

SECOND TEN YEAR INTERVAL  
INSERVICE INSPECTION REPORT  
April 20, 1995 through November 16, 1996

Attachment 1  
to NG-97-0327

DUANE ARNOLD ENERGY CENTER

UNIT #1 PALO, IOWA

Commercial Service Date: February 1, 1975

SECOND TEN YEAR INTERVAL  
INSERVICE INSPECTION SUMMARY REPORT

April 20, 1995 through November 16, 1996

Dated: November 16, 1996

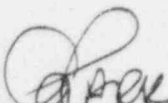
OWNER:

IES UTILITIES, INC

P.O. Box 351

Cedar Rapids, Iowa 52406

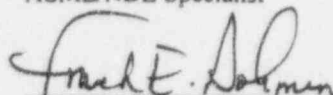
Prepared by:

  
ASME/NDE Specialist

Date:

1/20/97

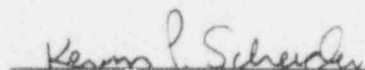
Reviewed by:

  
Corporate NDE Level III

Date:

1-20-97

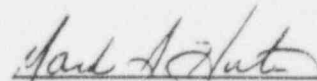
Reviewed by:

  
Equipment Monitoring Group, GL

Date:

1/22/97

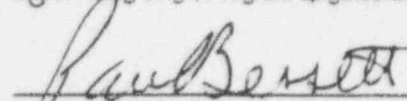
Concurred by:

  
Supervising Engr, Program Engineering

Date:

1/23/97

Approved by:

  
Manager, Engineering

Date:

1/24/97

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**SECOND TEN YEAR INTERVAL  
INSERVICE INSPECTION REPORT**  
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Part A, Page 1 of 2

As Required by the Provisions of the ASME Code Rules

- ## 7. Components Inspected

Part J (PP1-5), and Part K (P1).

Component or Appurtenance	Manufacturer or Installer	Manufacturer or Installer Serial No.	State or Province No.	National Board No.
Reactor Pressure Vessel (RPV)	Chicago Bridge & Iron	3-4833	N/A	3663

Refer to Part B, Pages 1-3, of this report for a continuation of components examined.

[illegible]

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8.5 X 11 inches, (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.

This form (E00029) may be obtained from the Order Dept., ASME, 345 E. 47th St., New York, N.Y. 10010

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Part A, Page 2 of 2

FORM NIS-1 (back)

8. Examination Dates 04/20/95 to 11/16/96 9. Inspection Interval from 11/01/85 to 11/01/96

10. Abstract of Examinations. Include a list of examinations and a statement concerning status of work required for current interval.

Refer to Part C, Part D, and Part J.

11. Abstract of Conditions Noted

Refer to Part H.

12. Abstract of Corrective Measures Recommended and Taken

Refer to 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.

Date July 29 1997 Signed John Tracy By JOHN FRANZ VP NUCLEAR

Certificate of Authorization No. (if applicable) \_\_\_\_\_ Expiration Date \_\_\_\_\_

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 Owner's Data Report during the period 04/20/95 to 11/16/96, 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 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 Owner's Data Report. Furthermore, neither the Inspector, nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date Feb 4 1997

William W. Mulla  
Inspector's Signature

Commissions NB 7542 N.I. Ia 1046  
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.

## Part B, page 1 of 3

- GROSS GENERATING CAPACITY: 565 MWE

COMPONENTS EXAMINED:

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

### Piping

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

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Part B, page 2 of 3

- 1) Owners: IES Utilities Inc.  
P.O. Box 351  
Cedar Rapids, IA 52406  
  
Central Iowa Power Cooperative  
Marion, IA.  
  
Corn Belt Power Cooperative  
Humbolt, IA.
- 2) Plant: Duane Arnold Energy Center, Palo, IA, 52324
- 3) Plant Unit: #1
- 4) Owners Certificate of Authorization (if required): N/A
- 5) Commercial Service Date: 02/01/75
- 6) National Board Number of Unit: N/A

GROSS GENERATING CAPACITY: 565 MWE

CERTIFICATE OF INSERVICE INSPECTION

COMPONENTS EXAMINED:

Class 1 Components:

Reactor Pressure Vessel

Sketch VS-01-01A  
VS-01-01<1>  
VS-01-01<2>  
VS-01-41  
VS-01-06  
VS-01-07  
VS-01-08<1>  
VS-01-08<2>  
VS-01-32  
VS-01-37  
Figure 1.1-05  
1.1-10

Control Rod Drive

Sketch VS-12-01

Feedwater B

ISO No. 1.2-05

Feedwater C and D

ISO No. 1.2-06

Core Spray B

ISO No. 1.2-08

Recirculation Manifold "A" and Risers E, F, G, and H

ISO No. 1.2-20

Head Vent

ISO No. 1.2-24

Vessel Instrumentation

ISO No. 1.2-28  
1.2-29  
1.2-30  
1.2-31

## Part B, page 3 of 3

- GROSS GENERATING CAPACITY: 565 MWE

### Class 1 Components (cont):

Sketch	VS-01-31
	VS-10-02
	VS-01-34
	VS-11-01
	VS-01-27
	VS-01-28
	VS-01-29
	VS-01-30
	VS-04-01
	VS-03-01<1>
	VS-01-26
	VS-05-01
	VS-03-02<1>

RHR Heat Exchanger: A	Figure 2.1-01
RHR Pump Suction (NW)	ISO No. 2.2-33
Main Steam Loop "A"	ISO No. 2.2-53
Main Steam Loop "B"	ISO No. 2.2-54
Main Steam Loop "C"	ISO No. 2.2-55
Main Steam Loop "D"	ISO No. 2.2-56
Main Steam Bypass	ISO No. 2.2-57
Main Steam Bypass	ISO No. 2.2-58
Scram Discharge Header (S)	ISO No. 2.2-60

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## SECOND TEN YEAR INTERVAL INSERVICE INSPECTION REPORT

April 20, 1995 through November 16, 1996

Part C, page 1 of 1

- 1) Owners: IES Utilities Inc.  
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Marion, IA. Corn Belt Power Cooperative  
Humbolt, IA.
- 2) Plant: Duane Arnold Energy Center, Palo, IA, 52324
- 3) Plant Unit: #1
- 4) Owners Certificate of Authorization (if required): N/A
- 5) Commercial Service Date: 02/01/76
- 6) National Board Number of Unit: N/A

GROSS GENERATING CAPACITY: 565 MWE

### CERTIFICATE OF INSERVICE INSPECTION

## ABSTRACT

The Inservice Inspection addressed in this report was performed in accordance with the American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section XI 1980 Edition through Winter 1981 Addenda, and the Duane Arnold Energy Center Updated Final Safety Analysis Report. The inspections were performed utilizing Non-Destructive Examination Techniques (i.e., UT, PT, MT, etc.). The examinations were conducted during the period of April 20, 1995 through November 16, 1996. The specific details and associated records of the examinations are on file at IES Utilities Inc.

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**SECOND TEN YEAR INTERVAL  
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Part D, page 1 of 4

- 1) Owners: IES Utilities Inc.  
P.O. Box 351  
Cedar Rapids, IA 52406
- Central Iowa Power Cooperative  
Marion, IA
- Corn Belt Power Cooperative  
Humbolt, IA.
- 2) Plant: Duane Arnold Energy Center, Palo, IA, 52324
- 3) Plant Unit: #1
- 4) Owners Certificate of Authorization (if required): N/A
- 5) Commercial Service Date: 02/01/75
- 6) National Board Number of Unit: N/A

GROSS GENERATING CAPACITY: 565 MWE

**Component and Weld Examination Identification Records**

**CLASS 1**

Component	Description	ISI Report	ISI ISO No.	Category	Results
Reactor Pressure Vessel	VCB-A002 <sup>(NOTE 1)</sup>	I96001 UT	VS-01-41	B-A	Accepted
	VCB-B001 <sup>(NOTE 1)</sup>	I96002 UT	VS-01-41	B-A	Accepted
	VCB-B003 <sup>(NOTE 1)</sup>	I96003 UT	VS-01-41	B-A	Accepted <sup>(NOTE 3)</sup>
	VCB-B004 <sup>(NOTE 1)</sup>	I96004 UT	VS-01-41	B-A	Accepted
	VCB-C005 <sup>(NOTE 2)</sup>	I96005 UT	VS-01-41	B-A	Accepted
	VLA-A001 <sup>(NOTE 1)</sup>	I96006 UT	VS-01-41	B-A	Accepted
	VLA-A002 <sup>(NOTE 1)</sup>	I96007 UT	VS-01-41	B-A	Accepted
	VLB-A001 <sup>(NOTE 1)</sup>	I96008 UT	VS-01-41	B-A	Accepted <sup>(NOTE 3)</sup>
	VLB-A002 <sup>(NOTE 1)</sup>	I96009 UT	VS-01-41	B-A	Accepted <sup>(NOTE 3)</sup>
	VLC-B001 <sup>(NOTE 1)</sup>	I96010 UT	VS-01-41	B-A	Accepted
	VLC-B002 <sup>(NOTE 1)</sup>	I96011 UT	VS-01-41	B-A	Accepted
	VLD-B001 <sup>(NOTE 1)</sup>	I96012 UT	VS-01-41	B-A	Accepted
	VLD-B002 <sup>(NOTE 1)</sup>	I96013 UT	VS-01-41	B-A	Accepted
	HCA-B001	I96014 UT	VS-01-07	B-A	Accepted
	HCC-C001 (Exam Area Stud Hole 40-60) <sup>(NOTE 2)</sup>	I96019 MT UT	VS-01-06	B-A	Accepted
	HCC-B002 (Exam Area Stud Hole 40-60)	I96015 UT	VS-01-06	B-A	Accepted
	HMA-B002	I96016 UT	VS-01-07	B-A	Accepted
	HMC-B002	I96017 UT	VS-01-06	B-A	Accepted
RPV Skirt	HCA-H002 (Exam Area 26.8' to 0.0' and 100% ID)	I96018 MT	VS-01-08	B-H	Accepted
	VSK-K001	I96069 VT 3/4	VS-01-08	F-A	Accepted
RPV FLANGE	STUD LIGAMENTS 41 - 60 <sup>(NOTE 4)</sup>	I96021 UT	1.1-05	B-G-1	Accepted
	CLOSURE HEAD NUTS <sup>(NOTE 5)</sup> (NUTS 41-60)	I96022 VT 1	1.1-05	B-G-1	Accepted
	CLOSURE HEAD STUDS (STUDS 41-60)	I96023 UT	1.1-05	B-G-1	Accepted
	CLOSURE HEAD WASHERS (WASHERS 41-60)	I96024 VT 1	1.1-05	B-G-1	Accepted

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- 6) National Board Number of Unit: N/A

GROSS GENERATING CAPACITY: 565 MWE

**Component and Weld Examination Identification Records**

**CLASS I**

Component	Description	ISI Report		ISI ISO No.	Category	Results
RPV HEAD Control Rod Drive	RPV HEAD LUG @ 292°	196025	MT	VS-01-37	B-H	Accepted
	1R215(02-19) WELD	196058	UT	VS-12-01	B-O	Accepted
	1R215(02-27) WELD	196059	UT	VS-12-01	B-O	Accepted
RPV STABILIZER	1R215(42-19) WELD	196060	UT	VS-12-01	B-O	Accepted
	1R215(42-27) WELD	196061	UT	VS-12-01	B-O	Accepted
	VSW-0°	196062	VT	VS-01-32	F-A	Accepted
			3/4			
	VSW-90°	196067	VT	VS-01-32	F-A	Accepted
			3/4			
	VSW-180° (NOTE 6)	196063	MT	VS-01-32	B-H	Accepted
		196064	VT		F-A	
			3/4			
	VSW-270° (NOTE 6)	196065	MT	VS-01-32	B-H	Accepted
RPV REPAIR AREA FEEDWATER SYSTEM		196066	VT		F-A	
			3/4			
	PL #1-19 REPAIR	196068	UT	VS-01-01<2>	B-A	Accepted
	FWB-D001	196052	UT	1.2-05	B-D	Accepted
	FWB-D001-INNER RAD	196053	UT	1.2-05	B-D	Accepted
	FWC-D001 (NOTE 7)	196054	UT	1.2-06	B-D	Accepted
	FWC-D001-INNER RAD	196055	UT	1.2-06	B-D	Accepted
	FWD-D001 (NOTE 7)	196056	UT	1.2-06	B-D	Accepted (NOTE 3)
	FWD-D001-INNER RAD	196057	UT	1.2-06	B-D	Accepted
	CSB-F002A	196073	PT	1.2-08	B-F	Accepted
CORE SPRAY SYSTEM RECIRC. SYSTEM			UT			
	RMA-J011	196075	PT	1.2-20	B-J	Accepted
			UT			
HEAD VENT	RMA-J011-LS	196076	PT	1.2-20	B-J	Accepted
			UT			
	HVA-FLG-BOLTING	196081	VT	1.2-24	B-G-2	Accepted

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- 3) Plant Unit: #1
- 4) Owners Certificate of Authorization (if required): N/A
- 5) Commercial Service Date: 02/01/75
- 6) National Board Number of Unit: N/A

GROSS GENERATING CAPACITY: 565 MWE

**Component and Weld Examination Identification Records**

CLASS 1						
Component	Description	ISI Report	ISI ISO No.	Category	Results	
HEAD VENT	HVA-FLG-STUD	196082	VT	1.2-24	B-G-2	Accepted
RPV INTERNALS	VIA-J005	196172	PT	1.2-28	B-J	Accepted
	VIB-F002	196084	PT	1.2-29	B-F	Accepted
	VIB-J003	196085	PT	1.2-29	B-J	Accepted
	VIC-F002	196086	PT	1.2-30	B-F	Accepted
	VID-F002	196087	PT	1.2-31	B-F	Accepted
	CORE PLATE (Areas where fuel was off-loaded)	196090	VT	VS-03-02	B-N-2	Accepted
	CORE SPRAY BRACKET 150°	196090	VT	VS-01-26	B-N-2	Accepted
	DRYER HOLDDOWN BRACKET 31°	196090	VT	VS-01-30	B-N-2	Accepted
	DRYER SUPPORT BRACKET 45°	196090	VT	VS-01-29	B-N-2	Accepted
	FEEDWATER BRACKET 225°	196090	VT	VS-01-27	B-N-2	Accepted
	GUIDE ROD BRACKET 0°	196090	VT	VS-01-28	B-N-2	Accepted
	GUIDE ROD BRACKET 180°	196090	VT	VS-01-28	B-N-2	Accepted
	JET PUMP SUPPORT PAD 108°	196090	VT	VS-01-34	B-N-2	Accepted
	JET PUMP SUPPORT PAD 144°	196090	VT	VS-01-34	B-N-2	Accepted
	SAMPLE HOLDER WELDS 108°	196090	VT	VS-10-02	B-N-1	Accepted
	SAMPLE HOLDER WELDS 288°	196090	VT	VS-10-02	B-N-1	Accepted
			1	VS-01-31	B-N-2	

NOTE 1 - These examinations were completed in accordance with 10CFR50.55a(g)(6)(ii)(A)(3)

NOTE 2 - See Relief Request NDE-023 for total Code Coverage.

NOTE 3 - Relevant indications were identified which were found acceptable.

NOTE 4 - Relief Request NDE-026

NOTE 5 - Relief Request NDE-019

NOTE 6 - Relief Request NDE-074

NOTE 7 - Relief Request NDE-025

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- 1) Owners: IES Utilities Inc.  
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- 5) Commercial Service Date: 02/01/75
- 6) National Board Number of Unit: N/A

GROSS GENERATING CAPACITY: 565 MWE

Component and Weld Examination Identification Records

CLASS 2

Component	Description	ISI Report	ISI ISO No.	Category	Results
RHR HEAT 'A' EXCHANGER	HEA-CB-2-INNER RAD (NOTE 1)	196105 UT	2.1-01	C-B	Accepted
	HEA-CB-6-INNER RAD	196104 UT	2.1-01	C-B	Accepted
	HEA-CC-7	196092 VT	2.1-01	F-A	Accepted
		3/4			
	HEA-CC-8(01)	196093 VT	2.1-01	F-A	Accepted
		3/4			
	HEA-CC-8(02)	196094 VT	2.1-01	F-A	Accepted (NOTE 2)
RHR PUMP SUCTION (NW) SCRAM DISCHAGER HEADER "S"		3/4			
	HEA-CC-8(03)	196095 VT	2.1-01	F-A	Accepted
		3/4			
	HEA-CC-8(04)	196096 VT	2.1-01	F-A	Accepted (NOTE 2)
		3/4			
	RHB-CE072	196097 MT	2.2-33	C-C	Accepted
	SDS-CF003	196098 MT	2.2-60	C-F	Linear Indications removed (NIS-2, 14-96-30)
		UT			

Note 1 - Relief Request NDE-022

Note 2 - Some bolts found loose. All Bolts tightened (NIS-2, 14-96-29)

PRESSURE TESTS

CLASS 1	RPV PIPING PUMPS VALVES INSTRUMENT NOZZLES CRD NOZZLES	196091 VT	ISONO-P	B-P	Accepted
		2			
CLASS 2	CRD MINI PURGE	196091 VT		C-H	Accepted
		2			
	HPCI	196099 VT		C-H	Accepted
		2			
	MAIN STEAM	196100 VT		C-H	Accepted
		2			

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Part E, page 1 of 1

- 1) Owners: IES Utilities Inc.  
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Cedar Rapids, IA. 52406  
  
Central Iowa Power Cooperative  
Marion, IA.  
  
Corn Belt Power Cooperative  
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- 2) Plant: Duane Arnold Energy Center, Palo, IA. 52324
- 3) Plant Unit: #1
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GROSS GENERATING CAPACITY: 565 MWE

ADDITIONAL EXAMINATIONS

There were no additional examinations required during RFO14.

SUCCESSIVE EXAMINATIONS

These snubbers have been known to be low in fluid level, therefore an examination was scheduled to verify fluid level.

Component Examined	Class	Previous Exam Rpt#	Exam Rpt#	ISI ISO	Results
MSA-CE029A	2	93-439	196159	2.2-53	Accepted
MSA-CE029B	2	93-440	196160	2.2-53	Accepted
MSB-CE027A	2	93-443	196161	2.2-54	Required Fluid
MSB-CE027B	2	93-444	196162	2.2-54	Accepted
MSC-CE029	2	93-447	196163	2.2-55	Accepted
MSD-CE026	2	93-451	196164	2.2-56	Required Fluid
MSE-CE037	2	93-461	196165	2.2-57	Accepted
MSF-CE007	2	95-049	196166	2.2-58	Accepted
MSF-CE009	2	93-464	196167	2.2-58	Required Fluid

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## SECOND TEN YEAR INTERVAL INSERVICE INSPECTION REPORT

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Part F, page 1 of 2

## 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: IES Utilities Inc.  
P.O. Box 351  
Cedar Rapids, IA. 52406  
  
Central Iowa Power Cooperative  
Marion, IA. Corn Belt Power Cooperative  
Humbolt, IA.
- 2) Plant: Duane Arnold Energy Center, Palo, IA. 52324
- 3) Plant Unit: #1
- 4) Owners Certificate of Authorization (if required): N/A
- 5) Commercial Service Date: 02/01/75
- 6) National Board Number of Unit: N/A

GROSS GENERATING CAPACITY: 565 MWE

<u>NIS-2 NO.</u>	<u>CLASS</u>	<u>COMPONENTS</u>	<u>DESCRIPTION</u>
14-95-02	2	SV-4333A (PMAR 1087343)	Replaced Pilot/Main Discs
14-95-03	2	EBB-14-SS-15 (CMAR A23051)	Replaced Snubber EBB-14-SS-15 (S/N DS-368) with spare snubber (S/N DA-01)
14-95-06	2	HLE-012-SS-310 (PMAR 1087017)	Replaced Main Cylinder Tube
14-95-07	2	GBB-003-SS-226 (PMAR 1087066)	Replaced Compression Poppet and Calibrated Valve
14-96-03	2	V22-0016 (CMAR A28570)	Replacement of disc
14-96-05	2	SV4334 (PMAR 1090656)	Pilot/Main Discs Replaced
14-96-09	2	EBB-014-SS-013 (PMAR 1091442)	Replaced Snubber EBB-014-SS-013 (S/N DA-004) with spare snubber (S/N DA-368)
14-96-10	2	PSV-1952 (CMAR A26700)	Relief Valve was gagged in place
14-96-11	1	DLA-002-SS-009 (PMAR 1097141)	Replaced load pin and snubber with spare snubber: (S/N 26373)
14-96-12	2	EBD-006-SS-154 (S/N DA-383) (PMAR 1091850)	Replaced main piston, main piston rod, and piston rod nut
14-96-15	2	PSV-2129 (CMAR A27552)	Replaced PSV-2129 with a new Crosby Valve (S/N N86493-00-0002)
14-96-16	2	PSV-2043 (CMAR A26701)	Replaced PSV-2043 with a new Crosby Valve (S/N N56758-00-0002)
14-96-17	2	PSV-2102 (PMAR 1091381)	Replaced spring (S/N NX2716-1060)
14-96-18	2	V20-0043 (CMAR A26258)	Replaced V20-0043 and piping (welds 6,7, and 12)
14-96-20	2	PSV-2109 (CMAR A27551)	Replaced valve with (S/N N86493-00-0001) and associated bolting
14-96-22	1	PSV-4402 (PMAR 1091392)	Machining of gasket surface and filter plug. Replacement of 4 bolts and studs
14-96-23	1	PSV-4401 (PMAR 1091390)	Machined filter plug and replaced 2nd stage disc

**SECOND TEN YEAR INTERVAL  
INSERVICE INSPECTION REPORT**  
April 20, 1995 through November 16, 1996

Part F, page 2 of 2

**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: IES Utilities Inc.  
P.O. Box 351  
Cedar Rapids, IA. 52406  
  
Central Iowa Power Cooperative  
Marion, IA.                      Corn Belt Power Cooperative  
Humbolt, IA.
- 2) Plant: Duane Arnold Energy Center, Palo, IA. 52324
- 3) Plant Unit: #1
- 4) Owners Certificate of Authorization (if required): N/A
- 5) Commercial Service Date: 02/01/75
- 6) National Board Number of Unit: N/A

GROSS GENERATING CAPACITY: 565 MWE

<u>NIS-2 NO.</u>	<u>CLASS</u>	<u>COMPONENTS</u>	<u>DESCRIPTION</u>
14-96-24	1	MO-2701 (CMAR A29376)	Seal weld of leak-off plug
14-96-25	2	PSV-2301 (CMAR A27553)	Replacement of relief valve, spring, studs, and nuts
14-96-26	1	PSV-4405 (PMAR 1091397)	Replaced one bolt and nut
14-96-27	2	PSV-2223 (PMAR 1091382)	Replaced spring
14-96-28	2	V22-0016 (ECP 1575)	Relocated valve in system
14-96-29	2	HEA-CC-08(1) HEA-CC-08(2) HEA-CC-08(3) HEA-CC-08(4) (CMAR A32322)	Tightened bolts
14-96-30	2	SDS-CF003 (CMAR A34500)(AR962487)	Removed linear indications (laps in pipe)
14-96-31	1	MO-2239 (CMAR A28226"A")	Seal weld of leak-off plug
14-96-32	2	V22-0017 (CMAR A28281)	Machined disc and tack welded disc nut
14-96-33	1	V20-0082 (CMAR A36004)	Replaced left hinge pin and repaired valve body (material removed)
14-96-34	2	MO-1902 (CMAR A23968)	Drilled hole in disc
14-96-35	1	MO-2401 (CMAR A22505)	Machined bonnet stuffing box
14-96-36	2	LE-2206 (CMAR A27277 "A")	Replacement of flange
14-96-37	1	Recirc. A Suction (ECP-1573)	Replacement of flange and associated bolting
14-96-38	1	PSV-4405 (PMAR 1091396)	Replaced main valve body
14-96-39	1	PSV-4400 (PMAR 1091388)	Machining of filter plug and filter plug seating surface

**SECOND TEN YEAR INTERVAL  
INSERVICE INSPECTION REPORT**  
April 20, 1995 through November 16, 1996

Part G, page 1 of 67

- 1) Owners: IES Utilities Inc.  
P.O. Box 351  
Cedar Rapids, IA. 52406
- Central Iowa Power Cooperative  
Marion, IA.
- Corn Belt Power Cooperative  
Humbolt, IA.
- 2) Plant: Duane Arnold Energy Center, Palo, IA. 52324
- 3) Plant Unit: #1
- 4) Owners Certificate of Authorization (if required): N/A
- 5) Commercial Service Date: 02/01/75
- 6) National Board Number of Unit: N/A

GROSS GENERATING CAPACITY: 565 MWE

**FORM NIS-2's**

SECOND TEN YEAR INTERVAL  
INSERVICE INSPECTION REPORT  
April 20, 1995 through November 16, 1996

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FORM NIS-2 14-95-02

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

1. Owners IES Industries Date August 29, 1995  
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 Road, Palo, IA 52324 PMAR 1087343  
Address Repair Organization to P.O. No., Job No., etc.
3. Work Performed by IES Utilities, Inc. Type Code Symbol Stamp None  
Name Authorization No. None  
3277 DAEC Rd., Palo, IA 52324 Expiration Date None
4. Identification of System Containment Atmosphere Dilution (CAD) - Class 2
- (a) Applicable Construction Code ASME III 1971 Edition N/A Addenda, N/A Code Case.  
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1980W&I
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)
Main Disc	Target Rock	24	N/A	SV-4333A	1974	Replacement	Yes
Pilot Disc	Target Rock	1322	N/A	SV-4333A	1974	Replacement	Yes

7. Description of Work: Pilot/Main Discs were replaced
8. Tests Conducted: Hydrostatic ☐ Pneumatic ☒ Nominal Operating Pressure  
Other Pressure \*44.8 psi Test Temp N/A °F
- \* Test performed during STP 47A005 (LLRT of Valve).

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

(12/82) This Form (E00030) may be obtained from the Order Dept., ASME, 345 E. 47th St., New York, NY 10017

## FORM NIS-2 (Back)

9. Remarks: During performance testing SV4333A failed to open on a consistent basis. The valve was disassembled and  
Applicable Manufacturer's Data Reports to be attached  
inspected. The pilot and main discs were replaced. The body-to-bonnet connection was not tack-welded (ref. Engineering  
Evaluation, NG-94-3509) after reassembly. A Pneumatic Pressure Test (VT-2) was performed during STP 47A005 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 [Signature] Group Leader - Equipment Monitoring Date Aug 30, 1995  
 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 Hartford, CT <sup>U.S.A. 9-14-95</sup> and employed  
 by Hartford Steam Boiler I&I Co. of Hartford, Conn  
 have inspected the components described in this Owner's Report during the period 5-9-95  
 to 9-14-95, 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.

William Mueller Commissions NB 7543 I, N I 0 1046  
 Inspector's Signature National Board, State, Province, and Endorsements  
 Date Sept 14, 1995

FORM NIS-2 14-95-03

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

1. Owners IES Industries Date November 17, 1995  
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 Road, Palo, IA 52324 CMAR A23051  
Address Repair Organization to P.O. No., Job No., etc.
3. Work Performed by IES Utilities, Inc. Type Code Symbol Stamp None  
Name Authorization No. None  
3277 DAEC Rd., Palo, IA 52324 Expiration Date None
4. Identification of System High Pressure Coolant Injection (Class 2)
- (a) Applicable Construction Code ANSI B31.7 1969 Edition 71 Addenda, N/A Code Case.  
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1980W81
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)
EBB-14-SS-15	Bergen Patterson	DA-01	N/A	N/A	*1992	Replacement	No
EBB-14-SS-15	Bergen Patterson	DA-368	N/A	S/N G151988	*1995	Replaced	No

7. Description of Work Replaced Snubber EBB-14-SS-15 (S/N DA-368) with spare snubber (S/N DA-01)
8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure  
Other Pressure N/A psi Test Temp N/A °F

\* Years rebuilt at the DAEC, DA-368 was rebuilt and documented on NIS-2 14-95-04

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. 14-95

## FORM NIS-2 (Back)

9. Remarks Snubber EBB-14-SS-15 (S/N DA-368) was found leaking fluid. Snubber (S/N DA-368) was removed and replaced  
Applicable Manufacturer's Data Reports to be attached  
with spare snubber (DA-01) which was rebuilt and documented on NIS-2 11-92-39. A Preservice VT-3/4 (Rpt. #94-038) was  
performed 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 N/A

Signed William O Muller GL Equipment Monitoring Date 11/20, 1995  
 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, Conn have inspected the components described in this Owner's Report during the period 8-10-94 to 11-20-95, 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.

William O Muller Commissions NB7542 N I Ia 1046  
 Inspector's Signature National Board, State, Province, and Endorsements  
 Date Nov 20, 1995



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

1. Owners IES Industries Date December 20, 1995  
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 Road, Palo, IA 52324 PMAR 1087017  
Address Repair Organization to P.O. No., Job No., etc.
3. Work Performed by IES Utilities, Inc. Type Code Symbol Stamp None  
Name Authorization No. None  
3277 DAEC Rd., Palo, IA 52324 Expiration Date None
4. Identification of System: Residual Heat Removal (RHR) - Class 2
5. (a) Applicable Construction Code ASME III 19 77 Edition W77 Addenda, N-71, N225, N-249 Code Case.  
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1980 W81
6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (YES or NO)
Main Cylinder Tube	Anchor Darling	N/A	N/A	HLE-012-SS-310 (DA-357)	1992	Replacement	No

7. Description of Work: Main Cylinder Tube was replaced during rebuilding of HLE-012-SS-310
8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure  
Other ☐ Pressure N/A psi Test Temp N/A °F

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

## FORM NIS-2 (Back)

9. Remarks: While rebuilding snubber DA-357, it was necessary to replace the main cylinder tube. The snubber was tested and  
Applicable Manufacturer's Data Reports to be attached  
found acceptable. DA-357 was installed at location HLE-012-SS-310. A preservice VT-3/4 (P95005) was completed 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 \_\_\_\_\_ N/A \_\_\_\_\_

Signed Kenneth P. Schuch GL Equipment Monitoring Date 1-3, 1996  
 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 of  
Hartford, Conn. have inspected the components described in this Owner's Report during the period  
12-1-95 to 1-3-96, 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.

William W. Muller  
 Inspector's Signature

Commissions NB 7542 N.I. I 2 1043  
 Nation, Board, State, Province, and Endorsements

Date Jan 3, 1996

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

1. Owners IES Industries Date December 20, 1995  
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 Road, Palo, IA 52324 PMAR 1087066  
Address Repair Organization to P.O. No., Job No., etc.
3. Work Performed by IES Utilities, Inc. Type Code Symbol Stamp None  
Name Authorization No. None  
3277 DAEC Rd., Palo, IA 52324 Expiration Date None
4. Identification of System: Residual Heat Removal (RHR) - Class 2
5. (a) Applicable Construction Code ANSI B31.7 1969 Edition 71 Addenda, N/A Code Case.  
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 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 (Y/N or No)
Compression Poppet	Anchor Darling	PN 202-1061-003	N/A	DA-358	1989	Replacement	No
Calibrated Valve	Anchor Darling	PN 302-1013-202	N/A	DA-358	1990	Replacement	No

7. Description of Work: Snubber DA-358 was rebuilt
8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure  
Other ☐ Pressure \_\_\_\_\_ psi Test Temp \_\_\_\_\_ °F

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

(12/82) This Form (E00030) may be obtained from the Order Dept., ASME, 345 E. 47th St., New York, NY 10017

## FORM NIS-2 (Back)

9. Remarks: Snubber S/N DA-358 was rebuilt, replacing the compression poppet and calibrated valve. The snubber was  
Applicable Manufacturer's Data Reports to be attached  
tested satisfactory and installed at location GBB-003-SS-226. A preservice VT-3/4 (95-074) was completed 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 N/A

Signed Vincent Schuch GL Equipment Monitoring Date 1-3, 1996  
 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 & Co of Hartford, Conn have inspected the components described in this Owner's Report during the period 5-23-95 to 1-3-96, 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.

William O Muller  
 Inspector's Signature

Commissions NB7543, N, I, I-2 1043  
 National Board, State, Province, and Endorsements

Date Jan 3, 1996

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

1. Owners IES Industries Date February 1, 1996  
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 Road, Palo, IA 52324 CMAR A28570  
Address Repair Organization to P. O. No., Job No., etc.
3. Work Performed by IES Utilities, Inc. Type Code Symbol Stamp None  
Name Authorization No. None  
3277 DAEC Road, Palo, IA 52324 Expiration Date None
4. Identification of System: High Pressure Coolant Injection (HPCI) - Class 2
5. (a) Applicable Construction Code ASME P&V Draft 19 68 Edition N/A Addenda N/A Code Case.  
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1980W81
6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (YES or NO)
Disc	Anchor/Darling	1	N/A	HT #220972	1983	Replacement	Yes
Disc	Anchor/Darling	1	N/A	HT #220972	1983	Repaired	Yes

7. Description of Work: Disc was replaced on V22-0016
8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒  
Other ☐ Pressure 17 psi Test Temp 254 °F

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

FORM NIS-2 (Back)

9. Remarks: V22-0016 was leaking by; therefore, CMAR A28570 was written to document repairs. A new disc assembly  
Applicable Manufacturer's Data Reports to be attached  
was prepared to install after opening. Anti-rotational lugs were welded to the new disc. Final NDE was acceptable. The  
valve was reassembled, an LLRT and a pressure test (ISI #P96001) were completed and accepted.

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 N/A

Signed Kenneth Schuch GL Equipment Monitoring Date 2/2 1996  
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, Conn. have inspected the components described in this Owner's Report  
during the period 1-9-96 to 2-26-96, 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.

William W. Muller Commissions NB 7542 I.N. I.D. 1046  
Inspector's Signature National Board, State, Province, and Endorsements

Date Feb. 26, 19 96



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

1. Owners IES Industries Date 5/7/96  
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 Road, Palo, IA 52324 PMAR 1090656  
Address \_\_\_\_\_ Repair Organization to P. O. No., Job No., etc. \_\_\_\_\_
3. Work Performed by IES Utilities, Inc. Type Code Symbol Stamp None  
Name \_\_\_\_\_ Authorization No. None  
3277 DAEC Road, Palo, IA 52324 Expiration Date None
4. Identification of System: Containment Atmosphere Dilution (CAD) - Class 2
5. (a) Applicable Construction Code ASME III 19 71 Edition N/A Addenda N/A Code Case.  
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1980W&1
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)
Main Disc	Target Rock	30	N/A	SV4334A	1987	Replacement	Yes
Pilot Disc	Target Rock	1159	N/A	SV4334A	1987	Replacement	Yes

7. Description of Work: Pilot/Main Discs were replaced
8. Tests Conducted: Hydrostatic ☐ Pneumatic ☒ Nominal Operating Pressure ☐  
Other ☐ Pressure 44.7 psi Test Temp N/A

\* Test performed during STP 47A005 (LLRT of valve)

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

## FORM NIS-2 (Back)

9. Remarks: The valve was disassembled and inspected. The pilot and main discs were replaced. The body-to-bonnet  
Applicable Manufacturer's Data Reports to be attached  
connection was not tack-welded (Ref. Engineering Evaluation, NG-94-3509) after reassembly. A Pneumatic Pressure Test  
(VT-2) was performed during STP 47A005 and accepted.

## 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 N/A

Signed *Karl P. Schuch* GL Equipment Monitoring Date 5/21 1996  
 Owner or Owner's Designer, 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, Conn. have inspected the components described in this Owner's Report  
 during the period 2-28-96 to 5-21-96, 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.

*William O. Mueller* Commissions NB 7542 I N I 1046  
 Inspector's Signature National Board, State, Province, and Endorsements

Date May 21, 19 96



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

1. Owners IES Industries Date 9/18/96  
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 Road, Palo, IA 52324 PMAR 1091442  
Address \_\_\_\_\_ Repair Organization to P. O. No., Job No., etc. \_\_\_\_\_
3. Work Performed by IES Utilities, Inc. Type Code Symbol Stamp None -  
Name \_\_\_\_\_ Authorization No. None  
3277 DAEC Road, Palo, IA 52324 Expiration Date None
4. Identification of System: HPCI Steam Supply Header Snubber - EBB-014-SS-013
5. (a) Applicable Construction Code ANSI B31.7 19 69 Edition 71 Addenda N/A Code Case.  
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1980
6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (YES or NO)
Snubber	Bergen Paterson	NAP	NAP	DA-004	Unknown	Replaced	No
Snubber	Bergen Paterson	NAP	NAP	DA-368	Unknown	Replacement	No

7. Description of Work: Installed rebuilt snubber DA-368
8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☐
- Other ☐ Pressure N/A psi Test Temp N/A °F

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

## FORM NIS-2 (Back)

9. Remarks: Removed snubber DA-004 and installed rebuilt snubber DA-368. Snubber DA-368 was rebuilt on CMAR  
Applicable Manufacturer's Data Reports to be attached

A23051A and documented on NIS-2 14-95-04.

## 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 N/A

Signed Kevin P. Schuch GL Equipment Monitoring Date 9/19 1996  
 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, Conn. have inspected the components described in this Owner's Report  
 during the period 5-7-96 to 9-26-96, 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.

William M. Mueller Commissions NB 7543 Ia 1046  
 Inspector's Signature National Board, State, Province, and Endorsements

Date Sept 26, 1996

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

1. Owners IES Industries Date 10/24/96  
Name  
P. O. Box 351, Cedar Rapids, IA 52406  
Address Sheet 1 of 2
2. Plant Duane Arnold Energy Center Unit 1  
Name  
3277 DAEC Road, Palo, IA 52324 Address CMAR A26700  
Repair Organization to P. O. No., Job No., etc.
3. Work Performed by IES Utilities, Inc. Type Code Symbol Stamp None  
Name Authorization No. None  
3277 DAEC Road, Palo, IA 52324 Expiration Date None
4. Identification of System: Residual Heat Removal (RHR) Class 2
5. (a) Applicable Construction Code ASME III 19 71 Edition W71 Addenda N/A Code Case.  
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1980
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)
PSV-1952	Crosby	N56758-00-0001	N/A	Model #JB-TD-35WC	1972	N/A	YES

7. Description of Work: PSV-1952 was gagged in place
8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☐  
Other ☐ Pressure N/A psi Test Temp N/A ° F

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

## FORM NIS-2 (Back)

9. Remarks: Engineered Maintenance Action (EMA) A26700 was used to document the replacement of PSV1953 and to  
Applicable Manufacturer's Data Reports to be attached

gag in place PSV-1952. The replacement of PSV1953 will be documented on a separate NIS-2 Form.

## CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this gagged in place  
(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 N/A

Signed Karl L. Seider GL Equipment Monitoring Date 11/6/96 1996  
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, Conn. have inspected the components described in this Owner's Report  
during the period 9-26-96 to 11-25-96, 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.

William Mueller Commissions NA 7542 IN ID 1046  
Inspector's Signature National Board, State, Province, and Endorsements  
Date Nov 8 19 96

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

1. Owners IES Industries Date 10/31/96  
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 Road, Palo, IA 52324 PMAR 1097141  
Address \_\_\_\_\_ Repair Organization to P. O. No., Job No., etc. \_\_\_\_\_
3. Work Performed by IES Utilities, Inc. Type Code Symbol Stamp None  
Name \_\_\_\_\_ Authorization No. None  
3277 DAEC Road, Palo, IA 52324 Expiration Date None
4. Identification of System: Reactor Feedwater Inlet Header Snubber - DLA-002-SS-009
5. (a) Applicable Construction Code ASME Section III 19 74 Edition W76 Addenda 1644-5 Code Case.  
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1980
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)
Load Pin	PSA	NAP	NAP	P/N 64161	1983	Replacement	NO
PSA-3 Snubber	PSA	26373	NAP	P/N 1801106-05	1983	Replacement	NO

7. Description of Work: Replaced PSA-3 Snubber and load pin
8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☐
- Other ☐ Pressure NAP psi Test Temp NAP °F

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



## FORM NIS-2 (Back)

9. Remarks: Replaced PSA-3 Snubber S/N 1888 with new, never installed, PSA-3 Snubber S/N 26373. Also  
Applicable Manufacturer's Data Reports to be attached

replaced rear load pin.

## 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 N/A

Signed Kenneth Schuch GL Equipment Monitoring Date 11/1/96 1996  
 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, Conn. have inspected the components described in this Owner's Report during the period 10-24-96 to 11-4-96, 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.

William M. Mulla  
 Inspector's Signature

Commissions

NB 7542 I, N, I-1046  
 National Board, State, Province, and Endorsements

Date Nov 4, 19 96

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

1. Owners IES Industries Date 10/31/96  
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 Road, Palo, IA 52324 PMAR 1091850  
Address \_\_\_\_\_ Repair Organization to P. O. No., Job No., etc. \_\_\_\_\_
3. Work Performed by IES Utilities, Inc. Type Code Symbol Stamp None  
Name \_\_\_\_\_ Authorization No. None  
3277 DAEC Road, Palo, IA 52324 Expiration Date None
4. Identification of System: Main Steam Bypass Valve Snubber - EBD-006-SS-154
5. (a) Applicable Construction Code ANSI B31.7 19 69 Edition W70 Addenda NA Code Case.  
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1980
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)
Main Piston	Anchor Darling	NAP	NAP	P/N 302-1052-003	1990	Replacement	NO
Main Piston Rod	Anchor Darling	NAP	NAP	P/N 116-008	1990	Replacement	NO
Piston Rod Nut	Anchor Darling	NAP	NAP	P/N 296-1000-010	1990	Replacement	NO

7. Description of Work: Rebuilt HS-SA-20 Snubber S/N DA-383
8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☐
- Other ☐ Pressure NAP psi Test Temp NAP ° F

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



## FORM NIS-2 (Back)

9. Remarks: Snubber S/N DA-383 was rebuilt and installed at location EBD-006-SS-154. During rebuild, a new piston, Applicable Manufacturer's Data Reports to be attached

piston rod, and piston rod nut were installed.

## 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 N/A

Signed Kevin Schuch GL Equipment Monitoring Date 11/1/96 1996  
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, Conn. have inspected the components described in this Owner's Report during the period 5-7-96 to 11-4-96, 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.

William Mueller Commissions NB 7542 N, I I 2 1046  
Inspector's Signature National Board, State, Province, and Endorsements

Date Nov 4, 19 96

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

1. Owners IES Industries Date 10/31/96  
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 Road, Palo, IA 52324 CMAR A27552  
Address \_\_\_\_\_ Repair Organization to P. O. No., Job No., etc. \_\_\_\_\_
3. Work Performed by IES Utilities, Inc. Type Code Symbol Stamp None  
Name \_\_\_\_\_ Authorization No. None  
3277 DAEC Road, Palo, IA 52324 Expiration Date None
4. Identification of System: Core Spray (Class 2)
5. (a) Applicable Construction Code ASME III 19 71 Edition W71 Addenda NA Code Case.  
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1980
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)
PSV2129	Crosby	N86493-00-0002	NA	Relief Valve	1996	Replacement	YES
Studs (8 ea)	Accutech	Ht #8860543	NA	NA	1996	Replacement	NO
Nuts (16 ea)	Accutech	Ht #8068128	NA	NA	1996	Replacement	NO

7. Description of Work: Replaced PSV2129 with new Crosby Valve (EMA A27551G)
8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒
- Other ☐ Pressure 290 psi Test Temp 80 ° F

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

## FORM NIS-2 (Back)

9. Remarks: AR 95-0628 01 recommended replacement of the existing Crosby valves. EMA A27551G evaluated the Applicable Manufacturer's Data Reports to be attached replacement and found it acceptable. The Replacement Plan included Welds 1 & 2 which were not completed. Bolt/Studs and nuts were replaced. AVT-2 (P96037) was completed and accepted.

## CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and fair 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 N/A

Signed [Signature] GL Equipment Monitoring Date 11/1/96 1996  
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, Conn. have inspected the components described in this Owner's Report during the period 9-26-96 to 11-5-96, 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 NB 7542 I, N I-1046  
National Board, State, Province, and Endorsements

Date Nov 5 19 96

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

1. Owners IES Industries Date 11/02/96  
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 Road, Palo, IA 52324 CMAR A26701  
Address Repair Organization to P. O. No., Job No., etc.
3. Work Performed by IES Utilities, Inc. Type Code Symbol Stamp None  
Name Authorization No. None  
3277 DAEC Road, Palo, IA 52324 Expiration Date None
4. Identification of System: Residual Heat Removal (RHR) Class 2
5. (a) Applicable Construction Code ASME III 19 71 Edition W71 Addenda Code Case.  
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1980
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)
PSV-2043	Crosby	N56758-00-0002	N/A	Model #JB-TD-35WC	1972	N/A	YES

7. Description of Work: PSV-2043 was gagged in place
8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☐  
Other ☐ Pressure N/A psi Test Temp N/A ° F

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

FORM NIS-2 (Back)

9. Remarks: Engineered Maintenance Action (EMA) A26703G was used to document the replacement of PSV2042 and to  
Applicable Manufacturer's Data Reports to be attached

gag in place PSV-2043. The replacement of PSV2042 will be documented on a separate NIS-2 Form.

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this gagged in place  
(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 N/A

Signed Kevin Scheidt GL Equipment Monitoring Date 11/6/96 1996  
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, Conn. have inspected the components described in this Owner's Report  
during the period 9-26-96 to 11-8-96, 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.

William Mueller Commissions NB 7542 N.I. I=1046  
Inspector's Signature National Board, State, Province, and Endorsements

Date Nov 8, 19 96

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

1. Owners IES Industries Date 11/05/96  
Name  
P. O. Box 351, Cedar Rapids, IA 52406  
Address Sheet 1 of 2
2. Plant Duane Arnold Energy Center Unit 1  
Name  
3277 DAEC Road, Palo, IA 52324 Address PMAR 1091381  
Repair Organization to P. O. No., Job No., etc.
3. Work Performed by IES Utilities, Inc. Type Code Symbol Stamp None  
Name Authorization No. None  
3277 DAEC Road, Palo, IA 52324 Expiration Date None
4. Identification of System: Core Spray (CS) Class 2
5. (a) Applicable Construction Code ASME III 19 71 Edition W71 Addenda NA Code Case.  
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1980-W81
6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (YES or NO)
Spring	Crosby	NX2716-1060	N/A	Ht. #20730	1992	Replacement	NO

7. Description of Work: Replaced Spring in PSV 2102
8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒  
Other ☐ Pressure \*2.1 psi Test Temp 68 ° F

\* This relief valve is on suction side of pump.

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



## FORM NIS-2 (Back)

9. Remarks: PSV 2102 was removed for testing. The valve failed the as-found leak test, was disassembled, cleaned, and  
Applicable Manufacturer's Data Reports to be attached

inspected. The spring and spring washers were replaced during reassembly. The valve passed setpoint test and leak test. A  
VT-2 (P96060) was performed and accepted after re-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 N/A

Signed Kenneth Schuch GL Equipment Monitoring Date 11/6/96 1996  
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, Conn. have inspected the components described in this Owner's Report  
during the period 10-29-96 to 11-12-96, 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.

William Mulla  
Inspector's Signature

Commissions NB 7542 I, N IS 1046  
National Board, State, Province, and Endorsements

Date Nov 13, 19 96



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

1. Owners IES Industries Date 11/05/96  
Name  
P. O. Box 351, Cedar Rapids, IA 52406  
Address
2. Plant Duane Arnold Energy Center Unit 1  
Name  
3277 DAEC Road, Palo, IA 52324 Address  
CMAR A26258  
Repair Organization to P. O. No., Job No., etc.
3. Work Performed by IES Utilities, Inc. Type Code Symbol Stamp None  
Name  
3277 DAEC Road, Palo, IA 52324 Authorization No. None  
Expiration Date None
4. Identification of System: Residual Heat Removal (RHR) Class 2
5. (a) Applicable Construction Code ASME III 19 71 Edition NA Addenda NA Code Case.  
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1980-W81
6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (YES or NO)
Piping	U.S.S.	Ht. #L61715	N/A	GBB-5	1988	Replacement	NO
Valve	Velan	S/N 931111-3	N/A	V20-0043	1993	Replacement	YES

7. Description of Work: Replaced V20-0043 and piping welds 6, 7, & 12.
8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒  
Other ☐ Pressure 182 psi Test Temp N/A ° F

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

## FORM NIS-2 (Back)

9. Remarks: V20-0043 was noted as leaking by and, therefore, required replacement. EMA A26257G documented the Applicable Manufacturer's Data Reports to be attached

acceptability of the replacement valve. Final PT was performed and a Functional Test (VT-2, P96039) was performed in accordance with Code Case N-416-1 on welds 6, 7, and 12 and accepted.

## 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 N/A

Signed Kevin L. Schind GL Equipment Monitoring Date 11/6/96 1996  
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, Conn. have inspected the components described in this Owner's Report during the period 10-25-96 to 11-12-96, 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.

Arthur M. Mulla  
Inspector's Signature

Commissions

NB7543 N.I. I-2 1046  
National Board, State, Province, and Endorsements

Date Nov 12, 19 96

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

1. Owners IES Industries Date 11/06/96  
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 Road, Palo, IA 52324 CMAR A27551  
Address \_\_\_\_\_ Repair Organization to P. O. No., Job No., etc. \_\_\_\_\_
3. Work Performed by IES Utilities, Inc. Type Code Symbol Stamp None  
Name \_\_\_\_\_ Authorization No. None  
3277 DAEC Road, Palo, IA 52324 Expiration Date None
4. Identification of System: Core Spray (CS) Class 2
5. (a) Applicable Construction Code ASME III 19 71 Edition W71 Addenda NA Code Case.  
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1980-W81
6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (YES or NO)
PSV-2109	Crosby	N86493-00-0001	N/A	Model #OMNI Series 900	1986	Replacement	YES
Studs	Accutech	Ht# 8860543	N/A	A193B7	1995	Replacement	NO
Nuts	Cardinal	Ht# 8068128	N/A	A1942H	1996	Replacement	NO

7. Description of Work: Replaced PSV-2109
8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒
- Other ☐ Pressure 295 psi Test Temp 70 °F

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

## FORM NIS-2 (Back)

9. Remarks: EMA A27551G documents the replacement of PSV-2109 with a Crosby Omni Series 900 Valve. The CMAR  
Applicable Manufacturer's Data Reports to be attached
- required modification of the inlet piping which was not needed; therefore, Code Case N-416-1 was not needed but used on the  
Pressure Test VT-2 (P96036). The installation also required the replacement of the bolting. The Pressure Test 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 N/A

Signed *Ken P. Schuch* GL Equipment Monitoring Date 11/14 1996  
 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, Conn. have inspected the components described in this Owner's Report  
 during the period 9-26-96 to 11-15-96, 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.

*William M. Mulla* Commissions NB 7542 I, N I 2 1046  
 Inspector's Signature National Board, State, Province, and Endorsements

Date Nov 15, 19 96

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

1. Owners IES Industries Date 11/19/96  
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 Road, Palo, IA 52324 PMAR 1091392  
Address \_\_\_\_\_ Repair Organization to P. O. No., Job No., etc. \_\_\_\_\_
3. Work Performed by IES Utilities, Inc. Type Code Symbol Stamp None  
Name \_\_\_\_\_ Authorization No. None  
3277 DAEC Road, Palo, IA 52324 Expiration Date None
4. Identification of System: Main Steam (MS) Class 1
5. (a) Applicable Construction Code ASME III 19 68 Edition W68 Addenda \_\_\_\_\_ Code Case.  
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1980-W81
6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (YES or NO)
Pilot Body	Target Rock	S/N 189	N/A	PSV 4402	1976	Repaired	NO
Bolts (4 ea)	Cardinal	Ht #8869139	N/A	PSV 4402 (Item #107)	1992	Replacement	NO
Nuts (4 ea)	Target Rock	Ht #25035	N/A	PSV 4402 (Item #150)	1992	Replacement	NO
Filter Plug	Target Rock	S/N 717	N/A	PSV 4402	1976	Repaired	No

7. Description of Work: Repair of PSV 4402 by machining/skincut of gasket surface and filter plug. Replacement for (4 ea) bolts and studs.
8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒
- Other ☐ Pressure 1008 - 1011 psi Test Temp 219 - 245 °F

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



## FORM NIS-2 (Back)

9. Remarks: During testing of PSV 4402 it was necessary to disassemble the valve, machine the gasket surface and filter  
Applicable Manufacturer's Data Reports to be attached

plug. During reassembly 4 bolts and nuts were replaced. A VT-2 (196091) was performed and accepted.

## CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this repair/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 N/A

Signed Kevin P. Schuch GL Equipment Monitoring Date 11/20 1996  
 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, Conn. have inspected the components described in this Owner's Report  
 during the period 9-26-96 to 11-20-96, 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.

William M. Muth  
 Inspector's Signature

Commissions

NB 7542 I, N I 1046  
 National Board, State, Province, and Endorsements

Date Nov 20, 19 96

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

1. Owners IES Industries Date 11/19/96  
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 Road, Palo, IA 52324 PMAR 1091390  
Address \_\_\_\_\_ Repair Organization to P. O. No., Job No., etc.
3. Work Performed by IES Utilities, Inc. Type Code Symbol Stamp None  
Name \_\_\_\_\_ Authorization No. None  
3277 DAEC Road, Palo, IA 52324 Expiration Date None
4. Identification of System: Main Steam (MS) Class 1
5. (a) Applicable Construction Code ASME III 19 68 Edition W68 Addenda NA Code Case.  
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1980-W81
6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (YES or NO)
Filter Plug	Target Rock	S/N #728	N/A	PSV 4401	1976	Repaired	NO
2nd Stage Disc	Target Rock	S/N #71	N/A	PSV 4401	1991	Replacement	NO

7. Description of Work: Machined Filter Plug and replaced 2nd stage disc on PSV 4401.
8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☐
- Other ☐ Pressure 1008 - 1011 psi Test Temp 219 - 245 °F

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



## FORM NIS-2 (Back)

9. Remarks: During testing at Target Rock facility, PSV 4401 was disassembled with the filter plug end and sealing surface  
Applicable Manufacturer's Data Reports to be attached

requiring a skimcut. The second stage disc was also replaced. A VT-2 (I96091) was completed and accepted after  
installation. A VT-3 (P96025) was performed on the second stage disc prior to installation.

## 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 N/A

Signed Kenneth S. Schuch GL Equipment Monitoring Date 11/20 1996  
 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, Conn. have inspected the components described in this Owner's Report  
 during the period 9-26-96 to 11-20-96, 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.

William M. Muller Commissions NB 7542 I N Ia 1046  
 Inspector's Signature National Board, State, Province, and Endorsements

Date Nov 20, 19 96

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

1. Owners IES Industries Date 11/19/96  
Name \_\_\_\_\_  
P. O. Box 351, Cedar Rapids, IA 52406  
Address \_\_\_\_\_
2. Plant Duane Arnold Energy Center Unit 1  
Name \_\_\_\_\_  
3277 DAEC Road, Palo, IA 52324 Address \_\_\_\_\_  
CMAR A29376  
Repair Organization to P. O. No., Job No., etc. \_\_\_\_\_
3. Work Performed by IES Utilities, Inc. Type Code Symbol Stamp None  
Name \_\_\_\_\_ Authorization No. None  
3277 DAEC Road, Palo, IA 52324 Expiration Date None
4. Identification of System: Reactor Water Cleanup (RWCU) Class 1
5. (a) Applicable Construction Code ASME P&V Draft 19 68 Edition \_\_\_\_\_ Addenda \_\_\_\_\_ Code Case.  
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1980-W81
6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (YES or NO)
Leak-off Plug	Anchor Darling Valve Co.	Model #1471-3	N/A	MO2701	1972	Repaired	YES

7. Description of Work: Seal weld of Leak-off Plug
8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☐  
Other ☐ Pressure \*N/A psi Test Temp N/A °F

\* Pressure Test not required for seal weld.

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

## FORM NIS-2 (Back)

9. Remarks: During system leakage test the Leak-off Line Plug for Valve MO2701 was leaking one (1) drop per second. The Applicable Manufacturer's Data Reports to be attached

plug was seal welded to stop leaking.

## 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 N/A

Signed Kevin P. Schuch GL Equipment Monitoring Date 11/20 1996  
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, Conn. have inspected the components described in this Owner's Report during the period 11-13-96 to 11-20-96, 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.

William M. Miller  
Inspector's Signature

Commissions NB 7542 I. N. Ia 1046  
National Board, State, Province, and Endorsements

Date Nov 20, 19 96

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

1. Owners IES Industries Date 11/19/96  
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 Road, Palo, IA 52324 CMAR A27553  
Address \_\_\_\_\_ Repair Organization to P. O. No., Job No., etc. \_\_\_\_\_
3. Work Performed by IES Utilities, Inc. Type Code Symbol Stamp None  
Name \_\_\_\_\_ Authorization No. None  
3277 DAEC Road, Palo, IA 52324 Expiration Date None
4. Identification of System: High Pressure Coolant Injection (HPCI) Class 2
5. (a) Applicable Construction Code ASME III 19 71 Edition W71 Addenda \_\_\_\_\_ Code Case.  
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1980-W81
6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (YES or NO)
Spring	Crosby	N86494-00-0001	N/A	PSV-2301	1996	Replacement	YES
Studs	Cardinal	Ht #X569B	N/A	FSK4159 Item 18	1986	Replacement	NO
Nuts	Cardinal	Ht #KC8972	N/A	FSK4159 Item 19	1986	Replacement	NO

7. Description of Work: PSV-2301 was replaced. Studs and nuts were also replaced.
8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒
- Other ☐ Pressure 16.3 psi Test Temp N/A °F

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

## FORM NIS-2 (Back)

9. Remarks: PSV-2301 was replaced with new Crosby Omni Series 900 PSV. It was necessary to replace the studs and nuts  
Applicable Manufacturer's Data Reports to be attached

during installation. Prior to installation the setpoint test was completed. A VT-2 (P96038) was completed and accepted.

## 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 N/A

Signed Kevin L. Schuch GL Equipment Monitoring Date 11/20 1996  
 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, Conn. have inspected the components described in this Owner's Report  
 during the period 9-26-96 to 11-20-96, 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.

William M. Meule  
 Inspector's Signature

Commissions NB 7543 I, N I 1046  
 National Board, State, Province, and Endorsements

Date Nov 20, 19 96



FORM NIS-2 14-96-26

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

1. Owners IES Industries Date 11/22/96  
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 Road, Palo, IA 52324 PMAR 1091397  
Address \_\_\_\_\_ Repair Organization to P. O. No., Job No., etc. \_\_\_\_\_
3. Work Performed by IES Utilities, Inc. Type Code Symbol Stamp None  
Name \_\_\_\_\_ Authorization No. None  
3277 DAEC Road, Palo, IA 52324 Expiration Date None
4. Identification of System: Mainsteam (MS) Class I
5. (a) Applicable Construction Code ASME III 19 68 Edition W68 Addenda \_\_\_\_\_ Code Case.  
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1980-W81
6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (YES or NO)
Bolt (1 ea)	Cardinal Ind.	Ht. #8869139	N/A	Item #107	1992	Replacement	NO
Nut (1 ea)	Target Rock	Ht. #25035	N/A	Item #150	1992	Replacement	NO

7. Description of Work: Replaced Bolt/Nut (1 ea) on PSV 4405
8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☐
- Other ☐ Pressure N/A psi Test Temp N/A °F

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

## FORM NIS-2 (Back)

9. Remarks: During reinstallation after testing of PSV 4405, it was necessary to replace one bolt and nut because of  
Applicable Manufacturer's Data Reports to be attached

galling during disassembly. No VT-2 is required for bolting replacement. Manufacturer's examinations were used for the  
required Preservice Exams.

## 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 N/A

Signed Ken P. Seefeld GL Equipment Monitoring Date 11/25 1996  
 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, Conn. have inspected the components described in this Owner's Report  
 during the period 8-13-96 to 12-5-96, 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.

William Mueller  
 Inspector's Signature

Commissions NB 7543 I, N Id 1046  
 National Board, State, Province, and Endorsements

Date Dec 5, 19 96



FORM NIS-2 14-96-27

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

1. Owners IES Industries Date 11/19/96  
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 Road, Palo, IA 52324 PMAR 1091382  
Address \_\_\_\_\_ Repair Organization to P. O. No., Job No., etc. \_\_\_\_\_
3. Work Performed by IES Utilities, Inc. Type Code Symbol Stamp None  
Name \_\_\_\_\_ Authorization No. None  
3277 DAEC Road, Palo, IA 52324 Expiration Date None
4. Identification of System: High Pressure Coolant Injection (HPCI) Class 2
5. (a) Applicable Construction Code ASME III 19 71 Edition W71 Addenda \_\_\_\_\_ Code Case.  
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1980-W81
6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (YES or NO)
Spring	Crosby	Pt. #NX2713	N/A	PSV-2223	1972	Replacement	NO
		S/N NX2713-0004					

7. Description of Work: Replaced spring for PSV-2223
8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☐
- Other ☐ Pressure \*0 psi Test Temp N/A °F

\* Relief valve is located on Barometric Condenser. The VT-2 conducted during HPCI Functional Test with HPCI Condensate Pump running pulling a vacuum. Valve was pressurized to 16.3 psig during setpoint test.

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

## FORM NIS-2 (Back)

9. Remarks: While performing relief setpoint verification on PSV-2223, the valve leaked and required disassembly. The  
Applicable Manufacturer's Data Reports to be attached

valve was reassembled with a new spring. The valve was then setpoint tested at 16.3 psig and passed. A VT-2 (P96054) was  
conducted during the HPCI Functional Test and was accepted.

## 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 N/A

Signed Kenneth Schuch GL Equipment Monitoring Date 12/2 1996  
 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, Conn. have inspected the components described in this Owner's Report  
 during the period 10-22-96 to 12-4-96, 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.

William Mueller  
 Inspector's Signature

Commissions NB 7542 I, N I 2 1046  
 National Board, State, Province, and Endorsements

Date Dec 4, 19 96

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

1. Owners IES Industries Date 11/20/96  
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 Road, Palo, IA 52324 ECP-1575  
Address \_\_\_\_\_ Repair Organization to P. O. No., Job No., etc.
3. Work Performed by IES Utilities, Inc. Type Code Symbol Stamp None  
Name \_\_\_\_\_ Authorization No. None  
3277 DAEC Road, Palo, IA 52324 Expiration Date None
4. Identification of System: High Pressure Coolant Injection (HPCI) Class 2
5. (a) Applicable Construction Code ANSI B31.7 19 69 Edition \_\_\_\_\_ Addenda \_\_\_\_\_ Code Case.  
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1980-W81
6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (YES or NO)
Pipe	Tioga	Ht. #N69061	N/A	A-106 GRB	1996	Replacement	NO
V22-0016	Anchor Valve Co.	0436-10-1-3	N/A	Body	1972	Relocated	YES

7. Description of Work: V22-0016 relocated closer to V22-0017
8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒  
Other ☐ Pressure \*19 psi Test Temp N/A °F

\* V22-0016 is located on steam exhaust.

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

FORM NIS-2 14-96-28

## FORM NIS-2 (Back)

9. Remarks: ECP-1575 was written to evaluate the need to relocate V22-0016 closer to V22-0017 to prevent siphoning of  
Applicable Manufacturer's Data Reports to be attached  
torus water into the piping due to vacuum created by turbine exhaust during turbine start. Three supports HLE-6-H-7, HBB-  
6-H-3, and HBB-6-H-2 required to be pinned; therefore, a preservice VT-3/4 (P96057, P96058, and P95059) was completed.  
A VT-2 (P96031) utilizing Code Case N-416-1 was performed and accepted.

## CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this relocation  
 (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 N/A

Signed Kenn P. Schuch GL Equipment Monitoring Date 11/20 1996  
 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, Conn. have inspected the components described in this Owner's Report  
 during the period 10-7-96 to 12-5-96, 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.

William M. Maibach  
 Inspector's Signature

Commissions NB 7542 N I I 2 1046  
 National Board, State, Province, and Endorsements

Date Dec 5, 19 96

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

1. Owners IES Industries Date 11/27/96  
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 Road, Palo, IA 52324 CMAR A32322  
Address \_\_\_\_\_ Repair Organization to P. O. No., Job No., etc. \_\_\_\_\_
3. Work Performed by IES Utilities, Inc. Type Code Symbol Stamp None  
Name \_\_\_\_\_ Authorization No. None  
3277 DAEC Road, Palo, IA 52324 Expiration Date None
4. Identification of System: Residual Heat Removal (RHR) Class 2
5. (a) Applicable Construction Code ASME III 19 68 Edition W68 Addenda NA Code Case.  
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1980-W81
6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (YES or NO)
HEA-CC-08(1)	N/A	N/A	N/A	1E201A	Unknown	Repaired	NO
HEA-CC-08(2)	N/A	N/A	N/A	1E201A	Unknown	Repaired	NO
HEA-CC-08(3)	N/A	N/A	N/A	1E201A	Unknown	Repaired	NO
HEA-CC-08(4)	N/A	N/A	N/A	1E201A	Unknown	Repaired	NO

7. Description of Work: All Bolts on HEA-CC-08(1,2,3,4) tightened
8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☐
- Other ☐ Pressure N/A psi Test Temp N/A °F

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



## FORM NIS-2 (Back)

9. Remarks: During Inservice Inspection (VT-3/4) of HEA-CC-08(2 & 4) some bolts were found loose. AR961892 was  
Applicable Manufacturer's Data Reports to be attached
- written and evaluated as "Accept As Is." However, CMAR A32322 was written to verify torque to 310 fl lbs. All bolts were  
tightened to 310 fl lbs and a Preservice VT-3/4 was completed.

## 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 N/A

Signed Karl S. Sells GL Equipment Monitoring Date 12/2 1996  
 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, Conn. have inspected the components described in this Owner's Report  
 during the period 10-23-96 to 12-4-96, 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.

William M. Mulla  
 Inspector's Signature

Commissions

NB7542 I, N I-1046  
 National Board, State, Province, and Endorsements

Date Dec 4, 1996

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

1. Owners IES Industries Date 12/5/96  
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 Road, Palo, IA 52324 CMAR A34500  
Address \_\_\_\_\_ Repair Organization to P. O. No., Job No., etc. \_\_\_\_\_
3. Work Performed by IES Utilities, Inc. Type Code Symbol Stamp None  
Name \_\_\_\_\_ Authorization No. None  
3277 DAEC Road, Palo, IA 52324 Expiration Date None
4. Identification of System: SCRAM Discharge Header (Class 2)
5. (a) Applicable Construction Code ASME III 19 71 Edition NA Addenda NA Code Case.  
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1980-W81
6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (YES or NO)
SDS-CF003	GE	N/A	N/A	N/A	Unknown	Repaired	YES

7. Description of Work: Removal of linear indications on Weld SDS-CF003
8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☐
- Other ☐ Pressure N/A psi Test Temp N/A °F

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



## FORM NIS-2 (Back)

9. Remarks: Inservice Inspection (Surface examination) I96098 revealed unacceptable linear indications. The indications  
Applicable Manufacturer's Data Reports to be attached  
were removed and a preservice exam (I96098) was performed and accepted. AR 96-2487 initiated CMAR A34500 for  
documentation of the repair.

## 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 N/A

Signed [Signature] GL Equipment Monitoring Date 12-5-96 1996  
 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, Conn. have inspected the components described in this Owner's Report  
 during the period 11-1-96 to 12-5-96, and state that to the best of  
 my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in  
 accordance with the requirements of the ASME Code, Section XI.

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

[Signature] Commissions NB 7542 NI Ia 1046  
 Inspector's Signature National Board, State, Province, and Endorsements

Date Dec 5, 1996

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

1. Owners IES Industries Date 12/16/96  
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 Road, Palo, IA 52324 CMAR A28226 CSR'A'  
Address \_\_\_\_\_ Repair Organization to P. O. No., Job No., etc. \_\_\_\_\_
3. Work Performed by IES Utilities, Inc. Type Code Symbol Stamp None  
Name \_\_\_\_\_ Authorization No. None  
3277 DAEC Road, Palo, IA 52324 Expiration Date None
4. Identification of System: High Pressure Coolant Injection (HPCI) Class 1
5. (a) Applicable Construction Code ASME P&V Draft 19 68 Edition NA Addenda NA Code Case.  
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1980-W81
6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (YES or NO)
Seal Plug	Anchor Valve Co.	N/A	N/A	MO2239	1972	Repaired	NO

7. Description of Work: Seal weld of leak-off plug on bonnet
8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒  
Other ☐ Pressure 950 psi Test Temp N/A °F

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

## FORM NIS-2 (Back)

9. Remarks: The bonnet leak-off plug was machined and then seal welded to assure a more leak-tight joint.  
Applicable Manufacturer's Data Reports to be attached

A final Liquid Penetrant Examination was completed and accepted. A VT-2 (196099) was completed and accepted. Code Case N-498 and Relief Request HT-014 were used.

## 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 \_\_\_\_\_ N/A

Signed W. L. Schuch GL Equipment Monitoring Date 12/18 1996  
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, Conn. \_\_\_\_\_ have inspected the components described in this Owner's Report during the period 5-6-96 to 1-9-97, 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.

Commissions

NA 7542 N.I. Ia 1046  
National Board, State, Province, and Endorsements

William B. Mueller  
Inspector's Signature

Date Jan 9, 19 97

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

1. Owners IES Industries Date 12/16/96  
Name \_\_\_\_\_  
P. O. Box 351, Cedar Rapids, IA 52406  
Address \_\_\_\_\_
2. Plant Duane Arnold Energy Center Unit 1  
Name \_\_\_\_\_  
3277 DAEC Road, Palo, IA 52324 CMAR A28281  
Address \_\_\_\_\_ Repair Organization to P. O. No., Job No., etc. \_\_\_\_\_
3. Work Performed by IES Utilities, Inc. Type Code Symbol Stamp None  
Name \_\_\_\_\_ Authorization No. None  
3277 DAEC Road, Palo, IA 52324 Expiration Date None
4. Identification of System: High Pressure Coolant Injection (HPCI) Class 2
5. (a) Applicable Construction Code ASME P&V Draft 19 68 Edition NA Addenda NA Code Case.  
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1980-W81
6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (YES or NO)
Disc	Anchor Valve Co.	MK #513SK1	N/A	V22-0017	1972	Repaired	NO

7. Description of Work: Disc was machined and disc nut was tack welded.
8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒  
Other ☐ Pressure 19 psi Test Temp \_\_\_\_\_ ° F

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

## FORM NIS-2 (Back)

9. Remarks: The disc for V22-0017 was machined. During reassembly a new disc nut was installed which required a tack  
Applicable Manufacturer's Data Reports to be attached

weld to hold it in place. A VT-2 (P96061) was completed and accepted. Code Case N-498 and Relief Request HT-014 were  
used.

## 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 N/A

Signed Karl L. Schulz GL Equipment Monitoring Date 12/18 1996  
 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, Conn. have inspected the components described in this Owner's Report  
 during the period 10-28-96 to 1-9-97 <sup>w.o.m</sup>, 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.

William M. Maki Commissions NB 7542 N, I Ia 1046  
 Inspector's Signature National Board, State, Province, and Endorsements

Date Jan 9, 19 96  
w.o.m

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

1. Owners IES Industries Date 12/16/96  
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 Road, Palo, IA 52324 CMAR A36004  
Address \_\_\_\_\_ Repair Organization to P. O. No., Job No., etc. \_\_\_\_\_
3. Work Performed by IES Utilities, Inc. Type Code Symbol Stamp None  
Name: \_\_\_\_\_ Authorization No. None  
3277 DAEC Road, Palo, IA 52324 Expiration Date None
4. Identification of System: Residual Heat Removal, LPCI INJ Loop "A"
5. (a) Applicable Construction Code ASME P&V Draft 19 68 Edition 70 Addenda NA Code Case.  
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1980-W81
6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (YES or NO)
Left Hinge Pin	Rockwell	91562 S/N 1	N/A	V20-082	1987	Replacement	NO
Valve Body	Rockwell	1X-80	NB7	Ht #1710482-102	1972	Repaired	NO

7. Description of Work: Replaced left hinge pin and repaired valve body (material removal)
8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒  
Other ☐ Pressure 1008 psi Test Temp 219 °F

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



## FORM NIS-2 (Back)

9. Remarks: Replaced left hinge pin and removed approximately 0.030" material from valve body. Removed material  
Applicable Manufacturer's Data Reports to be attached
- was a casting irregularity that interfered with disc movement. Repair, replacement, and pressure test was documented on  
preservice reports P96062, P96063, and P96091.

## CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this repair and 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 N/A

Signed Kenn P. Schuch GL Equipment Monitoring Date 1/2 1996<sup>18</sup><sub>97</sub>  
 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, Conn. have inspected the components described in this Owner's Report  
 during the period 11-16-96 to 1-8-97, 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.

William C. Muth Commissions NB 7542 N.I. I= 1046  
 Inspector's Signature National Board, State, Province, and Endorsements

Date Jan 8, 19 97

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

1. Owners IES Industries Date 12/16/96  
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 Road, Palo, IA 52324 CMAR A23968  
Address \_\_\_\_\_ Repair Organization to P. O. No., Job No., etc. \_\_\_\_\_
3. Work Performed by IES Utilities, Inc. Type Code Symbol Stamp None  
Name \_\_\_\_\_ Authorization No. None  
3277 DAEC Road, Palo, IA 52324 Expiration Date None
4. Identification of System: Residual Heat Removal (RHR) Class 2
5. (a) Applicable Construction Code ASME P&V Draft 19 68 Edition NA Addenda NA Code Case.  
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1980-W81
6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (YES or NO)
Disc	Anchor Valve Co.	S/N #1	N/A	MO1902	1972	Repaired	NO

7. Description of Work: Drilled Valve Disc with 1/8" Thermal Relief Hole per GL89-10
8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒
- Other ☐ Pressure 170 psi Test Temp N/A °F

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

## FORM NIS-2 (Back)

9. Remarks: Pressure/Thermal Relief Hole was drilled in valve disc in accordance with Generic Letter 89-10 to reduce Applicable Manufacturer's Data Reports to be attached

potential binding in Valve MQ1902 operation.

## 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 N/A

Signed Ken L. Schuch GL Equipment Monitoring Date 12/18/96 1996  
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, Conn. have inspected the components described in this Owner's Report during the period 6-17-96 to 1-8-97, 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 William D. Mulla Commissions NB 7543 N, I Ia 1046  
National Board, State, Province, and Endorsements

Date Jan 8, 19 97

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

1. Owners IES Industries Date 12/17/96  
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 Road, Palo, IA 52324 CMAR A22505  
Address \_\_\_\_\_ Repair Organization to P. O. No., Job No., etc. \_\_\_\_\_
3. Work Performed by IES Utilities, Inc. Type Code Symbol Stamp None  
Name \_\_\_\_\_ Authorization No. None  
3277 DAEC Road, Palo, IA 52324 Expiration Date None
4. Identification of System: RCIC Steam Supply, Outboard Isolation
5. (a) Applicable Construction Code ASME P&V Draft 19 68 Edition NA Addenda NA Code Case.  
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1980-W81
6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (YES or NO)
Bonnet	Anchor/Darling	11461 S/N 4	N/A	MO2401	1974	Repaired	NO

7. Description of Work: Machined bonnet stuffing box.
8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Normal Operating Pressure ☐
- Other ☐ Pressure N/A psi Test Temp N/A °F

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

(12/82) This Form (E00030) may be obtained from the Order Dept., ASME, 345 E. 47th St., New York, NY 10017.

## FORM NIS-2 (Back)

9. Remarks: Removed skim cut from bonnet stuffing box to provide true fit for bronze aluminum packing spacer.  
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 N/A

Signed *Vern L. Schuch* GL Equipment Monitoring Date 1-2 1997  
 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, Conn. have inspected the components described in this Owner's Report during the period 10-28-96 to 1-9-97, 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.

*William W. Mueller*  
 Inspector's Signature

Commissions NB 7542 I, N I = 1046  
 National Board, State, Province, and Endorsements

Date Jan 9, 19 97



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

1. Owners IES Industries Date 12/17/96  
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 Road, Palo, IA 52324 CMAR A27277 CSR'A'  
Address \_\_\_\_\_ Repair Organization to P. O. No., Job No., etc. \_\_\_\_\_
3. Work Performed by IES Utilities, Inc. Type Code Symbol Stamp None  
Name \_\_\_\_\_ Authorization No. None  
3277 DAEC Road, Palo, IA 52324 Expiration Date None
4. Identification of System: High Pressure Coolant Injection (HPCI) Class 2
5. (a) Applicable Construction Code ANSI B31.7 19 69 Edition 70 Addenda NA Code Case.  
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1980-W81
6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (YES or NO)
LE2206	Fluid Components Inc.	S/N 6007-1, 6008-1	N/A	N/A	1996	Replacement	NO
Studs (4 ea)	Daniel Bolt Co.	Ht #207-X-114B	N/A	A193B7	1973	Replacement	NO
Nuts (8 ea)	Cardinal	Ht #Y083771	N/A	A1942H	1985	Replacement	NO

7. Description of Work: Replacement of LE2206, Bolts, and Nuts
8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒
- Other ☐ Pressure 950 psi Test Temp N/A ° F

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



## FORM NIS-2 (Back)

9. Remarks: LE2206 was replaced with new studs and nuts. The level element is not ASME XI; however, the flange  
Applicable Manufacturer's Data Reports to be attached  
connecting the element to the piping is. A VT-2 (P96042) was completed and accepted. Code Case N-498 and Relief  
Request HT-014 were used.

## 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 N/A

Signed *Ken L. Schuch* GL Equipment Monitoring Date 12/18 1996  
 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, Conn. have inspected the components described in this Owner's Report  
 during the period 10-10-96 to 1-9-97, 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.

Commissions

*William Mullin*  
 Inspector's Signature

NB 7542 N.I. Ia 1046  
 National Board, State, Province, and Endorsements

Date Jan 9, 19 97

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

1. Owners IES Industries Date 12/23/96  
Name \_\_\_\_\_  
P. O. Box 351, Cedar Rapids, IA 52406  
Address \_\_\_\_\_
2. Plant Duane Arnold Energy Center Unit 1  
Name \_\_\_\_\_  
3277 DAEC Road, Palo, IA 52324 ECP 1573  
Address \_\_\_\_\_ Repair Organization to P. O. No., Job No., etc.
3. Work Performed by IES Utilities, Inc. Type Code Symbol Stamp None  
Name \_\_\_\_\_ Authorization No. None  
3277 DAEC Road, Palo, IA 52324 Expiration Date None
4. Identification of System: Recirculation (Class 1)
5. (a) Applicable Construction Code \*ANSI B31.1 19 67 Edition NA Addenda N-2, Code Case.  
N-7, N-9, N-10

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

\* **GE 22A1295AD**

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)
Flange	GE Reuter Stakes	N/A	N/A	Recirc 'A' Suction	1996	Replacement	NO
Studs	Cardinal	Ht #8097943	N/A	SA 193 GRB7	1993	Replacement	NO
Nuts	Cardinal	Ht #8898293	N/A	SA 194 GR2H	1993	Replacement	NO

7. Description of Work: Replacement of Recirc 'A' Suction Blind Flg & Bolting with GE Reuter Stakes Flg w/ Bolting
8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒  
Other ☐ Pressure 1008-1011 psi Test Temp 219-245 °F

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

(12/82) This Form (E00030) may be obtained from the Order Dept., ASME, 345 E. 47th St., New York, NY 10017.

## FORM NIS-2 (Back)

9. Remarks: ECP 1573 installed an instrument flange to measure electrochemical potential for Noble Metal addition. The Applicable Manufacturer's Data Reports to be attached

new/existing flanges were VT-1 (P96045) examined and accepted. New bolting was used for the installation. A System Leakage Test (VT-2, I96091) was performed and accepted.

## 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 N/A

Signed *Ken L. Selby* GL Equipment Monitoring Date 1/2 1997  
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, Conn. have inspected the components described in this Owner's Report during the period 10-17-96 to 1-9-97, 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.

*William O. Mauch*  
Inspector's Signature

Commissions

NB 7542 N, I Ia 1046  
National Board, State, Province, and Endorsements

Date Jan 9, 19 97

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

1. Owners IES Industries Date 01/02/97  
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 Road, Palo, IA 52324 PMAR 1091396  
Address \_\_\_\_\_ Repair Organization to P. O. No., Job No., etc. \_\_\_\_\_
3. Work Performed by IES Utilities, Inc. Type Code Symbol Stamp None  
Name \_\_\_\_\_ Authorization No. None  
3277 DAEC Road, Palo, IA 52324 Expiration Date None
4. Identification of System: Main Steam (Class 1)
5. (a) Applicable Construction Code ASME III 19 68 Edition W68 Addenda N/A Code Case.  
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1980-W81
6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (YES or NO)
Main Valve Body	Target Rock	S/N 203	N/A	PSV-4405	1974	Replacement	NO

7. Description of Work: Replaced the Main Valve Body (S/N 176) with Main Valve Body (S/N 203)
8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒
- Other ☐ Pressure 1008-1011 psi Test Temp 219-245 °F

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

(12/82) This Form (E00030) may be obtained from the Order Dept., ASME, 345 E. 47th St., New York, NY 10017.

## FORM NIS-2 (Back)

9. Remarks: Main Valve Body S/N 176 was removed to perform the necessary modifications to the Main Body to Pilot  
Applicable Manufacturer's Data Reports to be attached
- Flange per GE SIL 196 Supplement 13. The Main Valve Body installed (S/N 203) was repaired under NIS-2 (13-95-53). A  
Pressure Test VT-2 (I96091) was completed after installation and accepted.

## 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 N/A

Signed *Scott M. Miller* GL Equipment Monitoring Date *Jan 2* 1997  
 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, Conn. have inspected the components described in this Owner's Report  
 during the period 8-14-96 to 1-8-97, 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.

Commissions NB7542 N I I 2 1046  
 National Board, State, Province, and Endorsements

*William D. Miller*  
 Inspector's Signature

Date *Jan 8*, 19 *97*



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

1. Owners IES Industries Date 01/16/97  
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 Road, Palo, IA 52324 PMAR 1091388  
Address \_\_\_\_\_ Repair Organization to P. O. No., Job No., etc. \_\_\_\_\_
3. Work Performed by IES Utilities, Inc. Type Code Symbol Stamp None  
Name \_\_\_\_\_ Authorization No. None  
3277 DAEC Road, Palo, IA 52324 Expiration Date None
4. Identification of System: Main Steam (Class 1)
5. (a) Applicable Construction Code ASME III 19 68 Edition W68 Addenda \_\_\_\_\_ Code Case.  
(b) Applicable Edition of Section XI Utilized for Repairs or Replacements 1980-W81
6. Identification of Components Repaired or Replaced and Replacement Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Repaired, Replaced, or Replacement	ASME Code Stamped (YES or NO)
Filter Plug	Target Rock	#218	N/A	PSV-4400	1976	Repaired	NO
Filter Plug Seating Surface	Target Rock	N/A	N/A	PSV-4400	1976	Repaired	NO

7. Description of Work: The filter plug and filter plug seating surface required machining
8. Tests Conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☒ X
- Other ☐ Pressure 1008-1011 psi Test Temp 219-245 °F

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

(12/82) This Form (E00030) may be obtained from the Order Dept., ASME, 345 E. 47th St., New York, NY 10017.



## FORM NIS-2 (Back)

9. Remarks: During testing the pilot valve required disassembly. The filter plug seating area and filter plug required  
Applicable Manufacturer's Data Reports to be attached

machining to correct a slight steam cut that was found. A liquid penetrant examination of the machined surface was  
performed and accepted. A VT-2 Examination (196091) was performed and accepted after the pilot valve was reinstalled.

## 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 N/A

Signed Scott Paulsen GL Equipment Monitoring Date 1-16 1997  
 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, Conn. have inspected the components described in this Owner's Report  
 during the period 9-11-96 to 1-20-97, 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.

William Mueller Commissions NB 7542 N, I Ia 1046  
 Inspector's Signature National Board, State, Province, and Endorsements

Date Jan 20, 19 97

**SECOND TEN YEAR INTERVAL  
INSERVICE INSPECTION REPORT**  
April 20, 1995 through November 16, 1996

Part H, page 1 of 1

- 1) Owners: IES Utilities Inc.  
P.O. Box 351  
Cedar Rapids, IA. 52406  
  
Central Iowa Power Cooperative      Corn Belt Power Cooperative  
Marion, IA.      Humbolt, IA.
- 2) Plant: Duane Arnold Energy Center, Palo, IA. 52324
- 3) Plant Unit: #1
- 4) Owners Certificate of Authorization (if required): N/A
- 5) Commercial Service Date: 02/01/75
- 6) National Board Number of Unit: N/A

GROSS GENERATING CAPACITY: 565 MWE

ABSTRACT OF CONDITIONS NOTED AND CORRECTIVE MEASURES TAKEN:

The corrective measures addressed in this report were performed in accordance with the American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section XI, 1980 Edition through Winter 1981 Addenda, and the Duane Arnold Energy Center Updated Final Safety Analysis Report. The corrective measures performed as Repairs or Replacements are listed in Part 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 1981 Addenda. Specific details and associated records of additional corrective measures are on file at IES Utilities Inc. The corrective measures addressed were performed during the period of April 20, 1995 through November 16, 1996.

**SECOND TEN YEAR INTERVAL  
INSERVICE INSPECTION REPORT**  
April 20, 1995 through November 16, 1996

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**SECOND TEN YEAR INTERVAL  
INSERVICE INSPECTION REPORT**  
April 20, 1995 through November 16, 1996

Part I, page 1 of 45

- 1) Owners: IES Utilities Inc.  
P.O. Box 351  
Cedar Rapids, IA 52406  
  
Central Iowa Power Cooperative      Corn Belt Power Cooperative  
Marion, IA                                  Humbolt, IA.
- 2) Plant: Duane Arnold Energy Center, Palo, IA 52324
- 3) Plant Unit: #1
- 4) Owners Certificate of Authorization (if required): N/A
- 5) Commercial Service Date: 02/01/75
- 6) National Board Number of Unit: N/A

GROSS GENERATING CAPACITY: 565 MWE

**ISI FIGURES AND ISOMETRICS**

**PLEASE NOTE:** ISI Figures and Isometrics are listed in Part B and Part E of this report

SECOND TEN YEAR INTERVAL  
INSERVICE INSPECTION REPORT  
April 20, 1995 through November 16, 1996

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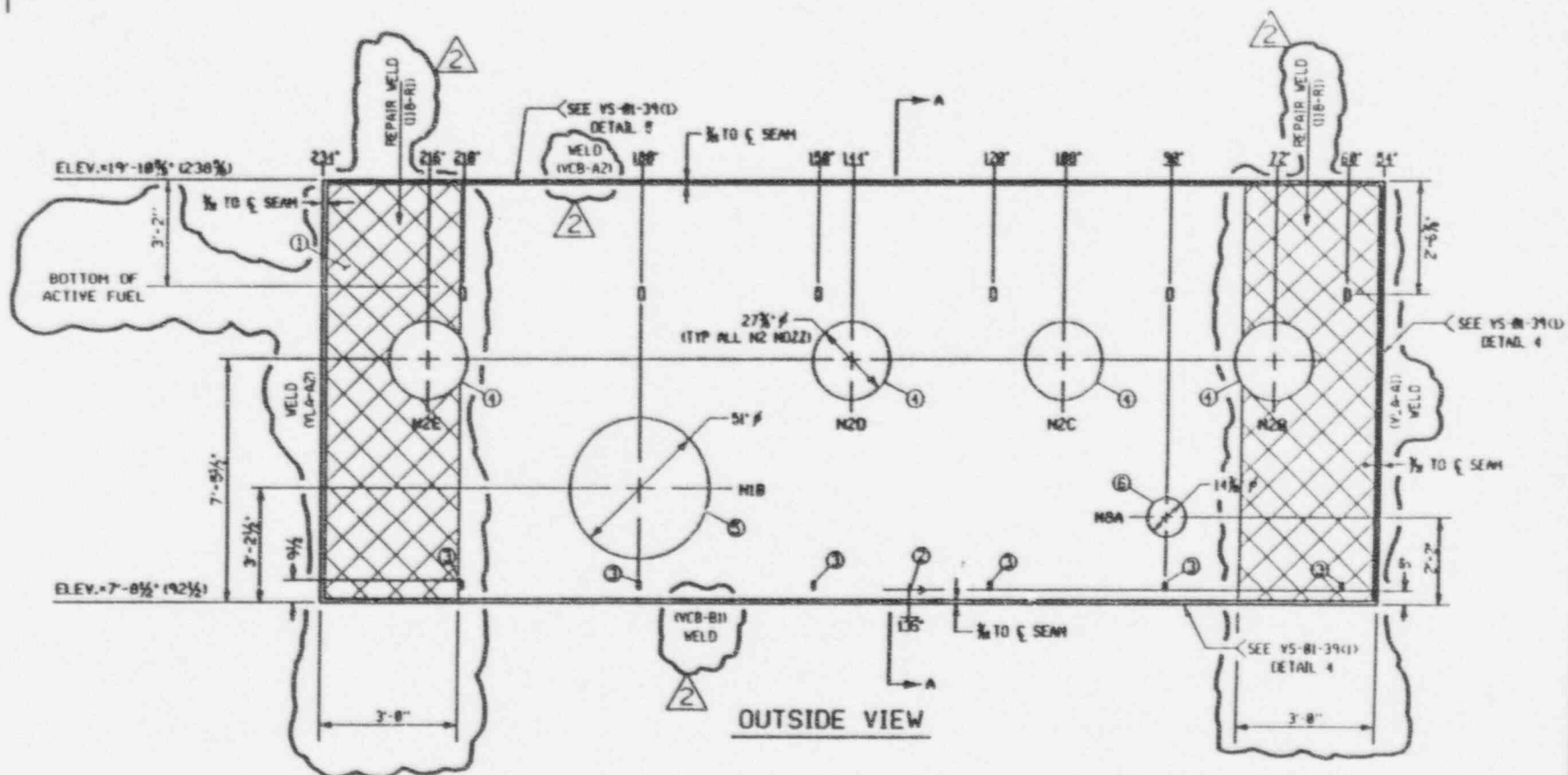
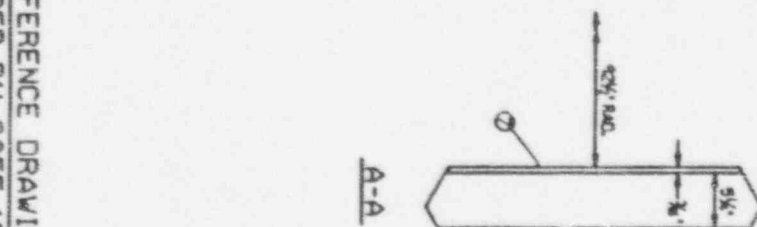


NO.	DESCRIPTION	BILL OF MATL.	PROCD.
1	SHELL PLATE #1	SA533 CLASS 1 GR.B	
2	THERMOCOUPLE PAD	(SEE VS-01-35<1>)	
3	INSUL. SUPPORT CLIP	(SEE VS-01-33)	
4	RECIRC. INLET NOZZ.	(SEE VS-01-11)	
5	RECIRC. OUTLET NOZZ.	(SEE VS-01-10)	
6	JP INSTR. NOZZ.	(SEE VS-01-17)	
7	CLADDING	309	

2	08-08-95	REVISED PER DURF-0011	DA	HA	SA	SS
1	12-09-94	DRAFTED FOR VESSEL INSPECTION PROGRAM	MS	DF	GP	SS
NO.	DATE	REVISION	DRAWN	CHKD.	ENGR.	VER.

REFERENCE DRAWING:  
APED-B11-2655-128

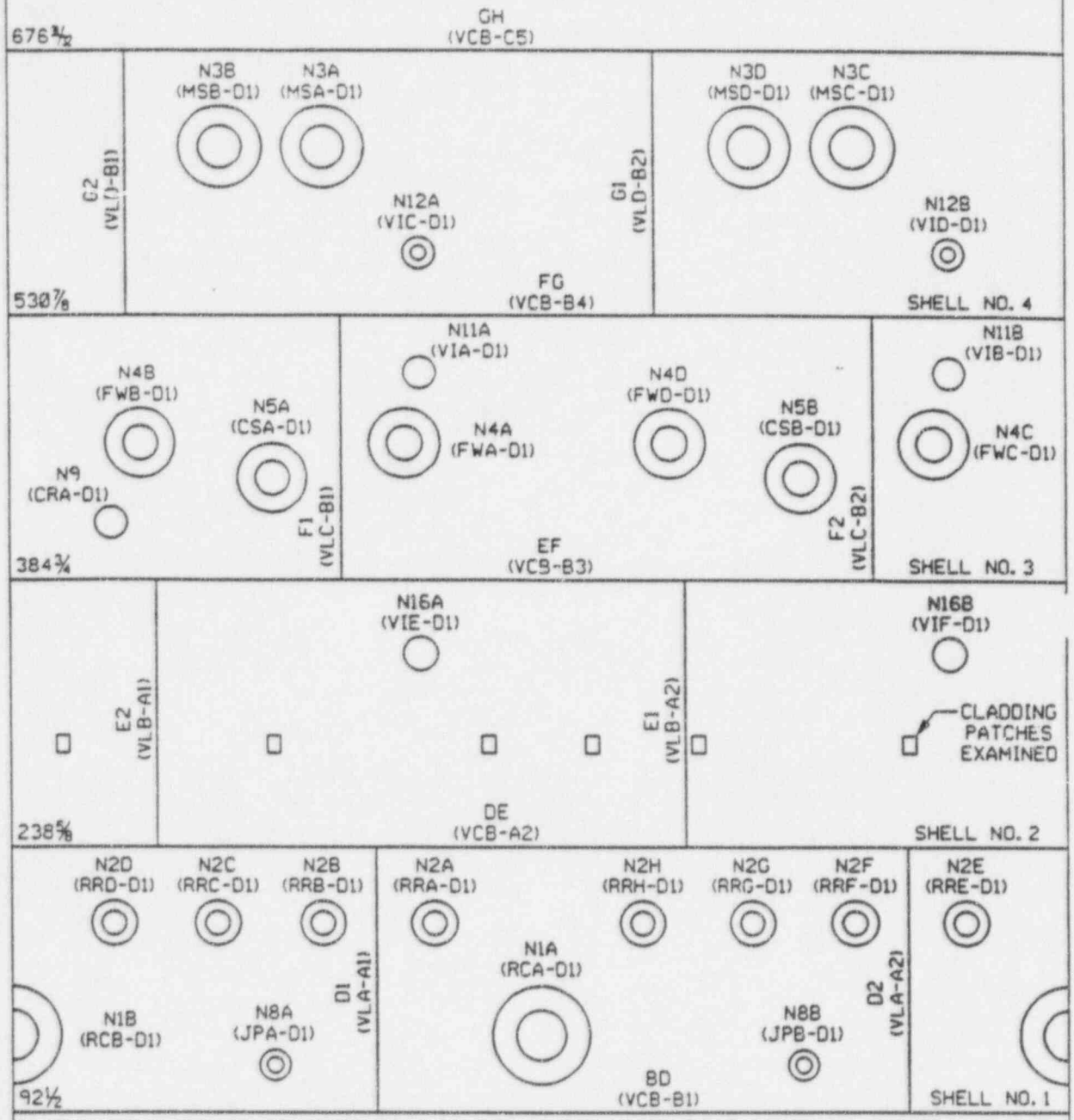
IES:  
Inservice Inspection Program  
Reactor Pressure Vessel Sketch



DWG. NO. VS-01-01<2>  
SHELL PLATE ASSEMBLY  
#1 HALF RING  
REV. 2



180 160 140 120 100 80 60 40 20 0 340 320 300 280 260 240 220 200 180  
 170 150 130 110 90 70 50 30 10 350 330 310 290 270 250 230 210 190



OUTSIDE VIEW

DRAFTED FOR VESSEL INSPECTION PROGRAM

REVISION

12.8.44

DATE

IES:

Inservice Inspection Program  
 Reactor Pressure Vessel Sketch

VESSEL SHELL RING  
 LAYOUT

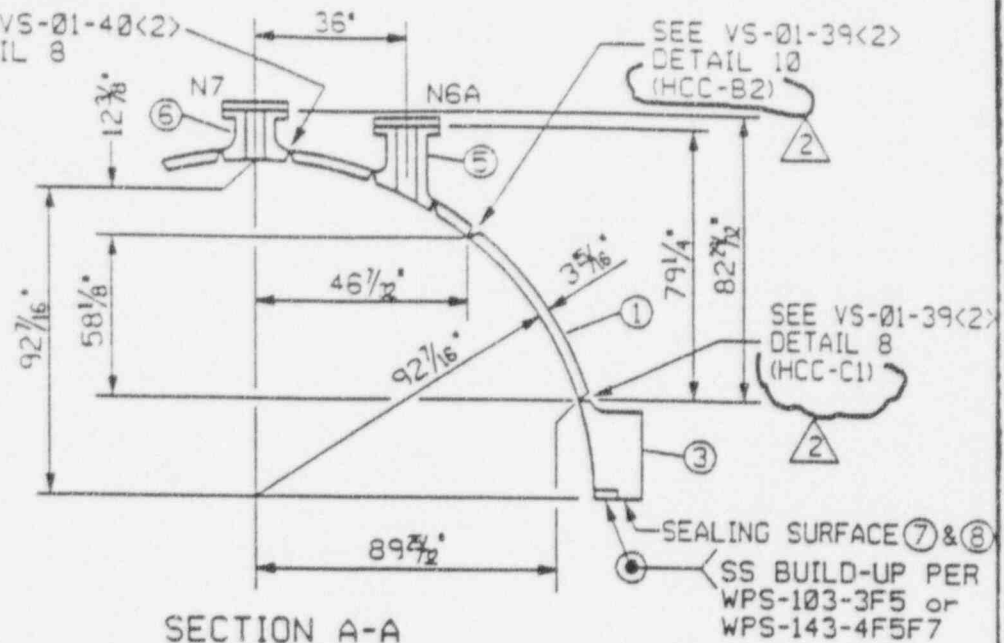
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VS-01-41

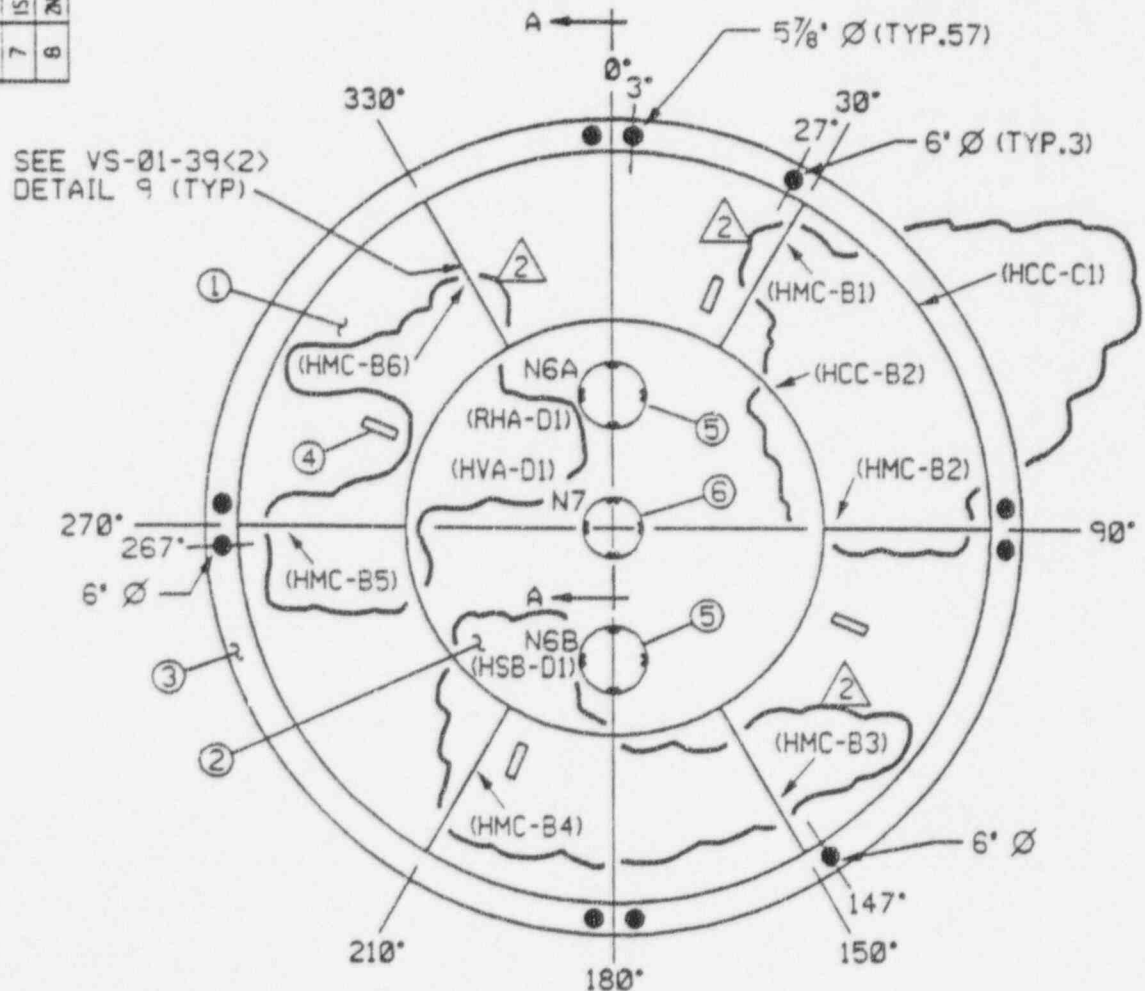
REV.  
 1

NO.	DESCRIPTION	BILL OF MATL.	PROCD.
1	SIDE PLATE	SA533 CLASS 1 GR.B	
2	DOLLAR PLATE	SA533 CLASS 1 GR.B	
3	HEAD FLANGE	A-508 CLASS 2	
4	LIFTING LUG	(SEE VS-01-37)	
5	HEAD SPRAY & INSTR. NOZZ.	(SEE VS-01-15)	
6	VENT NOZZ.	(SEE VS-01-16)	
7	1ST LAYER SEAL SURF. CLADDING	304L	
8	2ND & 3RD LAYER SEAL SURF. CLADDING	308L	

SEE VS-01-40<2>  
DETAIL 8



SECTION A-A



PLAN VIEW

REFERENCE DRAWINGS:

APED-B11-2655-179, APED-B11-2655-211,  
APED-B11-2655-215

IES:

Inservice Inspection Program  
Reactor Pressure Vessel Sketch

TOP HEAD  
ASSEMBLY

DWG. NO.

VS-01-06

REV.

2

REVISED PER DURE-0011

DRAFTED FOR VESSEL INSPECTION PROGRAM

REVISION

DA MS DR TR CHKD ENGR. VER.

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NO.	DESCRIPTION	BILL OF MATL.	PROCD.
1	KNUCKLE	SA533 CLASS 1 GR.B	
2	KNUCKLE EXTENSION	SA516 GR.70	
3	SKIRT EXTENSION	SA516 GR.70	
4	MANHOLE	(SEE VS-01-08)	
5	THERMOCOUPLE PADS	(SEE VS-01-35)	
6	INSULATION		
7	WALKING SURFACE		

NO.	DATE	BY	CHKD.	ENGR.	VER.
1	08-08-95	SS	SS		
2	12-09-94	SS	GP	SS	

REVISED PER DURE-0011  
DRAFTED FOR VESSEL INSPECTION PROGRAM

REVISION

NO. DATE

#### REFERENCE DRAWINGS:

APED-B11-2655-127, APED-B11-3160-010,  
APED-B11-3160-013

#### IES:

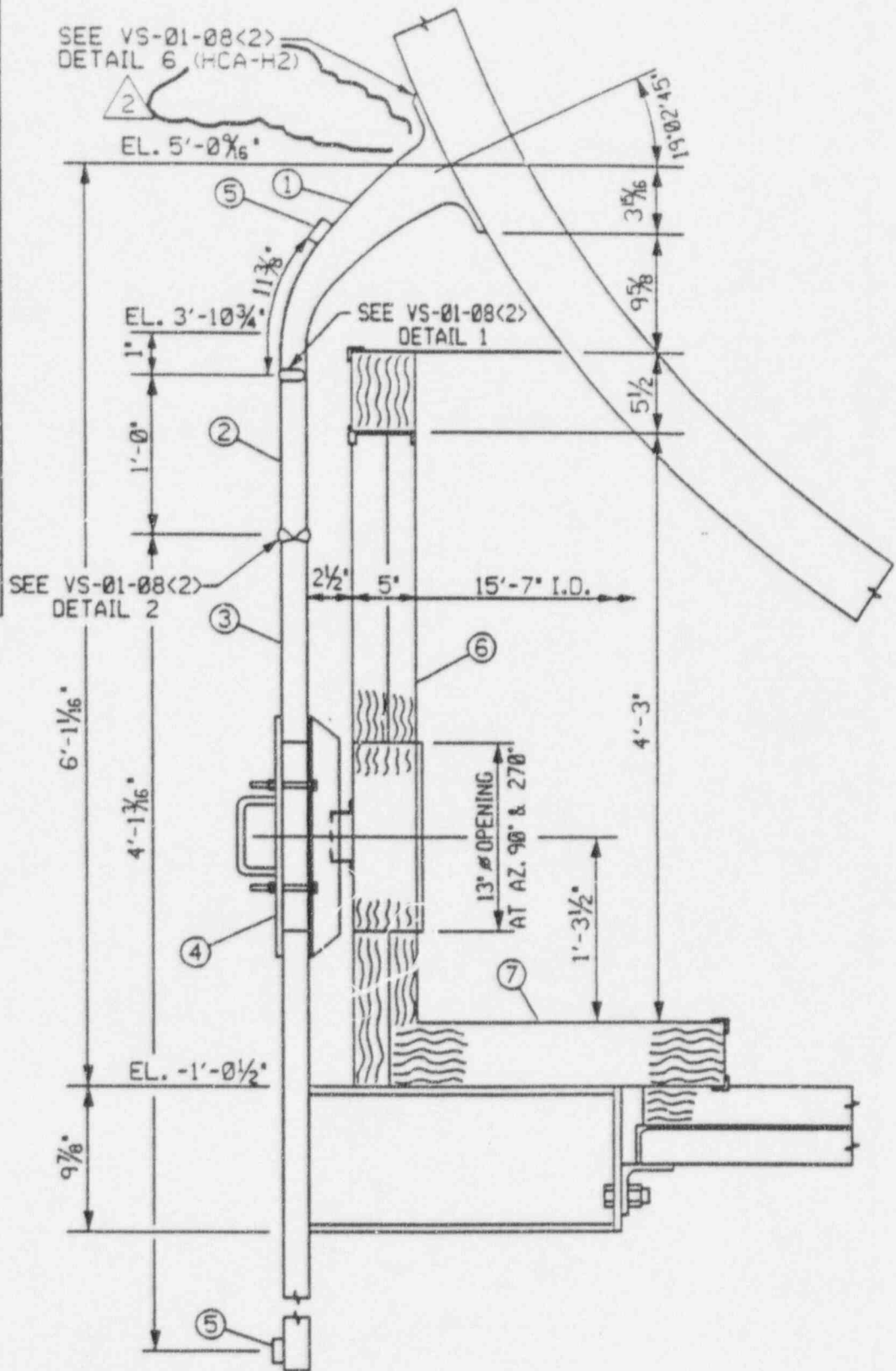
Inservice Inspection Program  
Reactor Pressure Vessel Sketch

SKIRT KNUCKLE &  
SKIRT EXTENSION

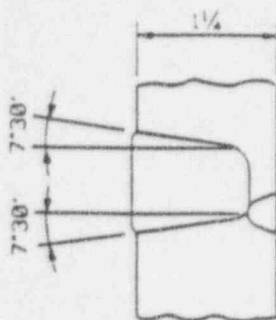
DWG. NO.

VS-01-08<1>

REV.  
2



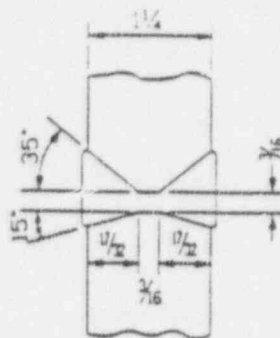




DETAIL 1

SKIRT KNUCKLE TO SKIRT  
KNUCKLE EXTENSION

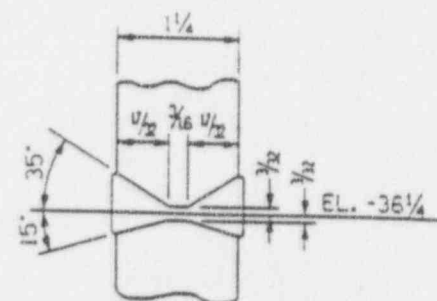
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DETAIL 2

SKIRT EXTENSION  
GIRTH SEAM

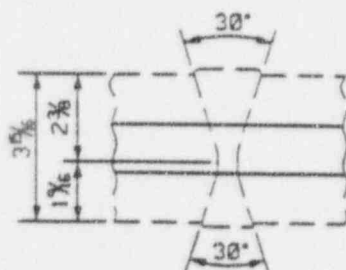
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DETAIL 3

SKIRT EXTENSION TO  
SUPPORT SKIRT

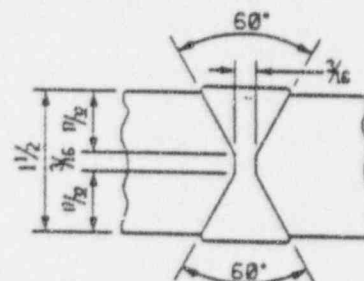
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DETAIL 4

SKIRT KNUCKLE VERT SEAMS

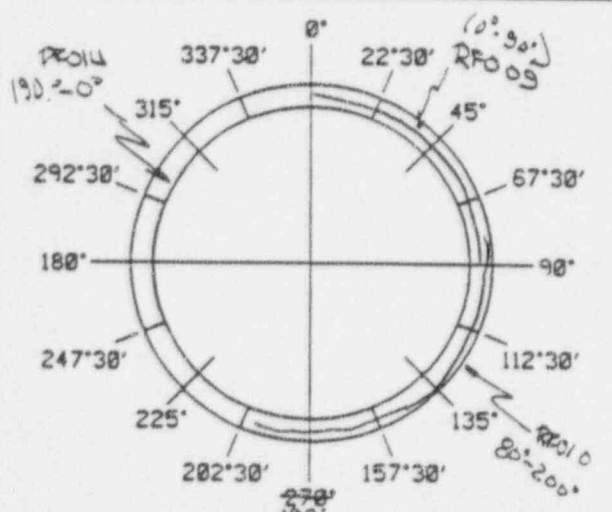
(WELD PER WPS-303-1F4)



DETAIL 5

SKIRT EXTENSION VERT SEAMS

(WELD PER WPS-301-1F4)

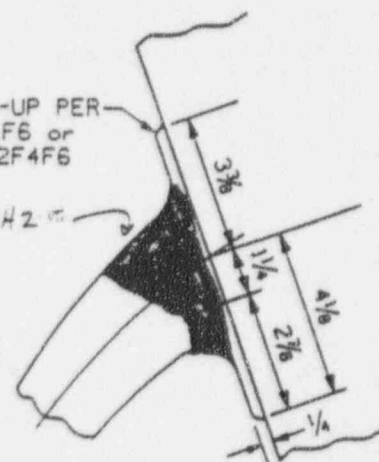
SEAM ORIENTATION  
SKIRT KNUCKLE & SKIRT EXTENSION R.S.

REFERENCE DRAWING:

APED-B11-2655-127

WELD BUILD-UP PER  
WPS-323-1F6 or  
WPS-323-2F4F6

HCA - H2



DETAIL 6

DETAIL OF SKIRT KNUCKLE TO  
BOTTOM HEAD JUNCTION(WELD PER WPS-323-2F4F6 or  
WPS-343-1F4F6)DRAFTED FOR VESSEL INSPECTION PROGRAM  
REVISION  
MS-01-01  
DATE  
NO.

IES:

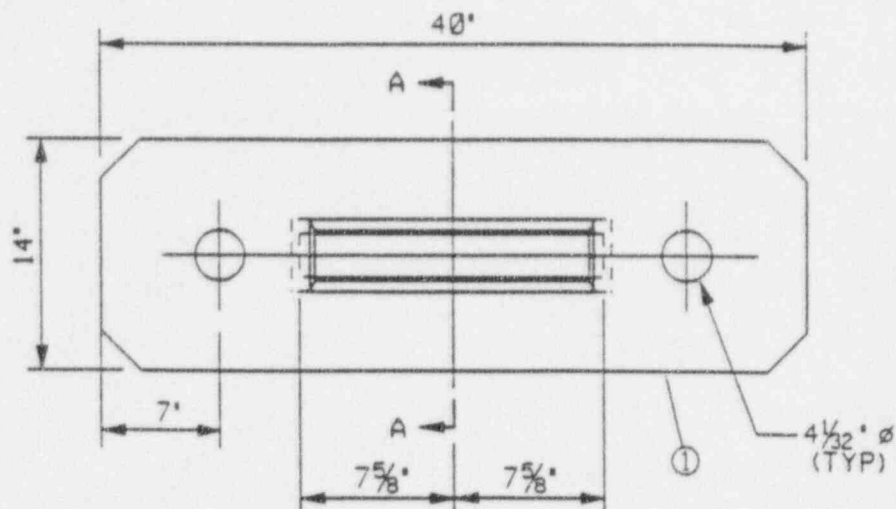
Inservice Inspection Program  
Reactor Pressure Vessel SketchSKIRT KNUCKLE &  
SKIRT EXTENSION

DWG. NO.

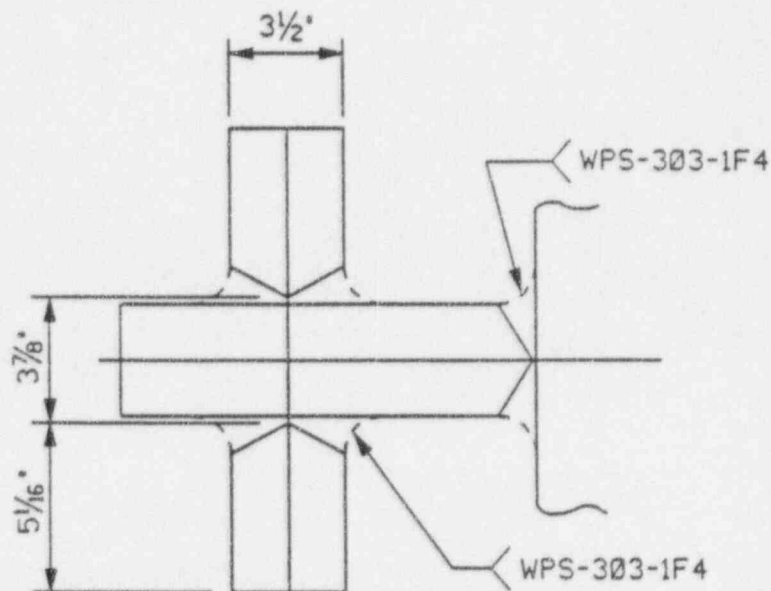
VS-01-08&lt;2&gt;

REV.

1



ELEVATION



SECTION A-A

REFERENCE DRAWINGS:  
APED-B11-001<2>, APED-B11-2655-207

IES:  
Inservice Inspection Program  
Reactor Pressure Vessel Sketch

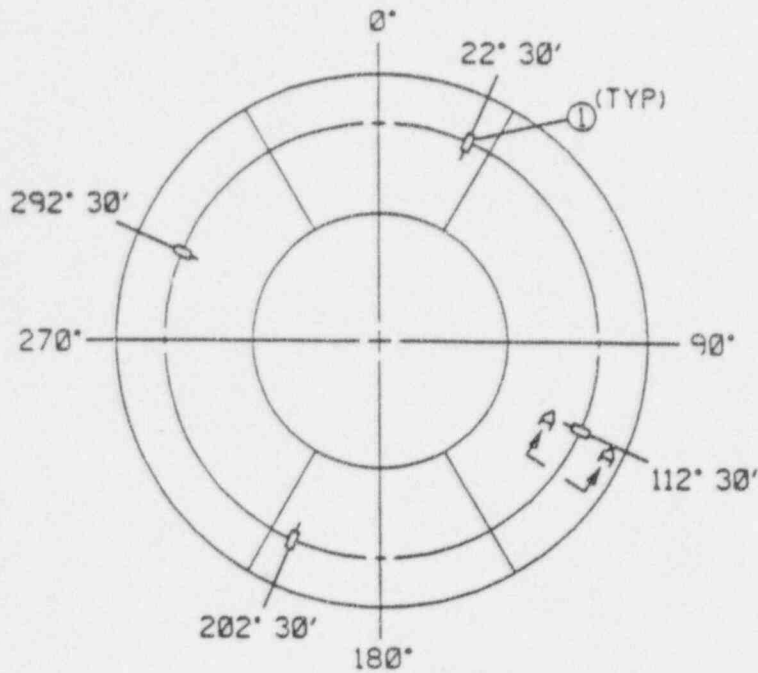
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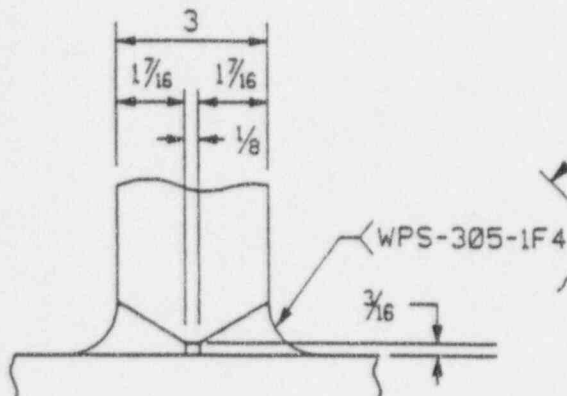
VS-01-32

REV.  
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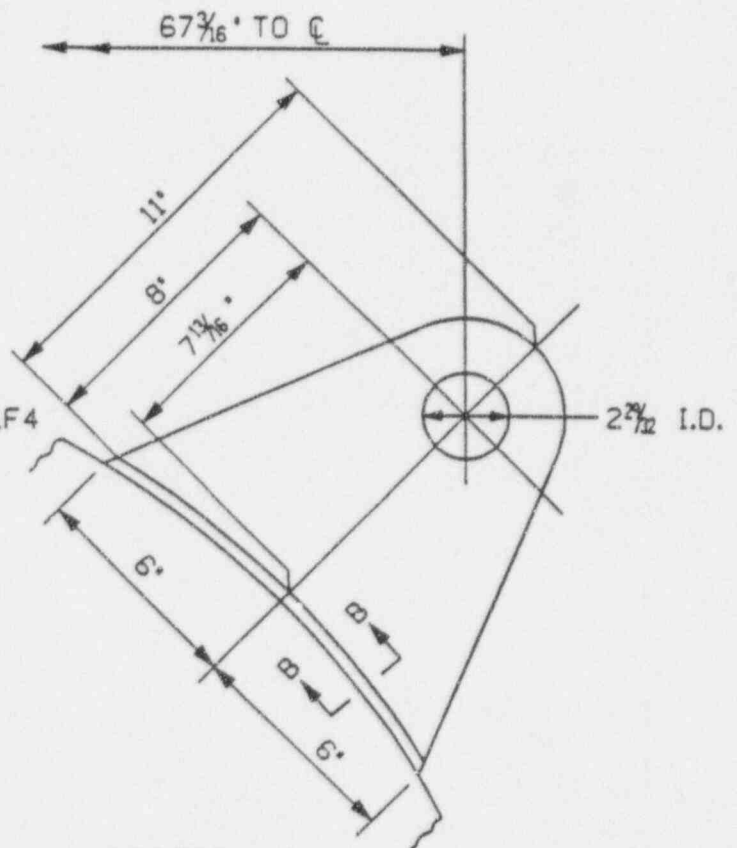
NO.	DESCRIPTION	BILL OF MATL.	PROCED.
1	LIFTING LUG	SA533 CLASS 1 GR. B	



PLAN VIEW OF TOP HEAD



SECTION B-B



SECTION A-A

REFERENCE DRAWINGS:  
APED-B11-001<4>, APED-B11-2655-197

IES:

Inservice Inspection Program  
Reactor Pressure Vessel Sketch

LIFTING LUG

DWG. NO.

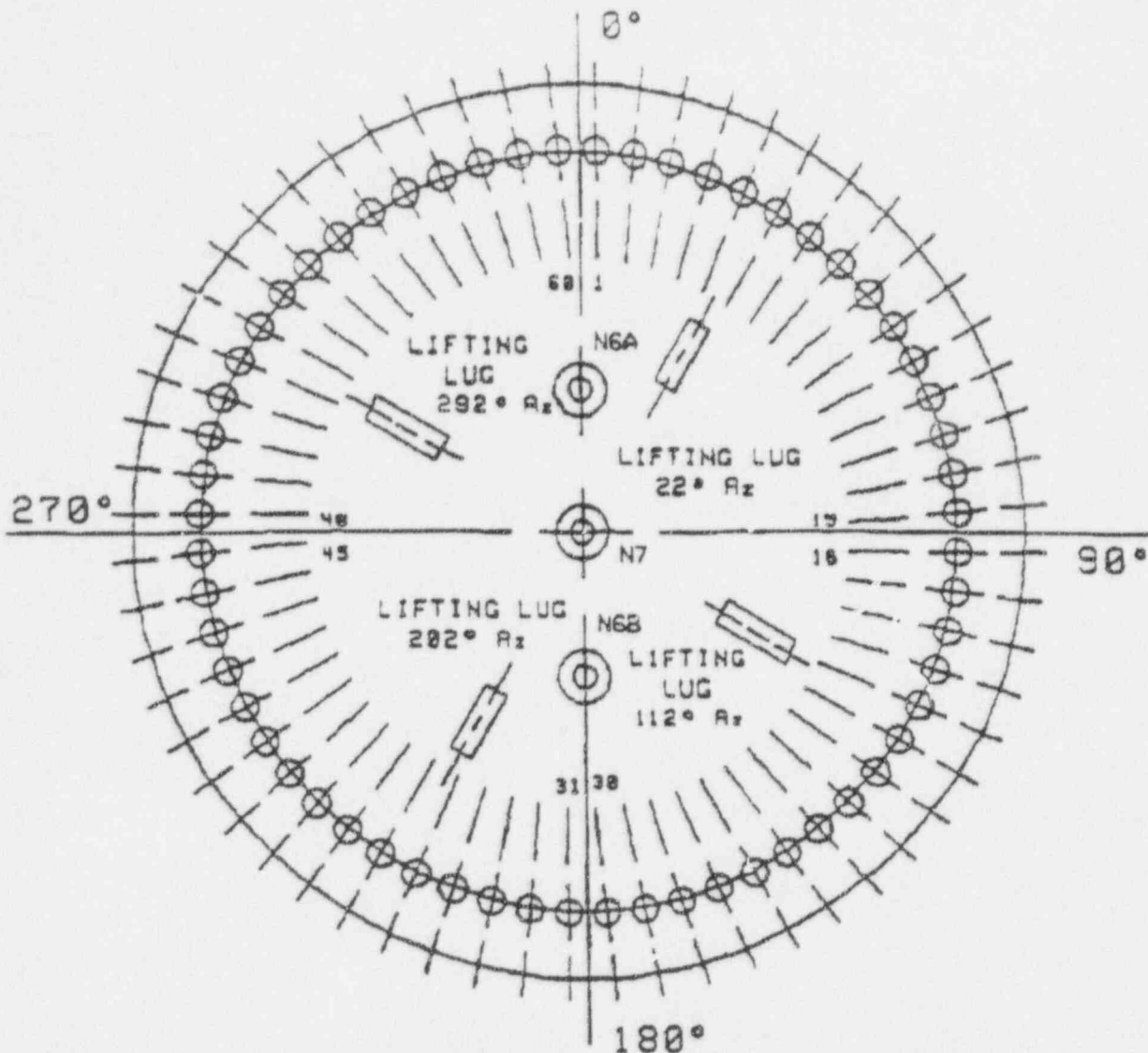
VS-01-37

REV.  
1

12-8-44  
NO. DATE

DRAFTED FOR VESSEL INSPECTION PROGRAM

MS  
CHKD  
ENGR  
VER.



VESSEL STUD AND LIGAMENT LOCATION

Figure No. 1.1-05

PR-Pressure Retaining  
 S-Studs  
 N-Nuts  
 B-Bushings  
 W-Washers  
 L-Ligaments

## DRAWING RELEASE RECORD

REV	DATE	PREPARED	REVIEWED	APPROVED	PURPOSE
1	4-3-88	SNL	SNL	RCM	ISO'S FOR 2nd 10 YEAR PLAN
2	9-24-90	OR	GP	KKM	ISO'S TO CAD FORMAT AS PER HG-89-8794
3	5-13-91	OR	GP	KKA	PCN - 8 - CORRECTLY IDENTIFIED LIFTING LUGS
4	7-22-94	DA	FED	GP	REVISED PER ISI INSPECTION WALKDOWN
5	7-26-95	DA	DF	GP	DELETED DWG PER DURF-013
6	13/11/96	JAH	TAK	GP	RE-ISSUED PER DURF-0025

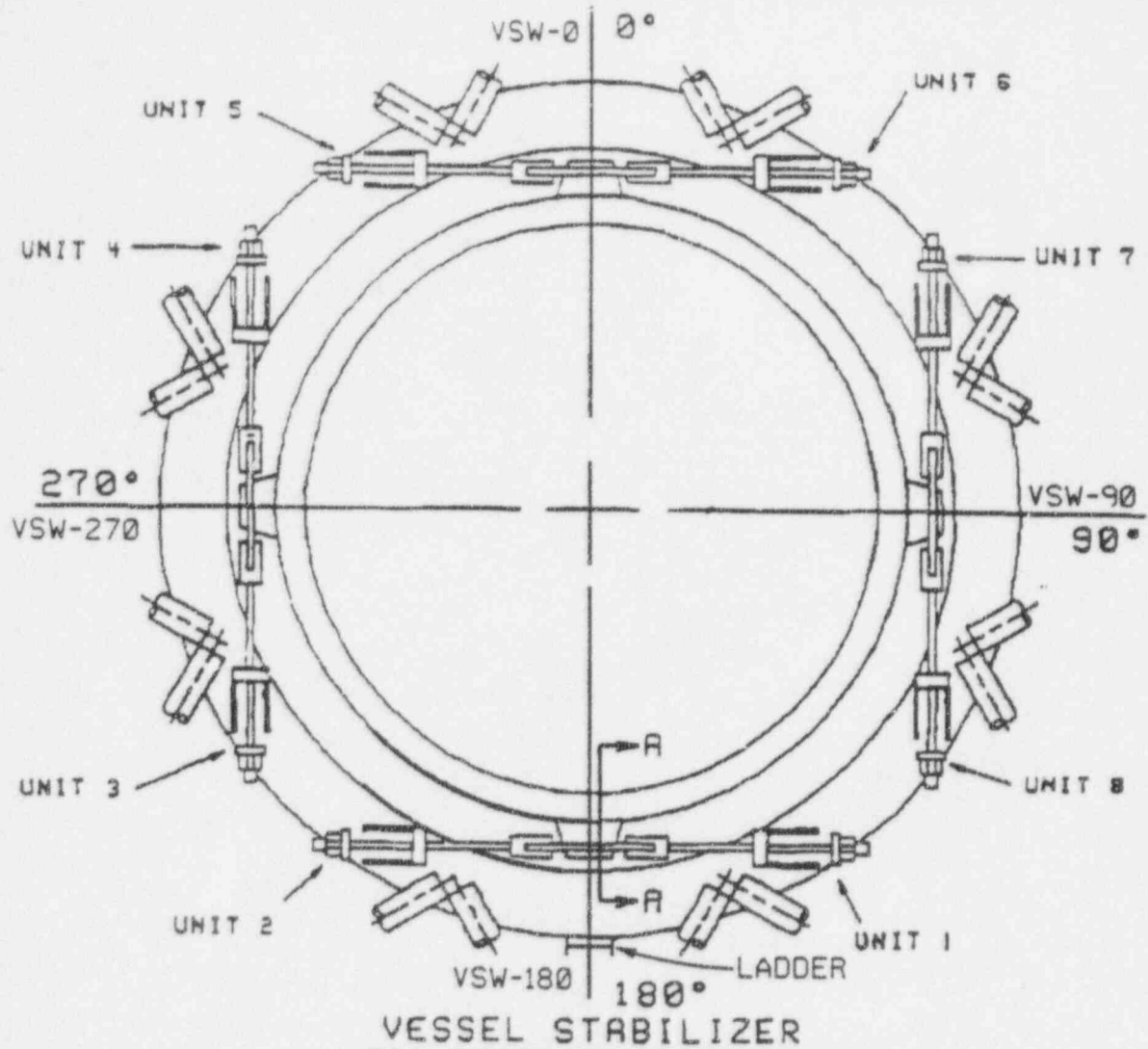
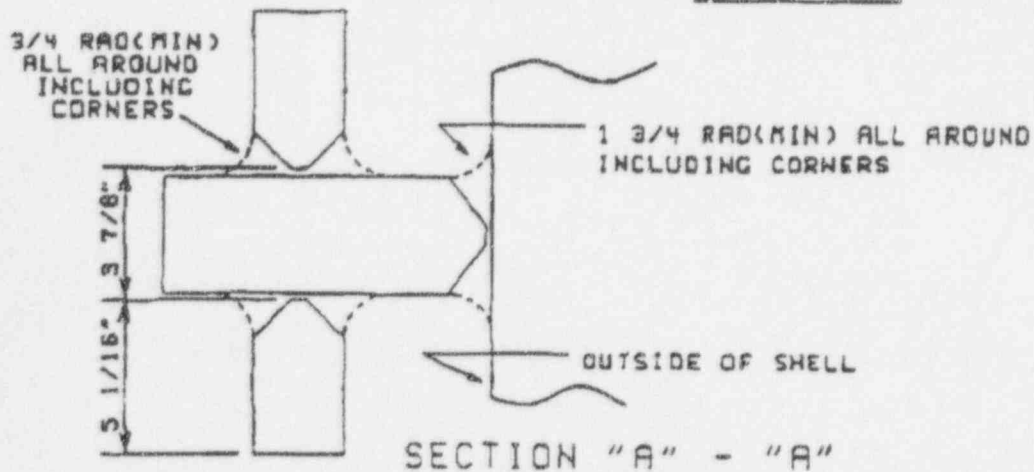


Figure No. 1.1-10

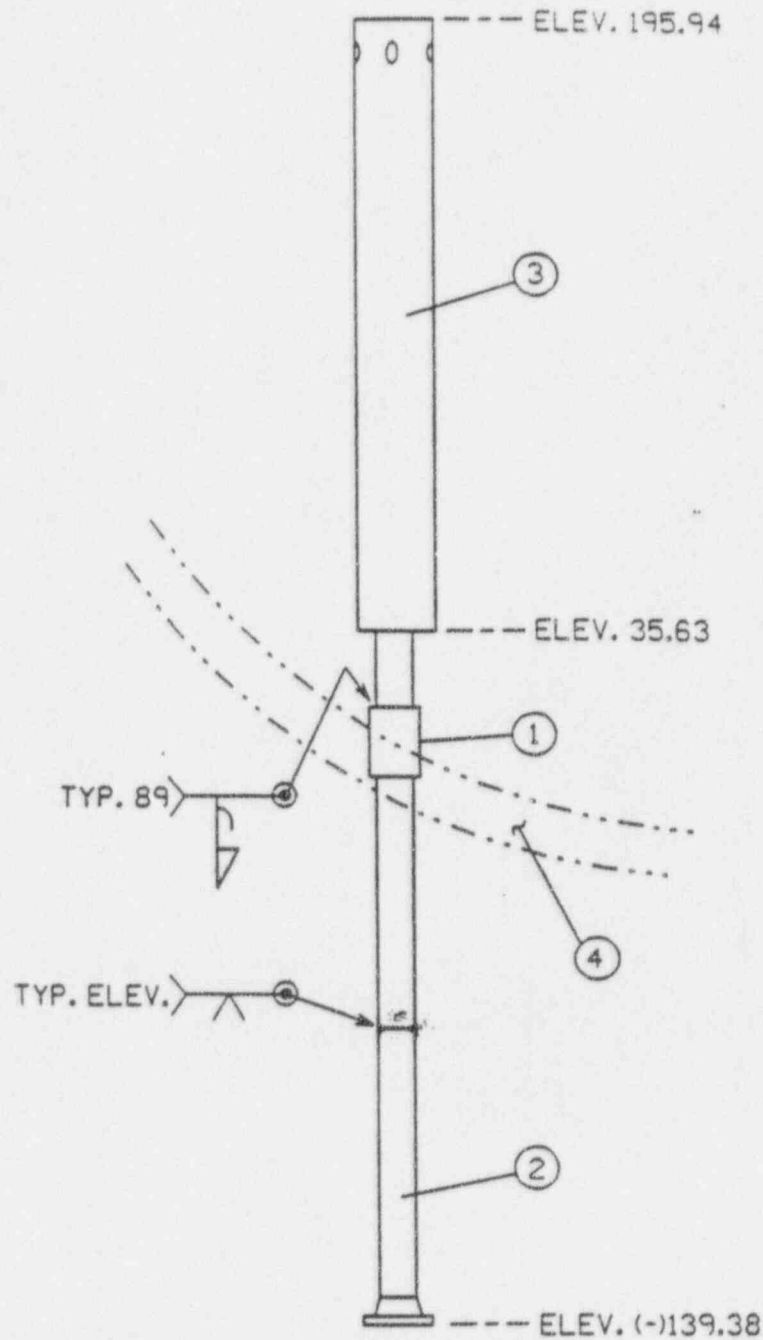


## DRAWING RELEASE RECORD

REV	DATE	PREPARED	REVIEWED	APPROVED	PURPOSE
0	5-13-91	DA DA GP	GP	RLM	PEN "B" NEW DWG IDENTIFYING SWEL REPAIRS
1	7-06-95	DA	JP	GO	DELETED DWG PER DUF-0013
2	3/21/96	JAH	DA	GP	RE-ISSUED PER DUF-U0027



NO.	DESCRIPTION	BILL OF MATL.	PROCD.
1	STUB TUBE	(SEE VS-12-02)	
2	HOUSING	(SEE VS-12-03)	
3	GUIDE TUBE	(SEE VS-12-04)	
4	BOTTOM HEAD	SA533 CLASS 1 GR.B	



REFERENCE DRAWING:  
APED-B11-084<1>

DRAFTED FOR VESSEL INSPECTION PROGRAM  
REVISION

12.8.94  
DATE

IES:

Inservice Inspection Program  
Reactor Pressure Vessel Sketch

CONTROL ROD DRIVE  
ASSEMBLY

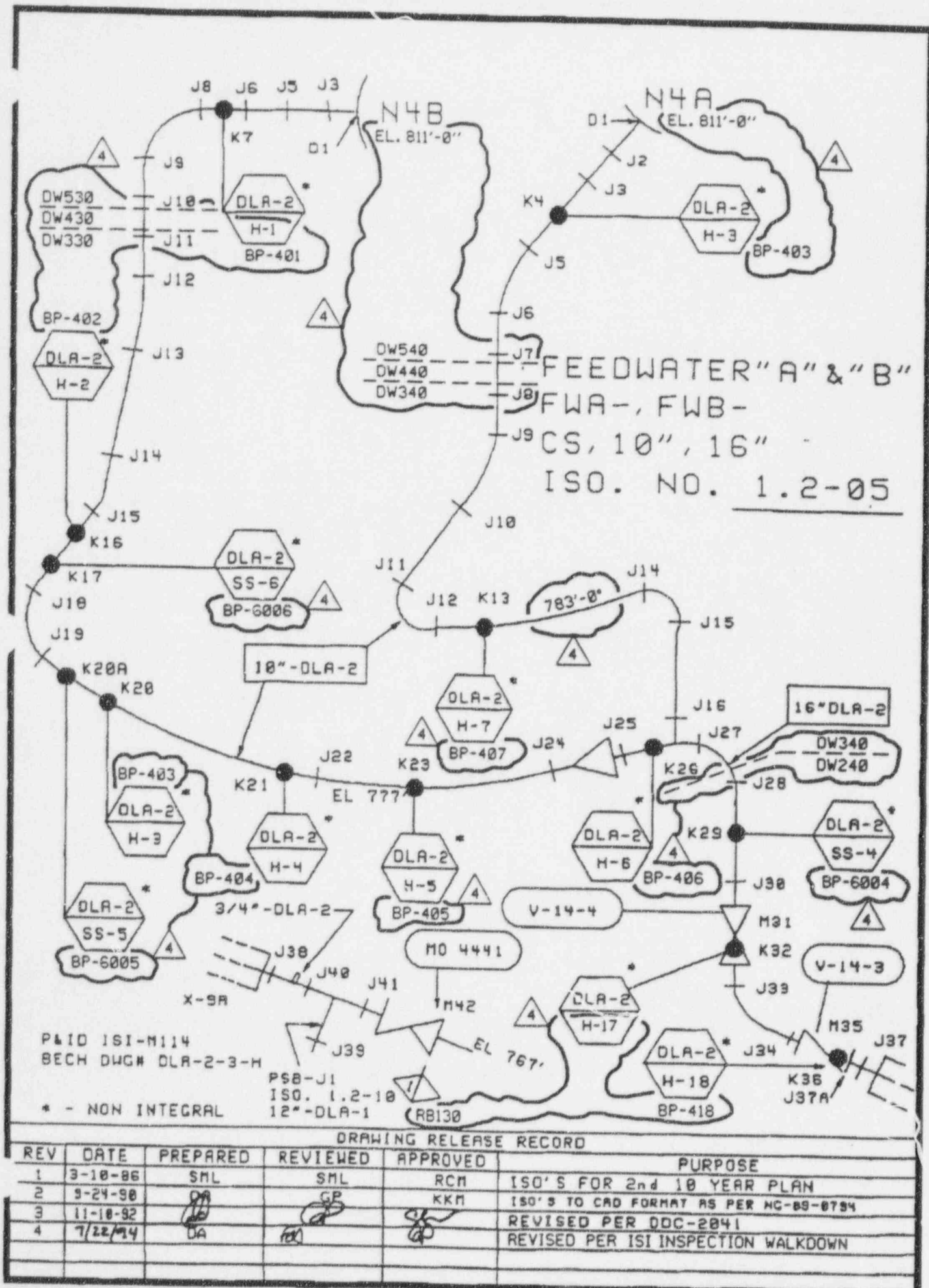
DWG. NO.

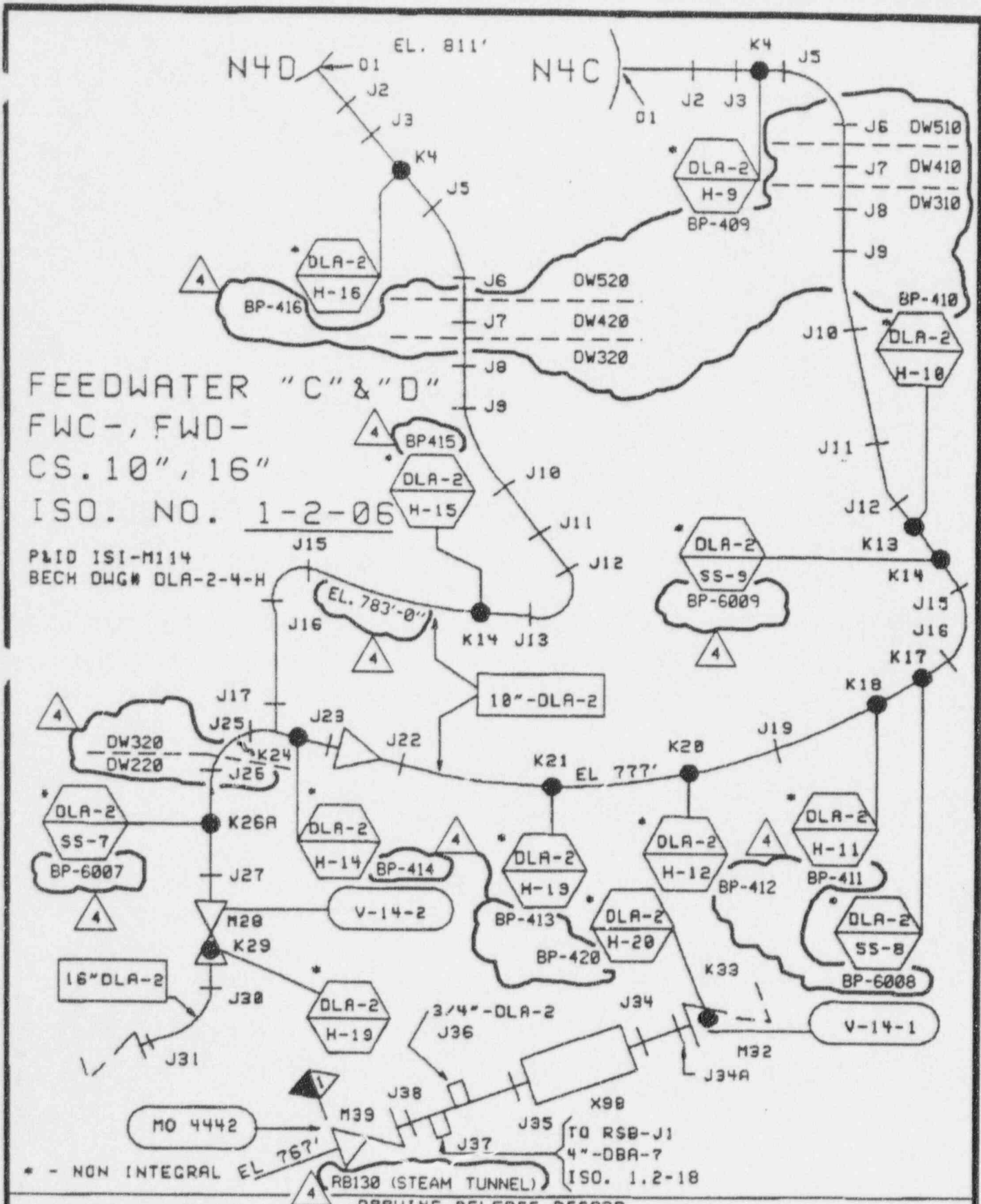
VS-12-01

REV.

1

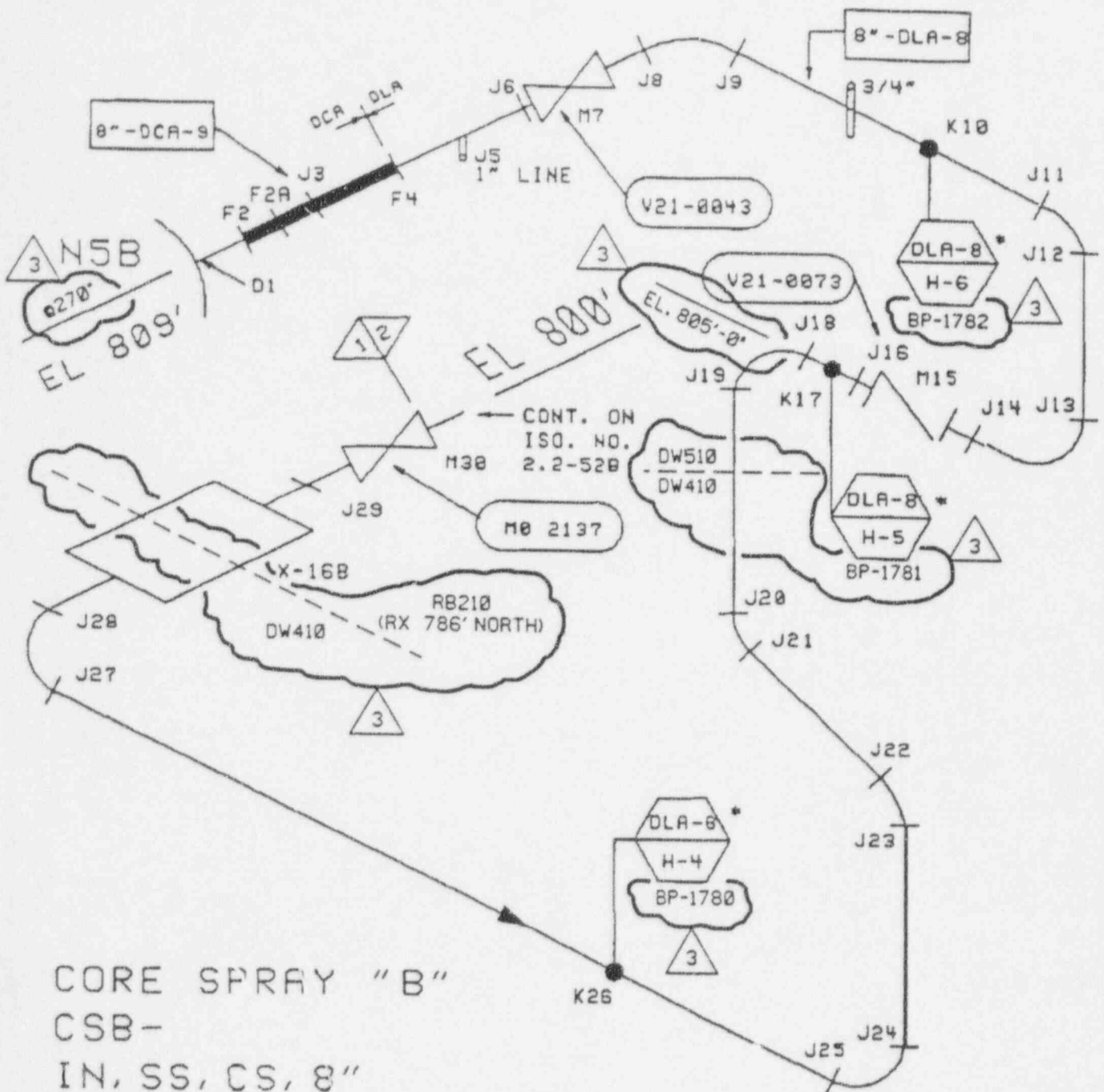






## DRAWING RELEASE RECORD

REV	DATE	PREPARED	REVIEWED	APPROVED	PURPOSE
1	3-11-86	SML	SML	RCM	ISO'S FOR 2nd 10 YEAR PLAN
2	9-24-90	DA	GP	KKM	ISO'S TO CAD FORMAT AS PER NC-80-8784
3	11-18-92	DA			REVISED PER ODC-2041
4	7/22/94	DA			REVISED PER ISI INSPECTION WALKDOWN



CORE SPRAY "B"  
 CSB-  
 IN, SS, CS, 8"  
 ISO. NO. 1.2-08

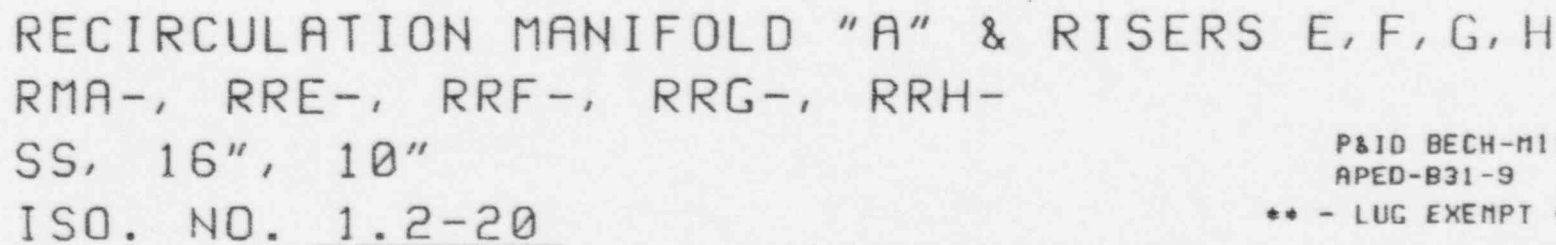
P&ID ISI-M121  
 BECH DWG# DLA-8-1-H

\* - NON INTEGRAL

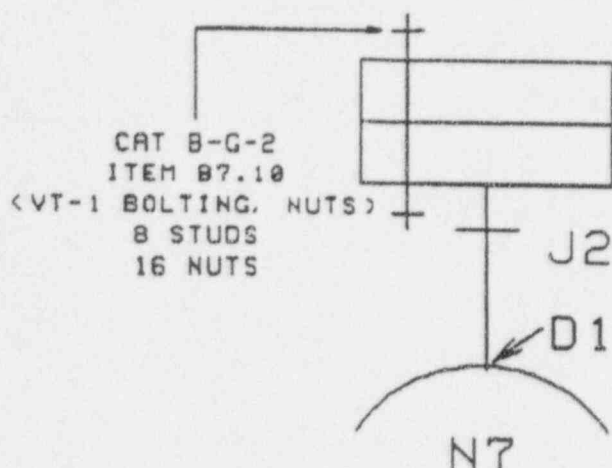
#### DRAWING RELEASE RECORD

REV	DATE	PREPARED	REVIEWED	APPROVED	PURPOSE
1	3-12-86	SNL	SNL	RCM	ISO'S FOR 2nd 10 YEAR PLAN
2	9-24-90	DA	JAH / A/0	RCM	ISO'S TO CAD FORMAT AS PER HG-89-8734
3	7/22/94	DA	JAH / A/0	RCM	REVISED PER ISI INSPECTION WALKDOWN

DRAWING RELEASE RECORD



P&ID BECH-M116  
APED-B31-9  
\*\* - LUG EXEMPT <5/8"



DW7  
(EXAMS PERFORMED  
ON REFUEL FLOOR)

3

HEAD VENT

HVA-

CS, 4"

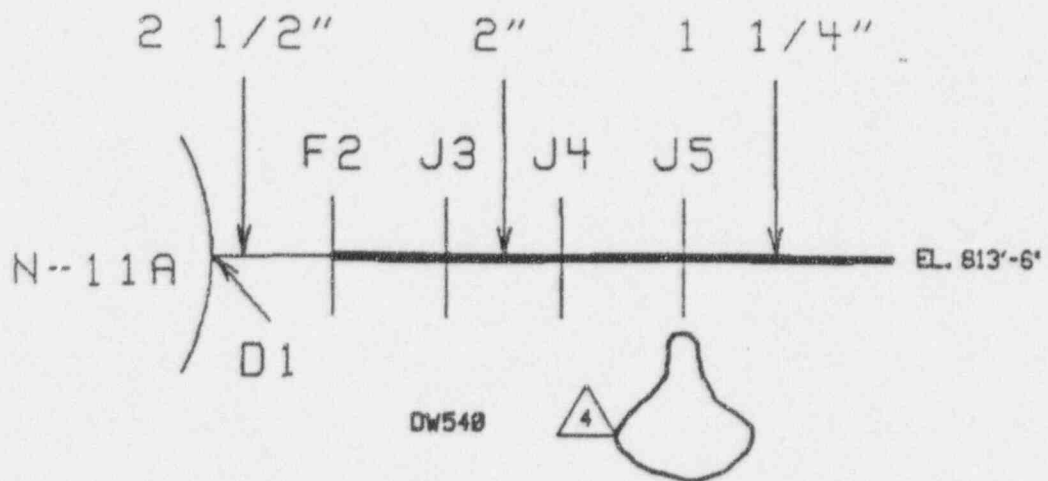
ISO. NO. 1.2-24

P&ID BECH-M114  
APED-B11-2655-104-3

# DRAWING RELEASE RECORD

REV	DATE	PREPARED	REVIEWED	APPROVED	PURPOSE
1	3-26-86	SAL	SAL	RCH	ISO'S FOR 2nd 10 YEAR PLAN
2	4-24-90	DA	DA	RCH	ISO'S TO CAD FORMAT AS PER HG-85-0794
3	7/22/14	DA	DA	RCH	REVISED PER ISI INSPECTION WALKDOWN





VESSEL INSTRUMENTATION N-11A  
VIA-

SS. 1 1/4", 2", 2 1/2"

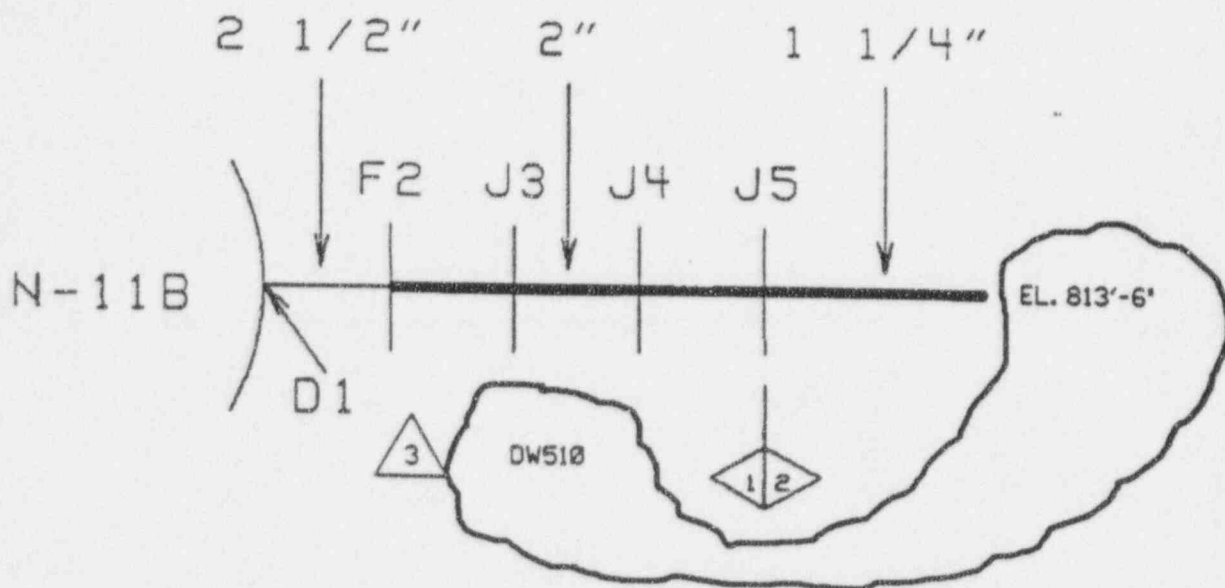
ISO. NO. 1.2-28

P&ID BECH-M115  
FSK-5560

# DRAWING RELEASE RECORD

REV	DATE	PREPARED	REVIEWED	APPROVED	PURPOSE
1	3-27-85	SAL	SAL	RCM	ISO'S FOR 2nd 10 YEAR PLAN
2	9-24-90	DA	JAH / FED	GP	ISO'S TO CAD FORMAT AS PER NG-89-8794
3	7-22-94	DA	JAH / FED	GP	REVISED PER ISI INSPECTION WALKDOWN
4	11/18/96	TAK	JW	GP	REV. PER DURE-0018





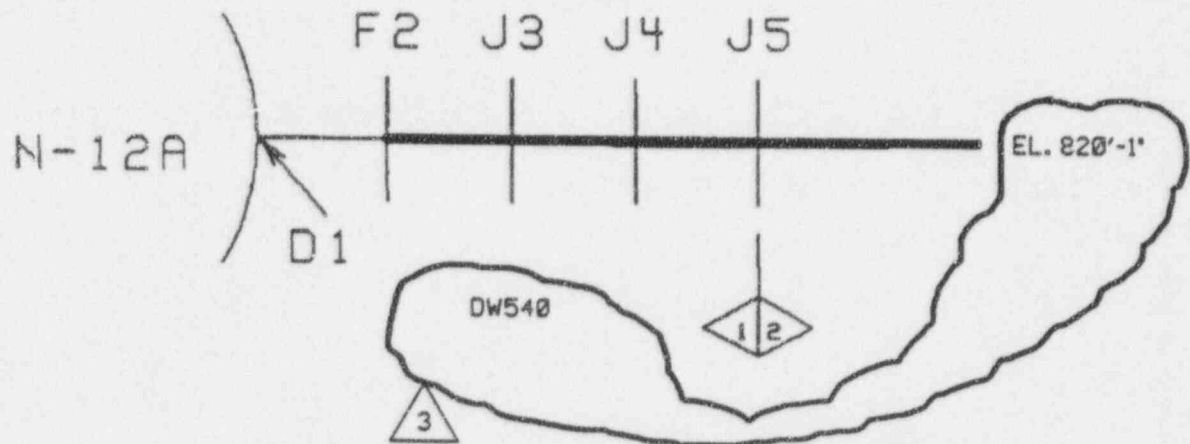
VESSEL INSTRUMENTATION N-11B  
VIB-

SS, 1 1/4", 2", 2 1/2"  
ISO. NO. 1.2-29

P&ID BECH-M115  
FSK-5564

## DRAWING RELEASE RECORD

REV	DATE	PREPARED	REVIEWED	APPROVED	PURPOSE
1	3-27-86	SM	SM	RCM	ISO'S FOR 2nd 10 YEAR PLAN
2	9-24-90	DA	DA	RCM	ISO'S TO CAD FORMAT AS PER NG-83-8794
3	7/22/94	DA	DA	RCM	REVISED PER ISI INSPECTION WALKDOWN

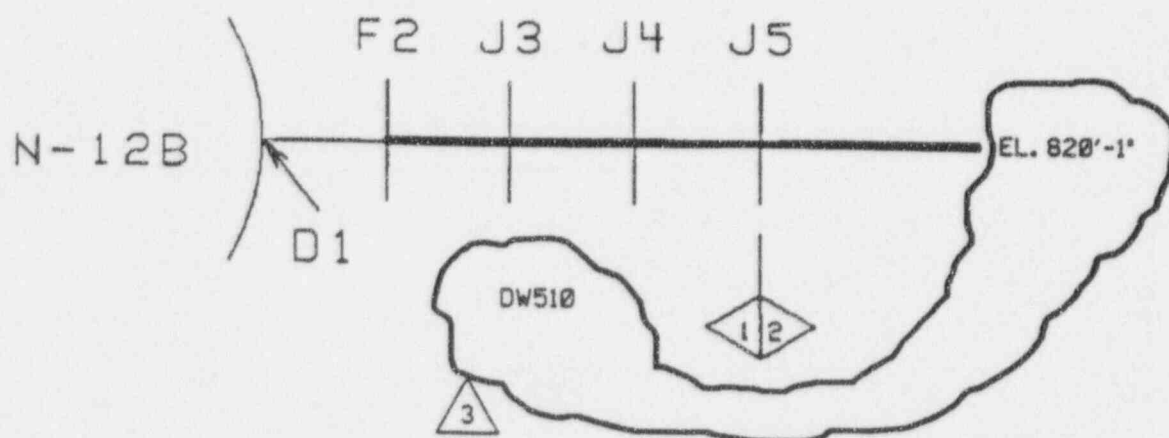


VESSEL INSTRUMENTATION N-12A  
 VIC-  
 SS, 2", 2 1/2"  
 ISO. NO. 1.2-30

P&ID BECH-M115

# DRAWING RELEASE RECORD

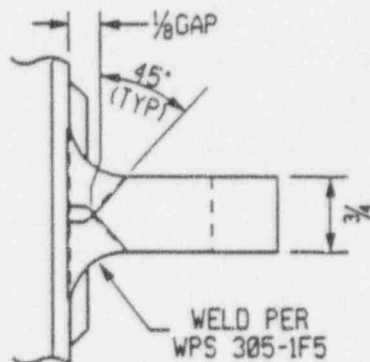
REV	DATE	PREPARED	REVIEWED	APPROVED	PURPOSE
1	3-27-86	SML	SML	RCM	ISO'S FOR 2nd 10 YEAR PLAN
2	9-24-90	DA	HA/RCM	RCM	ISO'S TO CAD FORMAT AS PER HG-89-8754
3	7/12/94	DA	HA/RCM	RCM	REVISED PER ISI INSPECTION WALKDOWN



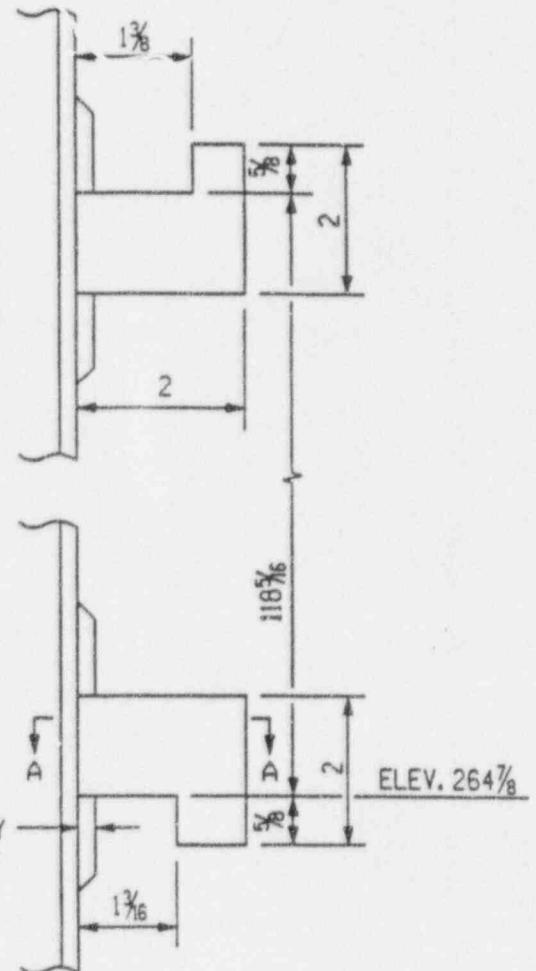
VESSEL INSTRUMENTATION N-12B  
 VID-  
 SS, 2", 2 1/2"  
 ISO. NO. 1.2-31

P&ID BECH-M115

DRAWING RELEASE RECORD					
REV	DATE	PREPARED	REVIEWED	APPROVED	PURPOSE
1	3-27-86	SHL	SHL	RCM	ISO'S FOR 2nd 10 YEAR PLAN
2	9-24-90	DA	DA	RCM	ISO'S TO CAD FORMAT AS PER NG-89-8754
3	7/22/94	DA	DA	RCM	REVISED PER ISI INSPECTION WALKDOWN



SECTION A-A



ELEVATION

REFERENCE DRAWINGS:

APED-B11-001<4>, APED-B11-059,  
APED-B11-067, APED-B11-2655-198

IES:

### Inservice Inspection Program Reactor Pressure Vessel Sketch

SURVEILLANCE  
SPECIMEN BRACKET

DWG. NO.

VS-01-31

REV.  
1

NO.	DESCRIPTION	BILL OF MATL.	PROCD.
1	HANDLE		
2	PIPE		
3	CAPSULE BASKET		
4	MIDDLE SUPPORT BRACKET PLATE	304 SS	
5	BOLT		

DA	MS	DF	GP	SS
MS	DF	GP	SS	VER.

REVISED PER DURE-0011  
DRAFTED FOR VESSEL INSPECTION PROGRAM  
REVISION

REFERENCE DRAWINGS:  
APED-B11-062,  
APED-B11-121

IES:

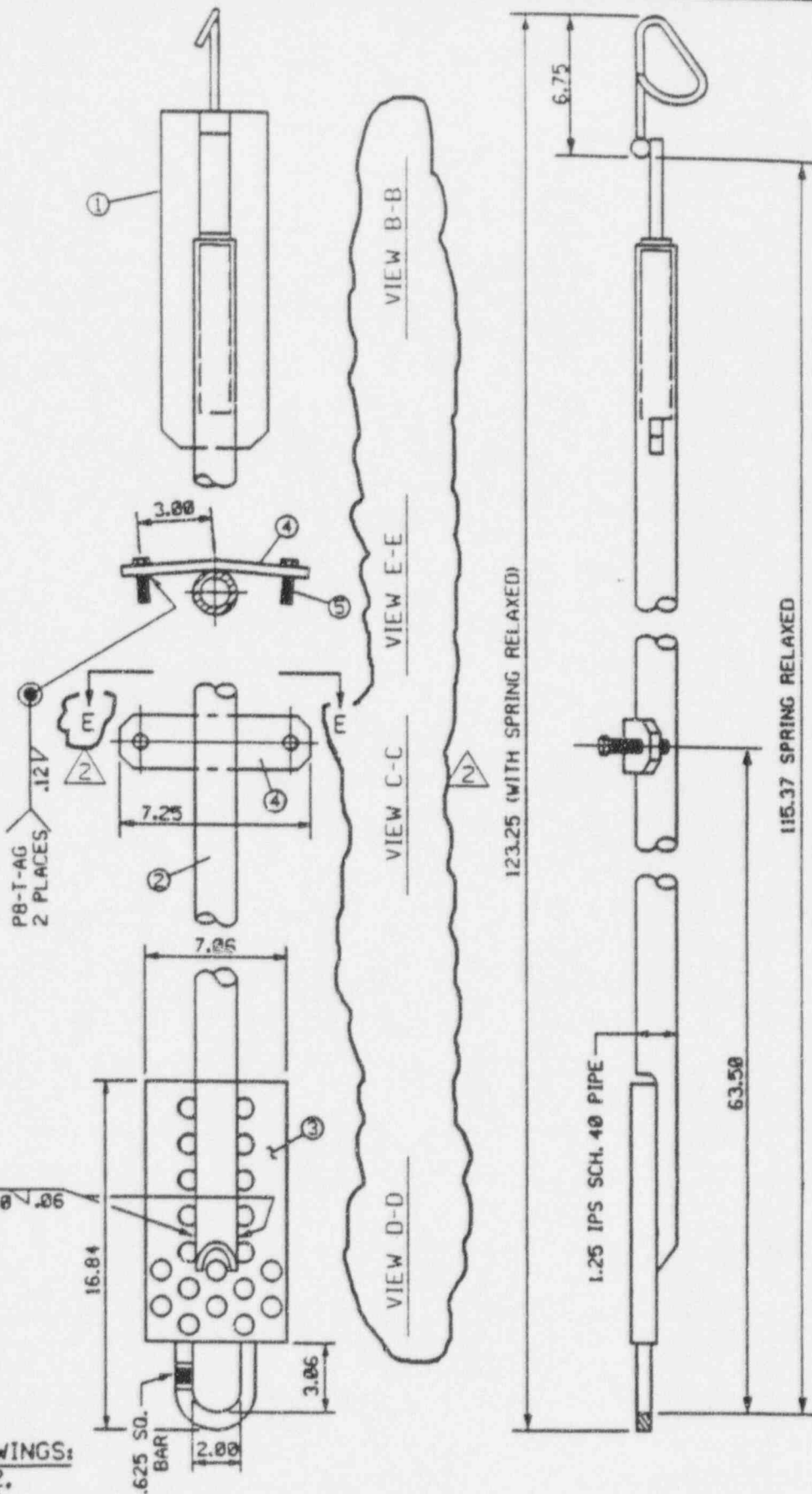
Inservice Inspection Program  
Reactor Pressure Vessel Sketch

SAMPLE HOLDER

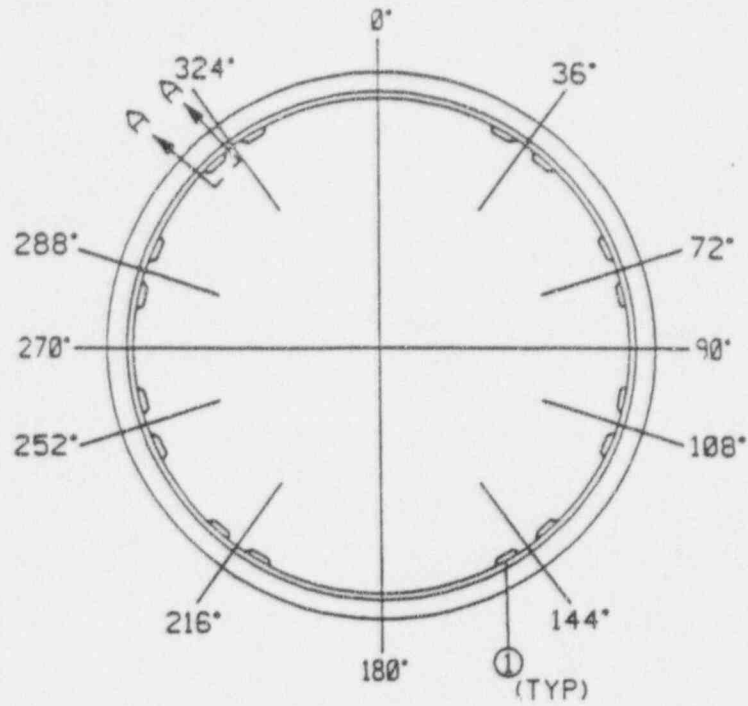
DWG. NO.

VS-10-02

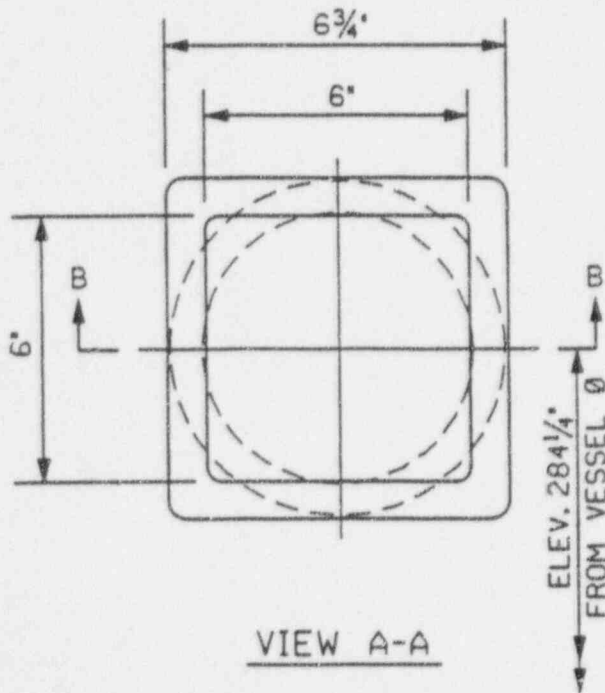
REV.  
2



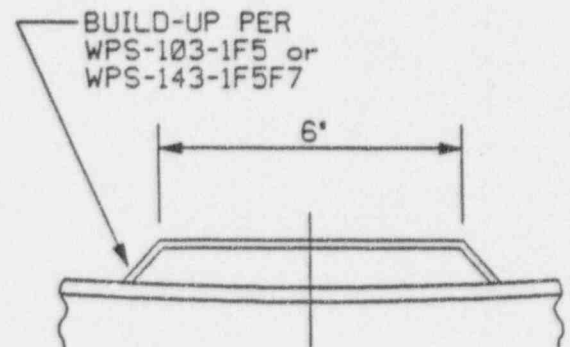
NO.	DESCRIPTION	BILL OF MATL.	PROCD.
1	SUPPORT PAD	309 or 308L	



PLAN VIEW



VIEW A-A



SECTION B-B

REFERENCE DRAWINGS:  
APED-B11-001<4>, APED-B11-2655-167

DRAFTED FOR VESSEL INSPECTION PROGRAM

REVISION

DATE

IES:

Inservice Inspection Program  
Reactor Pressure Vessel Sketch

JET PUMP RISER  
SUPPORT PAD

DWG. NO.

VS-01-34

REV.

1



NO.	DESCRIPTION	BILL OF MATL.	PROCED.
1	RISER INLET ELBOW (10" S.R.)	304 SS	
2	RISER PIPE	304 SS	
3	TRANSITION PIECE	304 SS	
4	180° ELBOW	A351 GR. CF8	
5	JET PUMP NOZZLE	A351 GR. CF8	
6	THROAT	304 SS	
7	DIFFUSER	304 SS	
8	ADAPTER	(SEE VS-11-05)	
9	HOLD DOWN ASSEMBLY	(SEE VS-11-03)	
10	LIFTING EYE	(SEE VS-11-03)	
11	RESTRAINER BRACKET ASSEMBLY	(SEE VS-11-02)	
12	PRESSURE SENSOR TAP		
13	WEDGE		
14	SENSING LINE (1.25 IPS, SCH 40)	(SEE VS-11-07)	
15	RISER BRACE	(SEE VS-11-04)	

MS	ENGR	VER.
1	1	1

DRAFTED FOR VESSEL INSPECTION PROGRAM

REVISION

12-8-94

DATE

NO.

1

IES:

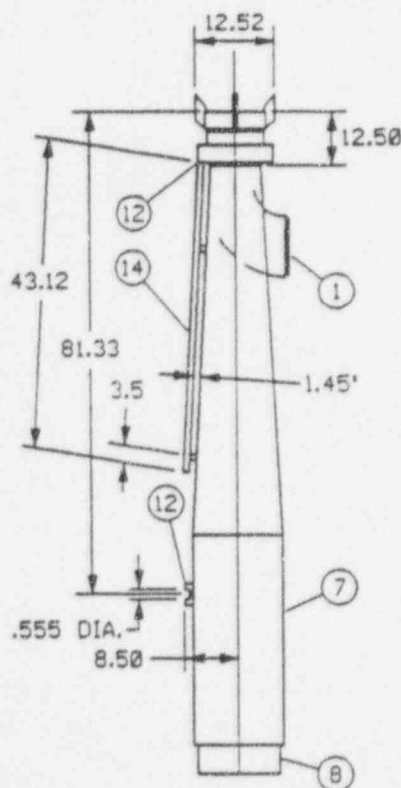
Inservice Inspection Program  
Reactor Pressure Vessel Sketch

DWG. NO.

VS-11-01

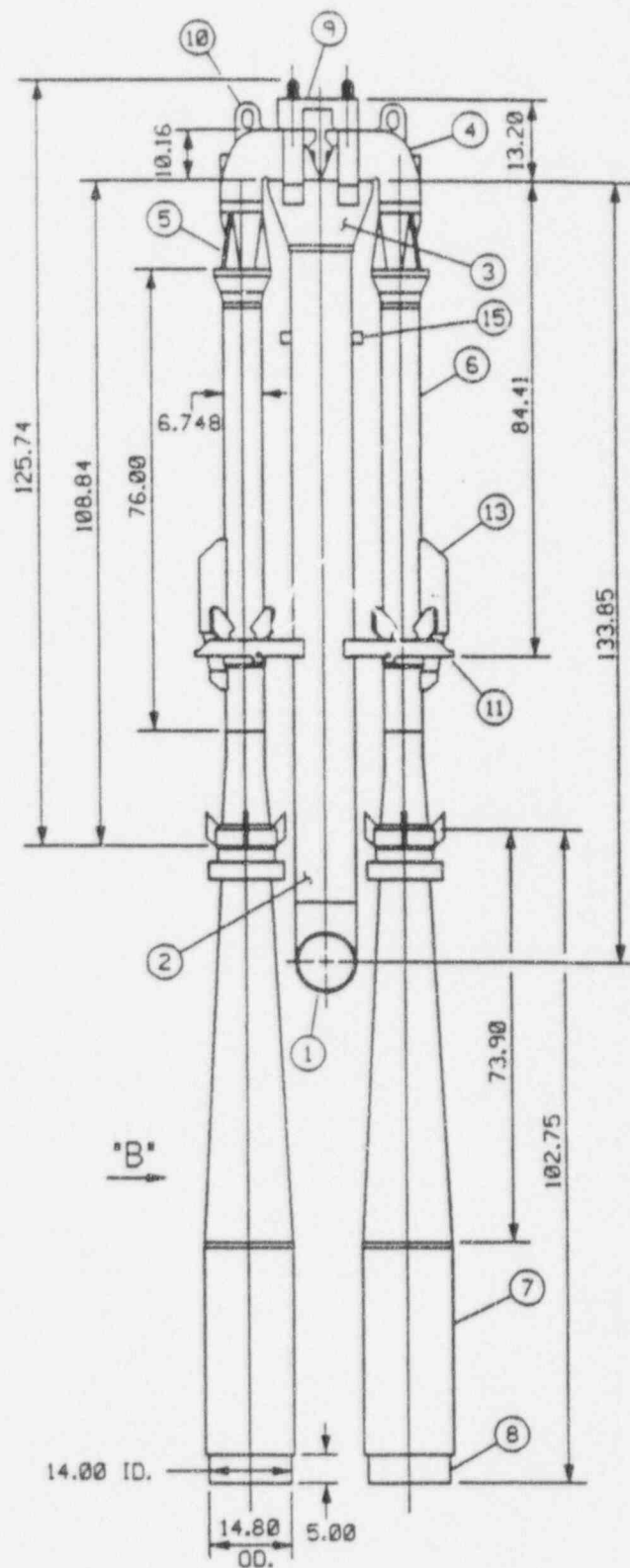
REV.

1



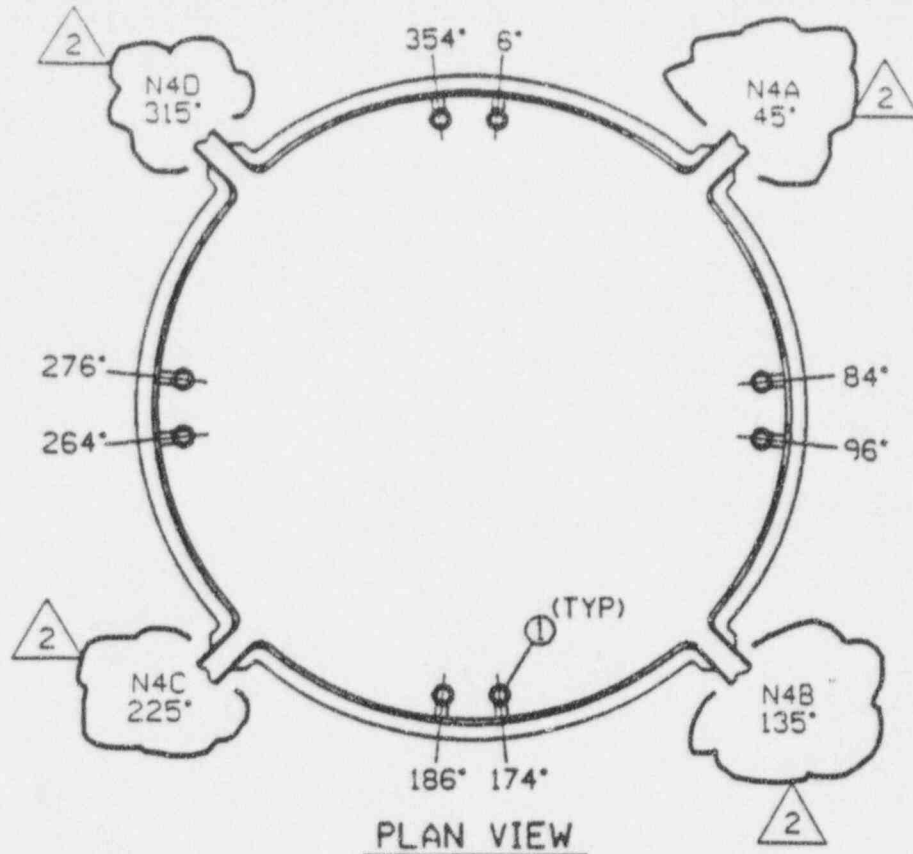
VIEW 'B'

REFERENCE DRAWING:  
APED-B11-117

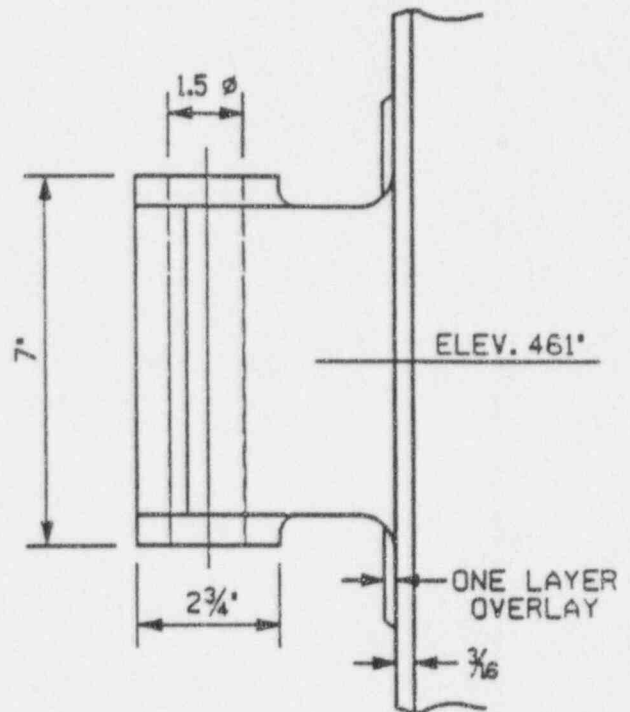
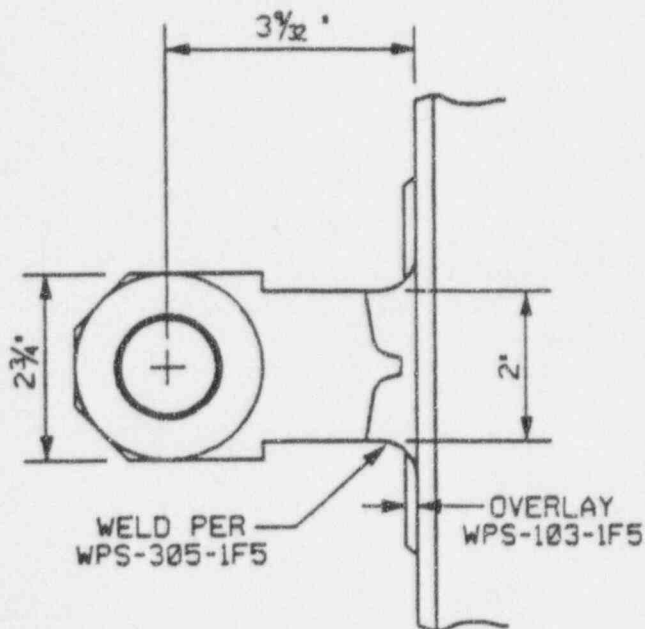


JET PUMP ASSEMBLY

NO.	DESCRIPTION	BILL OF MAIL.	PROCEED.
1	FW SPARGER BRACKET	304L SA240	



NO	DATE	REVISION	DESIGN	CHKD	ENGR	VER
1	12-08-94	DRAFTED FOR VESSEL INSPECTION PROGRAM	MS	DF	GP	SS
2	09-08-95	REVISED PER DUF-0011	DA	HA	SS	SS



REFERENCE DRAWINGS:  
APED-B11-001<4>, APED-B11-2655-169

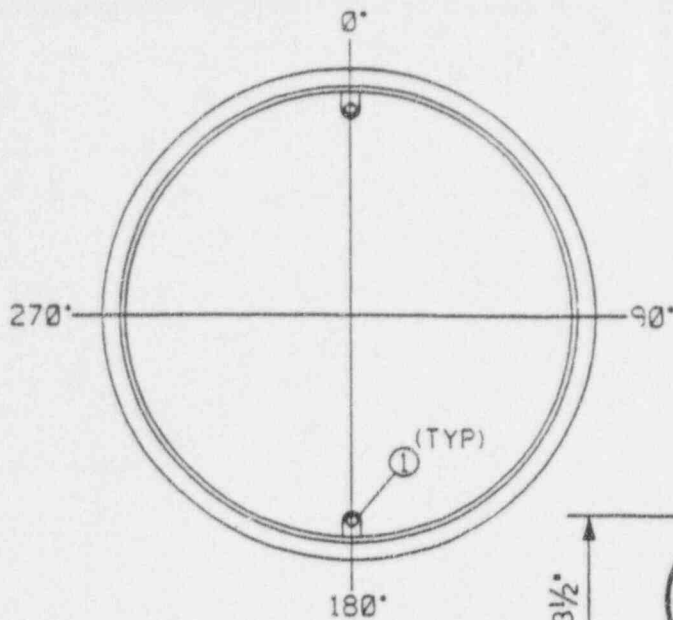
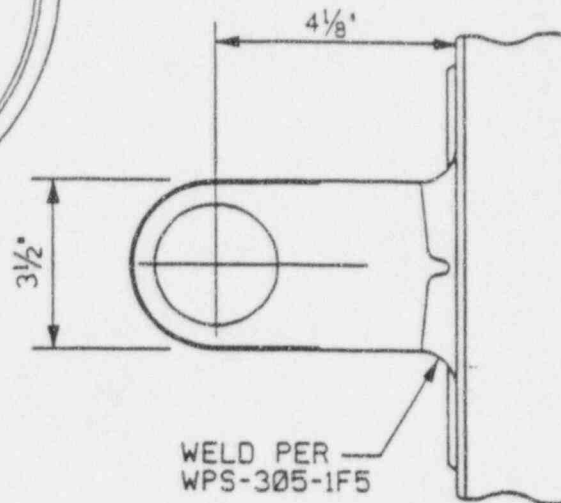
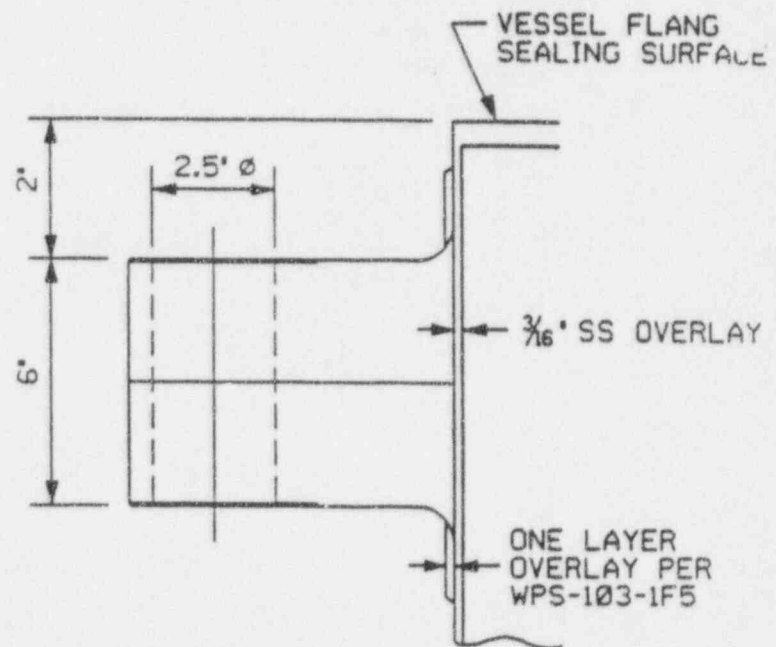
IES:  
Inservice Inspection Program  
Reactor Pressure Vessel Sketch

FEEDWATER SPARGER  
BRACKET

DWG. NO. VS-01-27

REV.  
2

NO.	DESCRIPTION	BILL OF MATL.	PROCD.
1	GUIDE ROD BRACKET	304L SA240	

PLAN VIEWPLAN VIEWELEVATION

REFERENCE DRAWINGS:  
APED-B11-001<4>, APED-B11-2655-171

NO.	DATE	REVISION	MS	DR	TR	CHK'D	ENGR.	VER.
1	12.8.94							

DRAFTED FOR VESSEL INSPECTION PROGRAM

IES:  
Inservice Inspection Program  
Reactor Pressure Vessel Sketch

GUIDE ROD BRACKET

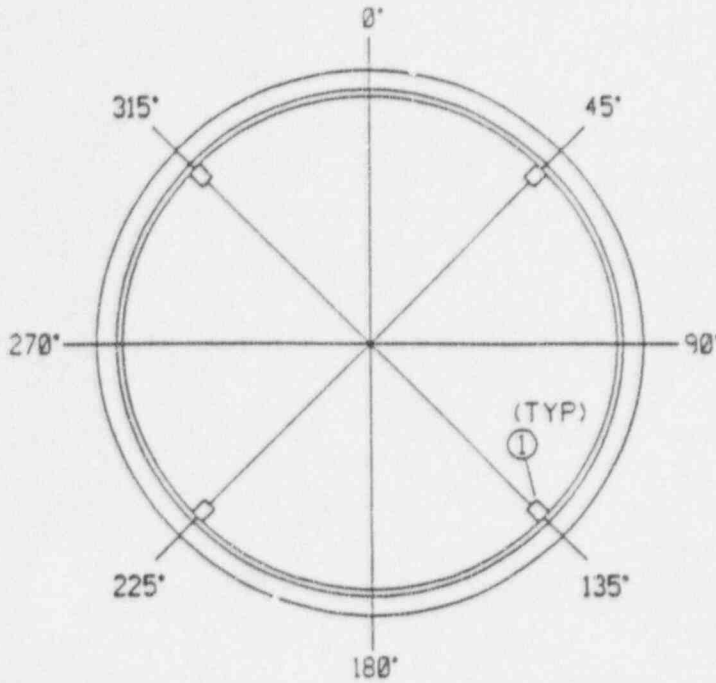
DWG. NO.

VS-01-28

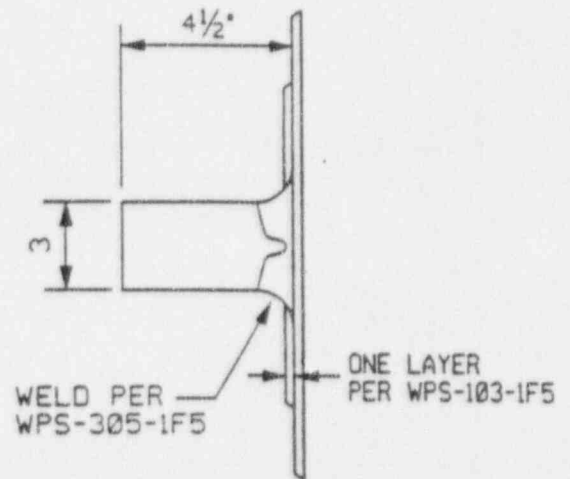
REV.

1

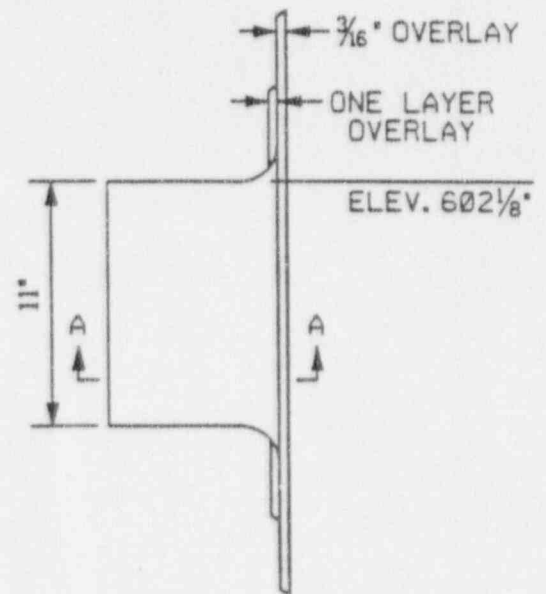
NO.	DESCRIPTION	BILL OF MATL.	PROCD.
1	STEAM DRYER SUPP. BRKT. 304L SA240		



PLAN VIEW



SECTION A-A



ELEVATION

REFERENCE DRAWINGS:  
APED-B11-001<4>, APED-B11-2655-170

NO.	DATE
1	12-8-94

**IES:**  
Inservice Inspection Program  
Reactor Pressure Vessel Sketch

STEAM DRYER  
SUPPORT BRACKET

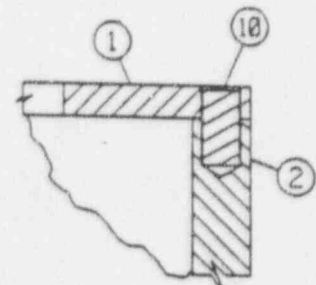
DWG. NO. VS-01-29

REV.  
1

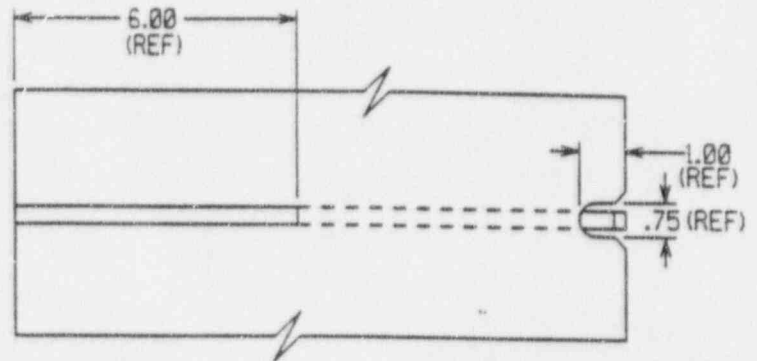




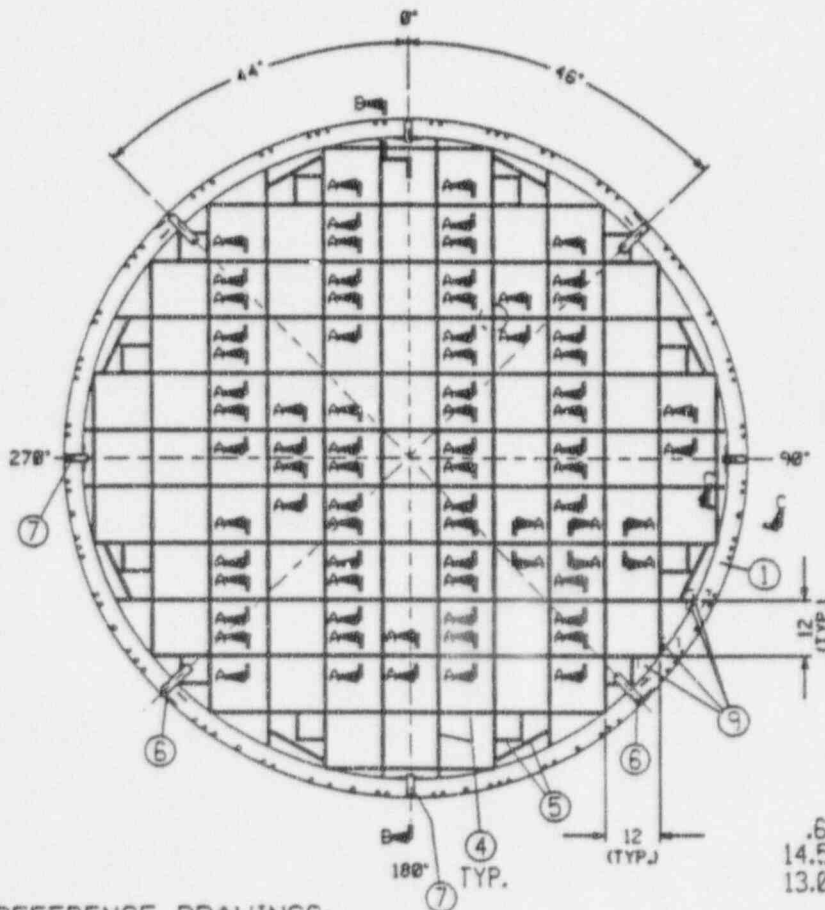
NO.	DESCRIPTION	BILL OF MATL.	PROCED.
1	TOP PLATE	(SEE VS-04-02)	
2	SIDE RING PLATE	(SEE VS-04-02)	
3	BOTTOM PLATE	(SEE VS-04-03)	
4	CROSS BEAMS	(SEE VS-04-04)	
5	SUPPORT PLATES	(SEE VS-04-05)	
6	LATCH	(SEE VS-04-06)	
7	EYEBOLT	(SEE VS-04-07)	
8	EYEBOLT BLOCK	(SEE VS-04-08)	
9	PIN BARS	(SEE VS-04-09)	
10	PIN (0.875" DIA.)	304 A276	



SECTION C-C

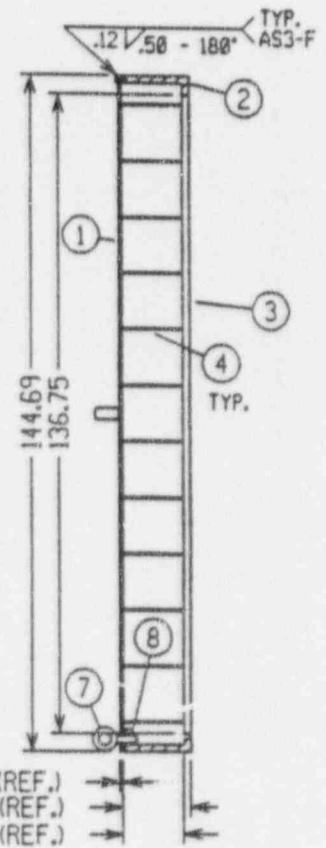


SECTION A-A



REFERENCE DRAWINGS:

APED-B11-3084-001,  
APED-B11-3084-108



SECTION B-B

DRAFTED FOR VESSEL INSPECTION PROGRAM

MS  
(DRTR/CHKD/ENGR/VER)

REVISION

12.8.94  
NO. DATE

IES:

Inservice Inspection Program  
Reactor Pressure Vessel Sketch

TOP  
GUIDE

DWG. NO.

VS-04-01

REV.  
1

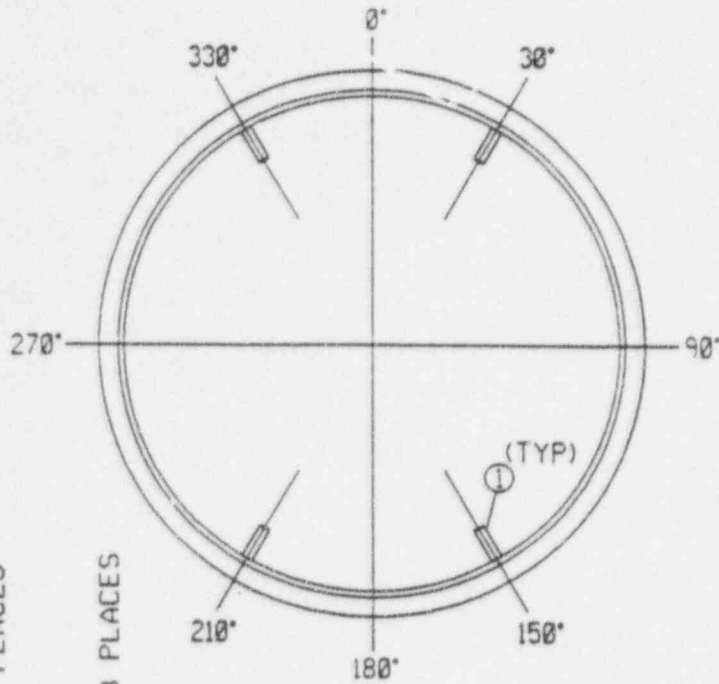


NO.	DESCRIPTION	BILL OF MATL.	PROCEED.
1	CORE PLATE	(SEE VS-03-02(1))	
2	RIM	304 A240	
3	BEAM PLATE	(SEE VS-03-04)	
4	BAR	(SEE VS-03-03)	
5	ALIGNER BLOCK	(SEE VS-03-06)	
6	EYEBOLT	(SEE VS-03-07)	
7	PIN	(SEE VS-03-08)	
8	PERIPHERAL FUEL SUPPORT	(SEE VS-03-09)	

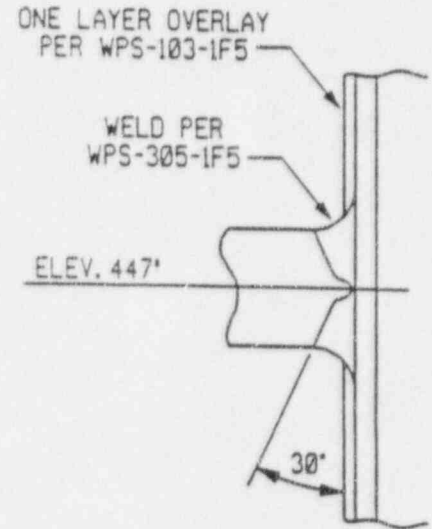
2000

Figure 1 is a plan view of the circular structure of the antenna. It shows a circular array of 100 elements arranged in a 10x10 grid. The overall diameter is 34.000. The distance between the centers of adjacent elements is 32.214. The elements are labeled with numbers 1 through 8, and letters A through H. The diagram includes dimensions and references to VS-03-03.

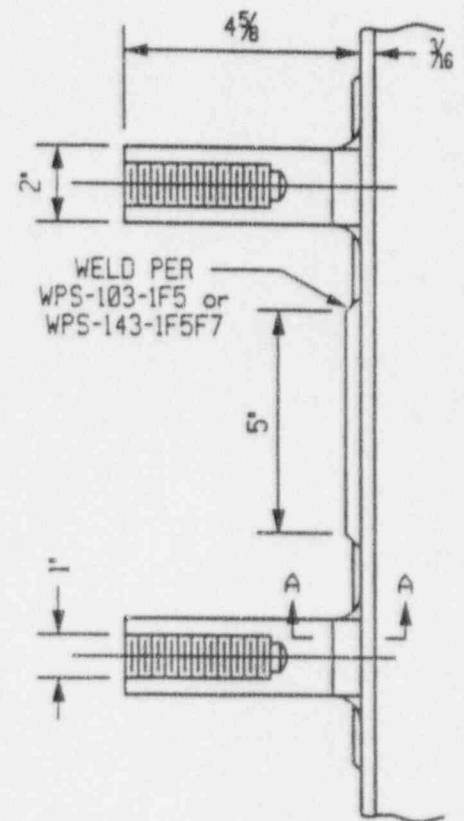
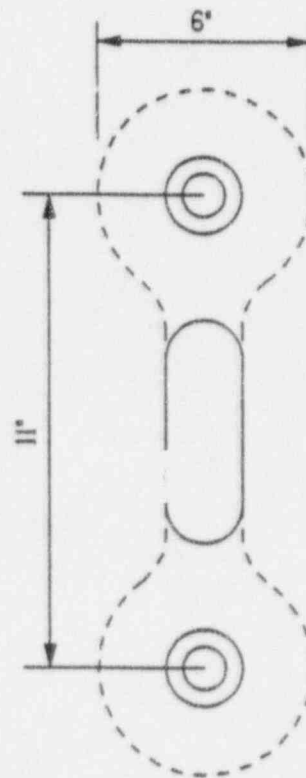
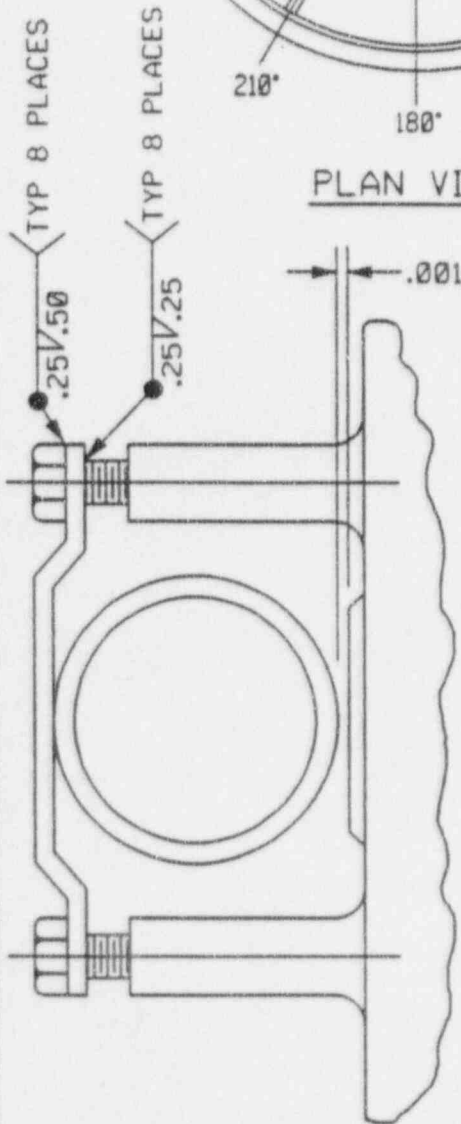
NO.	DESCRIPTION	BILL OF MATL.	PROCED.
1	CORE SPRAY BRKT.	304L SA240	



PLAN VIEW



SECTION A-A



ELEVATION

REFERENCE DRAWINGS:  
APED-B11-001<4>, APED-B11-2655-168

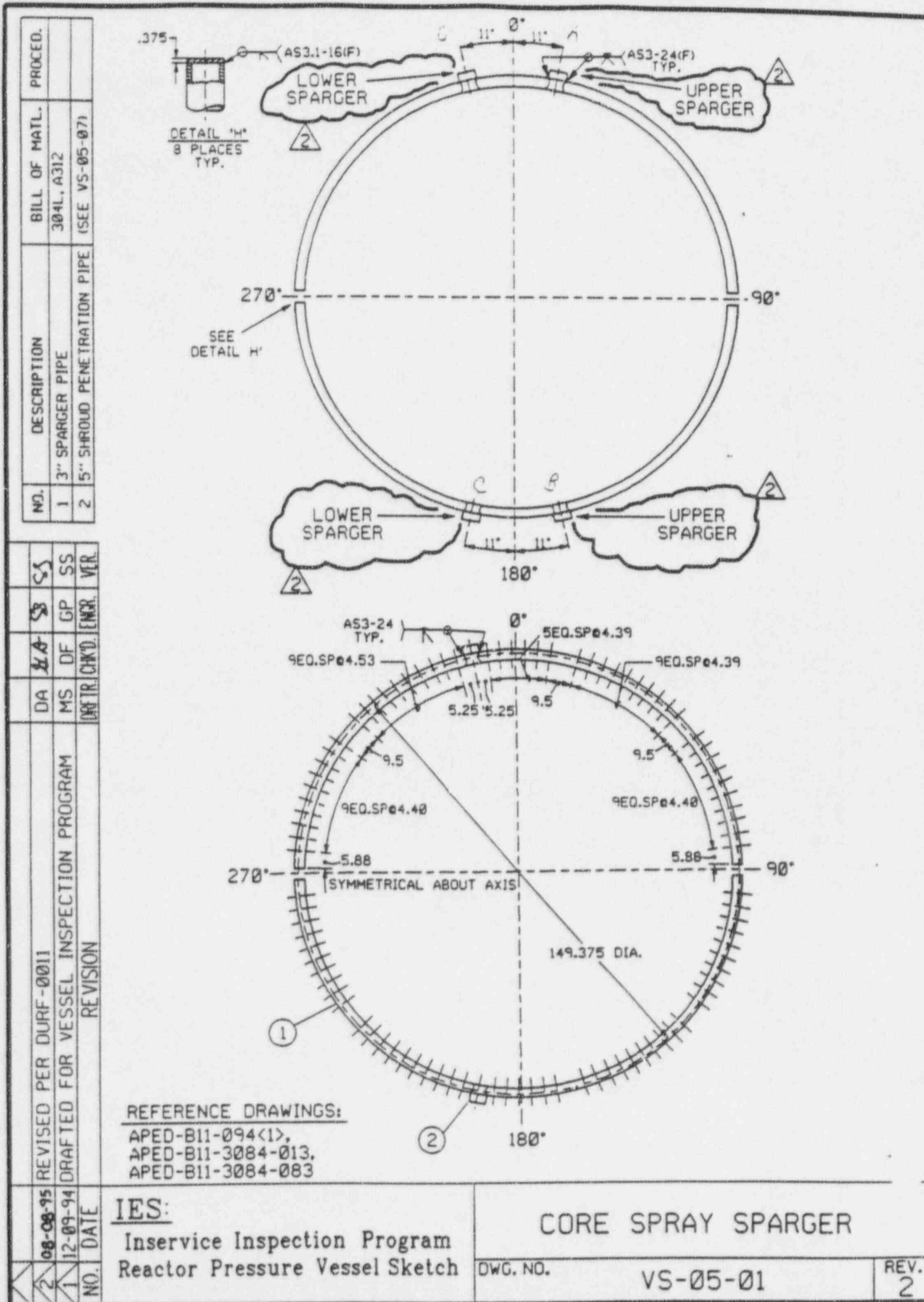
12-8-94  
NO. DATE  
IES:  
Inservice Inspection Program  
Reactor Pressure Vessel Sketch

CORE SPRAY BRACKET

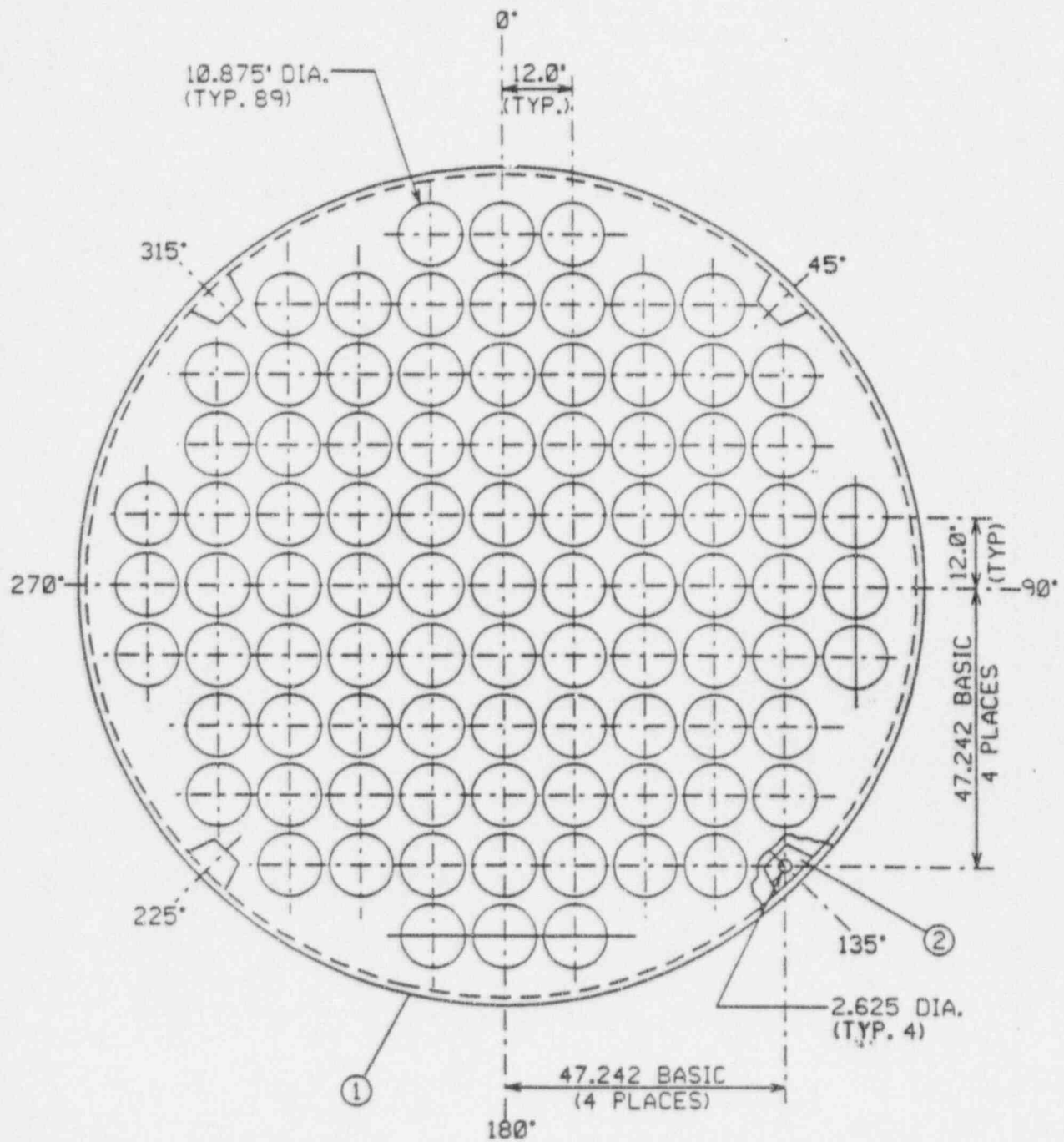
DWG. NO.

VS-01-26

REV.  
1



NO.	DESCRIPTION	BILL OF MATL.	PROCD.
1	CORE PLATE	304L A240	
2	ALIGNER BLOCKS	(SEE VS-03-06)	



REFERENCE DRAWING:

APED-B11-3084-008,

APED-B11-3084-009

IES:

Inservice Inspection Program  
Reactor Pressure Vessel Sketch

CORE PLATE

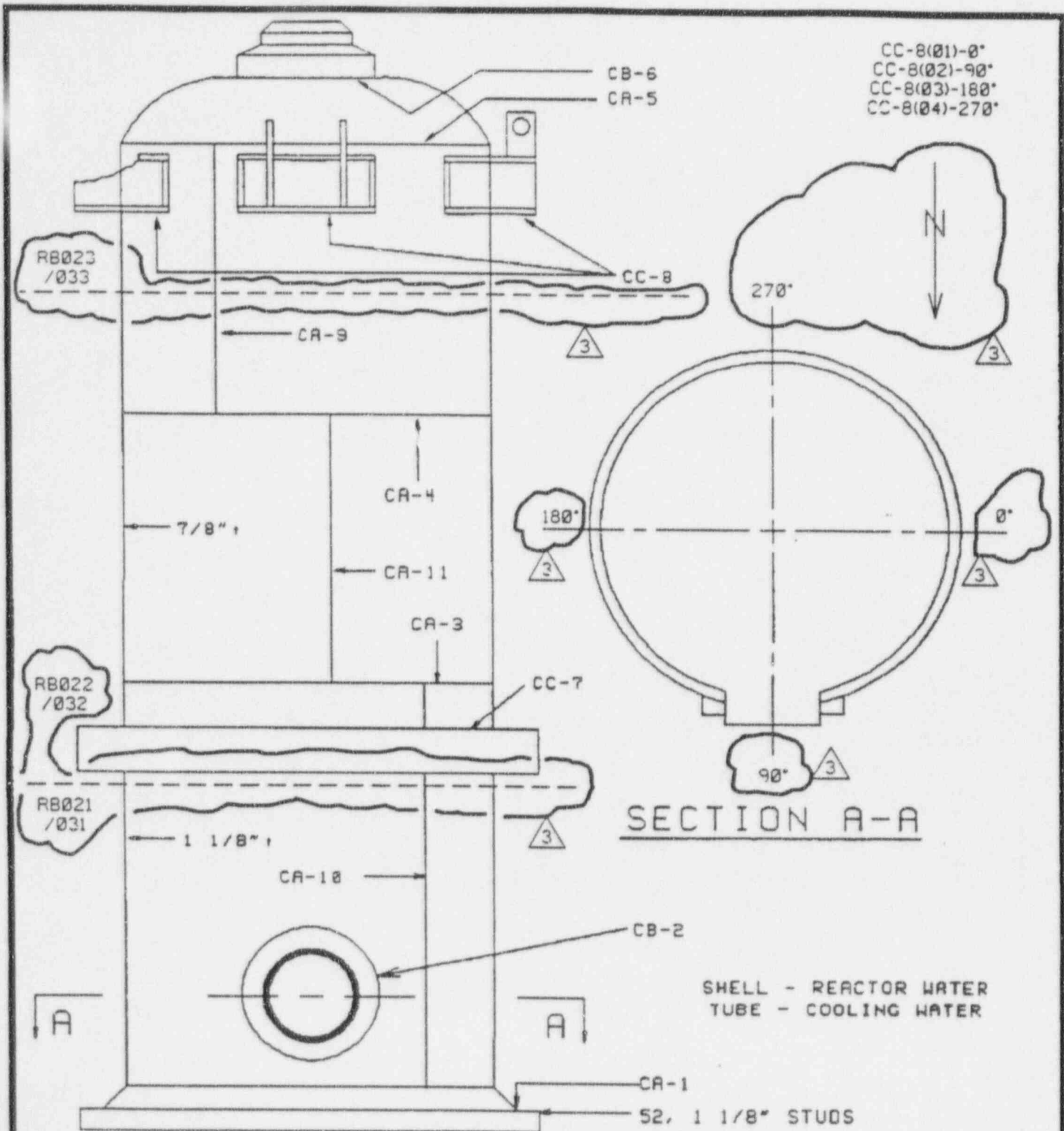
DWG. NO.

VS-03-02&lt;1&gt;

REV.

1

12-8-04  
DATE  
NO.

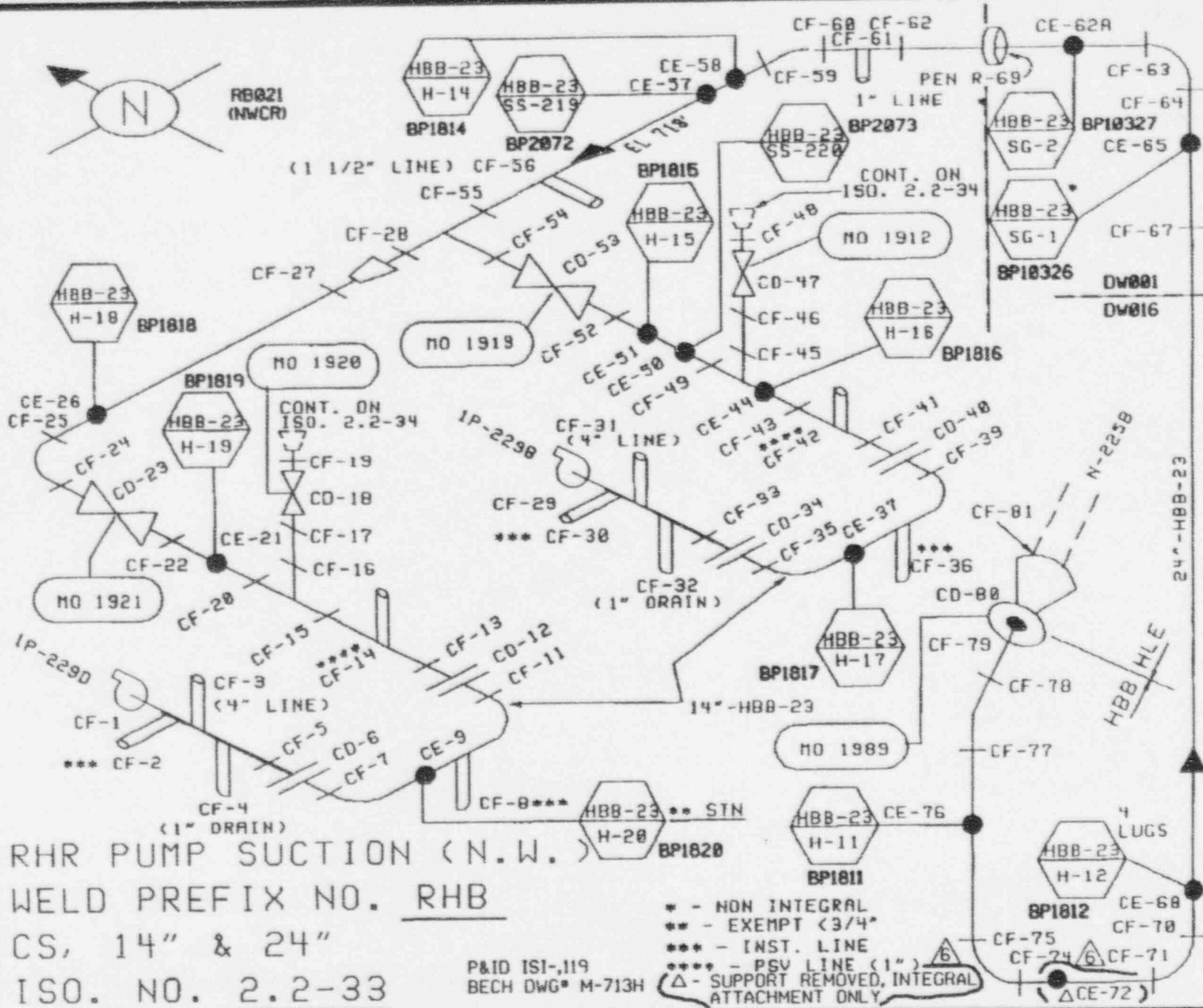


RHR HEAT EXCH A & B  
HEA-, HEB-  
FIGURE NO. 2.1-01

## DRAWING RELEASE RECORD

REV	DATE	PREPARED	REVIEWED	APPROVED	PURPOSE
1	4-26-86	SM	SM	RCM	ISO'S FOR 2nd 10 YEAR PLAN
2	9-18-90	DA	DA	RCM	ISO'S TO CAD FORMAT AS PER NG-89-0794
3	8/23/94	DA	DA	RCM	REVISED PER ISI INSPECTION WALKDOWN





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")  
△ - SUPPORT REMOVED, INTEGRAL ATTACHMENT ONLY

P&ID ISI-119  
BECH DWG# M-713H

REV	DATE	PREPARED	REVIEWED	APPROVED	PURPOSE
1	4-25-86	STL	STL	RCM	ISO'S FOR 2nd 10 YEAR PLAN
2	9-18-90	DA	DA	GP	ISO'S TO CAD FORMAT AS PER HG-89-8794
3	7-22-94	DA	DA	GP	REVISED PER ISI INSPECTION WALKDOWN
4	7-6-95	DA	JDF	GP	REVISED PER DWF-0013
5	2-2-96	TAK	JW	GP	REV. PER DWF-0018
6	8-21-96	JAH	DA	GP	REV. PER DWF-0027

ORAC INSERVICE INSPECTION ASME SECTION XI ISOMETRIC

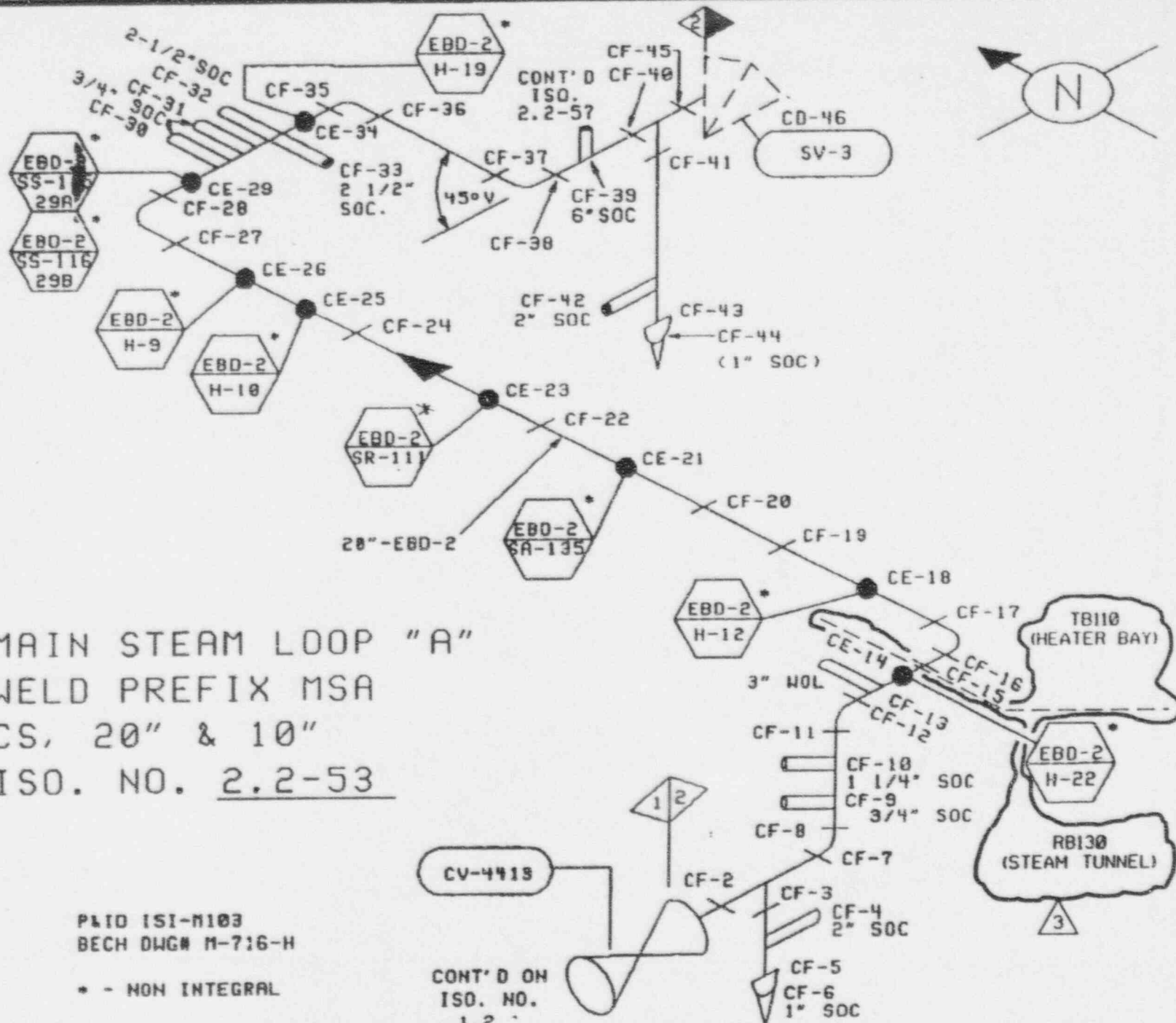


**DRAINING RELEASE RECORD**

MAIN STEAM LOOP "A"  
WELD PREFIX MSA  
CS, 20" & 10"  
ISO. NO. 2.2-53

PLID ISI-N103  
BECH DWGN M-716-H

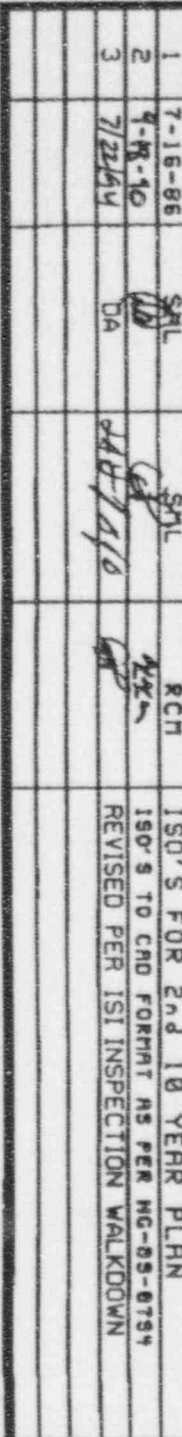
\* - NON INTEGRAL



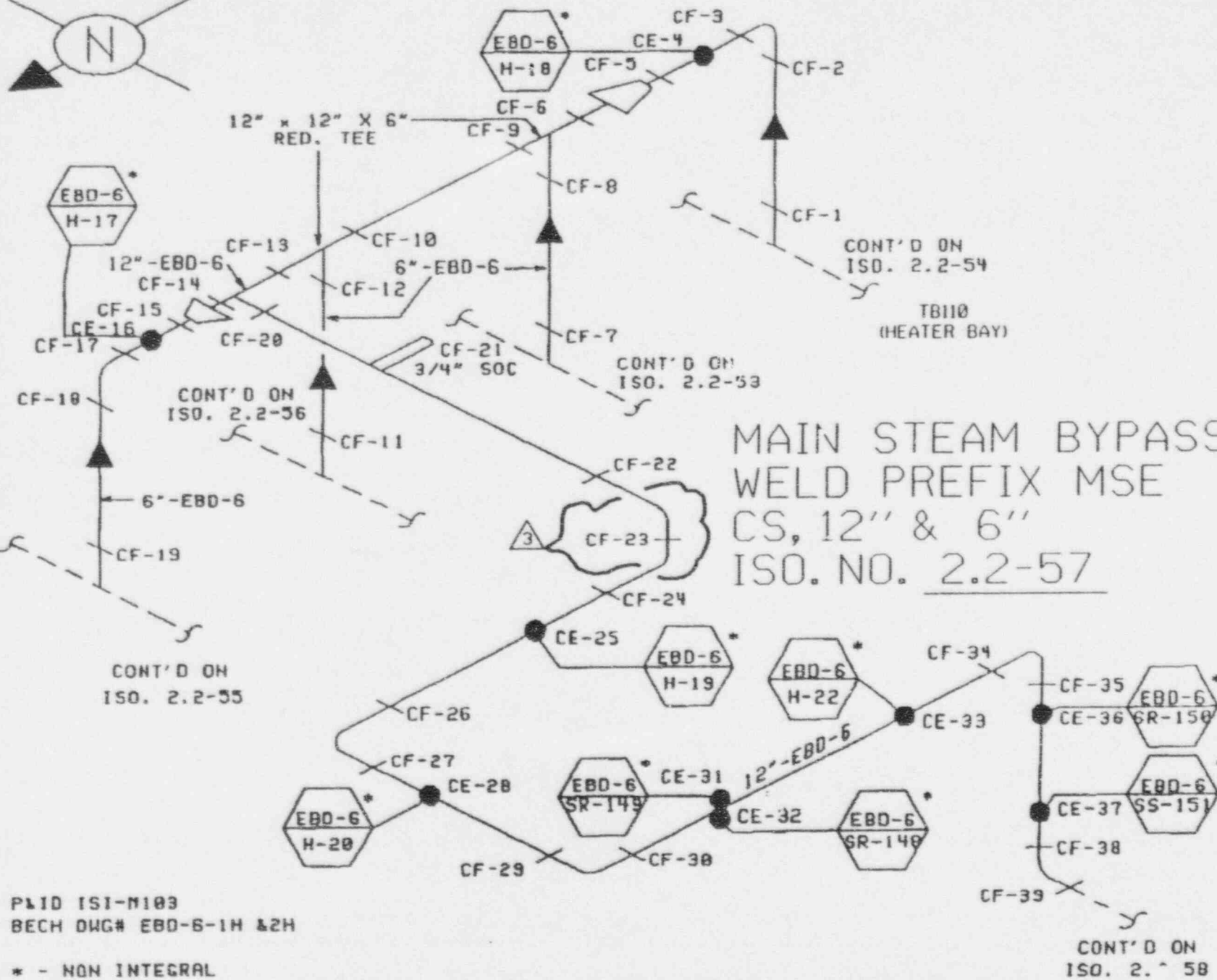
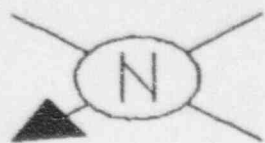




1	7-16-86	SOL	SOL	RCH	ISO'S FORCED 10 YEAR PLHN
2	9-18-90	DA	DA	422	ISO'S TO CAD FORMAT AS PER MC-85-8794
3	7/22/94	DA	DA	422	REVISED PER ISI INSPECTION WALKDOWN







PL10 ISI-M103  
BECH DWG# EBD-6-1H & 2H

\* - NON INTEGRAL

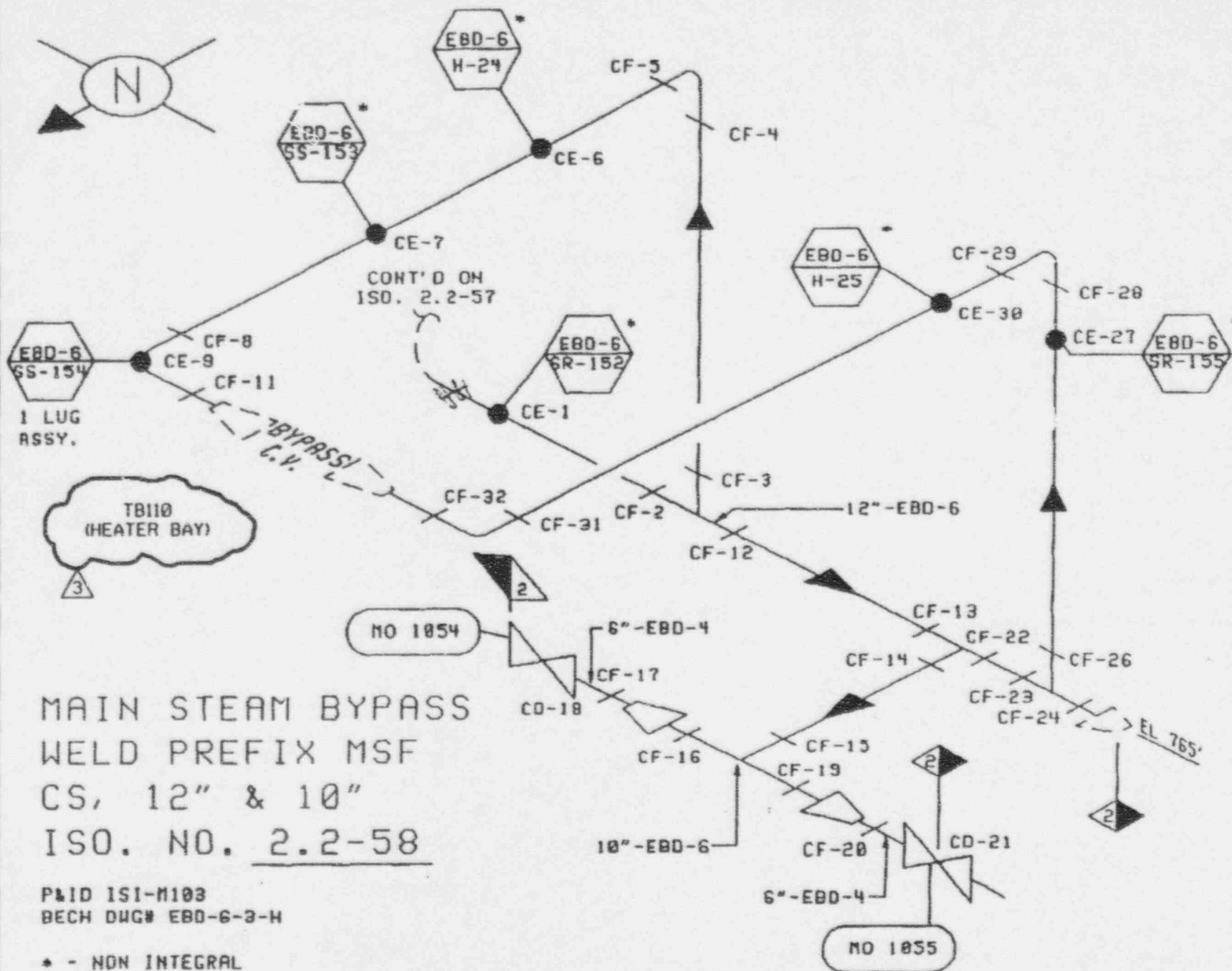
CONT'D ON  
ISO. 2. 58

MAIN STEAM BYPASS  
WELD PREFIX MSE  
CS, 12" & 6"  
ISO. NO. 2.2-57

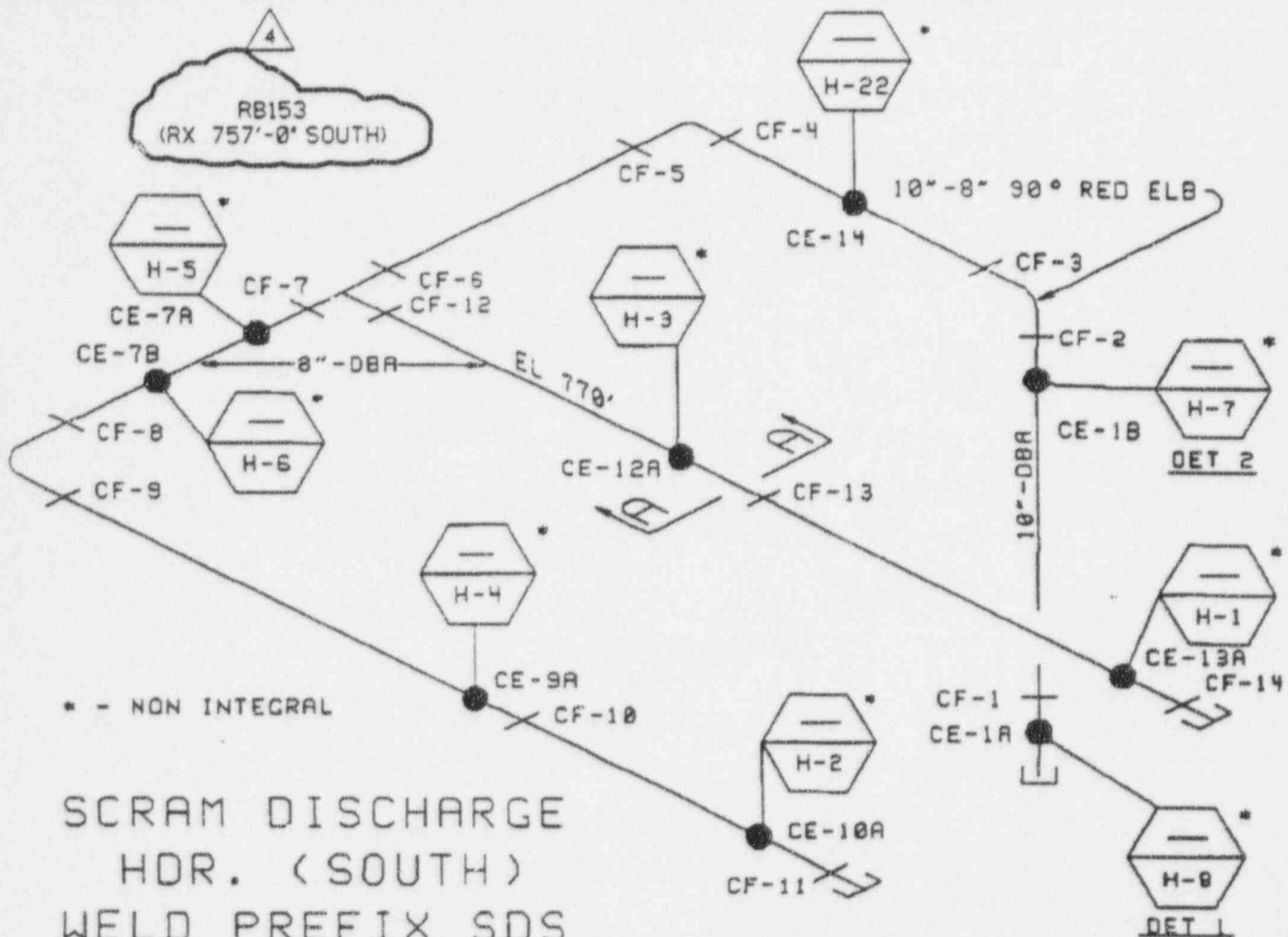
DRAWING RELEASE RECORD

REV DATE PREPARED REVIEWED APPROVED PURPOSE

1	7-16-86	SN	SPL	RCM	ISO'S FOR 2nd 10 YEAR PLAN
2	4-18-90	DA	DA	OP	ISO'S TO CMO FORMAT AS PER HG-89-8794
3	7-22-94	DA	JAH / BJB	OP	REVISED PER ISI INSPECTION WALKDOWN
4	7-06-95	DA	JDF	OP	REVISED PER DUFF-0013







SCRAM DISCHARGE  
HDR. (SOUTH)

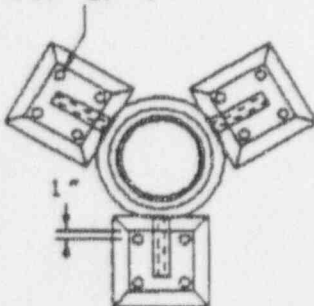
WELD PREFIX SDS

CS, 10" & 8"

ISO. NO. 2.2-60

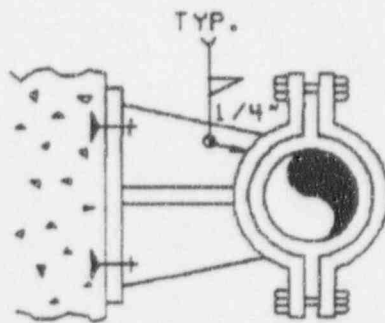
ASME ISI M113

3/4" BOLTS  
TYP OF 4

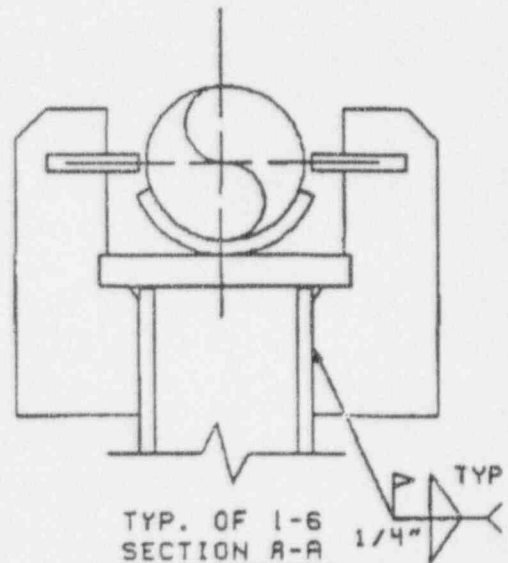


DETAIL 1

TYP.



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	10-25-87	JPM	RCM	REL	MODIFICATION OF SUPPORTS, FCN 13231 SEQ 5
3	9-18-90	DA	DA	DA	ISO'S TO CAD FORMAT AS PER NG-89-8794
4	7-24-94	DA	DA	DA	REVISED PER ISI INSPECTION WALKDOWN

**SECOND TEN YEAR INTERVAL  
INSERVICE INSPECTION REPORT**  
April 20, 1995 through November 16, 1996

Part J, page 1 of 5

- 1) Owners: IES Utilities Inc.  
P.O. Box 351  
Cedar Rapids, IA. 52406  
  
Central Iowa Power Cooperative  
Marion, IA.  
Corn Belt Power Cooperative  
Humbolt, IA.
- 2) Plant: Duane Arnold Energy Center, Palo, IA. 52324
- 3) Plant Unit: #1
- 4) Owners Certificate of Authorization (if required): N/A
- 5) Commercial Service Date: 02/01/75
- 6) National Board Number of Unit: N/A

GROSS GENERATING CAPACITY: 565 MWE

**STATUS OF WORK FOR SECOND TEN YEAR INTERVAL**

(Those percentages shown are actual, where the percentages exceed the allowable only the maximum (34% for period one and 67% for period two) will be taken credit for).

**CLASS 1**

ITEM NO.	TOTAL #	PERIOD 1	PERIOD 2	PERIOD 3	REMARKS
B1.11	4	0%	0%	100%	SEE NOTE 1
B1.12	8	0%	0%	100%	SEE NOTE 1
B1.21S	1	0%	0%	100%	PERMISSIBLE
B1.21T	1	33%	66%	100%	1/3 EACH PERIOD
B1.22B	1	0%	0%	100%	PERMISSIBLE
B1.22T	1	33%	66%	100%	1/3 EACH PERIOD
B1.30	1	33%	66%	100%	1/3 EACH PERIOD
B1.40	1	33%	66%	100%	1/3 EACH PERIOD
B1.50	1	0%	0%	100%	PERMISSIBLE
B3.90	34	28%	58%	100%	
B3.100	34	28%	58%	100%	
B4.11	2	0%	0%	100%	SEE NOTE 2
B4.12	89	0%	0%	100%	SEE NOTE 2
B4.13	30	0%	0%	100%	SEE NOTE 2
B5.10	14	73%	73%	100%	SEE NOTE 3
B5.20	8	12%	50%	100%	SEE NOTE 4
B5.130	8	50%	75%	100%	SEE NOTE 5
B5.140	2	0%	50%	100%	
B6.10	60	0%	66%	100%	PERMISSIBLE
B6.20	60	0%	66%	100%	PERMISSIBLE
B6.40	60	0%	66%	100%	PERMISSIBLE
B6.50	60	0%	66%	100%	PERMISSIBLE
B6.180	2	0%	100%	100%	16 PER PUMP
B6.190	2	0%	100%	100%	
B6.200	2	0%	100%	100%	16 PER PUMP

**SECOND TEN YEAR INTERVAL  
INSERVICE INSPECTION REPORT**  
April 20, 1995 through November 16, 1996

Part J, page 2 of 5

- 1) Owners: IES Utilities Inc.  
P.O. Box 351  
Cedar Rapids, IA. 52406  
  
Central Iowa Power Cooperative  
Marion, IA.                      Corn Belt Power Cooperative  
Humbolt, IA.
- 2) Plant: Duane Arnold Energy Center, Palo, IA. 52324
- 3) Plant Unit: #1
- 4) Owners Certificate of Authorization (if required): N/A
- 5) Commercial Service Date: 02/01/75
- 6) National Board Number of Unit: N/A

GROSS GENERATING CAPACITY: 565 MWE

**STATUS OF WORK FOR SECOND TEN YEAR INTERVAL**

(Those percentages shown are actual, where the percentages exceed the allowable only the maximum (34% for period one and 67% for period two) will be taken credit for).

**CLASS 1 (cont.)**

ITEM NO.	TOTAL #	PERIOD 1	PERIOD 2	PERIOD 3	REMARKS
B7.10	3	66%	66%	100%	
B7.50	4	0%	50%	100%	
B7.60	2	0%	66%	100%	
B7.70	45	N/A	N/A	N/A	RELIEF REQUEST NDE-002 (WHEN DISASSEMBLED)
B7.80	89	N/A	N/A	N/A	SEE NOTE 6
B8.10	9	18%	64%	100%	
B9.11	478	38%	68%	100%	SEE NOTE 7
B9.12	50	19%	60%	100%	SEE NOTE 7
B9.21	12	41%	66%	100%	
B9.31	8	37%	100%	100%	SEE NOTE 8
B9.32	1	0%	100%	100%	
B9.40	43	19%	46%	100%	
B10.10	34	35%	73%	100%	SEE NOTE 9
B10.20	8	25%	50%	100%	
B12.20	2	0%	100%	N/A	
B12.50	45	N/A	N/A	N/A	RELIEF REQUEST NDE-002
B13.10	*	*	*	*	
B13.20	*	*	*	*	*ACCESSIBLE AREAS EACH RFO
B13.21	*	*	*	*	
B13.22	*	*	*	*	PERMISSIBLE
B14.10	4	0%	0%	100%	PERMISSIBLE
B15.10	3	N/A	N/A	N/A	100% EACH REFUELING OUTAGE
B15.11	3	N/A	N/A	N/A	ONCE PER INTERVAL
B15.50	1	N/A	N/A	N/A	100% EACH REFUELING OUTAGE
B15.51	1	N/A	N/A	N/A	ONCE PER INTERVAL
B15.60	2	N/A	N/A	N/A	100% EACH REFUELING OUTAGE
B15.61	2	N/A	N/A	N/A	ONCE PER INTERVAL
B15.70	1	N/A	N/A	N/A	100% EACH REFUELING OUTAGE
B15.71	1	N/A	N/A	N/A	ONCE PER INTERVAL

**SECOND TEN YEAR INTERVAL  
INSERVICE INSPECTION REPORT**  
April 20, 1995 through November 16, 1996

Part J, page 3 of 5

- 1) Owners: IES Utilities Inc.  
P.O. Box 351  
Cedar Rapids, IA. 52406  
  
Central Iowa Power Cooperative  
Marion, IA.                      Corn Belt Power Cooperative  
Humbolt, IA.
- 2) Plant: Duane Arnold Energy Center, Palo, IA. 52324
- 3) Plant Unit: #1
- 4) Owners Certificate of Authorization (if required): N/A
- 5) Commercial Service Date: 02/01/75
- 6) National Board Number of Unit: N/A

GROSS GENERATING CAPACITY: 565 MWE

**STATUS OF WORK FOR SECOND TEN YEAR INTERVAL**

(Those percentages shown are actual, where the percentages exceed the allowable only the maximum (34% for period one and 67% for period two) will be taken credit for).

**CLASS 2**

ITEM NO.	TOTAL #	PERIOD 1	PERIOD 2	PERIOD 3	REMARKS
C1.10	2	50%	50%	100%	
C1.20	1	0%	100%	100%	
C2.21	2	0%	50%	100%	
C2.22	2	0%	0%	100%	
C3.10	5	20%	100%	100%	
C3.20	41	16%	59%	100%	
C5.11	78	33%	66%	100%	
C5.21	34	33%	66%	100%	
C5.31	4	100%	100%	100%	
C7.10	2	N/A	N/A	N/A	ONCE PER PERIOD
C7.20	2	N/A	N/A	N/A	ONCE PER INTERVAL
C7.30	12	N/A	N/A	N/A	ONCE PER PERIOD
C7.40	14	N/A	N/A	N/A	ONCE PER INTERVAL
C7.50	3	N/A	N/A	N/A	ONCE PER PERIOD
C7.60	3	N/A	N/A	N/A	ONCE PER INTERVAL
C7.70	12	N/A	N/A	N/A	ONCE PER PERIOD
C7.80	12	N/A	N/A	N/A	ONCE PER INTERVAL

**SUPPORTS**

CLASS 1					
ITEM NO.	TOTAL #	PERIOD 1	PERIOD 2	PERIOD 3	REMARKS
F1.00	1	0%	0%	100%	
F2.00	15	20%	66%	100%	
F3.00	171	35%	67%	100%	

CLASS 2					
ITEM NO.	TOTAL #	PERIOD 1	PERIOD 2	PERIOD 3	REMARKS
F1.00	70	38%	67%	100%	
F2.00	33	20%	58%	100%	
F3.00	227	34%	70%	100%	

**SECOND TEN YEAR INTERVAL  
INSERVICE INSPECTION REPORT**  
April 20, 1995 through November 16, 1996

Part J, page 4 of 5

- 1) Owners: IES Utilities Inc.  
P.O. Box 351  
Cedar Rapids, IA. 52406
- Central Iowa Power Cooperative  
Marion, IA.
- Corn Belt Power Cooperative  
Humbolt, IA.
- 2) Plant: Quang Arnold Energy Center, Palo, IA. 52324
- 3) Plant Unit: #1
- 4) Owners Certificate of Authorization (if required): N/A
- 5) Commercial Service Date: 02/01/75
- 6) National Board Number of Unit: N/A

GROSS GENERATING CAPACITY: 565 MWE

**STATUS OF WORK FOR SECOND TEN YEAR INTERVAL**

NOTE 1 - Item Numbers B1.11, B1.12

IES Utilities has implemented the augmented reactor vessel examination requirements per 10CFR 50.55a(g)(6)(ii)(A)(3). This increased the number of welds required to be examined. B1.11 was increased from 1 to 4, B1.12 was increased from 1 to 8.

NOTE 2 - Item Numbers B4.11, B4.12, B4.13

These Item Numbers are to be examined during conduct of the system hydrostatic test. IES Utilities performed the VT-2 examinations for these Item Numbers utilizing Code Case N-498.

NOTE 3 - Item Number B5.10

11 Nozzle-to-Safeend 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 period 2, 4 of the 11 Nozzle-to-Safeend Welds were examined again and were submitted in the Summary Report for that period. Because these 4 were already examined the percentages do not change. 7 of the 11, completed during Outage 08, were scheduled for examination during the remainder of the interval.

NOTE 4 - Item Number B5.20

There was one Nozzle-to-Safeend Weld  $\leq 4"$  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, period 2, which brought the percentage within Code allowable. There were 2 more completed during Outage 11, period 2, which brought the total to 50% at the end of period 2.

NOTE 5 - Item Number B1.530

There were two scheduled for the Outage 12, period 2, including CSA-F002A which was previously completed during Outage 08, period 1.

NOTE 6 - Item Number B7.80 (CRD Bolting)

There are no percentages calculated for this item because each CRD that is removed a VT-1 examination is performed on the associated bolting. There are usually 20 scheduled per outage. However, during Outage 14, period 3, there were no CRDs removed.

NOTE 7 - Item Number B9.11

There are a total of 478 Category B-J B9.11 welds. 25% would be 120 welds, IES Utilities has completed 139 welds for this interval. Of the 139 welds, 50 had intersecting longitudinal welds requiring examination under B9.12.

**SECOND TEN YEAR INTERVAL  
INSERVICE INSPECTION REPORT**  
April 20, 1995 through November 16, 1996

Part J, page 5 of 5

- 1) Owners: IES Utilities Inc.  
P.O. Box 351  
Cedar Rapids, IA. 52406  
  
Central Iowa Power Cooperative      Corn Belt Power Cooperative  
Marion, IA.                                  Humbolt, IA.
- 2) Plant: Duane Arnold Energy Center, Palo, IA. 52324
- 3) Plant Unit: #1
- 4) Owners Certificate of Authorization (if required): N/A
- 5) Commercial Service Date: 02/01/75
- 6) National Board Number of Unit: N/A

GROSS GENERATING CAPACITY: 565 MWE

**STATUS OF WORK FOR SECOND TEN YEAR INTERVAL**

NOTE 8 - Item Number B9.31

100% of the components were examined by the end of period 2. 4 of the 8 were rescheduled during period 3 to meet the required code percentages. 2 were completed in Outage 12 and 2 more were completed in Outage 13.

NOTE 9 - Item Number B10.10

Relief Request NDE-008 required MSA-K035, MSB-K040, MSC-K038, and MSD-K034 to be visually (VT-3/4) examined each period versus a surface examination of the integral attachment.



**SECOND TEN YEAR INTERVAL  
INSERVICE INSPECTION REPORT**  
April 20, 1995 through November 16, 1996

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**SECOND TEN YEAR INTERVAL  
INSERVICE INSPECTION REPORT**  
April 20, 1995 through November 16, 1996

Part K, page 1 of 1

- 1) Owners: IES Utilities Inc.  
P.O. Box 351  
Cedar Rapids, IA. 52406  
  
Central Iowa Power Cooperative  
Marion, IA.  
  
Corn Belt Power Cooperative  
Humbolt, IA.
- 2) Plant: Duane Arnold Energy Center, Palo, IA. 52324
- 3) Plant Unit: #1
- 4) Owners Certificate of Authorization (if required): N/A
- 5) Commercial Service Date: 02/01/75
- 6) National Board Number of Unit: N/A

GROSS GENERATING CAPACITY: 565 MWE

**RELIEF REQUESTS**

The following are the relief requests that were used during the period of this Summary Report.

**RELIEF REQUESTS**

NDE-002

NDE-003

NDE-006

NDE-007

NDE-019

NDE-022

NDE-023

NDE-024

NDE-025

NDE-026

RR-002, Rev. 2

HT-014

**ALTERNATIVE TESTING #**

NDE-020

**CODE CASE #**

N-461

N-498

N-416-1

N-535

**DESCRIPTION**

All valves under Category B-M-2

Class 2 piping welds (NDE Exemption)

Level III Recertification Requirements

All Valve Pressure Retaining Bolting under B-G-2

Visual (VT-1) examination of Vessel Nuts

HEA-CB-2, 75% Coverage due to nozzle to shell configuration

HCC-C001(42.7%) and VCB-C015(36.8%) Coverage due to vessel flange configuration

VSW-0,-90,-180,-270 (60%) Coverage due to Stabilizer configuration

One sided examination coverage due to nozzle configuration

Vessel Threads in Flange (77.1%) Coverage due to flange configuration

MSIV 'D' Outboard (CV-4421) Non-Code Repair, valve was not opened

HPCI - pressure testing (30 - 60 minutes hold time)

**DESCRIPTION**

Use of existing Vessel Calibration Blocks

**DESCRIPTION**

Calibration block selection

Code Credit for hydro from system leakage test

Alternative Testing for hydro after a repair/replacement

Alternative Requirements for Inservice Inspection Intervals

SECOND TEN YEAR INTERVAL  
INSERVICE INSPECTION REPORT  
April 20, 1995 through November 16, 1996

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THIRD TEN YEAR INTERVAL  
INSERVICE INSPECTION REPORT  
November 01, 1996 through November 16, 1996

DUANE ARNOLD ENERGY CENTER

UNIT #1 PALO, IOWA

Commercial Service Date: February 1, 1975

THIRD TEN YEAR INTERVAL  
INSERVICE INSPECTION SUMMARY REPORT

November 01, 1996 through November 16, 1996

Dated: November 16, 1996

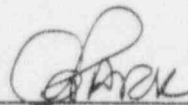
OWNER:

IES UTILITIES, INC

P.O. Box 351

Cedar Rapids, Iowa 52406

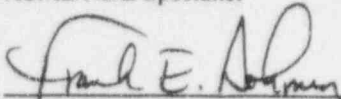
Prepared by:

  
ASME/NDE Specialist

Date:

1/20/97

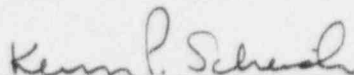
Reviewed by:

  
Corporate NDE Level III

Date:

1-20-97

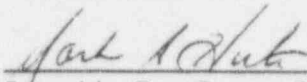
Reviewed by:

  
Equipment Monitoring Group, GL

Date:

1/23/97

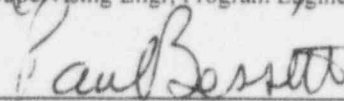
Concurred by:

  
Supervising Engr, Program Engineering

Date:

1/23/97

Approved by:

  
Manager, Engineering

Date:

1/24/97

THIRD TEN YEAR INTERVAL  
INSERVICE INSPECTION REPORT  
November 01, 1996 through November 16, 1996

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**THIRD TEN YEAR INTERVAL  
INSERVICE INSPECTION REPORT**  
November 01, 1996 through November 16, 1996

Table of Contents

PART	DESCRIPTION	PAGE NO.
A	Form NIS-1	pages 1-2
B	Certificate of Inservice Inspection	pages 1-2
C	Abstract	page 1
D	Table of Component and Weld Examination Identification Records	page 1
E	Table of Additional and Successive Examinations Identification Records	page 1
F	Abstract of ASME Section XI Repairs and Replacements	page 1
G	Form NIS-2's	page 1
H	Abstract of Conditions Noted and Corrective Measures Taken	page 1
I	ISI Figures and Isometrics	pages 1-12
J	Status of Work for Second Ten Year Interval	pages 1-4
K	Listing of Relief Requests and Code Cases Utilized	page 1



**THIRD TEN YEAR INTERVAL  
INSERVICE INSPECTION REPORT**  
November 01, 1996 through November 16, 1996

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## November 01, 1996 through November 16, 1996

Part A, Page 1 of 2

As Required by the Provisions of the ASME Code Rules

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

### 7. Components Inspected

Component or Appurtenance	Manufacturer or Installer	Manufacturer or Installer Serial No.	State or Province No.	National Board No.
Reactor Pressure Vessel (RPV)	Chicago Bridge & Iron	3-4835	N/A	3663

Refer to Part B, Pages 1-2, of this report for a continuation of components examined.

[illegible]

Note: Supplemental sheets in form of lists, sketches, or drawings may be used provided (1) size is 8.5 X 11 inches, (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.

This form (E00029) may be obtained from the Order Dept., ASME, 345 E. 47th St., New York, N.Y. 10010.

THIRD TEN YEAR INTERVAL  
INSERVICE INSPECTION REPORT  
November 01, 1996 through November 16, 1996

Part A, Page 2 of 2

FORM NIS-1 (back)

8. Examination Dates 11/01/96 to 11/16/96 9. Inspection Interval from 11/01/96 to 11/01/05

10. Abstract of Examinations. Include a list of examinations and a statement concerning status of work required for current interval.

Refer to Part C, Part D, and Part J.

11. Abstract of Conditions Noted

Refer to Part H.

12. Abstract of Corrective Measures Recommended and Taken

Refer to 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.

Date Jan 29 1997 Signed [Signature] By JOHN FRANZ V.P. NUCLEAR

Certificate of Authorization No. (if applicable) \_\_\_\_\_ Expiration Date \_\_\_\_\_

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 Owner's Data Report during the period 04/20/95 to 11/16/96, 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 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 Owner's Data Report. Furthermore, neither the Inspector, nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date Feb 4 1997

[Signature]

Inspector's Signature

Commissions NO 7543 N.I. Ia 1046

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.

**THIRD TEN YEAR INTERVAL  
INSERVICE INSPECTION REPORT**  
November 01, 1996 through November 16, 1996

Part B, page 1 of 2

- 1) Owners: IES Utilities Inc.  
P.O. Box 351  
Cedar Rapids, IA. 52406  
  
Central Iowa Power Cooperative      Corn Belt Power Cooperative  
Marion, IA.      Humbolt, IA.
- 2) Plant: Duane Arnold Energy Center, Palo, IA. 52324
- 3) Plant Unit: #1
- 4) Owners Certificate of Authorization (if required): N/A
- 5) Commercial Service Date: 02/01/75
- 6) National Board Number of Unit: N/A

GROSS GENERATING CAPACITY: 565 MWE

**CERTIFICATE OF INSERVICE INSPECTION**

**COMPONENTS EXAMINED:**

Reactor Pressure Vessel:

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

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

Refer to Part A, Page 1, form NIS-1, Owners Data Report for Inservice Inspections.

Piping

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

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

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

November 01, 1996 through November 16, 1996

1) Owners: IES Utilities Inc.  
P.O. Box 351  
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Central Iowa Power Cooperative  
Marion, IA.  
  
Corn Belt Power Cooperative  
Humbolt, IA.

2) Plant: Duang Arnold Energy Center, Palo, IA. 52324

3) Plant Unit: #1

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

5) Commercial Service Date: 02/01/75

6) National Board Number of Unit: N/A

### CERTIFICATE OF INSERVICE INSPECTION

Class 1 Components:

Reactor Pressure Vessel	Sketch VS-01-41 VS-01-06
Main Steam 'A'	ISO No. 1.2-01
Feedwater A and B	ISO No. 1.2-05
Core Sprav A	ISO No. 1.2-07
Control Rod Drive Return	ISO No. 1.2-12A
Residual Heat Removal	ISO No. 1.2-13
Recircualtion Manifold 'A'	ISO No. 1.2.20
Recircualtion Manifold 'B'	ISO No. 1.2-22
Head Vent	ISO No. 1.2-24
Jet Pump Instrumentation 'A'	ISO No. 1.2-25

**THIRD TEN YEAR INTERVAL  
INSERVICE INSPECTION REPORT**

November 01, 1996 through November 16, 1996

Part C, page 1 of 1

- 1) Owners: IES Utilities Inc.  
P.O. Box 351  
Cedar Rapids, IA. 52406  
  
Central Iowa Power Cooperative      Corn Belt Power Cooperative  
Marion, IA.      Humbolt, IA.
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GROSS GENERATING CAPACITY: 565 MWE

**CERTIFICATE OF INSERVICE INSPECTION**

**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 1989 Edition No Addenda, and the Duane Arnold Energy Center Updated Final Safety Analysis Report. The inspections were performed utilizing Non-Destructive Examination Techniques (i.e., UT, PT, MT, etc.). The examinations were conducted during the period of April 20, 1995 through November 16, 1996. The specific details and associated records of the examinations are on file at IES Utilities Inc.



**THIRD TEN YEAR INTERVAL  
INSERVICE INSPECTION REPORT**  
November 01, 1996 through November 16, 1996

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**THIRD TEN YEAR INTERVAL  
INSERVICE INSPECTION REPORT**

November 01, 1996 through November 16, 1996

Part D, page 1 of 1

- 1) Owners: IES Utilities Inc.  
P.O. Box 351  
Cedar Rapids, IA. 52406  
  
Central Iowa Power Cooperative  
Marion, IA.  
  
Corn Belt Power Cooperative  
Humbolt, IA.
- 2) Plant: Duane Arnold Energy Center, Palo, IA. 52324
- 3) Plant Unit: #1
- 4) Owners Certificate of Authorization (if required): N/A
- 5) Commercial Service Date: 02/01/75
- 6) National Board Number of Unit: N/A

GROSS GENERATING CAPACITY: 565 MWE

**Component and Weld Examination Identification Records**

**CLASS 1**

Component	Description	ISI Report		ISI ISO No.	Category	Results
Reactor Pressure Vessel	VCB-C005	196005	UT	VS-01-41	B-A	Accepted
	HCC-C001(Studs Holes 60-20)	196020	MT UT	VS-01-06	B-A	Accepted
Main Steam	MSA-D001	196038	UT	1.2-01	B-D	Accepted
	MSA-D001 Inner Radius	196039	UT	1.2-01	B-D	Accepted
Feedwater 'A'	FWA-D001	196032	UT	1.2-05	B-D	Accepted
	FWA-D001 Inner Radius	196033	UT	1.2-05	B-D	Accepted
Core Spray 'A'	CSA-F002	196072	PT UT	1.2-07	B-F	Accepted
Control Rod Drive Return	CRA-D001	196026	UT	1.2-12A	B-D	Accepted
	CRA-D001 Inner Radius	196027	UT	1.2-12A	B-D	Accepted
	CRA-F002	196074	PT	1.2-12A	B-F	Accepted
Residual Heat Removal	RHA-D001	196042	UT	1.2-13	B-D	Accepted
	RHA-D001 Inner Radius	196043	UT	1.2-13	B-D	Accepted
Recirculation Riser 'A'	RRF-F002	196077	PT UT	1.2-20	B-F	Accepted
Recirculation Riser 'B'	RRD-D001	196044	UT	1.2-22	B-D	Accepted
	RRD-D001 Inner Radius	196045	UT	1.2-22	B-D	Accepted
	RRD-F002	196080	PT UT	1.2-22	B-F	Accepted
Head Vent	HVA-D001	196034	UT	1.2-24	B-D	Accepted
	HVA-D001 Inner Radius	196035	UT	1.2-24	B-D	Accepted
Jet Pump	JPA-D001	196036	UT	1.2-25	B-D	Accepted
Instrumentation	JPA-D001 Inner Radius	196037	UT	1.2-25	B-D	Accepted
	JPA-F002	196083	PT UT	1.2-25	B-F	Accepted

**THIRD TEN YEAR INTERVAL  
INSERVICE INSPECTION REPORT**  
November 01, 1996 through November 16, 1996

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**THIRD TEN YEAR INTERVAL  
INSERVICE INSPECTION REPORT**  
November 01, 1996 through November 16, 1996

Part E, page 1 of 1

- 1) Owners: IES Utilities Inc.  
P.O. Box 351  
Cedar Rapids, IA. 52406  
  
Central Iowa Power Cooperative      Corn Belt Power Cooperative  
Marion, IA.      Humbolt, IA.
- 2) Plant: Duane Arnold Energy Center, Palo, IA. 52324
- 3) Plant Unit: #1
- 4) Owners Certificate of Authorization (if required): N/A
- 5) Commercial Service Date: 02/01/75
- 6) National Board Number of Unit: N/A

GROSS GENERATING CAPACITY: 565 MWE

**ADDITIONAL EXAMINATIONS**

There were no additional examinations required during RFO14 for the third ten year interval.

**SUCCESSIVE EXAMINATIONS**

There were no successive examinations required during RFO14 for the third ten year interval

**THIRD TEN YEAR INTERVAL  
INSERVICE INSPECTION REPORT**  
November 01, 1996 through November 16, 1996

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**THIRD TEN YEAR INTERVAL  
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November 01, 1996 through November 16, 1996

Part F, page 1 of 1

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: IES Utilities Inc.  
P.O. Box 351  
Cedar Rapids, IA. 52406  
  
Central Iowa Power Cooperative      Corn Belt Power Cooperative  
Marion, IA.      Humbolt, IA.
- 2) Plant: Duane Arnold Energy Center, Palmdale, IA. 52324
- 3) Plant Unit: #1
- 4) Owners Certificate of Authorization (if required): N/A
- 5) Commercial Service Date: 02/01/75
- 6) National Board Number of Unit: N/A

GROSS GENERATING CAPACITY: 565 MWE

There were no ASME Section XI Repairs or Replacements completed under the Third Ten Year Interval.  
All Repairs and Replacements were completed and submitted under the Second Ten Year Interval  
Summary Report



THIRD TEN YEAR INTERVAL  
INSERVICE INSPECTION REPORT  
November 01, 1996 through November 16, 1996

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## November 01, 1996 through November 16, 1996

1) Owners: IES Utilities Inc.  
P.O. Box 351  
Cedar Rapids, IA 52406

Corn Belt Power Cooperative  
Humbolt, IA.

- 2) Plant: Duane Arnold Energy Center, Palo, IA, 52324
- 3) Plant Unit: #1
- 4) Owners Certificate of Authorization (if required) : N/A
- 5) Commercial Service Date: 02/01/75
- 6) National Board Number of Unit: N/A

GROSS GENERATING CAPACITY: 565 MWE

There are no NIS-2's included in this summary report.  
They are included in the Second Ten Year Interval Summary Report

**THIRD TEN YEAR INTERVAL  
INSERVICE INSPECTION REPORT**  
November 01, 1996 through November 16, 1996

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## November 01, 1996 through November 16, 1996

1) Owners: IES Utilities Inc.  
P.O. Box 351  
Cedar Rapids, IA. 52406

Central Iowa Power Cooperative                  Corn Belt Power Cooperative  
Marion, IA.    Humbolt, IA.

2) Plant: Duane Arnold Energy Center, Palo, IA, 52324

3) Plant Unit: #1

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

5) Commercial Service Date: 02/01/73

6) National Board Number of Unit: N/A

ABSTRACT OF CONDITIONS NOTED AND CORRECTIVE MEASURES TAKEN:

The corrective measures are addressed in the Second Ten Year Interval report and 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 the Second Ten Year Interval Summary 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 1981 Addenda. Specific details and associated records of additional corrective measures are on file at IES Utilities Inc. The corrective measures addressed were performed during the period of April 20, 1995 through November 16, 1996.

**THIRD TEN YEAR INTERVAL  
INSERVICE INSPECTION REPORT**  
November 01, 1996 through November 16, 1996

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**THIRD TEN YEAR INTERVAL  
INSERVICE INSPECTION REPORT**  
November 01, 1996 through November 16, 1996

Part I, page 1 of 12

- 1) Owners: IES Utilities Inc.  
P.O. Box 351  
Cedar Rapids, IA. 52406  
  
Central Iowa Power Cooperative      Corn Belt Power Cooperative  
Marion, IA.      Humbolt, IA.
  - 2) Plant: Duane Arnold Energy Center, Palo, IA. 52324
  - 3) Plant Unit: #1
  - 4) Owners Certificate of Authorization (if required): N/A
  - 5) Commercial Service Date: 02/01/75
  - 6) National Board Number of Unit: N/A
- GROSS GENERATING CAPACITY: 565 MWE

**ISI FIGURES AND ISOMETRICS**

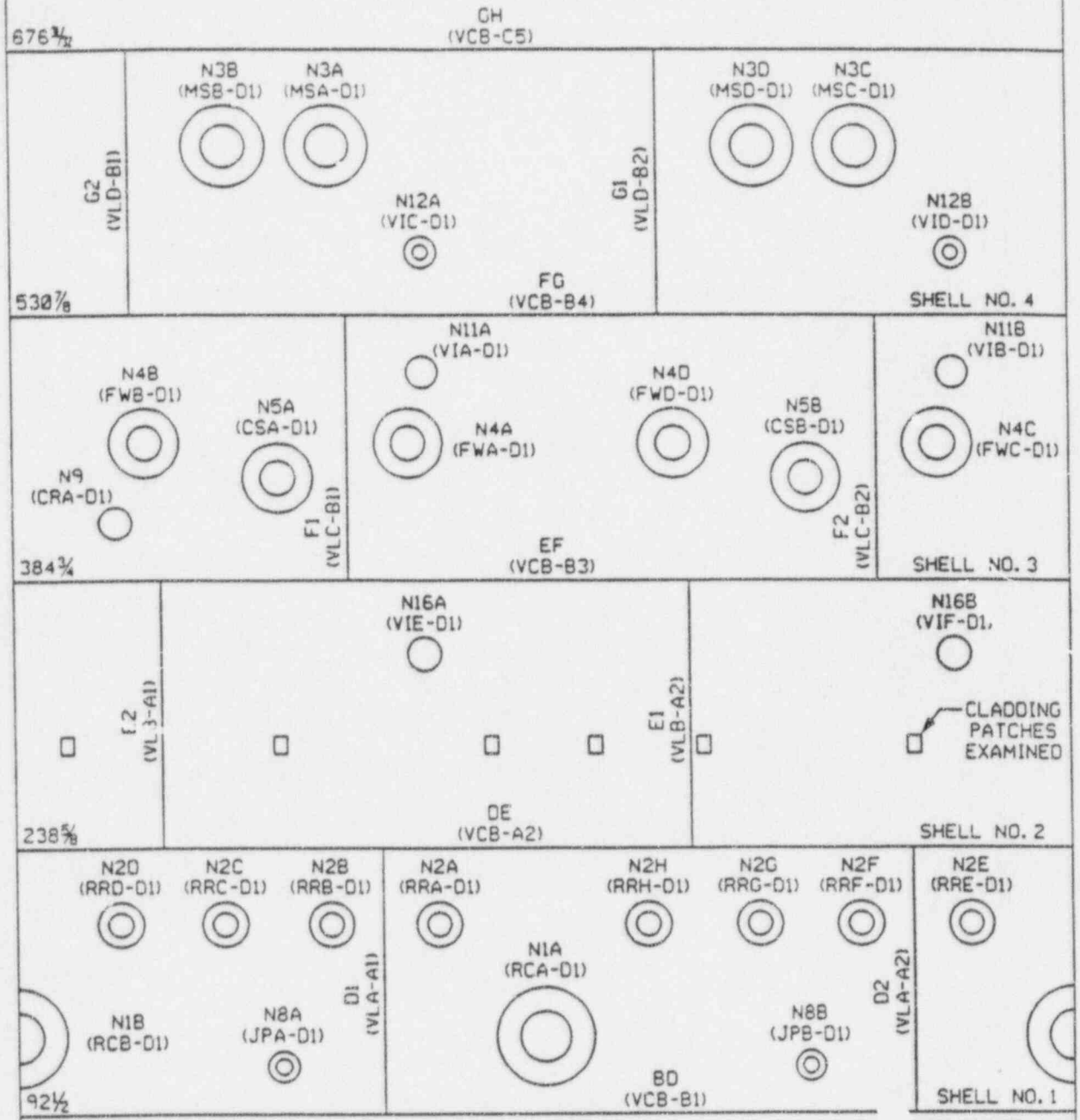
**PLEASE NOTE:** ISI Figures and Isometrics are listed in Part B and Part E of this report



**THIRD TEN YEAR INTERVAL  
INSERVICE INSPECTION REPORT**  
November 01, 1996 through November 16, 1996

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180 160 140 120 100 80 60 40 20 0 340 320 300 280 260 240 220 200 180  
 170 150 130 110 90 70 50 30 10 350 330 310 290 270 250 230 210 190



OUTSIDE VIEW

DRAFTED FOR VESSEL INSPECTION PROGRAM

REVISION

12.8.74  
NO. DATE

IES:

Inservice Inspection Program  
Reactor Pressure Vessel Sketch

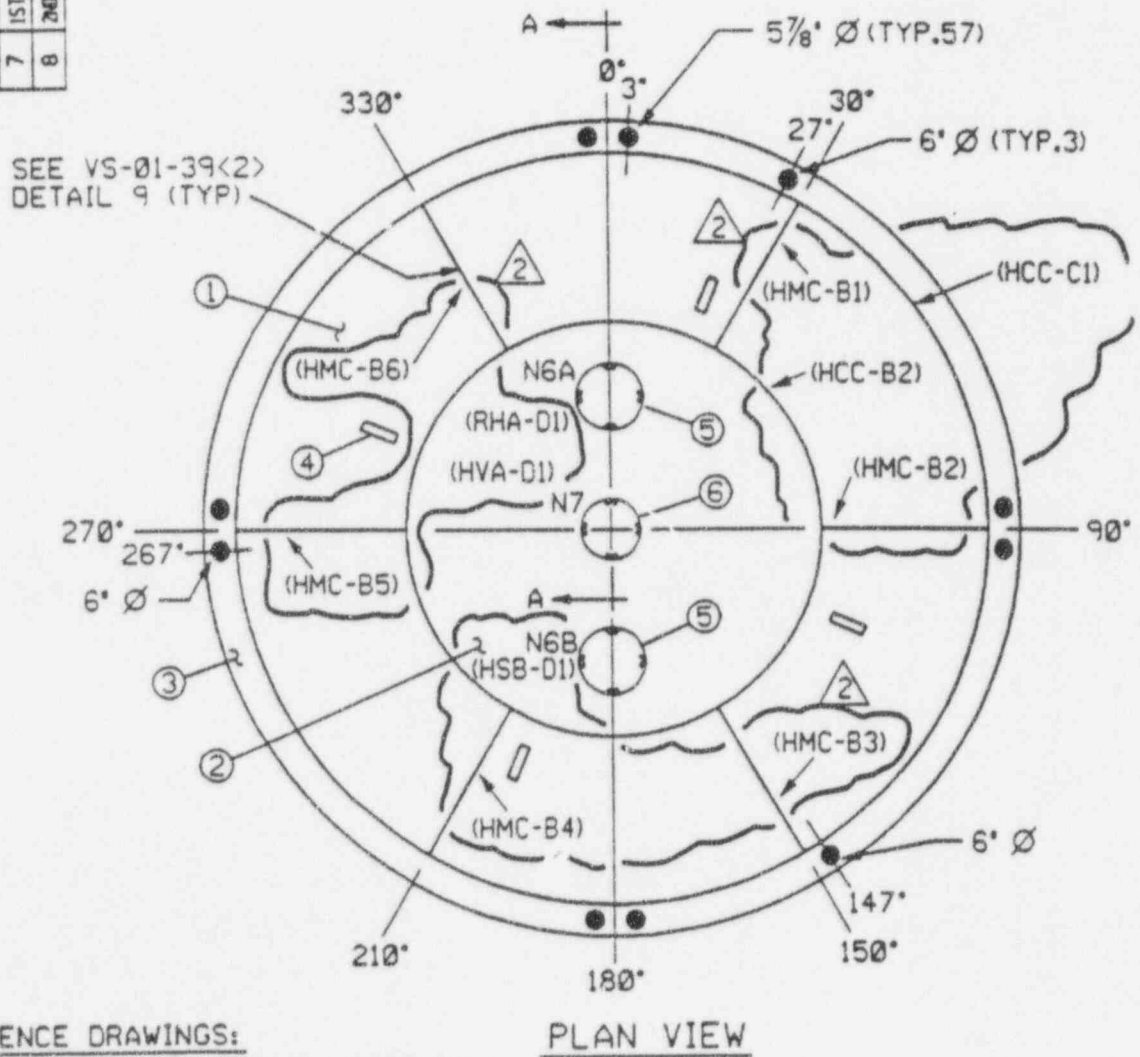
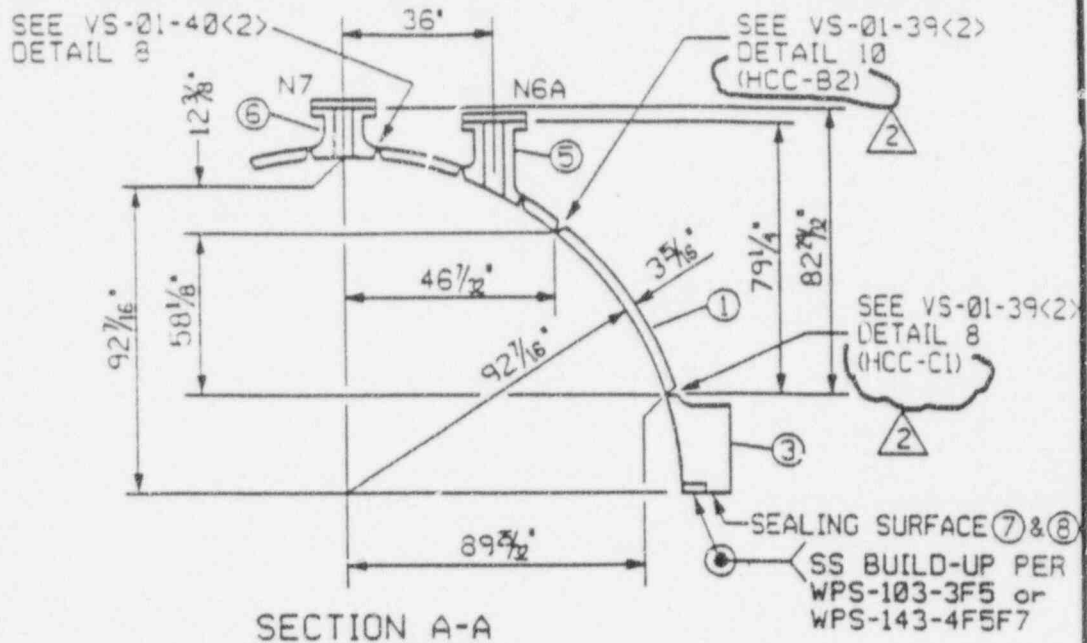
VESSEL SHELL RING  
LAYOUT

DWG. NO.

VS-01-41

REV.  
1

NO.	DESCRIPTION	BILL OF MATL.	PROCED.
1	SIDE PLATE	SA533 CLASS 1 GR.B	
2	DOLLAR PLATE	SA533 CLASS 1 GR.B	
3	HEAD FLANGE	A-508 CLASS 2	
4	LIFTING LUG	(SEE VS-01-37)	
5	HEAD SPRAY & INSTR. NOZZ.	(SEE VS-01-15)	
6	VENT NOZZ.	(SEE VS-01-16)	
7	1ST LAYER SEAL SURFACE CLADDING	309L	
8	2ND & 3RD LAYER SEAL SURFACE CLADDING	308L	



REFERENCE DRAWINGS:

APED-B11-2655-179, APED-B11-2655-211,  
APED-B11-2655-215

IES:

### Inservice Inspection Program Reactor Pressure Vessel Sketch

TOP HEAD  
ASSEMBLY

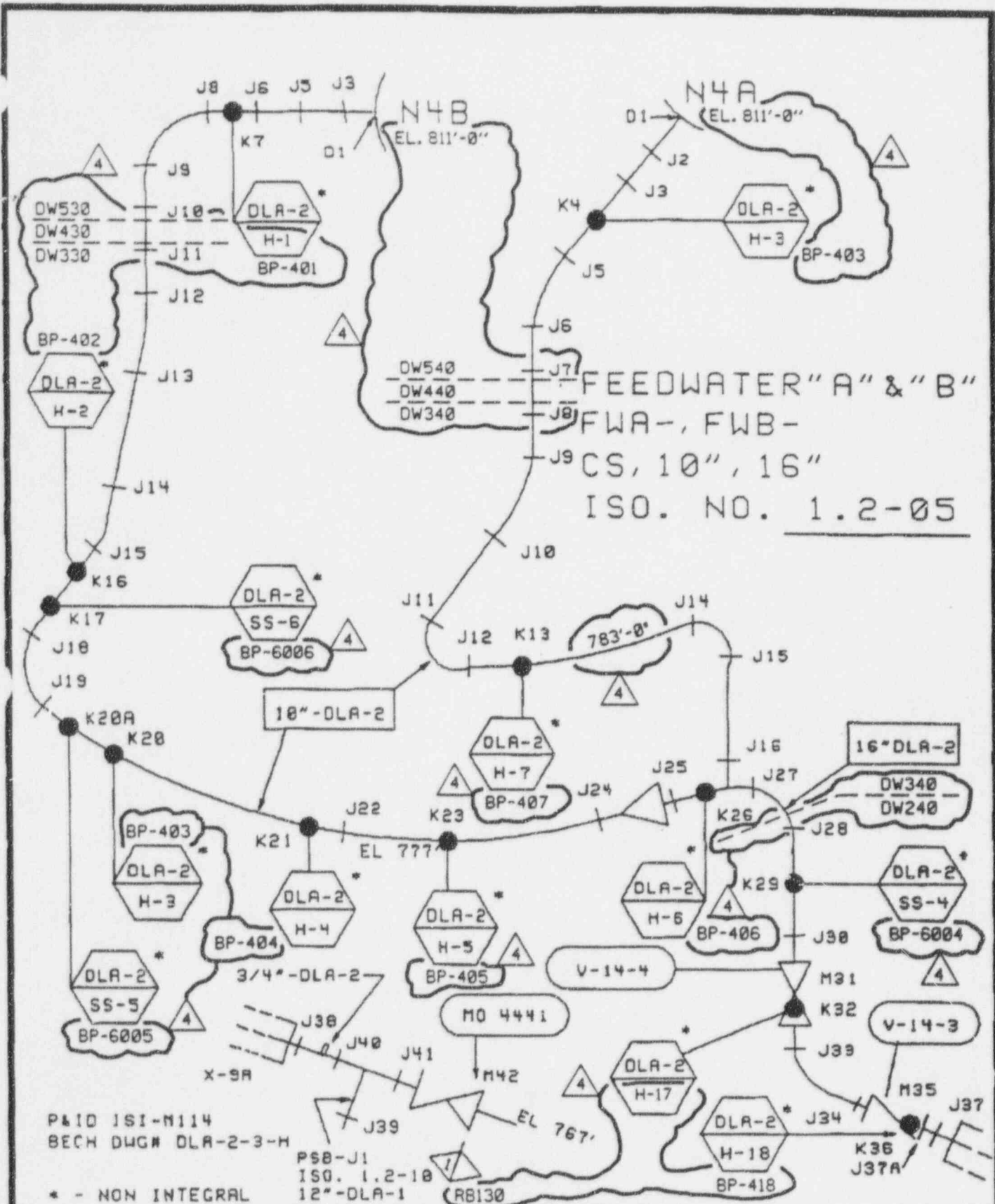
DWG. NO.

VS-01-06

REV.  
2

NO	DATE	REVISION	DA	SS	SS
2	08-08-95	REVISED PER DUF-0011			
1	12-09-94	DRAFTED FOR VESSEL INSPECTION PROGRAM	MS	DF	GP SS
			DRAFT	CHKD	ENCR. VER.

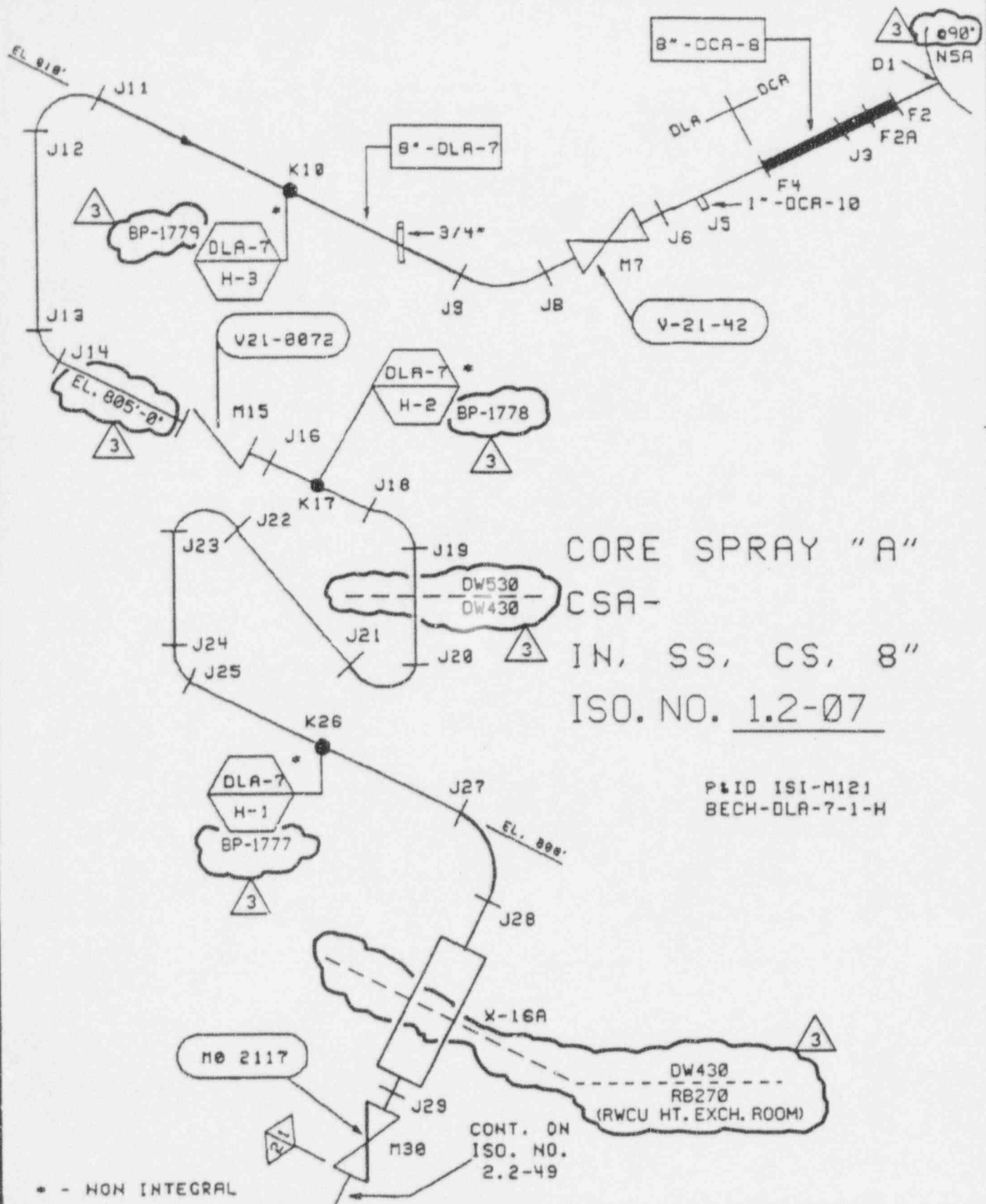




## DRAWING RELEASE RECORD

REV	DATE	PREPARED	REVIEWED	APPROVED	PURPOSE
1	3-10-86	SNL	SNL	RCM	ISO'S FOR 2nd 10 YEAR PLAN
2	3-24-90	DA	GP	KKM	ISO'S TO CAD FORMAT AS PER NC-89-0794
3	11-18-92	DA	GP	KKM	REVISED PER ODC-2041
4	7/22/94	DA	GP	KKM	REVISED PER ISI INSPECTION WALKDOWN

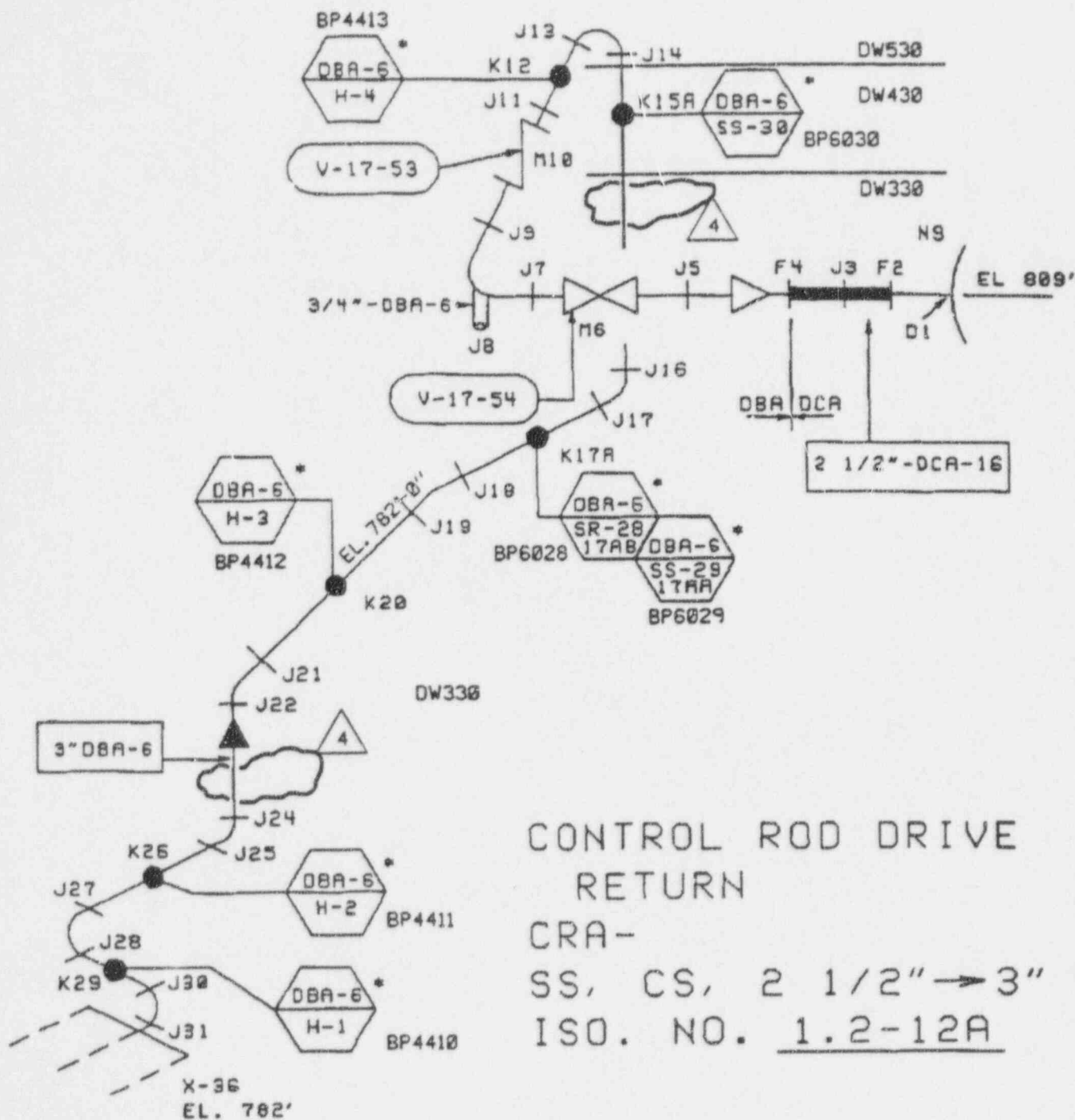




## DRAWING RELEASE RECORD

REV	DATE	PREPARED	REVIEWED	APPROVED	PURPOSE
1	3-12-86	BML	BML	RCM	ISO'S FOR 2nd 10 YEAR PLAN
2	9-24-90	DA	JAH / A/D		ISO'S TO CAD FORMAT AS PER NG-69-0794
3	7/22/94				REVISED PER ISI INSPECTION WALKDOWN





# CONTROL ROD DRIVE RETURN

CRA-

SS, CS, 2 1/2" → 3"

ISO. NO. 1.2-12A

CONT. ON

ISO. NO. 1.2-12B

PLS ISI-M117

BECH. DWGA 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	DA	JAH / FED	GP	ISO'S TO CAD FORMAT AS PER HG-85-0704
3	7-22-94	DA	JAH / FED	GP	REVISED PER ISI INSPECTION WALKDOWN
4	7-06-95	DA	JDF	GP	REVISED PER DURF-0013

RHR-HEADSPRAY

RHA

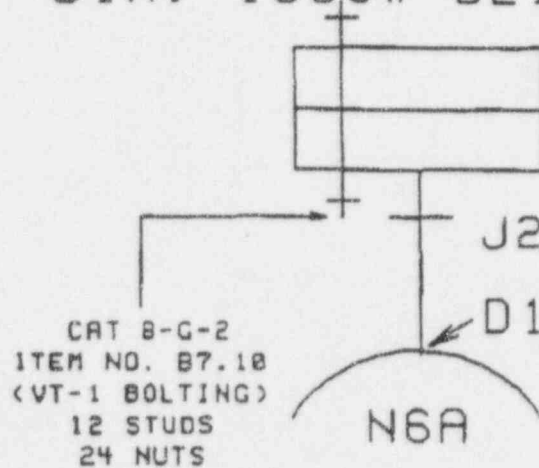
C.S. -6"

ISO. NO. 1.2-13

P&amp;ID-M119

BECH DWG# DBA-5-1-H





6" DIA. 1500# BLIND FLANGE



DW7  
(EXAMS PERFORMED  
ON REFUEL FLOOR)

4

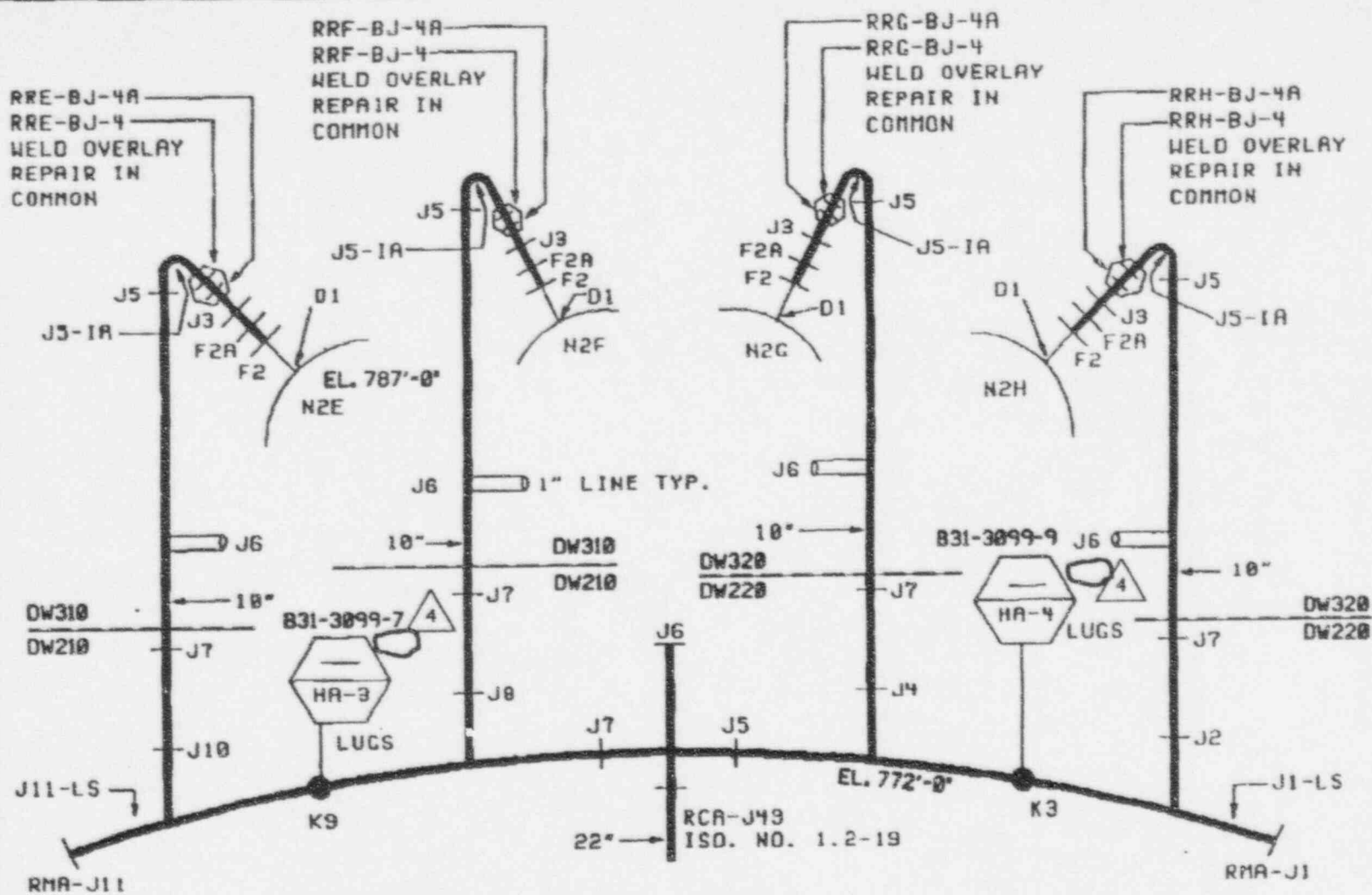
## DRAWING RELEASE RECORD

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 1985, 1987 RFO
3	9-29-90				ISO'S TO CAD FORMAT AS PER HQ-89-0794
4	7/22/94	DA	DAH/FCO		REVISED PER ISI INSPECTION WALKDOWN

DREC INSERVICE INSPECTION ASME SECTION XI ISOMETRIC

REV	DATE	PREPARED	REVIEWED	APPROVED	PURPOSE
1	3-20-86	SM	QTL	RCH	ISO'S FOR 2nd 10 YEAR PLAN
2	4-24-90	DA	JAH / BJB	GP	ISO'S TO CAD FORMAT AS PER NC-89-8794
3	7-22-94	DA	JAH / BJB	GP	REVISED PER ISI INSPECTION WALKDOWN
4	1/18/96	TAK	JW	GP	REV. PER DURF-0018

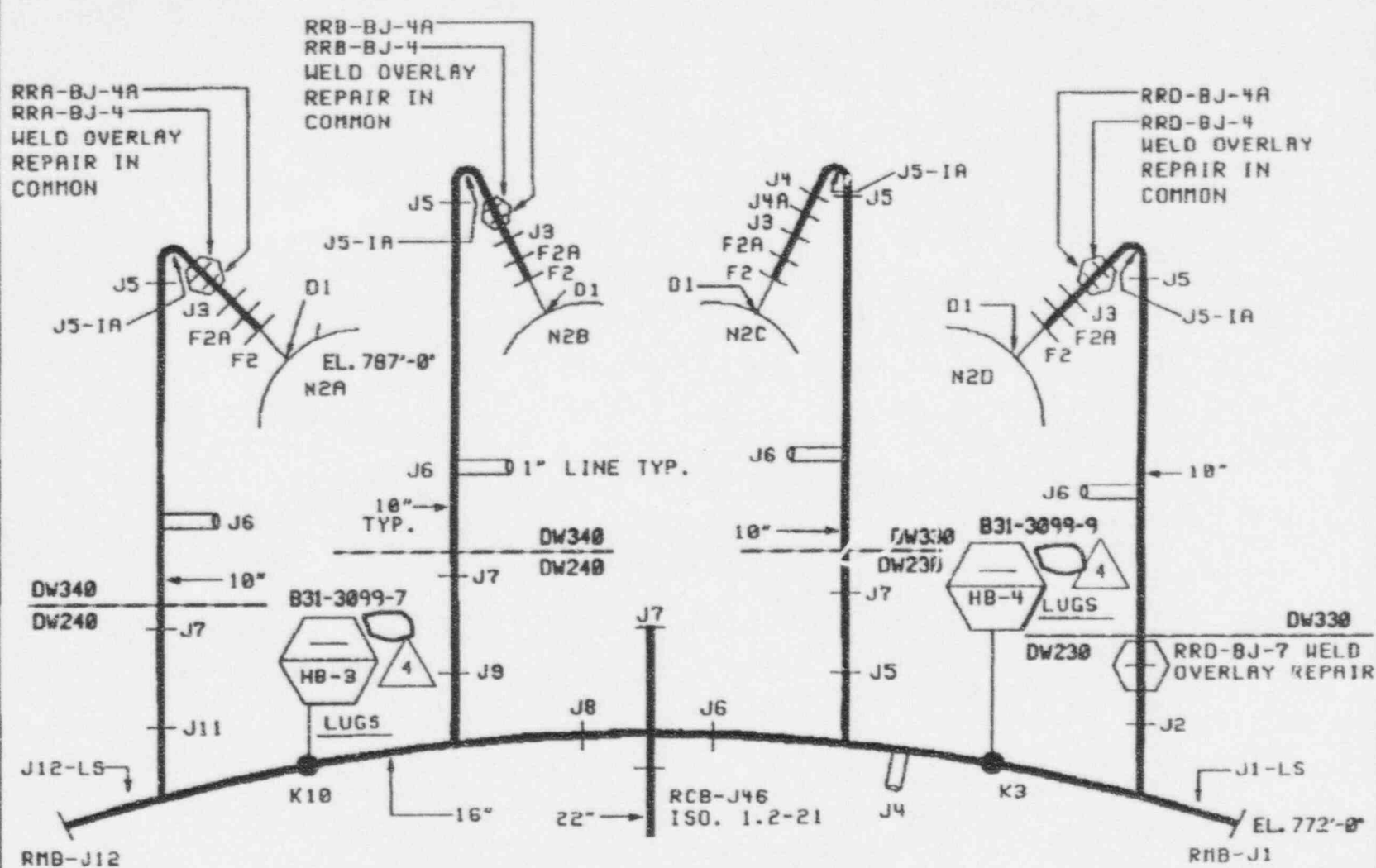
DRAWING RELEASE RECORD



RECIRCULATION MANIFOLD "A" & RISERS E, F, G, H  
 RMA-, RRE-, RRF-, RRG-, RRH-  
 SS, 16", 10"  
 ISO. NO. 1.2-20

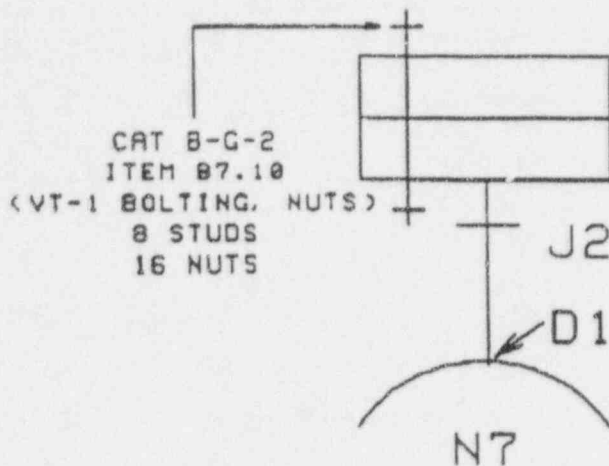
PAID BECH-M116  
 APED-B31-9

REV	DATE	PREPARED	REVIEWED	APPROVED	PURPOSE
1	3-28-86	SAL	SAL	RCM	ISO'S FOR 2nd 10 YEAR PLAN
2	4-24-90	DA	DA	GP	ISO'S TO CMO FORMAT AS PER NC-B9-8799
3	7-22-94	TAK	JW	GP	REVISED PER ISI INSPECTION WALKDOWN
4	1/18/96				REV. PER DURE-0018



RECIRCULATION MANIFOLD "B" & RISERS A, B, C, D  
RMB-, RRA-, RRB-, RRC-, RRD-,  
SS, 16", 10"  
ISO. NO. 1.2-22

P&ID BECH-M116  
APED B31-9



DW7  
(EXAMS PERFORMED  
ON REFUEL FLOOR)

3

HEAD VENT

HVA-

CS, 4"

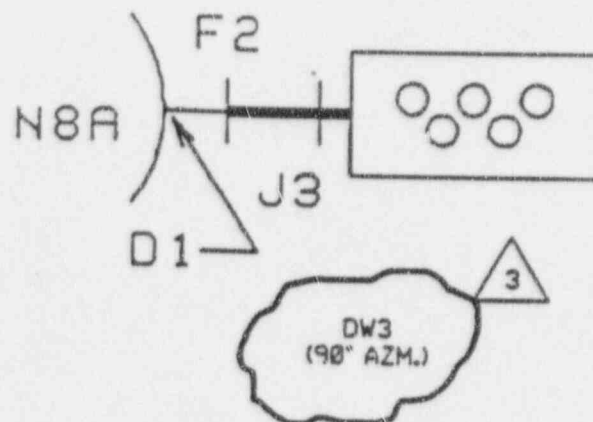
ISO. NO. 1.2-24

P&ID BECH-M114  
APED-811-2655-104-3

DRAWING RELEASE RECORD

REV	DATE	PREPARED	REVIEWED	APPROVED	PURPOSE
1	3-26-86	SAL	SAL	RCM	ISO'S FOR 2nd 10 YEAR PLAN
2	4-24-90	DA	DA	RCM	ISO'S TO CAD FORMAT AS PER HG-89-8794
3	7/22/94	DA	DA	RCM	REVISED PER ISI INSPECTION WALKDOWN





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	BML	BML	RCM	ISO'S FOR 2nd 10 YEAR PLAN
2	9-24-90	DA	DA	RCM	ISO'S TO CAD FORMAT AS PER NG-89-0794
3	7/22/94	DA	DA	RCM	REVISED PER ISI INSPECTION WALKDOWN



**THIRD TEN YEAR INTERVAL  
INSERVICE INSPECTION REPORT**  
November 01, 1996 through November 16, 1996

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**THIRD TEN YEAR INTERVAL  
INSERVICE INSPECTION REPORT**  
November 01, 1996 through November 16, 1996

Part J, page 1 of 4

- 1) Owners: IES Utilities Inc.  
P.O. Box 351  
Cedar Rapids, IA. 52406
- Central Iowa Power Cooperative  
Marion, IA.
- Corn Belt Power Cooperative  
Humbolt, IA.
- 2) Plant: Duane Arnold Energy Center, Palo, IA. 52324
- 3) Plant Unit: #1
- 4) Owners Certificate of Authorization (if required) : N/A
- 5) Commercial Service Date: 02/01/75
- 6) National Board Number of Unit: N/A

GROSS GENERATING CAPACITY: 565 MWE

**STATUS OF WORK FOR THIRD TEN YEAR INTERVAL**

(Those percentages shown are actual, where the percentages exceed the allowable only the maximum (34% for period one and 67% for period two) will be taken credit for).

**CLASS 1**

ITEM NO.	TOTAL #	PERIOD 1	PERIOD 2	PERIOD 3	REMARKS
B1.11	4	0%	0%	0%	
B1.12	8	0%	0%	0%	
B1.21	2	0%	0%	0%	
B1.22	15	0%	0%	0%	
B1.30	1	50%	0%	0%	
B1.40	1	33%	0%	0%	
B1.50	1	0%	0%	0%	
B3.90	33	39%	0%	0%	See Note 1
B3.100	33	39%	0%	0%	See Note 1
B4.11	2	0%	0%	0%	See Note 2
B4.12	89	0%	0%	0%	See Note 2
B4.13	30	0%	0%	0%	See Note 2
B5.10	14	29%	0%	0%	
B5.20	8	13%	0%	0%	
B5.130	8	0%	0%	0%	
B5.140	2	0%	0%	0%	
B6.10	60	0%	0%	0%	
B6.20	60	0%	0%	0%	
B6.40	60	0%	0%	0%	
B6.50	60	0%	0%	0%	
B6.180	2	0%	0%	0%	See Note 3
B6.190	2	0%	0%	0%	See Note 3
B6.200	2	0%	0%	0%	See Note 3

**THIRD TEN YEAR INTERVAL  
INSERVICE INSPECTION REPORT**  
November 01, 1996 through November 16, 1996

Part J, page 2 of 4

- 1) Owners: IES Utilities Inc.  
P.O. Box 351  
Cedar Rapids, IA. 52406
- Central Iowa Power Cooperative  
Marion, IA.
- Corn Belt Power Cooperative  
Humbolt, IA.
- 2) Plant: Duane Arnold Energy Center, Palo, IA. 52324
- 3) Plant Unit: #1
- 4) Owners Certificate of Authorization (if required): N/A
- 5) Commercial Service Date: 02/01/78
- 6) National Board Number of Unit: N/A

GROSS GENERATING CAPACITY: 565 MWE

### STATUS OF WORK FOR THIRD TEN YEAR INTERVAL

(Those percentages shown are actual, where the percentages exceed the allowable only the maximum (34% for period one and 67% for period two) will be taken credit for).

**CLASS 1 (cont.)**

<u>ITEM NO.</u>	<u>TOTAL #</u>	<u>PERIOD 1</u>	<u>PERIOD 2</u>	<u>PERIOD 3</u>	<u>REMARKS</u>
B7.10	3	0%	0%	0%	
B7.30	5	0%	0%	0%	See Note 3
B7.60	2	0%	0%	0%	See Note 3
B7.70	45	0%	0%	0%	See Note 3
B7.80	89	0%	0%	0%	See Note 3
B9.11	94	0%	0%	0%	
B9.12	0	0%	0%	0%	
B9.21	9	0%	0%	0%	
B9.31	6	0%	0%	0%	
B9.32	1	0%	0%	0%	
B9.40	23	0%	0%	0%	
B10.10	1	0%	0%	0%	See Note 4
B10.20	3	0%	0%	0%	See Note 4
B10.30	1	0%	0%	0%	See Note 4
B12.20	2	0%	0%	0%	
B12.50	45	0%	0%	0%	
B13.10	39	0%	0%	0%	
B13.20	8	0%	0%	0%	
B13.30	30	0%	0%	0%	
B13.40	5	0%	0%	0%	
B14.10	3	0%	0%	0%	
B15.10	1	0%	0%	0%	
B15.11	1	0%	0%	0%	

**THIRD TEN YEAR INTERVAL  
INSERVICE INSPECTION REPORT**  
November 01, 1996 through November 16, 1996

Part J, page 3 of 4

- 1) Owners: IES Utilities Inc.  
P.O. Box 351  
Cedar Rapids, IA 52406  
  
Central Iowa Power Cooperative  
Marion, IA.  
Corn Belt Power Cooperative  
Humbolt, IA.
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- 3) Plant Unit: #1
- 4) Owners Certificate of Authorization (if required): N/A
- 5) Commercial Service Date: 02/01/75
- 6) National Board Number of Unit: N/A

GROSS GENERATING CAPACITY: 565 MWE

**STATUS OF WORK FOR THIRD TEN YEAR INTERVAL**

(Those percentages shown are actual, where the percentages exceed the allowable only the maximum (34% for period one and 67% for period two) will be taken credit for).

**CLASS 2**

<u>ITEM NO.</u>	<u>TOTAL #</u>	<u>PERIOD 1</u>	<u>PERIOD 2</u>	<u>PERIOD 3</u>	<u>REMARKS</u>
C1.10	2	0%	0%	0%	
C1.20	1	0%	0%	0%	
C2.21	2	0%	0%	0%	
C2.22	2	0%	0%	0%	
C3.10	1	0%	0%	0%	See Note 4
C3.20	7	0%	0%	0%	See Note 4
C5.51	69	0%	0%	0%	
C5.81	1	0%	0%	0%	
C7.10	5	N/A	N/A	N/A	
C7.20	5	N/A	N/A	N/A	

**SUPPORTS**

<u>CLASS 1</u>					
<u>ITEM NO.</u>	<u>TOTAL #</u>	<u>PERIOD 1</u>	<u>PERIOD 2</u>	<u>PERIOD 3</u>	<u>REMARKS</u>
F1.10	42	0%	0%	0%	See Note 5
F1.20	52	0%	0%	0%	See Note 5
F1.40	19	0%	0%	0%	See Note 5

**THIRD TEN YEAR INTERVAL  
INSERVICE INSPECTION REPORT**  
November 01, 1996 through November 16, 1996

Part J, page 4 of 4

- 1) Owners: IES Utilities Inc.  
P.O. Box 351  
Cedar Rapids, IA. 52406
- Central Iowa Power Cooperative  
Marion, IA.
- Corn Belt Power Cooperative  
Humbolt, IA.
- 2) Plant: Duane Arnold Energy Center, Palo, IA. 52324
- 3) Plant Unit: #1
- 4) Owners Certificate of Authorization (if required) : N/A
- 5) Commercial Service Date: 02/01/75
- 6) National Board Number of Unit: N/A

GROSS GENERATING CAPACITY: 565 MWE

**STATUS OF WORK FOR THIRD TEN YEAR INTERVAL**

- NOTE 1 - Item Numbers B3.90, B3.100  
There are a total of 34 nozzles, however 1 of the nozzles are exempt by IWB-1220(c) and not included in the percentages.
- NOTE 2 - Item Numbers B4.11, B4.12, B4.13  
These items are required to be examined during conduct of the system hydrostatic test, IES Utilities has implemented Code Case N-498-1 (TAP-P011)
- NOTE 3 - Item Numbers B6.180, B6.190, B6.200, B7.50, B7.60, B7.70, B7.80  
These examinations are performed when the component is disassembled for other reasons. Therefore no percentages are recorded.
- NOTE 4 - Item Numbers B10.10, B10.20, B10.30, C3.10, C3.20  
These item numbers are from Code Case N509 (TAP-I007)
- NOTE 5 - Item Number F1.10, F1.20, F1.40  
These item numbers are from Code Case N491 (TAP-I008)

**THIRD TEN YEAR INTERVAL  
INSERVICE INSPECTION REPORT**  
November 01, 1996 through November 16, 1996

Part K, page 1 of 1

- 1) Owners: IES Utilities Inc  
P.O. Box 351  
Cedar Rapids, IA 52406
- Central Iowa Power Cooperative  
Marion, IA.
- Corn Belt Power Cooperative  
Humbolt, IA.
- 2) Plant: Duane Arnold Energy Center, Palo, IA 52224
- 3) Plant Unit: #1
- 4) Owners Certificate of Authorization (if required): N/A
- 5) Commercial Service Date: 02/01/75
- 6) National Board Number of Unit: N/A

GROSS GENERATING CAPACITY: 565 MWE

**RELIEF REQUESTS**

The following are the relief requests that were used during the period of this Summary Report.

**RELIEF REQUESTS**

NDE-R001  
NDE-R028

**DESCRIPTION**

Limited examination of vessel welds  
Limited examination of nozzle-to-vessel welds

**ALTERNATIVE TESTING**

NDE-R011

**DESCRIPTION**

Use of existing vessel calibration blocks

**CODE CASE #**

N-535

**DESCRIPTION**

Alternative Requirements for Inservice Inspection Intervals



**THIRD TEN YEAR INTERVAL  
INSERVICE INSPECTION REPORT**  
November 01, 1996 through November 16, 1996

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Augmented Inspection Results  
RFO14

Attachment 2  
to NG-97-0327

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System or Component Description	ACC	REJ	Inspection Requirement	Weld or Component Description	UT Report Number	PT Report Number	Visual Report Number	ISI ISO/Fig Number	Comments
Feedwater 'A'	X		A	FWA-Bore	196033			1.2-05	Nozzle Bore (Zones 3,4A,4B,5)
	X		A	FWA-Nozzle	196033			1.2-05	Nozzle (Zones 1 & 2)
	X		A	FWA-Therm Slev	196106			1.2-05	Thermal Sleeve Weld
	X		A	FWA-J002	196108			1.2-05	
	X		A	FWA-J003	196109			1.2-05	
	X		A	FWA-Safe End	196110			1.2-05	Entire Safe End
Feedwater 'B'	X		A	FWB-Bore	196053			1.2-05	Nozzle Bore (Zones 3,4A,4B,5)
	X		A	FWB-Nozzle	196053			1.2-05	Nozzle (Zones 1 & 2)
	X		A	FWB-Therm Slev	196107			1.2-05	Thermal Sleeve Weld
	X		A	FWB-J003	196111			1.2-05	
	X		A	FWB-J005	196112			1.2-05	
	X		A	FWB-Safe End	196113			1.2-05	Entire Safe End
Feedwater 'C'	X		A	FWC-Bore	196055			1.2-06	Nozzle Bore (Zones 3,4A,4B,5)
	X		A	FWC-Nozzle	196055			1.2-06	Nozzle (Zones 1 & 2)
	X		A	FWC-Therm Slev	196114			1.2-06	Thermal Sleeve Weld
	X		A	FWC-J002	196116			1.2-06	
	X		A	FWC-J003	196117			1.2-06	
	X		A	FWC-Safe End	196118			1.2-06	Entire Safe End
Feedwater 'D'	X		A	FWD-Bore	196057			1.2-06	Nozzle Bore (Zones 3,4A,4B,5)
	X		A	FWD-Nozzle	196057			1.2-06	Nozzle (Zones 1 & 2)
	X		A	FWD-Therm Slev	196115			1.2-06	Thermal Sleeve Weld
	X		A	FWD-J002	196119			1.2-06	
	X		A	FWD-J003	196120			1.2-06	
Feedwater 'D'	X		A	FWD-Safe End	196121			1.2-06	Entire Safe End

Augmented Inspection Results  
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System or Component Description	ACC	REJ	Inspection Requirement	Weld or Component Description	UT Report Number	PT Report Number	Visual Report Number	ISI ISO/Fig Number	Comments
Core Spray 'A'	X		B	CSA-F002	196072			1.2-07	
	X		B	CSA-F002A	196123			1.2-07	
	X		B	CSA-F004	196124			1.2-07	
	X		B	CSA-J003	196125			1.2-07	
Reactor Water Cleanup	X		B	CUB-F004	196126			1.2-11B	
	X		C	CUB-J001	196127			1.2-11B	
	X		C	CUB-J002	196128			1.2-11B	
	X		B	CUB-J005	196129			1.2-11B	
	X		B	CUB-J008	196130			1.2-11B	
	X		B	CUB-J010	196131			1.2-11B	
	X		B	CUB-J011	196132			1.2-11B	
	X		B	CUB-J013	196133			1.2-11B	
	X		B	CUB-J014	196134			1.2-11B	
	X		B	CUB-J016	196135			1.2-11B	
	X		B	CUB-J017	196136			1.2-11B	
	X		B	1E-214 INTERCON-01	196168			4.1-04	10% PER SUPP. 1 (GL88-01)
	X		B	1E-214 INTERCON-13	196169			4.1-04	10% PER 10% PER SUPP. 1 (GL88-01)01)
	X		B	1E-214 INTERCON-21	196170			4.1-04	10% PER SUPP. 1 (GL88-01)
Control Rod Drive	X		A	CRA-F002	196074			1.2-12A	
	X		A	CRA-F004	196138			1.2-12A	
	X		A	CRA-J003	196139			1.2-12A	
Reactor Core Isolation Cooling	X		C	RSB-J001	196140			1.2-18	
	X		C	RSB-J002	196141			1.2-18	
	X		C	RSB-J003	196142			1.2-18	
	X		C	RSB-J006	196143			1.2-18	
	X		C	RSB-J008	196144			1.2-18	

Augmented Inspection Results  
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System or Component Description	ACC	REJ	Inspection Requirement	Weld or Component Description	UT Report Number	PT Report Number	Visual Report Number	ISI ISO/Fig Number	Comments
Reactor Core Isolation Cooling	X		C	RSB-J009	196145			1.2-18	
Recirculation Pump 'A'	X		B	RCA-J005	196146			1.2-19A	
	X		B	RCA-J006	196147			1.2-19A	
	X		B	RCA-J008	196148			1.2-19A	
	X		B	RCA-J028	196149			1.2-19A	
	X		B	RCA-J034	196150			1.2-19A	
Recirculation Pump 'A' Discharge Valve Bypass	X		B	RBA-J006	196151			1.2-19A	
Recirculation Manifold	X		B	RMA-J011	196075			1.2-20	
Recirculation System Riser 'A'	X		B	RRF-F002	196077			1.2-20	
	X		B	RRG-J005	196153			1.2-20	
Recirculation System Riser 'B'	X		B	RRD-F002	196080			1.2-22	
Jet Pump 'A' Instrumentation	X		B	JPA-F002	196083			1.2-25	
	X		B	JPA-J003	196155			1.2-25	
Jet Pump 'B' Instrumentation	X		B	JPB-F002	196156			1.2-26	
	X		B	JPB-J003	196157			1.2-26	
RPV Interior	X		D	Core Spray			*196090	VS-05-01	100% of all core spray piping welds were examined utilizing the BWRVIP-018 techniques.**
RPV Studs	X		G	Studs #41- #45			196023	1.1-05	VT-1 of studs

Augmented Inspection Results  
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System or Component Description	ACC	REJ	Inspection Requirement	Weld or Component Description	UT Report Number	PT Report Number	Visual Report Number	ISI ISO/Fig Number	Comments
RPV Interior	X		E,F	Jet Pump #05			*I96090	VS-11-01	100% examined
	X		E,F	Jet Pump #06			*I96090	VS-11-01	100% examined, restrainer set screws appeared to have slight gap. When compared to previous exam, no change noted.
	X		E,F	Jet Pump #07			*I96090	VS-11-01	100% examined
	X		E,F	Jet Pump #08			*I96090	VS-11-01	100% examined

A - NUREG-0619  
B - NUREG-0313 (GL 88-01)  
C - GL 87-11  
D - IE Bulletin 80-13  
E - GE RICSIL 045  
F - GE RICSIL 078  
G - GE RICSIL 055

ACC - Accept  
REJ - Reject

\* Augmented examination of reactor pressure vessel (RPV) interior is in the GE Refuel Outage 14, In vessel Visual Inspection (IVVI) Report I96090

\*\* Core Spray Weld P3(Left), 90° T-Box, A suspect indication evaluated as a scratch  
Core Spray Nozzle C-8 Tack Weld, Examination of remaining tack weld acceptable