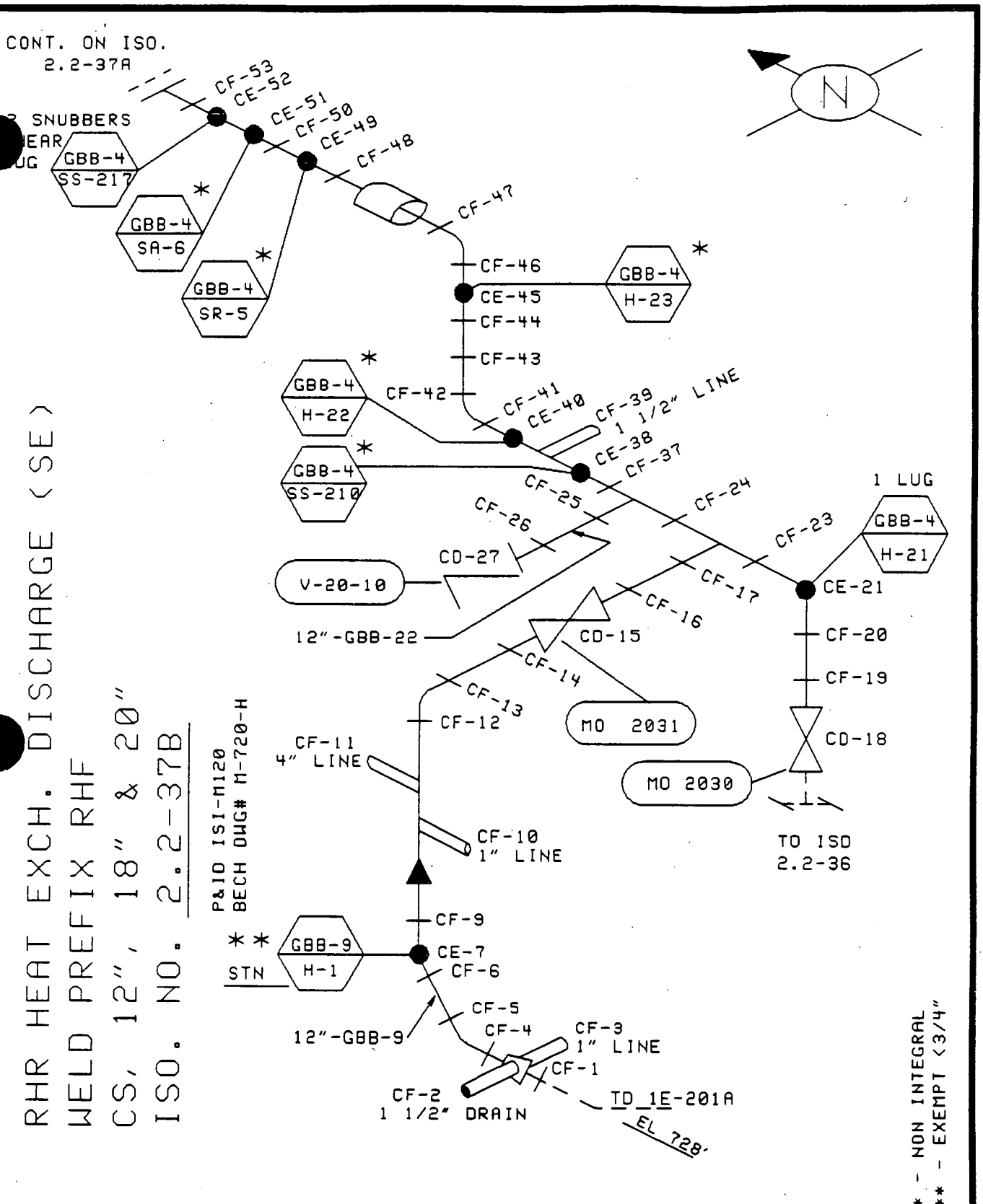
DAEC INSERVICE INSPECTION ASME SECTION XI ISOMETRIC



REV	DATE	PREPARED	REVIEWED	APPROVED	PURPOSE
1	4-30-86	SML	SML	RCM	ISO'S FOR 2nd 10 YEAR PLAN
2	9-18-90				ISO'S TO CAD FORMAT AS PER NG-89-0794

DRAWING RELEASE RECORD

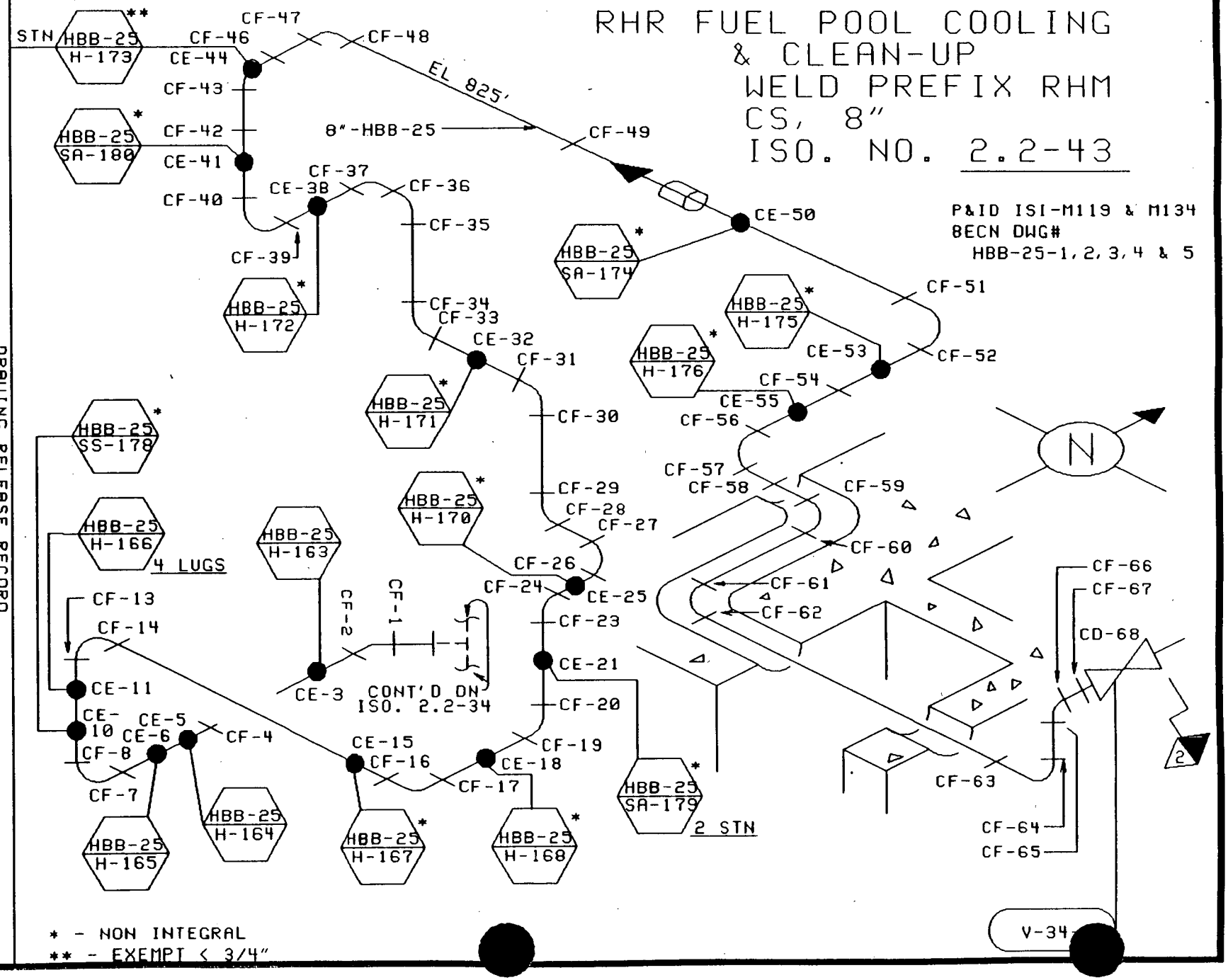
DAEC INSERVICE INSPECTION ASME SECTION XI ISOMETRIC



DRAWING RELEASE RECORD					
REV	DATE	PREPARED	REVIEWED	APPROVED	PURPOSE
1	6-17-86	SML	SML	RCM	ISO'S FOR 2nd 10 YEAR PLAN
2	9-18-90				ISO'S TO CAD FORMAT AS PER NG-89-0794

RHR FUEL POOL COOLING & CLEAN-UP
WELD PREFIX RHM
CS, 8"
ISO. NO. 2.2-43

P&ID ISI-M119 & M134
BECN DWG#
HBB-25-1, 2, 3, 4 & 5

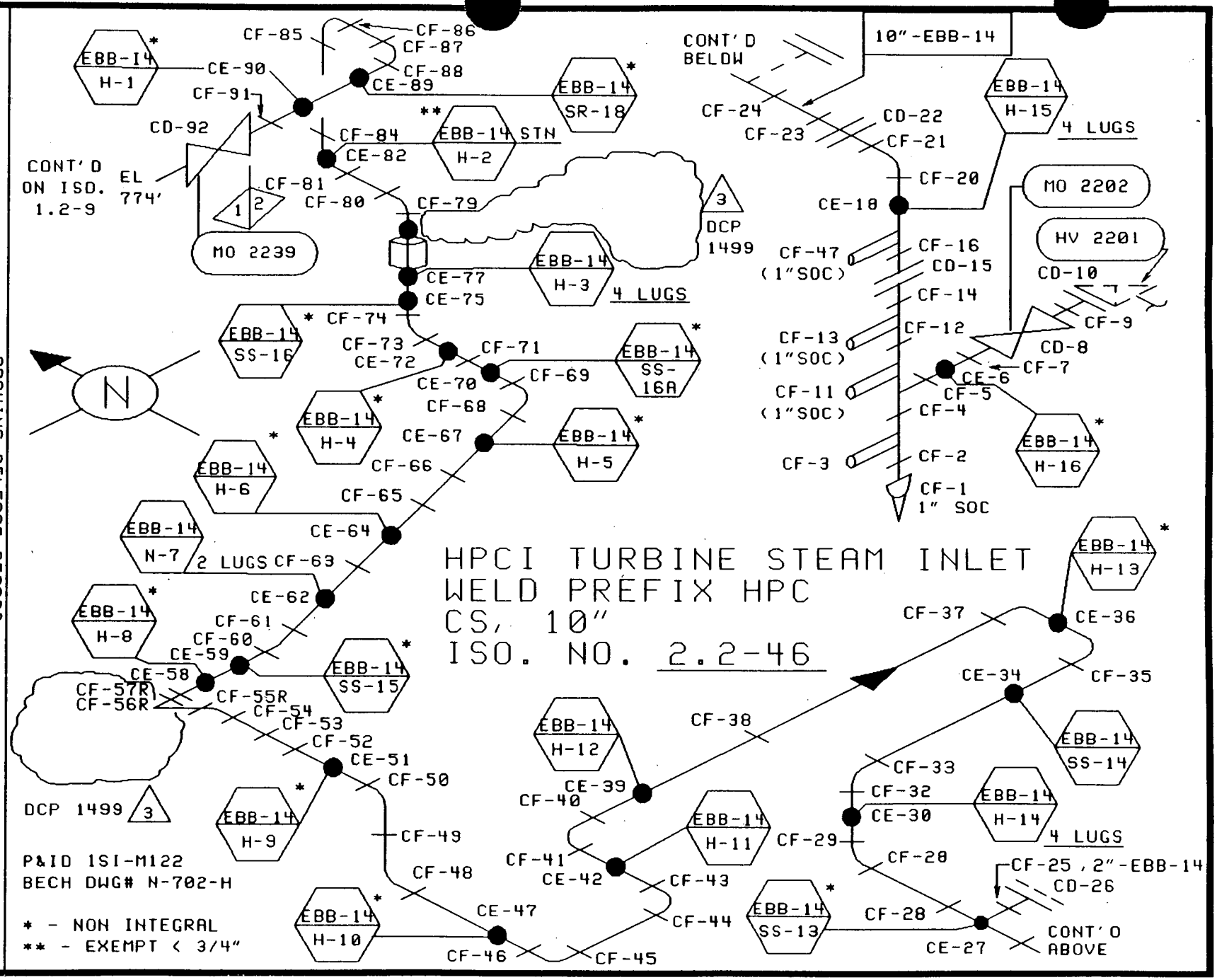


* - NON INTEGRAL
** - EXEMPT < 3/4"

REV	DATE	PREPARED	REVIEWED	APPROVED	PURPOSE
1	6-23-86	SML	SML	RCM	ISO'S FOR 2nd 10 YEAR PLAN
2	4-18-90				ISO'S TO CAD FORMAT AS PER NG-89-0754

DRAWING RELEASE RECORD

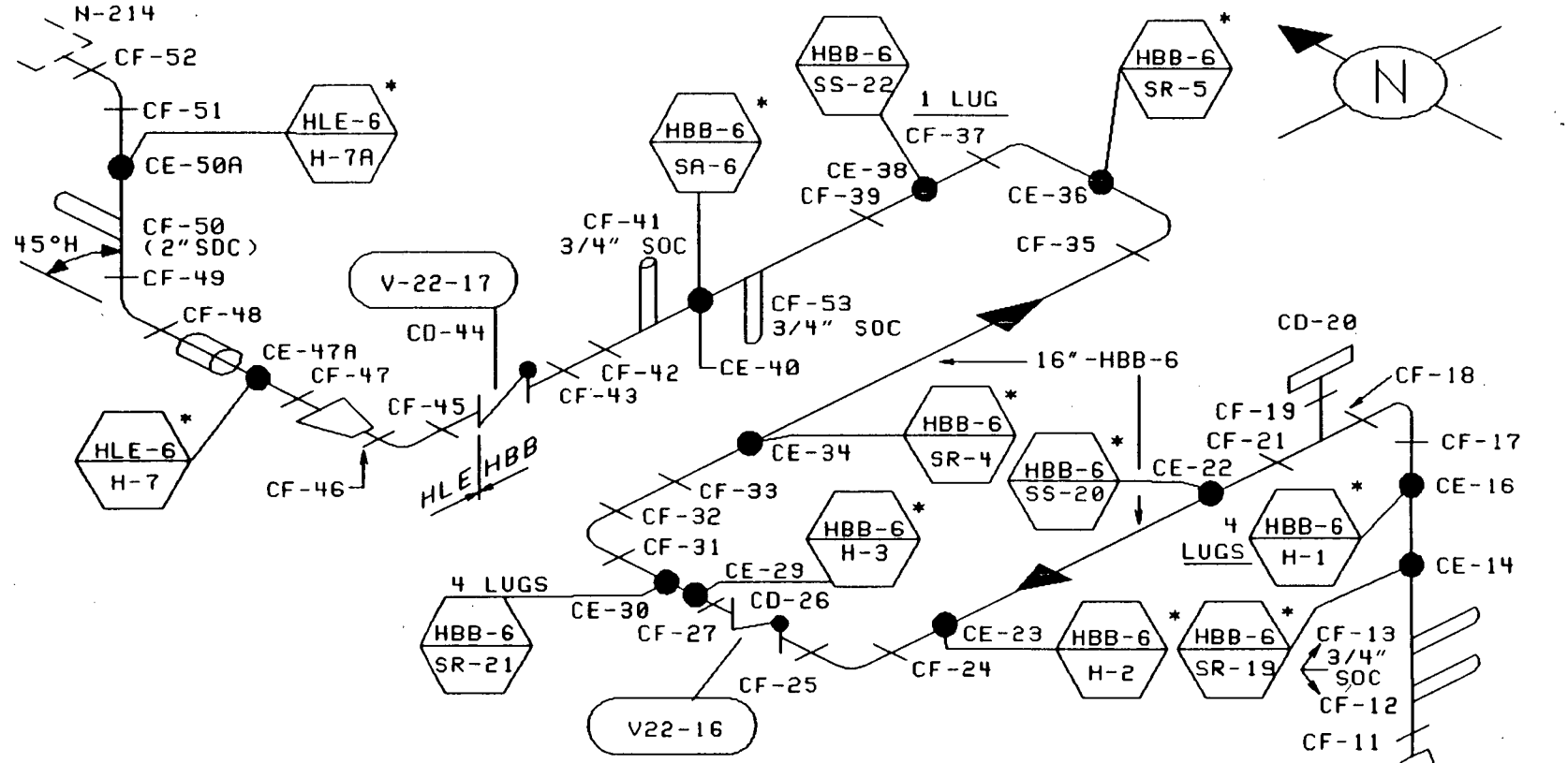
DAEC INSERVICE INSPECTION ASME SECTION XI ISOMETRIC



REV	DATE	PREPARED	REVIEWED	APPROVED	PURPOSE
1	7-8-86	SML	SML	RCM	ISO'S FOR 2nd 10 YEAR PLAN
2	9-18-90				ISO'S TO CAD FORMAT AS PER NG-89-0754
3	9-18-90				DCP 1499, REMOVAL OF CROSSTIE TO RHR LINE

DRAWING RELEASE RECORD

DAEC INSERVICE INSPECTION ASME SECTION XI ISOMETRIC



HPCI TURBINE STEAM EXHAUST
WELD PREFIX HPD
CS, 20", 18" & 16"
ISO. NO. 2.2-47

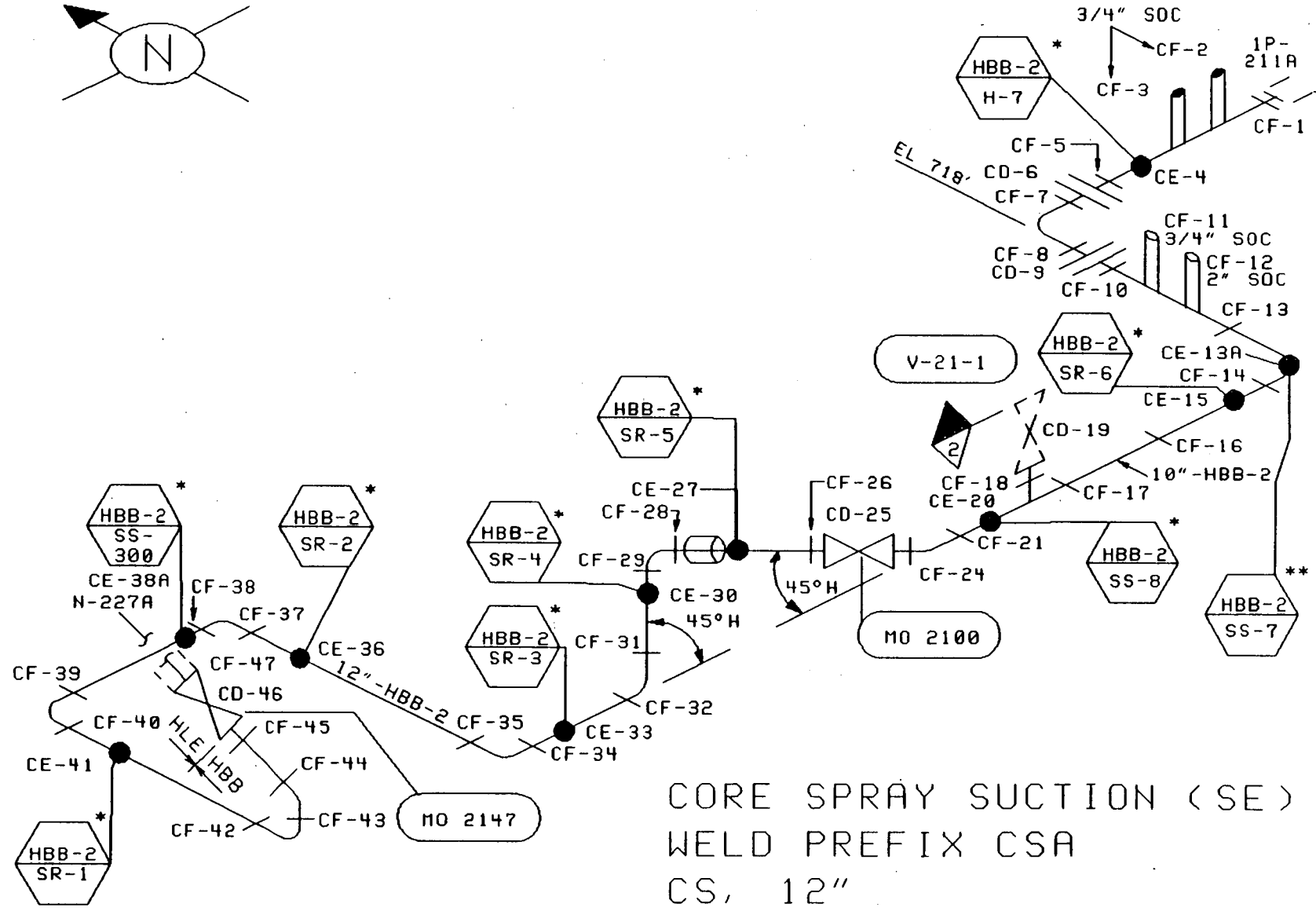
P&ID ISI-M122
BECH. DWG# M-703-H

* - NON INTEGRAL

REV	DATE	PREPARED	REVIEWED	APPROVED	PURPOSE
1	7-9-86	SAL	SAL	RCM	ISO'S FOR 2nd 10 YEAR PLAN
2	9-18-90				ISO'S TO CAD FORMAT AS PER NG-89-0784

DRAWING RELEASE RECORD

DAEC INSERVICE INSPECTION ASME SECTION XI ISOMETRIC



CORE SPRAY SUCTION (SE)
WELD PREFIX CSA
CS, 12"
ISO. NO. 2.2-48

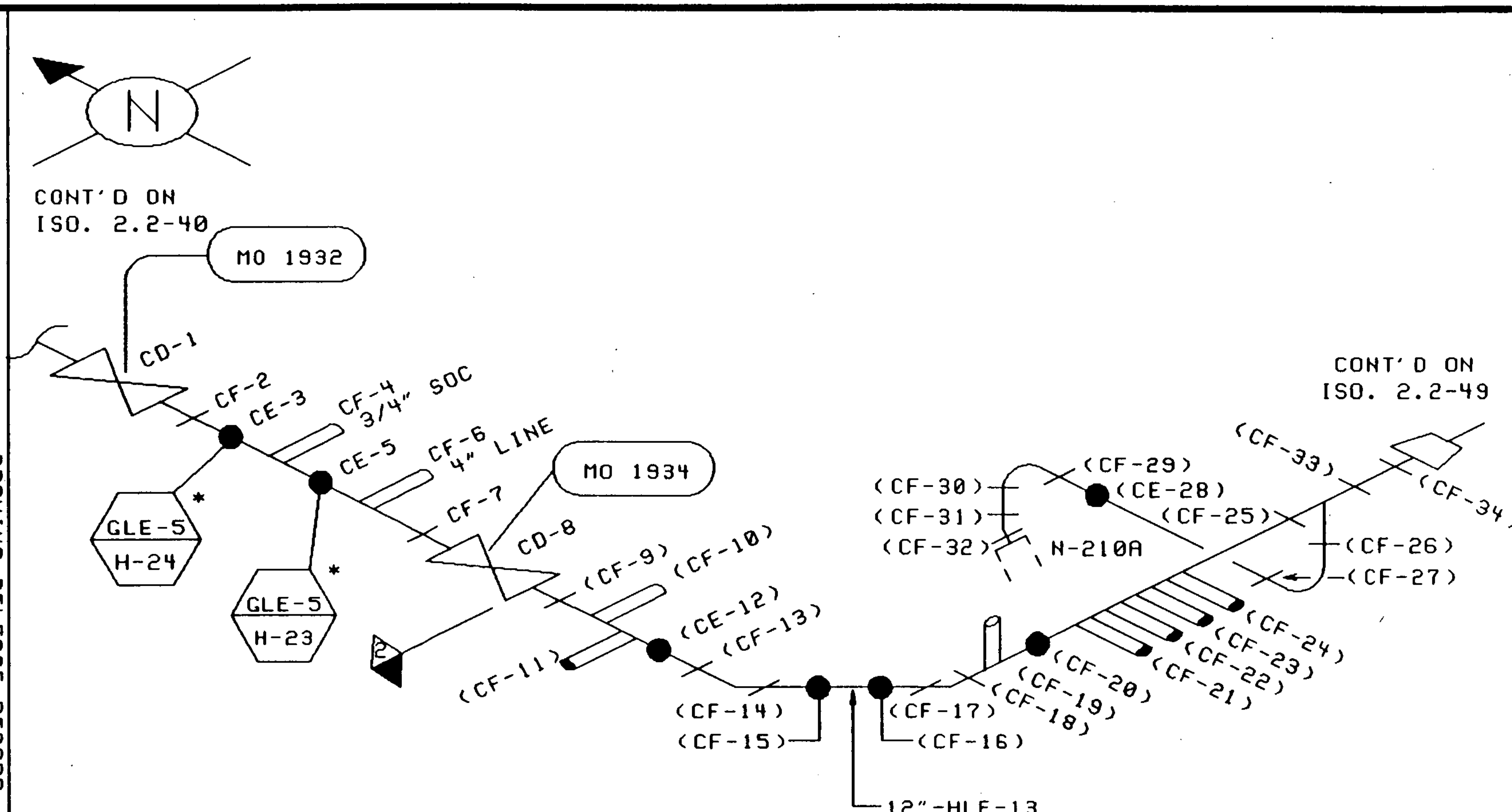
* - NON INTEGRAL
** - EXEMPT (3/4"

P&ID 1SI-M121
BECH DWG# M-708-H

REV	DATE	PREPARED	REVIEWED	APPROVED	PURPOSE
1	7-10-86	SML	SML	RCM	ISO'S FOR 2nd 10 YEAR PLAN
2	9-18-90				ISO'S TO CAD FORMAT AS PER NG-89-0794

DRAWING RELEASE RECORD

DAEC INSERVICE INSPECTION ASME SECTION XI ISOMETRIC



CORE SPRAY DISCHARGE (SE CONT.)
WELD PREFIX CSC
CS, 4" & 12"
ISO. NO. 2.2-50

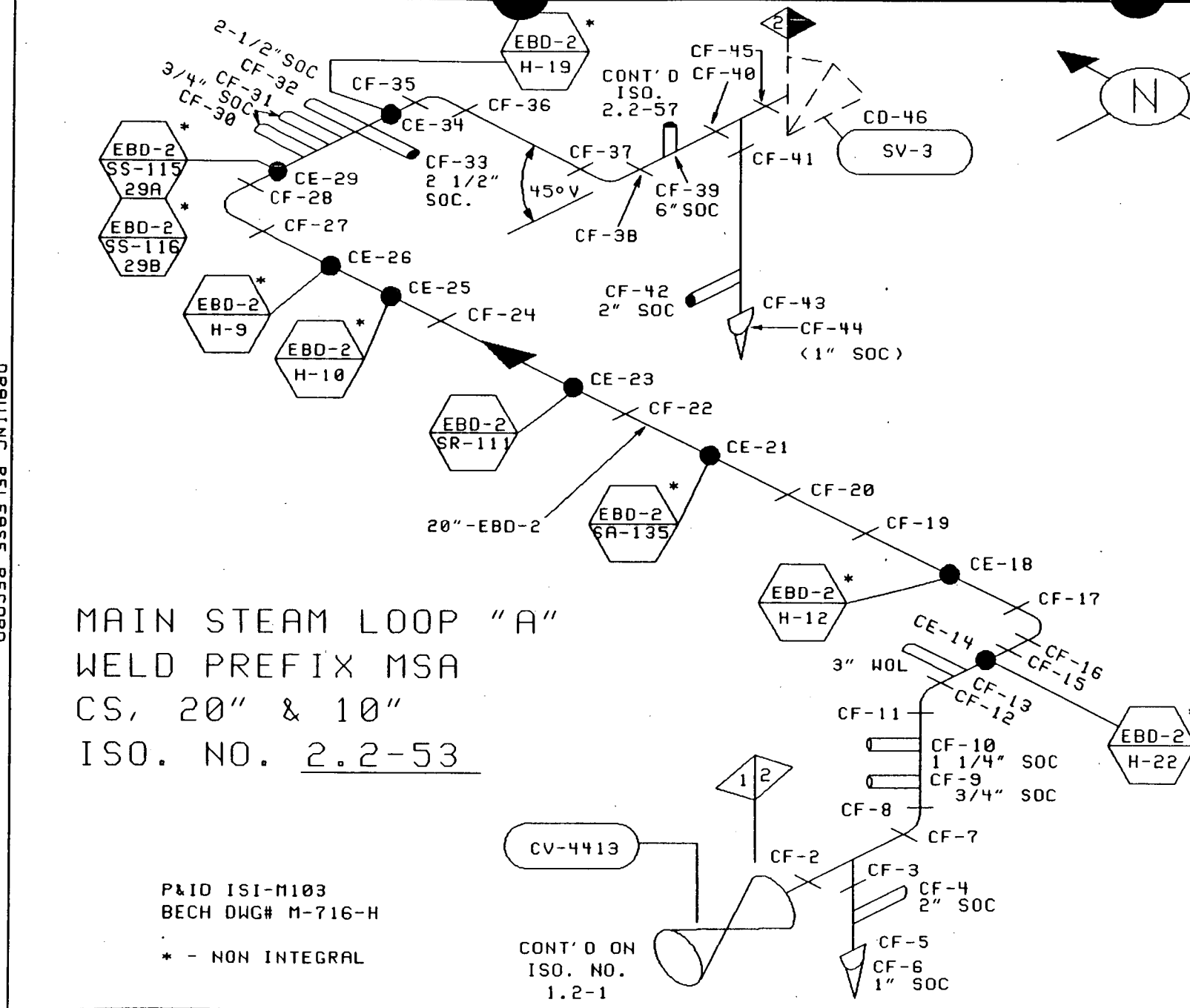
* - NON INTEGRAL
( ) - 1st TEN YEAR BOUNDARY WELDS

P&ID ISI-M119
BECN DWG# M-710-H

DRAWING RELEASE RECORD

REV	DATE	PREPARED	REVIEWED	APPROVED	PURPOSE
1	7-11-86	SML	SML	RCM	ISO'S FOR 2nd 10 YEAR PLAN
2	9-18-90	[signature]	[signature]	[signature]	ISO'S TO CAD FORMAT AS PER NG-89-0794

DAEC INSERVICE INSPECTION ASME SECTION XI ISOMETRIC



MAIN STEAM LOOP "A"
WELD PREFIX MSA
CS, 20" & 10"
ISO. NO. 2.2-53

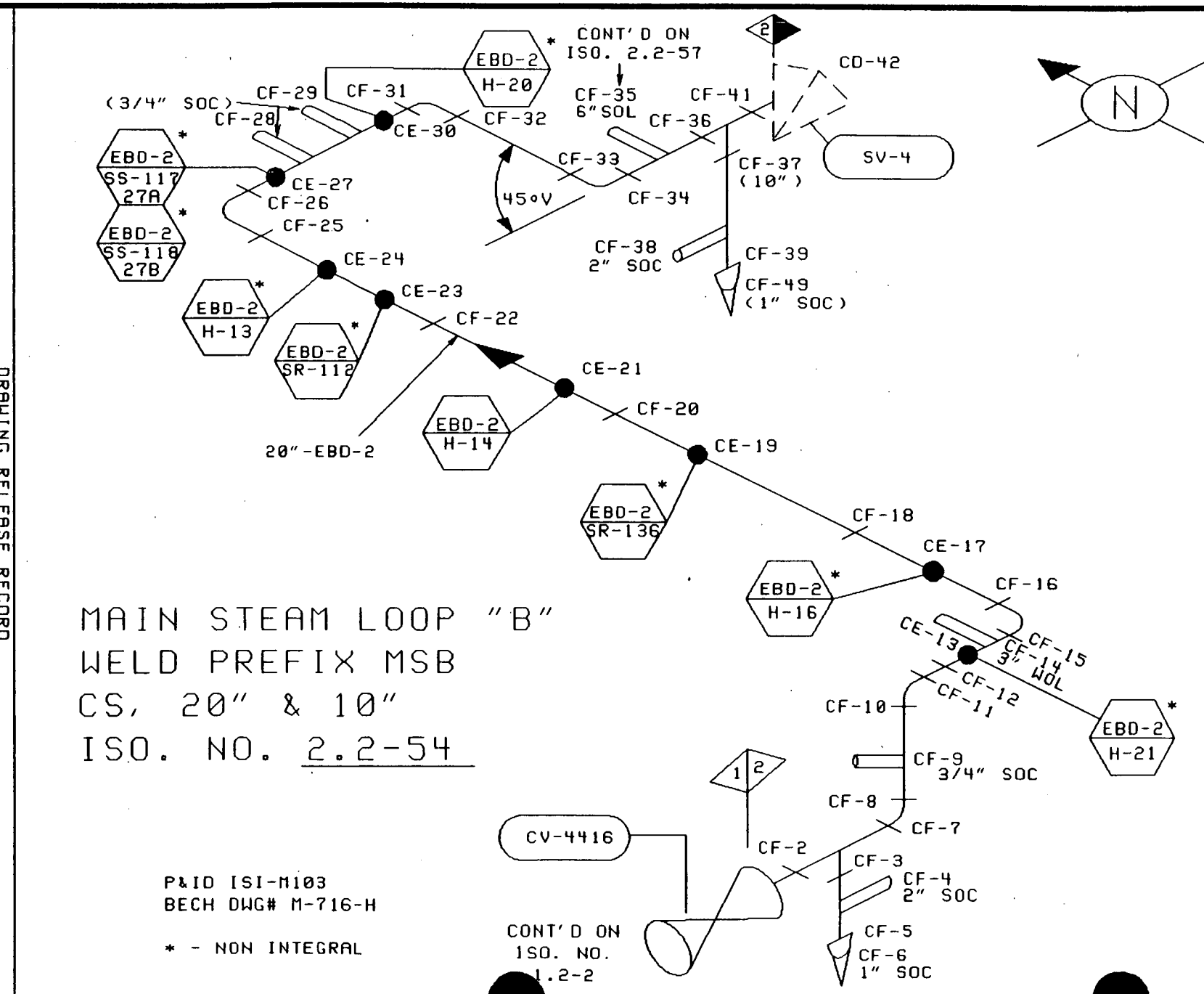
P&ID ISI-M103
BECH DWG# M-716-H

* - NON INTEGRAL

REV	DATE	PREPARED	REVIEWED	APPROVED	PURPOSE
1	7-14-86	SML	SML	RCM	ISO'S FOR 2nd 10 YEAR PLAN
2	9-18-90				ISO'S TO CAD FORMAT AS PER NG-89-0794

DRAWING RELEASE RECORD

DAEC INSERVICE INSPECTION ASME SECTION XI ISOMETRIC



MAIN STEAM LOOP "B"
WELD PREFIX MSB
CS, 20" & 10"
ISO. NO. 2.2-54

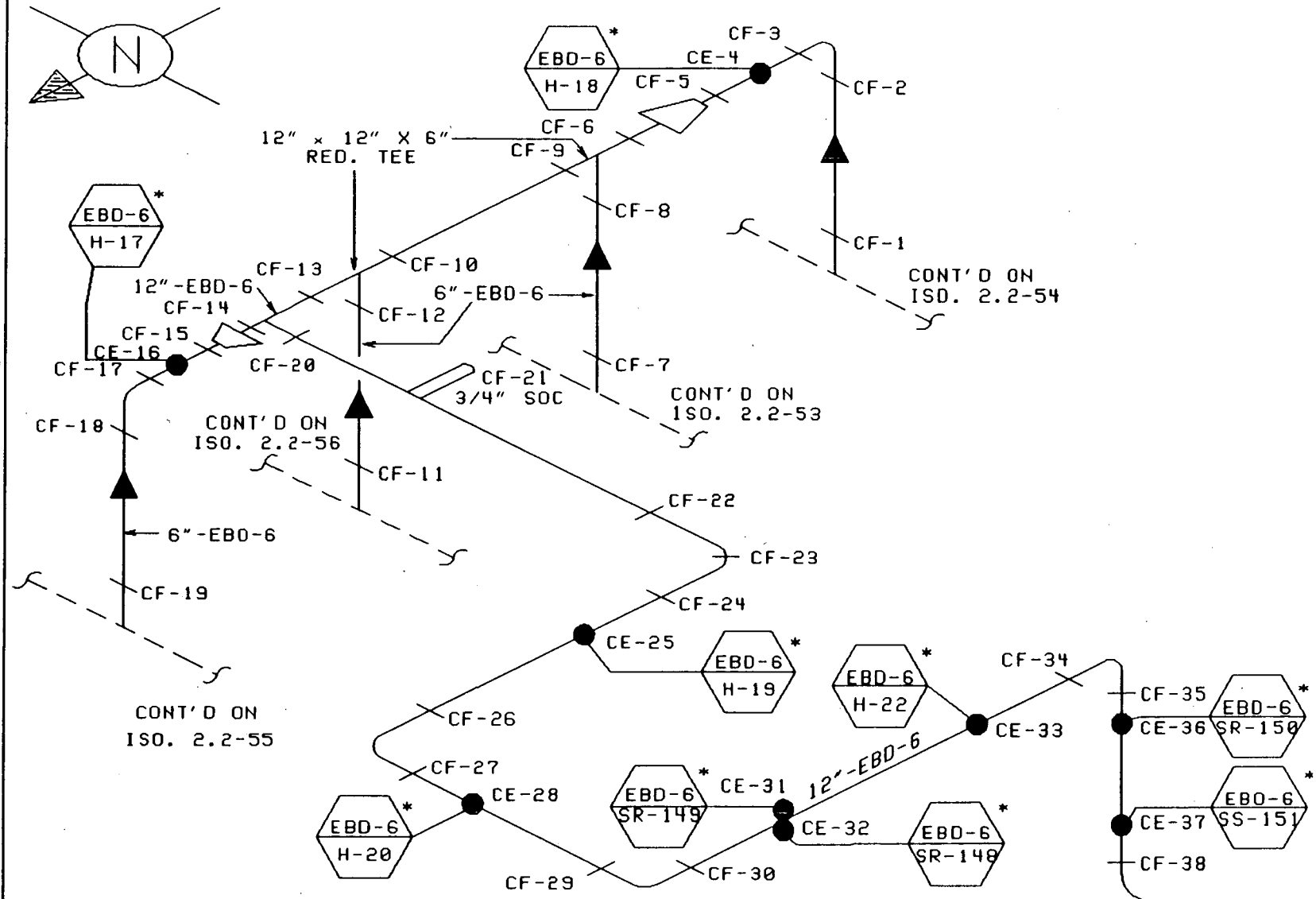
P&ID ISI-M103
BECH DWG# M-716-H

* - NON INTEGRAL

DRAWING RELEASE RECORD

REV	DATE	PREPARED	REVIEWED	APPROVED	PURPOSE
1	7-15-86	STL	STL	RCM	ISO'S FOR 2nd 10 YEAR PLAN
2	9/18-90				ISO'S TO CAD FORMAT AS PER NG-89-0794

DAEC INSERVICE INSPECTION ASME SECTION XI ISOMETRIC



MAIN STEAM BYPASS
WELD PREFIX MSE
CS, 12" & 6"
ISO. NO. 2.2-57

P&ID ISI-M103
BECH DWG# EBD-6-1H &2H

* - NON INTEGRAL

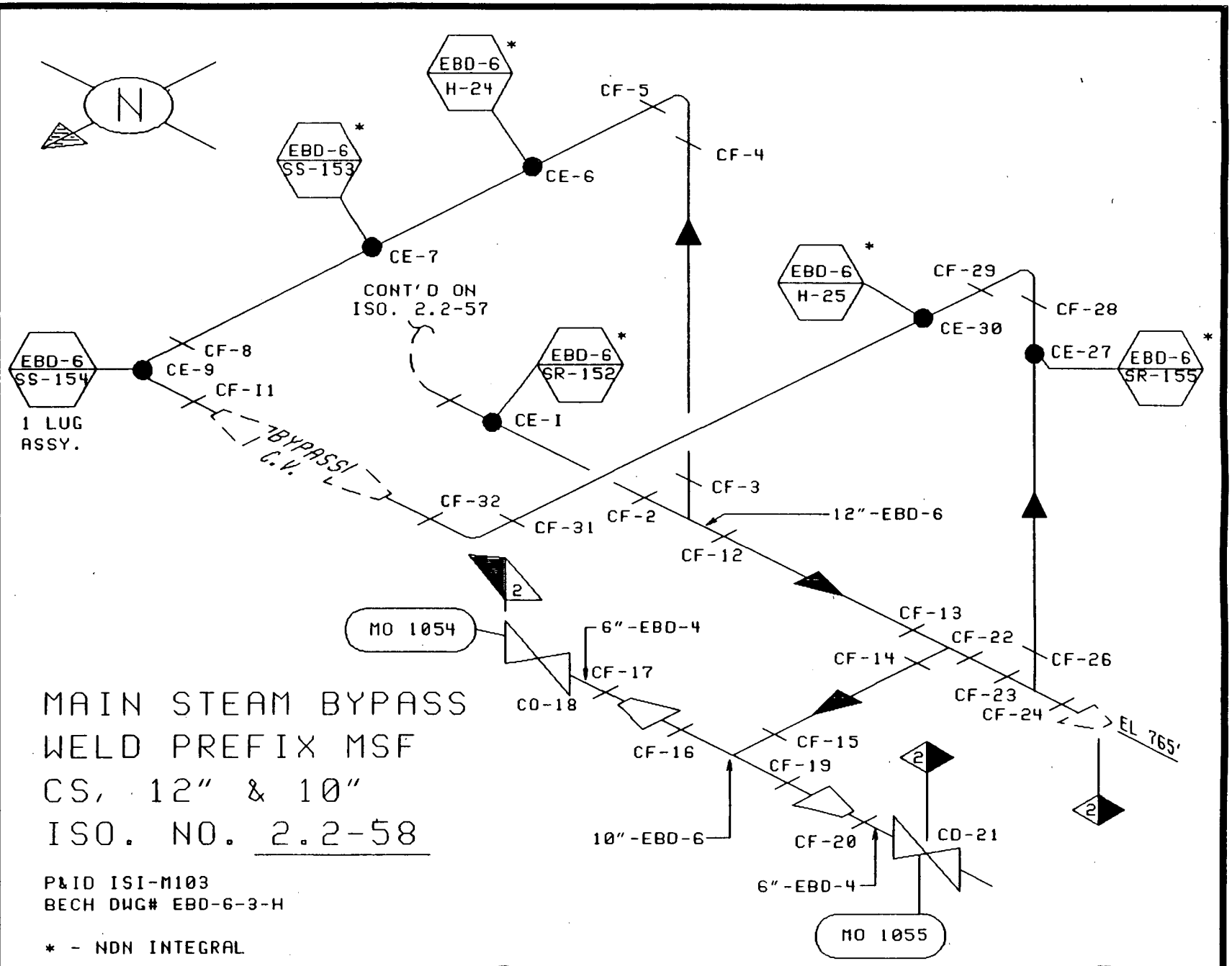
DRAWING RELEASE RECORD

REV	DATE	PREPARED	REVIEWED	APPROVED	PURPOSE
1	7-16-86	SAL	SAL	RCM	ISO'S FOR 2nd 10 YEAR PLAN
2	4-18-90				ISO'S TO CAD FORMAT AS PER NG-89-0794

DAEC INSERVICE INSPECTION ASME SECTION XI ISOMETRIC

DRAWING RELEASE RECORD

REV	DATE	PREPARED	REVIEWED	APPROVED	PURPOSE
1	7-16-86	SML	SML	RCM	ISO'S FOR 2nd 10 YEAR PLAN
2	9-18-90				ISO'S TO CAD FORMAT AS PER NG-89-0794

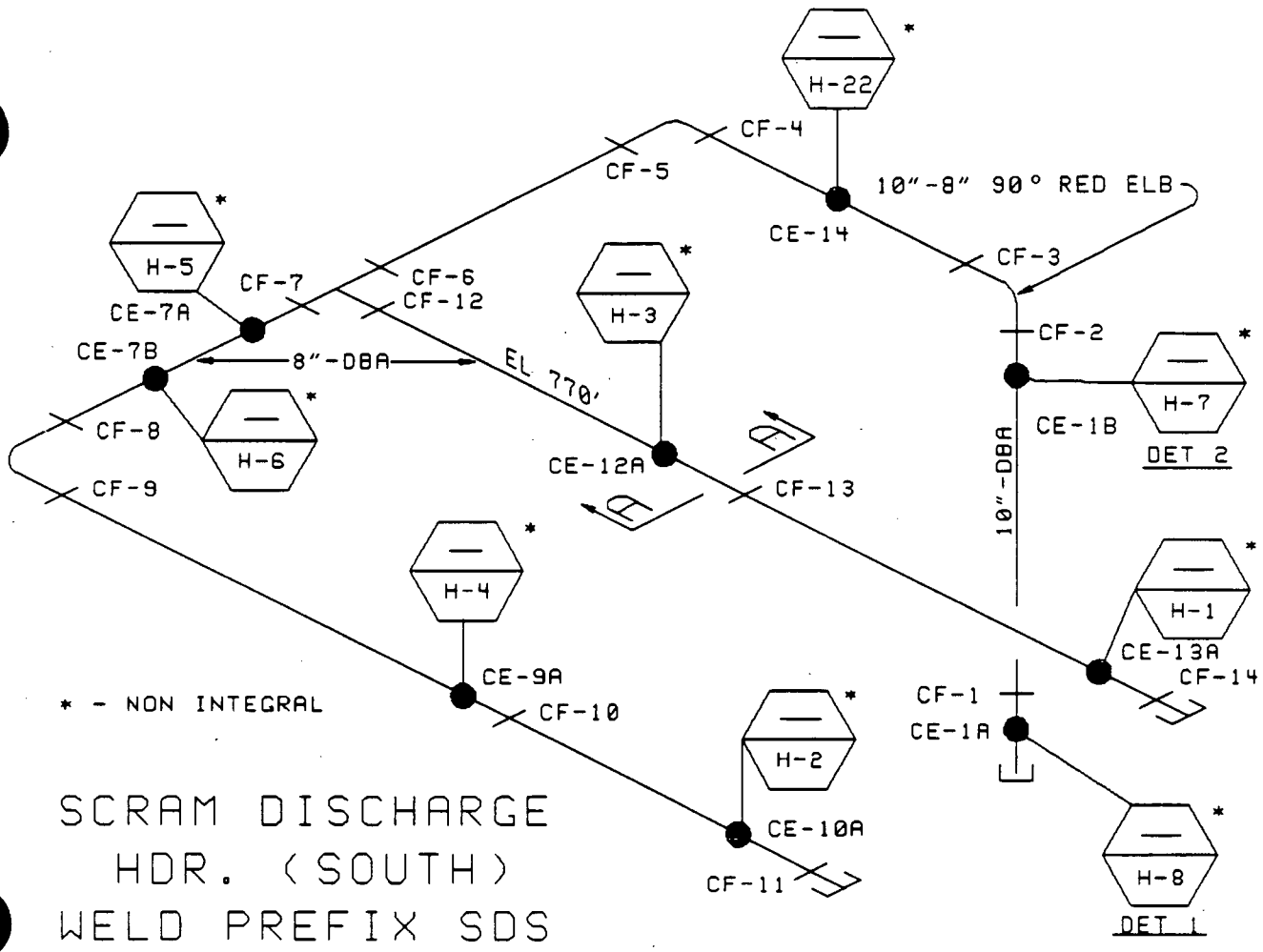


MAIN STEAM BYPASS
WELD PREFIX MSF
CS, 12" & 10"
ISO. NO. 2.2-58

P&ID ISI-M103
BECH DWG# EBD-6-3-H

* - NON INTEGRAL

DAEC INSERVICE INSPECTION ASME SECTION XI ISOMETRIC

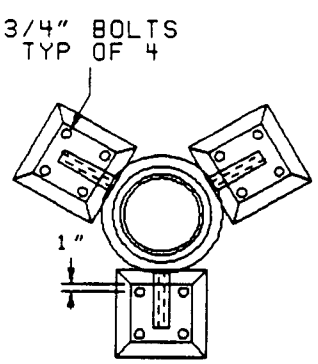


SCRAM DISCHARGE HDR. (SOUTH)

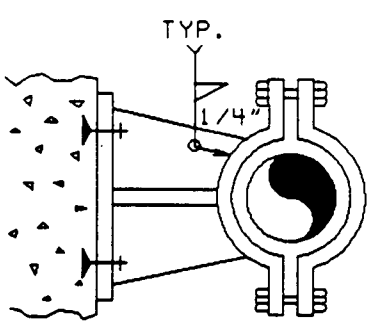
WELD PREFIX SDS

CS, 10" & 8"

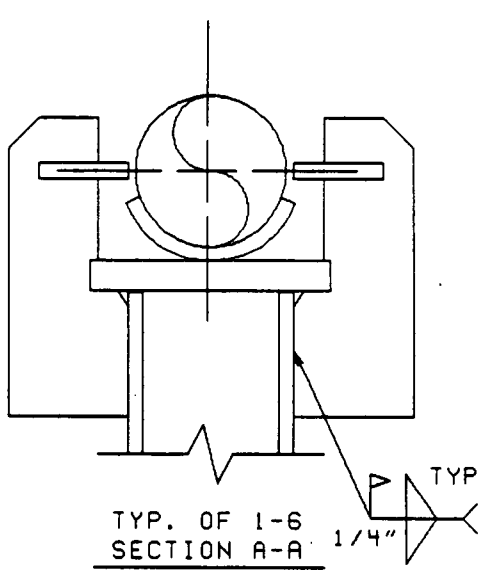
ISO. NO. 2.2-60



DETAIL 1



DETAIL 2



TYP. OF 1-6
SECTION A-A

DRAWING RELEASE RECORD					
REV	DATE	PREPARED	REVIEWED	APPROVED	PURPOSE
1	7-16-86	SML	SML	RCM	ISO'S FOR 2nd 10 YEAR PLAN
2	10-26-87	JPM	RCM	REL	MODIFICATION OF SUPPORTS, FCN 1323; SEQ 5
3	9-18-90				ISO'S TO CAD FORMAT AS PER NG-89-0794

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 52324

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

STATUS OF WORK FOR SECOND INTERVAL

CLASS 1

Item No.	Total #	16% - 34% Period 1	16% min 67% max Outage 10	Remarks
B1.11	1	0%	0%	Permissible
B1.12	1	0%	0%	Permissible
B1.21B	1	0%	0%	Permissible
B1.21T	1	33%	66%	1/3 each period
B1.22B	1	0%	0%	Permissible
B1.22T	1	33%	66%	1/3 each period
B1.30	1	33%	66%	1/3 each period
B1.40	1	33%	66%	1/3 each period
B3.90	32	28%	46%	
B3.100	32	28%	46%	
B4.11	2	0%	0%	25% per interval
B4.12	89	0%	0%	25% per interval
B4.13	30	0%	0%	25% per interval
B5.1D	14	73%	73%	See Note 1
B5.20	8	12%	25%	See Note 2
B5.130	8	50%	62%	
B5.140	2	0%	50%	
B6.10	60	0%	66%	Permissible
B6.20	60	0%	66%	Permissible
B6.40	60	0%	66%	Permissible
B6.50	60	0%	66%	Permissible
B6.180	2	0%	100%	16 per pump
B6.190	2	0%	100%	
B6.200	2	0%	100%	16 per pump

1) Owners: Iowa Electric Light and Power Company
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Humboldt, Iowa

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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

CLASS 1 (cont.)

IWm No.	Total #	16% - 34% Period 1	16% min 67% max Outage 10	Remarks
[redacted]10	3	66%	66%	
B7.50	2	0%	50%	
B7.60	2	0%	100%	16 per pump
B7.70	40	N/A	N/A	Relief Request NDE-002 when disassembled
B7.80	89	N/A	N/A	See Note 3
B8.10	6	28%	57%	
B9.11	129	38%	53%	
B9.12	51	19%	43%	
B9.21	12	41%	66%	
B9.31	8	37%	87%	
B9.32	1	0%	100%	
B9.40	41	19%	24%	
B10.10	34	35%	55%	
B10.20	8	25%	50%	
B12.20	2	0%	100%	
B12.50	45	N/A	N/A	Relief Request NDE-002
B13.10	*	*	*	
B13.20	*	*	*	*Accessible areas during refueling outage
B13.21	*	*	*	
B13.22	*	*	*	Permissible
B14.10	28	0%	0%	Permissible
B15.10	3	N/A	N/A	100% per refuel outage
[redacted].11	3	N/A	N/A	Once per interval

1) Owners: Iowa Electric Light and Power Company
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Marion, Iowa

Corn Belt Power Cooperative
Humboldt, Iowa

2) Plant Duane Arnold Energy Center, Palo, Iowa 52324

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

CLASS 1 (cont.)

Item No.	Total #	Period 1 16% - 34%	Outage 10 16% min 67% max	Remarks
B15.50	1	N/A	N/A	100% per refuel outage
B15.51	1	N/A	N/A	Once per interval
B15.60	2	N/A	N/A	100% per refuel outage
B15.61	2	N/A	N/A	Once per interval
B15.70	1	N/A	N/A	100% per refuel outage
B15.71	1	N/A	N/A	Once per interval

1) Owners: Iowa Electric Light and Power Company
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Humboldt, Iowa

2) Plant Duane Arnold Energy Center, Palo, Iowa 52324

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

STATUS OF WORK FOR SECOND INTERVAL

CLASS 2

		16% - 34%	16% min 67% max	
Item No.	Total #	Period 1	Outage 10	Remarks
C1.10	2	50%	50%	
C1.20	1	0%	0%	
C2.21	2	0%	0%	50% Scheduled Outage 11
C3.10	5	20%	20%	
C3.20	44	16%	34%	
C5.11	77	33%	50%	
C5.21	39	33%	53%	
C5.31	4	100%	100%	
C7.10	2	N/A	N/A	Once per period
C7.20	2	50%	50%	Once per period
C7.30	12	N/A	N/A	Once per period
C7.40	14	N/A	N/A	Once per interval
C7.50	3	N/A	N/A	Once per period
C7.60	3	N/A	N/A	Once per interval
C7.70	12	N/A	N/A	Once per period
C7.80	12	N/A	N/A	Once per interval

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 52324

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

		SUPPORTS 16% min 67% max		
CLASS 1		16%-34%		
Item No.	Total #	Period 1	Outage 10	Remarks
F2.00	15	20%	26%	
F3.00	166	35%	52%	
CLASS 2				
F1.00	71	38%	52%	
F2.00	34	20%	35%	
F3.00	231	34%	52%	

Note 1 - Item Number B5.1D

11 nozzle to safe-end welds were completed during Outage 08, Period 1. These were submitted in the Summary Report for that period thus credit was taken for those completed. During Outage 10, 3 of the 11 nozzle to safe-end welds were examined again and are submitted in this Summary Report. Because these 3 were already examined the percentages do not change. 7 of the 11,completed during Outage 08, are scheduled for examination during the remainder of this interval.

1) Owners: Iowa Electric Light and Power Company
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Humboldt, Iowa

2) Plant Duane Arnold Energy Center, Palo, Iowa 52324

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

Note 2 - Item Number B5.20

There was one nozzle to safe-end weld ≤ 4" scheduled during Outage 08, Period 1. Because of an oversight, there weren't any scheduled in Outage 09, Period 1. CRA-F002 was completed during Outage 10 which brings the percentage within Code allowable. There are 2 more scheduled for the next refueling outage which will bring the percentage to 50% at the end of period 2.

Note 3 - Item Number B7.80 (CRD Bolting)

There are no percentages calculated for this item number because each CRD that is removed receives a VT-1 examination on the bolting. There are usually 20 scheduled per outage.

System or Component Description	ACC	REJ	Inspection Requirement	Weld or Component Description	UT Report No.	Visual Report No.	PT Report No.	ISI ISO/Fig No.	Comments
RPV Interior	X		E	Jet Pump (MIL)	N/A	*	N/A	None	Visual inspection of PMP MIL 9 thru 16
	X		H	Jet Pump (RB)	N/A	*	N/A	None	Visual inspection of PMP RB 9 thru 16
	X		I	Jet Pump (ASS)	N/A	*	N/A	None	Visual inspection of PMP ASS 9 thru 12
	X		I	Jet Pump (RSS)	N/A	*	N/A	None	Set screw tack welds on Jet Pump 2, 4, 5 & 10 reported indications, acceptable as per NCR #90-076 jet pumps 1 - 16 examined.
	X		C,F	Core Spray Spargers	N/A	*	N/A	None	Spargers A,B,C,D; Thermal
				Thermal Sleeve, Nozzle					Sleeve A,B and Nozzle A,B, T-Box Welds
	X		B	Feedwater Nozzle A	89-46	*	89-441	1.1-9	Inside vessel: right installation bracket acceptable as per NCR-90-70 UT was performed from OD
	X		B	Feedwater Nozzle B	89-47	*	89-442	1.1-9	Inside vessel UT was performed from OD.
	X		B	Feedwater Nozzle C	89-49	*	89-443	1.1-9	Inside vessel UT was performed from OD

System or Component Description	ACC	REJ	Inspection Requirement	Weld or Component Description	UT Report No.	Visual Report No.	PT Report No.	ISI ISO/Fig No.	Comments
	X		B	Feedwater Nozzle D	89-49	*	89-444	1.2-5	Inside vessel UT was performed from OD
	X		B	CRD Return Line Nozzle	N/A	*	89-440	1.1-9	Indications found, repair by grinding, only in cladding
	X		G	Steam Dry DRN CHAN	N/A	*	N/A	None	Acceptable as per NCR 90-069
				Steam Dry EXT SURF	N/A	*	N/A	None	
	X		K	Vessel Head	N/A	*	N/A	None	VT-1 inspection
Feedwater 'A'	X		B	FWA-BD-1	89-42	N/A	N/A	1.1-9	UT-0
	X		B	FWA-BD-1	89-43	N/A	N/A	1.1-9	UT-45
	X		B	FWA-BD-1	89-44	N/A	N/A	1.1-9	UT-60
	X		B	FWA-BD-1 (Bore)	89-46	N/A	N/A	1.1-9	UT-30
	X		B	FWA-BD-1 (T.S.)	89-50	N/A	N/A	1.1-9	UT-45
	X		B	FWA-BD-1 (IR)	89-45	N/A	N/A	1.1-9	UT-70
	X		B	FWA-BD-1 (T.S.)	89-51	N/A	N/A	1.1-9	UT-60
Feedwater 'B'	X		B	FWB-BD-1 (Bore)	89-47	N/A	N/A	1.1-9	UT-30
Feedwater 'C'	X		B	FWC-BD-1 (Bore)	89-49	N/A	N/A	1.1-9	UT-30

System or Component Description	A C C	R E J	Inspection Requirement	Weld or Component Description	UT Report No.	Visual Report No.	PT Report No.	ISI ISO/Fig No.	Comments
Feedwater 'D'	X		B	FWD-BD-1 (Bore)	89-48	N/A	N/A	1.1-9	UT-30
CRD Return	X		B	CRA-F002	89-151	N/A	N/A	1.2-12A	Stainless steel side
	X		B	CRA-F002	89-150	N/A	N/A	1.2-12A	Carbon steel side
	X		B	CRA-J003	89-149	N/A	N/A	1.2-12A	
	X		B	CRA-F004	89-147	N/A	N/A	1.2-12A	Stainless steel side
	X		B	CRA-F004	89-148	N/A	N/A	1.2-12A	Carbon steel side
Core Spray 'A'	X		J,A	CSA-F002	89-127	N/A	N/A	1.2-7	UT-RL
	X		J,A	CSA-F002	89-128	N/A	N/A	1.2-7	UT-45 (safeend side only)
	X		A	CSA-F002A	89-125	N/A	N/A	1.2-7	Pipe side
	X		A	CSA-F002A	89-126	N/A	N/A	1.2-7	Safeend side
	X		A	CSA-J003	89-124	N/A	N/A	1.2-7	
	X		A	CSA-F004	89-122	N/A	N/A	1.2-7	Carbon steel side
	X		A	CSA-F004	89-123	N/A	N/A	1.2-7	Stainless steel side
Reactor Water Cleanup Discharge (Class 1)	X		A	CUB-F004	89-143	N/A	N/A	1.2-11B	

System or Component Description	ACC	REJ	Inspection Requirement	Weld or Component Description	UT Report No.	Visual Report No.	PT Report No.	ISI ISO/Fig No.	Comments
	X		A	CUB-J005	89-142	N/A	N/A	1.2-11B	
	X		A	CUB-J008	89-141	N/A	N/A	1.2-11B	
	X		A	CUB-J010	89-140	N/A	N/A	1.3-11B	
	X		A	CUB-J011	89-139	N/A	N/A	1.2-11B	
	X		A	CUB-J013	89-138	N/A	N/A	1.2-11B	
	X		A	CUB-J014	89-137	N/A	N/A	1.2-11B	
	X		A	CUB-J016	89-136	N/A	N/A	1.2-11B	
	X		A	CUB-J017	89-135	N/A	N/A	1.2-11B	
Residual Heat Removal - 18B	X		A	RHB-J001-OVL	89-164	N/A	N/A	1.2-14	UT-60 overlay weld
	X		A	RHB-J002	89-165	N/A	N/A	1.2-14	
	X		A	RHB-F003	89-169	N/A	N/A	1.2-14	Stainless steel side
	X		A	RHB-F003	89-170	N/A	N/A	1.2-14	Carbon steel side
Recirc Pump 'A' Suction	X		J,A	RCA-F002	89-192	N/A	N/A	1.2-19	UT-RL
	X		J,A	RCA-F002	89-191	N/A	N/A	1.2-19	UT-45 safeend side only

System or Component Description	ACC	REJ	Inspection Requirement	Weld or Component Description	UT Report No.	Visual Report No.	PT Report No.	ISI ISO/Fig No.	Comments
	X		A	RCA-J004	89-208	N/A	N/A	1.2-19	
	X		A	RCA-J005A	89-196	N/A	N/A	1.2-19	
	X		A	RCA-J018	89-197	N/A	N/A	1.2-19	
	X		A	RCA-J021	89-193	N/A	N/A	1.2-19	
	X		A	RCA-J022	89-194	N/A	N/A	1.2-19	
	X		A	RCA-J024	89-195	N/A	N/A	1.2-19	
	X		A	RCA-J027	89-198	N/A	N/A	1.2-19	
	X		A	RCA-J034	89-199	N/A	N/A	1.2-19	
Recirc Bypass 'A'	X		A	RBA-J001	89-182	N/A	N/A	1.2-19	
	X		A	RBA-J002	89-183	N/A	N/A	1.2-19	
	X		A	RBA-J003	89-184	N/A	N/A	1.2-19	
	X		A	RBA-J006	89-185	N/A	N/A	1.2-19	
	X		A	RBA-J007	89-186	N/A	N/A	1.2-19	
	X		A	RBA-J008	89-187	N/A	N/A	1.2-19	
	X		A	RBA-J009	89-188	N/A	N/A	1.2-19	

System or Component Description	ACC	REJ	Inspection Requirement	Weld or Component Description	UT Report No.	Visual Report No.	PT Report No.	ISI ISO/Fig No.	Comments
	X		A	RBA-J010	89-189	N/A	N/A	1.2-19	
	X		A	RBA-J012	89-190	N/A	N/A	1.2-19	
Recirc Manifold 'A'	X		A	RMA-J005	89-224	N/A	N/A	1.2-20	
	X		A	RMA-J007	89-223	N/A	N/A	1.2-20	
	X		A	RMA-J008	89-225	N/A	N/A	1.2-20	
	X		A	RMA-J010	89-226	N/A	N/A	1.2-20	
Recirc Riser 'E'	X		J, A	RRE-F002	90-62	N/A	N/A	1.2-20	UT-RL
	X		J, A	RRE-F002	90-56	N/A	N/A	1.2-20	UT-45 (safeend side only)
	X		A	RRE-J003	89-230	N/A	N/A	1.2-20	UT-45
	X		A	RRE-J004/ J004A OVL	89-235	N/A	N/A	1.2-20	UT-45 UT-60 weld overlay
	X		A	RRE-J005	89-229	N/A	N/A	1.2-20	
	X		A	RRE-J007	90-298	N/A	N/A	1.2-20	UT-45
Recirc Riser 'F'	X		J, A	RRF-F002	89-244	N/A	N/A	1.2-20	UT-RL
	X		J, A	RRF-F002	89-245	N/A	N/A	1.2-20	UT-48 (safeend side only)

System or Component Description	ACC	REJ	Inspection Requirement	Weld or Component Description	UT Report No.	Visual Report No.	PT Report No.	ISI ISO/Fig No.	Comments
	X		A	RRF-F002A Code Only	89-247	N/A	N/A	1.2-20	
	X		A	RRF-J003	89-228	N/A	N/A	1.2-20	
	X		A	RRF-J004/ J004A OVL	89-237	N/A	N/A	1.2-20	UT-60 weld overlay
	X		A	RRF-J005	89-227	N/A	N/A	1.2-20	
	X		A	RRF-J007	90-297	N/A	N/A	1.2-20	
Recirc Riser 'G'	X		A,J	RRG-F002	90-63	N/A	N/A	1.2-20	UT-RL
	X		J, A	RRG-F002	90-58	N/A	N/A	1.2-20	UT-45: Safeend side only
	X		A	RRG-J003	89-231	N/A	N/A	1.2-20	
	X		A	RRG-J004/ J004A OVL	89-233	N/A	N/A	1.2-20	UT-60 weld overlay
Recirc Riser 'H'	X		J, A	RRH-F002	90-64	N/A	N/A	1.2-20	UT-RL
	X		J, A	RRH-F002	90-60	N/A	N/A	1.2-20	UT-45 safeend side only
	X		A	RRH-J003	89-240	N/A	N/A	1.2-20	
	X		A	RRH-J004/ J004A-OVL	89-239	N/A	N/A	1.2-20	UT-60 weld overlay

System or Component Description	ACC	REJ	Inspection Requirement	Weld or Component Description	UT Report No.	Visual Report No.	PT Report No.	ISI ISO/Fig No.	Comments
Recirc Pump 'B' Suction	X		A	RCB-J006	89-248	N/A	N/A	1.2-21	
	X		A	RCB-J007	89-249	N/A	N/A	1.2-21	
	X		A	RCB-J009	89-250	N/A	N/A	1.2-21	
Recirc Manifold 'B'	X		A	RMB-J009	89-253	N/A	N/A	1.2-22	
	X		A	RMB-J011	89-254	N/A	N/A	1.2-22	
	X		A	RMB-J012	89-252	N/A	N/A	1.2-22	
Recirc Riser 'A'	X		A	RRA-J003	89-262	N/A	N/A	1.2-22	
	X		A	RRA-J004/ J004A-OVL	89-261	N/A	N/A	1.2-22	UT-60 weld overlay
	X		A	RRA-J005	89-259	N/A	N/A	1.2-22	
	X		A	RRA-J007	89-258	N/A	N/A	1.2-22	
Recirc Riser 'B'	X		A	RRB-J003	89-257	N/A	N/A	1.2-22	
	X		A	RRB-J004/ J004A-OVL	89-256	N/A	N/A	1.2-22	UT-60 weld overlay
Recirc Riser 'C'	X		A	RRC-J003	89-263	N/A	N/A	1.2-22	

System or Component Description	ACC	REJ	Inspection Requirement	Weld or Component Description	UT Report No.	Visual Report No.	PT Report No.	ISI ISO/Fig No.	Comments
Recirc Riser 'D'	X		A	RRD-J003	89-268	N/A	N/A	1.2-22	
	X		A	RRD-J004/ J004A-OVL	89-267	N/A	N/A	1.2-22	UT-60 weld overlay
	X		A	RRD-J007-OVL	89-265	N/A	N/A	1.2-22	UT-60 weld overlay
Jet Pump Inst. 'A'	X		A	JPA-F002	89-269	N/A	N/A	1.2-25	Safeend side
	X		A	JPA-F002	89-270	N/A	N/A	1.2-25	Nozzle side
	X		A	JPA-J003	89-271	N/A	N/A	1.2-25	
Jet Pump Inst. 'A'			A	JPB-F002	89-275	N/A	N/A	1.2-26	Safeend side
			A	JPB-F002	89-274	N/A	N/A	1.2-26	Nozzle side
			A	JPB-F003	89-276	N/A	N/A	1.2-26	
Reactor Water Cleanup (Non-Class) 'CUA'	X		A	CUA-A-01	90-66	N/A	N/A	4.1-01	Preservice replacement
	X		A	CUA-A-03	90-67	N/A	N/A	4.1-01	Preservice replacement
	X		A	CUA-A-04	90-68	N/A	N/A	4.1-01	Preservice replacement

System or Component Description	ACC	REJ	Inspection Requirement	Weld or Component Description	UT Report No.	Visual Report No.	PT Report No.	ISI ISO/Fig No.	Comments
	X		A	CUA-A-05	90-69	N/A	N/A	4.1-01	Preservice replacement
	X		A	CUA-A-06	90-70	N/A	N/A	4.1-01	Preservice replacement
	X		A	CUA-A-07	90-71	N/A	N/A	4.1-01	Preservice replacement
	X		A	CUA-A-08	90-72	N/A	N/A	4.1-01	Preservice replacement
	X		A	CUA-A-09	90-73	N/A	N/A	4.1-01	Preservice replacement
	X		A	CUA-A-11	90-74	N/A	N/A	4.1-01	Preservice replacement
	X		A	CUA-A-12	90-75	N/A	N/A	4.1-01	Preservice replacement
	X		A	CUA-A-15	90-76	N/A	N/A	4.1-01	Preservice replacement
	X		A	CUA-A-16	90-77	N/A	N/A	4.1-01	Preservice replacement
	X		A	CUA-A-17	90-78	N/A	N/A	4.1-01	Preservice replacement
	X		A	CUA-A-18	90-79	N/A	N/A	4.1-01	Preservice replacement
	X		A	CUA-A-19	90-80	N/A	N/A	4.1-01	Preservice replacement
	X		A	CUA-A-20	90-165	N/A	N/A	4.1-01	Preservice replacement
'CUB'	X		A	CUB-A-01	90-81	N/A	N/A	4.1-02	Preservice replacement
	X		A	CUB-A-02	90-82	N/A	N/A	4.1-02	Preservice replacement
	X		A	CUB-A-03	90-83	N/A	N/A	4.1-02	Preservice replacement

System or Component Description	ACC	REJ	Inspection Requirement	Weld or Component Description	UT Report No.	Visual Report No.	PT Report No.	ISI ISO/Fig No.	Comments
	X		A	CUB-A-04	90-84	N/A	N/A	4.1-02	Preservice replacement
	X		A	CUB-A-05	90-85	N/A	N/A	4.1-02	Preservice replacement
	X		A	CUB-A-06	90-86	N/A	N/A	4.1-02	Preservice replacement
	X		A	CUB-A-07	90-85	N/A	N/A	4.1-02	Preservice replacement
	X		A	CUB-A-08	90-86	N/A	N/A	4.1-02	Preservice replacement
	X		A	CUB-A-09	90-87	N/A	N/A	4.1-02	Preservice replacement
	X		A	CUB-A-10	90-88	N/A	N/A	4.1-02	Preservice replacement
	X		A	CUB-A-11	90-89	N/A	N/A	4.1-02	Preservice replacement
	X		A	CUB-A-12	90-90	N/A	N/A	4.1-02	Preservice replacement
	X		A	CUB-A-03A	90-293	N/A	N/A	4.1-02	Preservice replacement
	X		A	CUB-A-04A	90-294	N/A	N/A	4.1-02	Preservice replacement
	X		A	CUB-A-07A	90-295	N/A	N/A	4.1-02	Preservice replacement
'CUC'	X		A	CUC-A-01	90-91	N/A	N/A	4.1-03	Preservice replacement
	X		A	CUC-A-02	90-92	N/A	N/A	4.1-03	Preservice replacement
	X		A	CUC-A-03	90-93	N/A	N/A	4.1-03	Preservice replacement
	X		A	CUC-A-05	90-94	N/A	N/A	4.1-03	Preservice replacement

System or Component Description	ACC	REJ	Inspection Requirement	Weld or Component Description	UT Report No.	Visual Report No.	PT Report No.	ISI ISO/Fig No.	Comments
	X		A	CUC-A-06	90-95	N/A	N/A	4.1-03	Preservice replacement
	X		A	CUC-A-07	90-96	N/A	N/A	4.1-03	Preservice replacement
	X		A	CUC-A-09	90-97	N/A	N/A	4.1-03	Preservice replacement
	X		A	CUC-A-11	90-98	N/A	N/A	4.1-03	Preservice replacement
	X		A	CUC-A-13	90-99	N/A	N/A	4.1-03	Preservice replacement
	X		A	CUC-A-14	90-100	N/A	N/A	4.1-03	Preservice replacement
	X		A	CUC-A-16	90-101	N/A	N/A	4.1-03	Preservice replacement
	X		A	CUC-A-17	90-102	N/A	N/A	4.1-03	Preservice replacement
	X		A	CUC-A-18	90-103	N/A	N/A	4.1-03	Preservice replacement
'DCB'	X		A	DCB-1	90-105	N/A	N/A	RWCU-1	This outage only
	X		A	DCB-2	90-113	N/A	N/A	RWCU-1	This outage only
	X		A	DCB-3	90-114	N/A	N/A	RWCU-1	This outage only
	X		A	DCB-4	90-117	N/A	N/A	RWCU-1	This outage only
	X		A	DCB-5	90-118	N/A	N/A	RWCU-1	This outage only
	X		A	DCB-6	90-121	N/A	N/A	RWCU-1	This outage only
	X		A	DCB-7	90-122	N/A	N/A	RWCU-1	This outage only

System or Component Description	ACC	REJ	Inspection Requirement	Weld or Component Description	UT Report No.	Visual Report No.	PT Report No.	ISI ISO/Fig No.	Comments
	X		A	DCB-8	90-125	N/A	N/A	RWCU-1	This outage only
	X		A	DCB-8A	90-285	N/A	N/A	RWCU-1	This outage only
	X		A	DCB-9	90-126	N/A	N/A	RWCU-1	This outage only
	X		A	DCB-10	90-106	N/A	N/A	RWCU-1	This outage only
	X		A	DCB-11	90-109	N/A	N/A	RWCU-1	This outage only
'ECB'	X		A	ECB-1	90-104	N/A	N/A	RWCU-1	This outage only
	X		A	ECB-1A	90-284	N/A	N/A	RWCU-1	This outage only
	X		A	ECB-2	90-112	N/A	N/A	RWCU-1	This outage only
	X		A	ECB-3	90-115	N/A	N/A	RWCU-1	This outage only
	X		A	ECB-4	90-116	N/A	N/A	RWCU-1	This outage only
	X		A	ECB-5	90-119	N/A	N/A	RWCU-1	This outage only
	X		A	ECB-6	90-120	N/A	N/A	RWCU-1	This outage only
	X		A	ECB-7	90-123	N/A	N/A	RWCU-1	This outage only
	X		A	ECB-8	90-124	N/A	N/A	RWCU-1	This outage only
	X		A	ECB-9	90-127	N/A	N/A	RWCU-1	This outage only
	X		A	ECB-10	90-107	N/A	N/A	RWCU-1	This outage only

System or Component Description	ACC	REJ	Inspection Requirement	Weld or Component Description	UT Report No.	Visual Report No.	PT Report No.	ISI ISO/Fig No.	Comments
	X		A	ECB-11	90-108	N/A	N/A	RWCU-1	This outage only
	X		A	ECB-12	90-110	N/A	N/A	RWCU-1	This outage only
	X		A	ECB-13	90-111	N/A	N/A	RWCU-1	This outage only
'1E-214 Intercon'	X		A	INT-1	90-128	N/A	N/A	RWCU	
	X		A	INT-2	90-139	N/A		RWCU	
	X		A	INT-3	90-149	N/A		RWCU	
	X		A	INT-4	90-150	N/A		RWCU	
	X		A	INT-5	90-151	N/A		RWCU	
	X		A	INT-6	90-152	N/A		RWCU	
	X		A	INT-7	90-153	N/A		RWCU	
	X		A	INT-8	90-154	N/A		RWCU	
	X		A	INT-9	90-155	N/A		RWCU	
	X		A	INT-10	90-129	N/A		RWCU	Replacement of elbow
	X		A	INT-11	90-130	N/A		RWCU	Replacement of elbow
	X		A	INT-12	90-131	N/A		RWCU	Replacement of elbow
	X		A	INT-13	90-132	N/A		RWCU	

System or Component Description	ACC	REJ	Inspection Requirement	Weld or Component Description	UT Report No.	Visual Report No.	PT Report No.	ISI ISO/Fig No.	Comments
	X		A	INT-14	90-133	N/A		RWCU	
	X		A	INT-15	90-134	N/A		RWCU	
	X		A	INT-16	90-135	N/A		RWCU	
	X		A	INT-17	90-136	N/A		RWCU	
	X		A	INT-18	90-137	N/A		RWCU	
	X		A	INT-19	90-138	N/A		RWCU	
	X		A	INT-20	90-140	N/A		RWCU	
	X		A	INT-21	90-141	N/A		RWCU	
	X		A	INT-22	90-142	N/A		RWCU	
	X		A	INT-23	90-143	N/A		RWCU	
	X		A	INT-24	90-144	N/A		RWCU	
	X		A	INT-25	90-145	N/A		RWCU	
	X		A	INT-26	90-146	N/A		RWCU	
	X		A	INT-27	90-147	N/A		RWCU	
	X		A	INT-28	90-148	N/A		RWCU	
Refueling Bellows	X		D	Refueling Bellows	N/A	89-445		N/A	

System or Component Description	ACC	REJ	Inspection Requirement	Weld or Component Description	UT Report No.	Visual Report No.	PT Report No.	ISI ISO/Fig No.	Comments
X-37c/38c Thickness at Penetration	X		D	X-38c/X-37c Plate	P90012	N/A		N/A	All points greater than NWT; 1.5"
Drywell Liner	X		D	A5A42A6AY1	P90013	N/A		N/A	From two feet around penet. X-37/38 (SW bundle) down to Drywell floor 746'-8" upper plate; all points greater than NWT, .75" lower plate; all points greater than NWT, 1.5"
Vent Line	X		D	217-6	P90016	N/A		N/A	All points > NWT = .375"
X-5E	X		D	217-A	P90017	N/A		N/A	All points > NWT = .375"
Drywell Liner	X		D	Azimuth 95	P90021	N/A		N/A	Below drywell floor 746'-8" (1 ft down 2 feet wide). All points > NWT = 1.5"
	X		D	Azimuth 185	P90021	N/A		N/A	Below drywell floor (1 ft. down 2 ft. wide). All points > NWT = 1.5"
Vent Line Air Gaps X-5			D	X-5 vent lines (8)	P90018	N/A		N/A	XS5 - vent line leaking water at about 1/2 gallon per hour. UT thickness of vent performed
Drywell Liner Drains	X		D	Drywell Linear Drains (4)	N/A	P90019		N/A	Drains at 0 , 90 , 180 , and 230 . No leakage found thickness sat.

System or Component Description	ACC	REJ	Inspection Requirement	Weld or Component Description	UT Report No.	Visual Report No.	PT Report No.	ISI ISO/Fig No.	Comments
Sand Pocket Drains	X		D	Sandpocket Drains	N/A	P90020		N/A	Drains at 5 , 95 , 185 , 275 . Drains at 95 and 185 saturated with water. UT thickness at drywell shell

Key Code	Description
A	NUREG 0313 (Generic Letter 88-01)
B	NUREG 0619
C	IEB 80-13
D	IE Letter NG-87-4355 (Generic Letter 87-05)
E	GE SIL 465
F	GE SIL 289
G	GE SIL 474
H	GE RICSIL 045
I	NDE Pro. 1111.15
J	GE SIL 455
K	GE RICSIL 051 (VT-1)

* Examination of augmented reactor pressure vessel (RPV) interior is in the document 1990 RFO GE in vessel inspection book.

ACC - Accept
REJ - Reject
RPV - Reactor Pressure Vessel
MIL - Mixer Inlet Lip
RB - Riser Brace
ASS - Assembly
RSS - Restrainer Set Screw
T.S. - Thermal Sleeve
IR - Inside Radius
RL - Refracted L Wave