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10 CFR 50.55a

December 7, 2016
GO2-16-149

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Subject: **COLUMBIA GENERATING STATION, DOCKET NO. 50-397;
RELIEF REQUESTS FOR LIMITED COVERAGE EXAMINATIONS
PERFORMED IN THE THIRD 10-YEAR INSERVICE INSPECTION INTERVAL**

Dear Sir or Madam:

Pursuant to 10 CR 50.55a(g)(5)(iii), Energy Northwest is submitting the enclosed requests for relief from the American Society of Mechanical Engineers (ASME) Code requirements which have been determined to be impractical to perform during the third 10-year Inservice Inspection (ISI) interval at Columbia Generating Station (Columbia). The third 10-year interval commenced on December 13, 2005 and ended on December 12, 2015 using the 2001 Edition through the 2003 Addenda of the ASME Section XI Code. In addition, relevant ASME Code Cases N-460 and N-663, which were approved for use in Revisions 14 through 17 of Regulatory Guide 1.147, Inservice Inspection Code Case Acceptability, ASME Section XI, Division 1, Table 1 were also used during this interval. There were no limitations or conditions identified for the use of these Code Cases. The specific relief requests are provided in Attachments 1 through 4 of this letter and are numbered 3ISI-16 to 3ISI-19, respectively.

There are no new commitments made in this submittal.

If you have any questions or require additional information, please contact Mr. R.M. Garcia, Licensing Supervisor at 509-377-8463.

I declare under penalty of perjury that the foregoing is true and correct.

Executed this 7th day of December, 2016.

Respectfully,

A. L. Javorik
Vice President, Engineering

Attachments: As stated

cc: NRC RIV Regional Administrator
NRC NRR Project Manager
NRC Sr. Resident Inspector - 988C
CD Sonoda – BPA 1399 (email)
WA Horin - Winston & Strawn

Attachment 1

Relief Request 3ISI-16

Relief Request 3ISI-16

10 CFR 50.55a Request Number 3ISI-16

NDE Coverage Limitations on the RPV Bottom Head Welds

1. ASME Code Component(s) Affected

Description:	Alternative Requirements to the Examination of Pressure Retaining Welds in the Reactor Pressure Vessel
ASME Code Class:	Class 1
Examination Category:	B-A
Item Number:	B1.21, B1.22
Components Affected:	Reactor Pressure Vessel (RPV) Bottom Head Welds (See Table 3ISI-16.1)

2. Applicable Code Edition and Addenda

The Columbia Generating Station (Columbia) Inservice Inspection (ISI) third ten-year interval ASME Section XI Code is the 2001 Edition through 2003 Addenda.

3. Applicable Code Requirement

ASME Section XI, Table IWB-2500-1, Examination Category B-A, "Pressure Retaining Welds in Reactor Vessel":

> Item B1.21 requires a volumetric examination of essentially 100% of the weld length of the bottom head circumferential welds in accordance with the examination requirements illustrated in Figure IWB-2500-3.
>
> Item B1.22 requires a volumetric examination of essentially 100% of the weld length of the bottom head meridional welds in accordance with the examination requirements illustrated in Figure IWB-2500-3.

Code Case N-460

This Code Case states that when the entire examination volume or area cannot be examined due to interference by another component or part geometry, a reduction in examination coverage on any Class 1 or Class 2 weld may be accepted provided the reduction in coverage for that weld is less than 10%. The applicable examination records shall identify both the cause and percentage of reduced examination coverage.

4. Impracticality of Compliance

During ultrasonic examination of the RPV bottom head circumferential and meridional welds listed in Table 3ISI-16.1, greater than 90% coverage of the required examination volume could not be obtained. Examinations were performed utilizing a Performance Demonstration Initiative (PDI) Appendix VIII qualified procedure specific to RPV assembly welds.

Due to the geometric configuration of the components, effective volumetric examination could only be performed from outside the RPV bottom head circumferential and meridional welds. The 60° refracted longitudinal (RL) beam angle used in the axial and circumferential direction was not able to achieve greater than 90% code required volume as required by Code Case N-460. The RPV bottom head coverage limitations on the circumferential welds were due to interference from the bottom head penetrations. The RPV bottom head coverage limitations on the meridional welds were due to interference by the vessel support skirt (See Figure 3ISI-16.1 and 16.2a & b).

Radiography is not practical on these types of vessel weld configurations, which prevent placement of the film and exposure source. Drawings and scan plans from the Ultrasonic Testing (UT) reports are provided for reference and clarification.

5. Burden Caused by Compliance

To effectively perform any significant additional Code allowable ultrasonic examinations, modification and/or replacement of the component would be required.

6. Proposed Alternative and Basis for Use

No alternative examination is proposed at this time.

Energy Northwest has examined the welds identified in Table 3ISI-16.1 to the extent practical and determined that results are acceptable with no recordable indications.

These RPV welds are also subject to VT-2 visual examination during system pressure testing in accordance with the requirements of Examination Category B-P and successfully passed their VT-2 examinations.

Energy Northwest requests the proposed relief be authorized pursuant to 10 CFR 50.55a(g)(6)(i).

7. Duration of Proposed Alternative

Relief is requested for the third ten-year inspection interval of the Inservice Inspection Program for Columbia Generating Station.

Relief Request 3ISI-16

Table 3ISI-16.1 Examination Category B-A							
Cat	**Item No**	**Comp ID**	**Item Description**	**Material 1 and Product Form**	**Material 2 and Product Form**	**Examination Code Coverage Obtained**	**Examination Limitations and Results**
B-A	B1.21	DG	Bottom Head Circumferential Weld	Rolled Plate-SA533 Gr.B CL1	Rolled Plate-SA533 Gr.B CL1	19%	The examination was limited due to proximity of the CRD penetrations. No recordable indications.
B-A	B1.21	DR	Bottom Head Circumferential Weld	Rolled Plate-SA533 Gr.B CL1	Rolled Plate-SA533 Gr.B CL1	19%	The examination was limited due to proximity of the CRD penetrations. No recordable indications.
B-A	B1.22	DA	Bottom Head Meridional Weld @ 272°	Rolled Plate-SA533 Gr.B CL1	Rolled Plate-SA533 Gr.B CL1	72%	The examination was limited due to proximity of the vessel support skirt. No recordable indications.
B-A	B1.22	DB	Bottom Head Meridional Weld @ 332°	Rolled Plate-SA533 Gr.B CL1	Rolled Plate-SA533 Gr.B CL1	72%	The examination was limited due to proximity of the vessel support skirt. No recordable indications.
B-A	B1.22	DC	Bottom Head Meridional Weld @ 32°	Rolled Plate-SA533 Gr.B CL1	Rolled Plate-SA533 Gr.B CL1	72%	The examination was limited due to proximity of the vessel support skirt. No recordable indications.
B-A	B1.22	DD	Bottom Head Meridional Weld @ 92°	Rolled Plate-SA533 Gr.B CL1	Rolled Plate-SA533 Gr.B CL1	72%	The examination was limited due to proximity of the vessel support skirt. No recordable indications.
B-A	B1.22	DE	Bottom Head Meridional Weld @ 152°	Rolled Plate-SA533 Gr.B CL1	Rolled Plate-SA533 Gr.B CL1	72%	The examination was limited due to proximity of the vessel support skirt. No recordable indications.
B-A	B1.22	DF	Bottom Head Meridional Weld @ 212°	Rolled Plate-SA533 Gr.B CL1	Rolled Plate-SA533 Gr.B CL1	72%	The examination was limited due to proximity of the vessel support skirt. No recordable indications.

Relief Request 3ISI-16

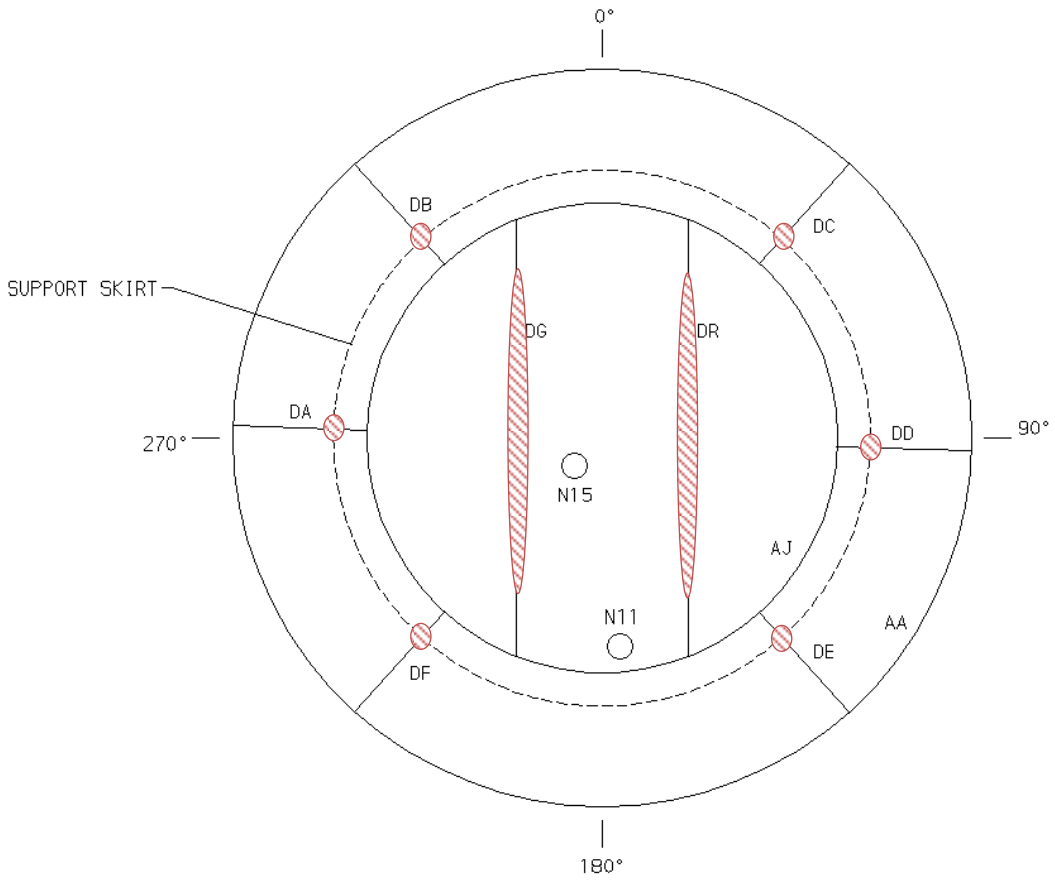


Figure 3ISI-16.1 Bottom Head. Hatched regions are inaccessible due to interferences

Relief Request 3ISI-16

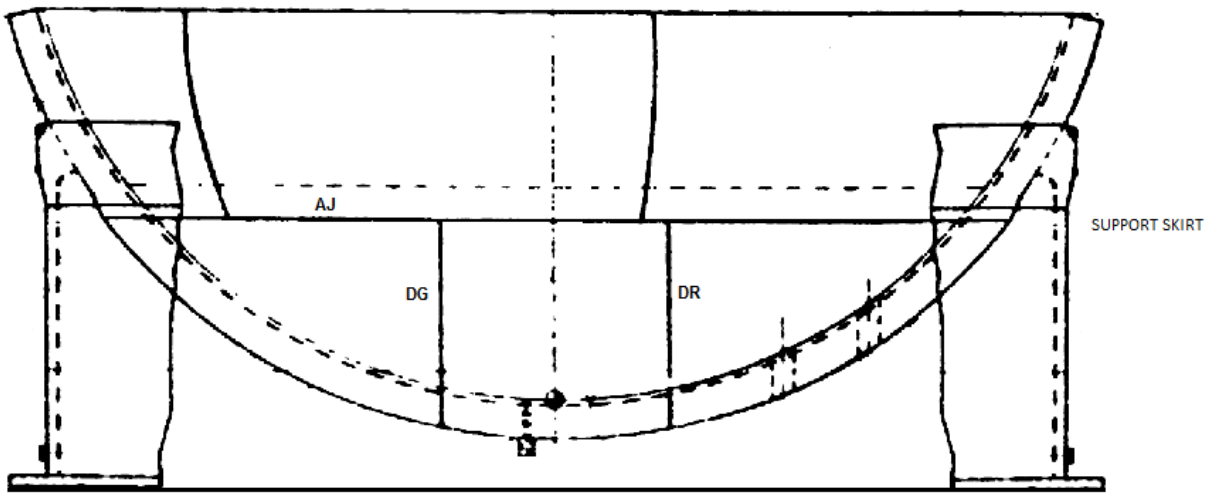


Figure 3ISI-16.2a

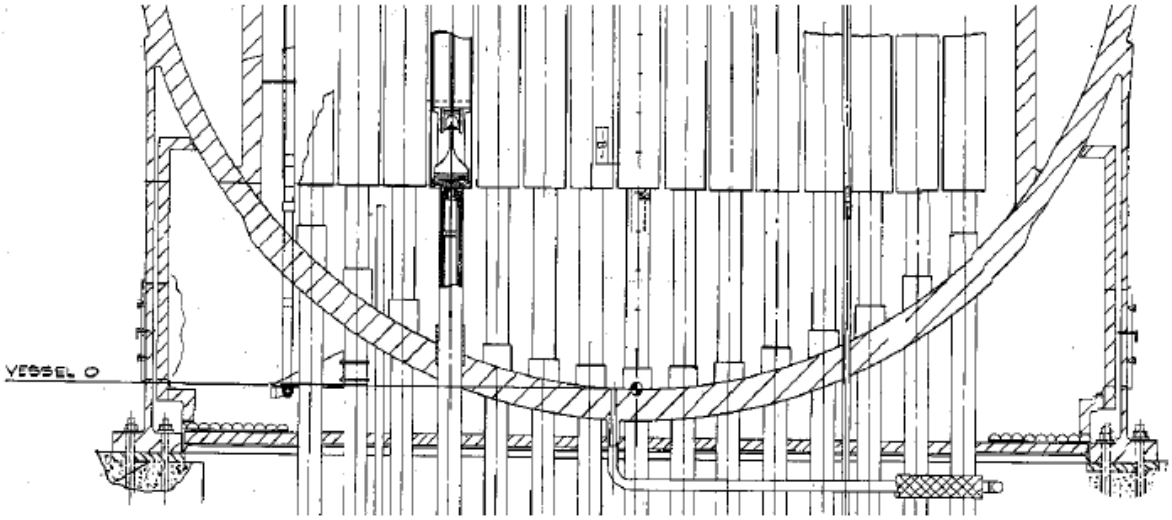
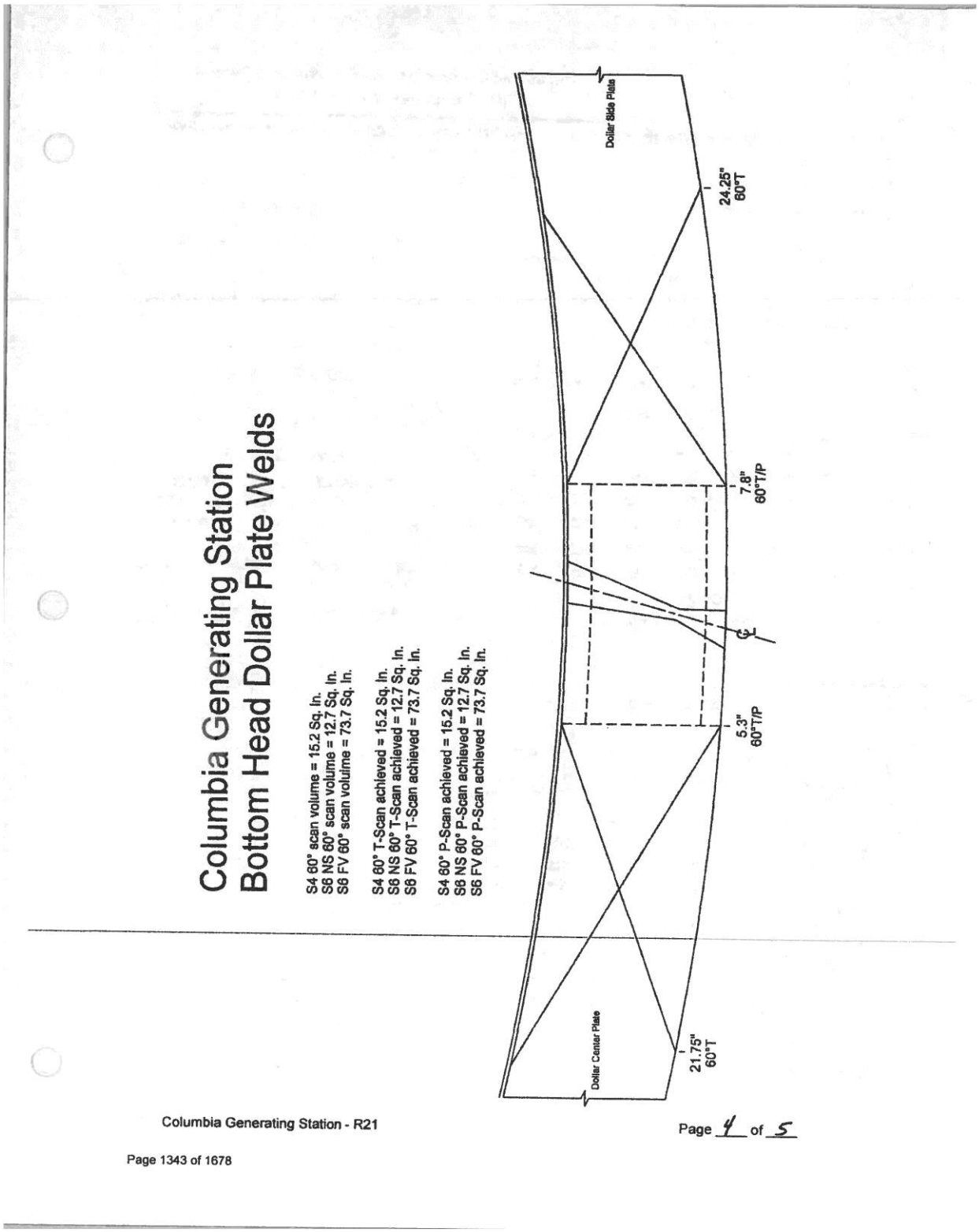


Figure 3ISI-16.2b
Bottom Head side view showing relative weld locations and penetration interferences

Relief Request 3ISI-16



Scan Plan for UT Report on DG weld

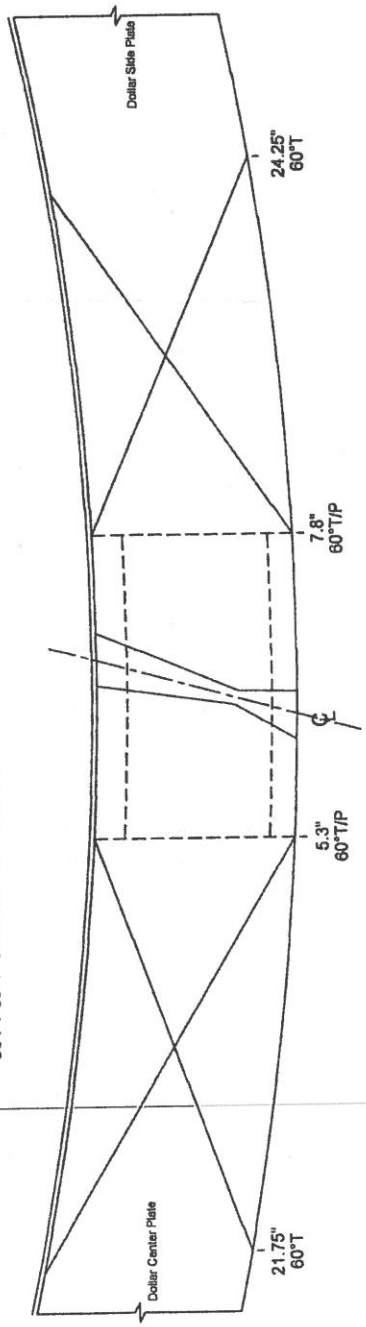
Relief Request 3ISI-16

Columbia Generating Station
Bottom Head Dollar Plate Welds

S4 60° scan volume = 15.2 Sq. In.
S6 NS 60° scan volume = 12.7 Sq. In.
S6 FV 60° scan volume = 73.7 Sq. In.

S4 60° T-Scan achieved = 15.2 Sq. In.
S6 NS 60° T-Scan achieved = 12.7 Sq. In.
S8 FV 60° T-Scan achieved = 73.7 Sq. In.

S4 60° P-Scan achieved = 15.2 Sq. In.
S6 NS 60° P-Scan achieved = 12.7 Sq. In.
S6 FV 60° P-Scan achieved = 73.7 Sq. In.



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Scan Plan for UT Report on DR weld

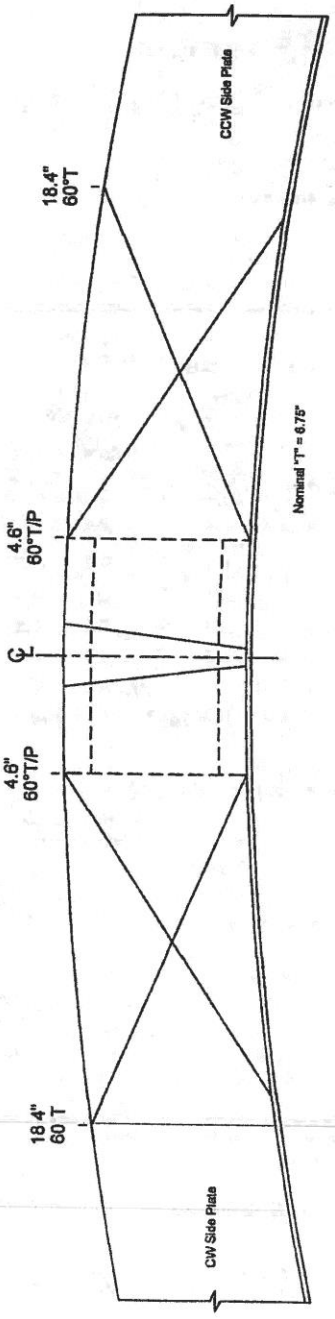
Relief Request 3ISI-16

Columbia Generating Station
Bottom Head Meridional

S4 60° scan volume = 9.5 Sq. In.
S6 NS 60° scan volume = 9.3 Sq. In.
S6 FV 60° scan volume = 43.8 Sq. In.

S4 60° T-Scan achieved = 9.5 Sq. In.
S6 NS 60° T-Scan achieved = 9.3 Sq. In.
S6 FV 60° T-Scan achieved = 43.8 Sq. In.

S4 60° P-Scan achieved = 9.5 Sq. In.
S6 NS 60° P-Scan achieved = 9.3 Sq. In.
S6 FV 60° P-Scan achieved = 43.8 Sq. In.



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Scan Plan for UT Report on DA weld

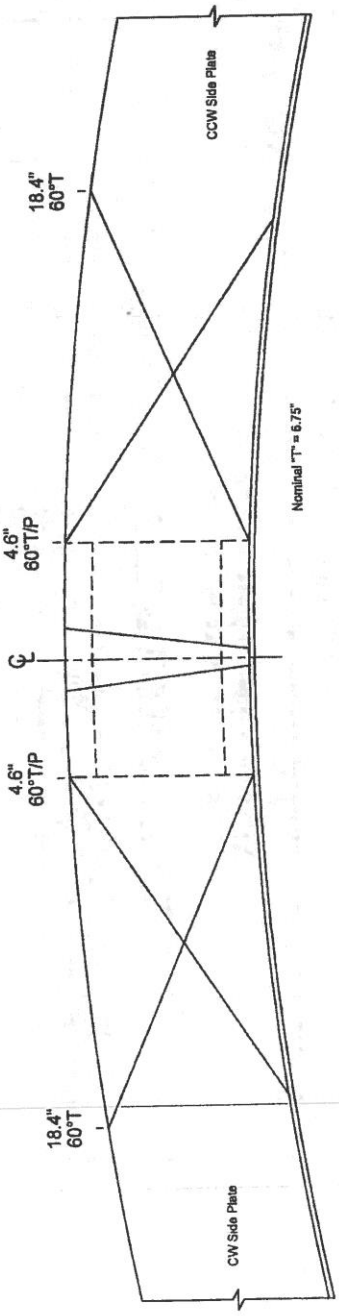
Relief Request 3ISI-16

Columbia Generating Station
Bottom Head Meridional

S4 60° scan volume = 9.5 Sq. In.
S6 NS 60° scan volume = 9.3 Sq. In.
S6 FV 60° scan volume = 43.8 Sq. In.

S4 60° T-Scan achieved = 9.5 Sq. In.
S6 NS 60° T-Scan achieved = 9.3 Sq. In.
S6 FV 60° T-Scan achieved = 43.8 Sq. In.

S4 60° P-Scan achieved = 9.5 Sq. In.
S6 NS 60° P-Scan achieved = 9.3 Sq. In.
S6 FV 60° P-Scan achieved = 43.8 Sq. In.



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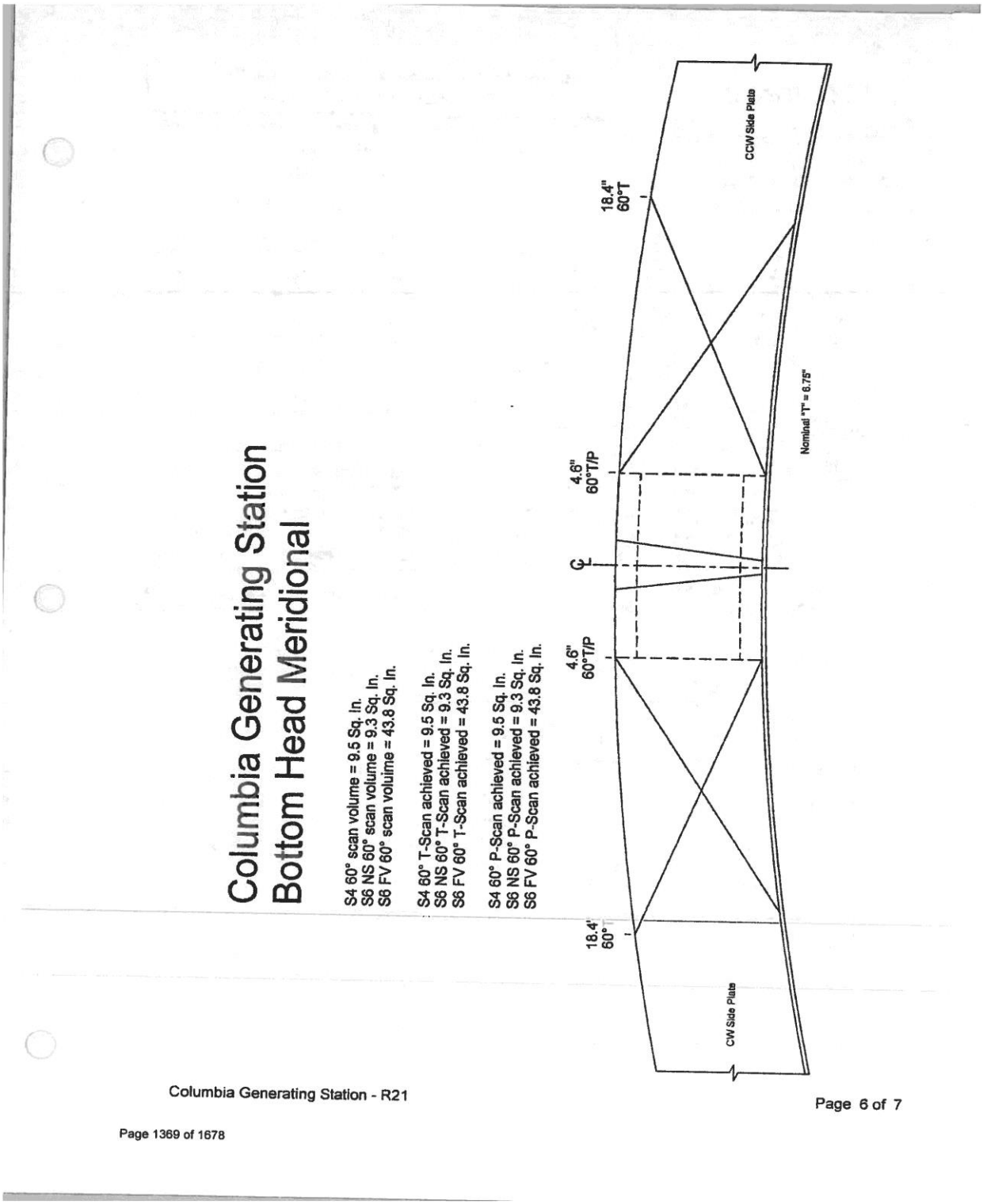
Scan Plan for UT Report on DB weld

Relief Request 3ISI-16



Scan Plan for UT Report on DC weld

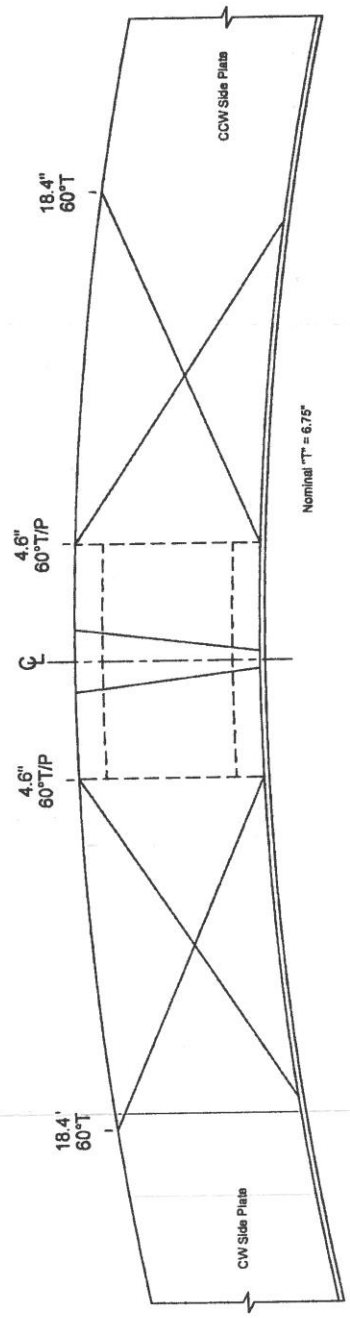
Relief Request 3ISI-16

Columbia Generating Station
Bottom Head Meridional

S4 60° scan volume = 9.5 Sq. In.
S6 NS 60° scan volume = 9.3 Sq. In.
S6 FV 60° scan volume = 43.8 Sq. In.

S4 60° T-Scan achieved = 9.5 Sq. In.
S6 NS 60° T-Scan achieved = 9.3 Sq. In.
S6 FV 60° T-Scan achieved = 43.8 Sq. In.

S4 60° P-Scan achieved = 9.5 Sq. In.
S6 NS 60° P-Scan achieved = 9.3 Sq. In.
S6 FV 60° P-Scan achieved = 43.8 Sq. In.



Columbia Generating Station - R21

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Scan Plan for UT Report on DD weld

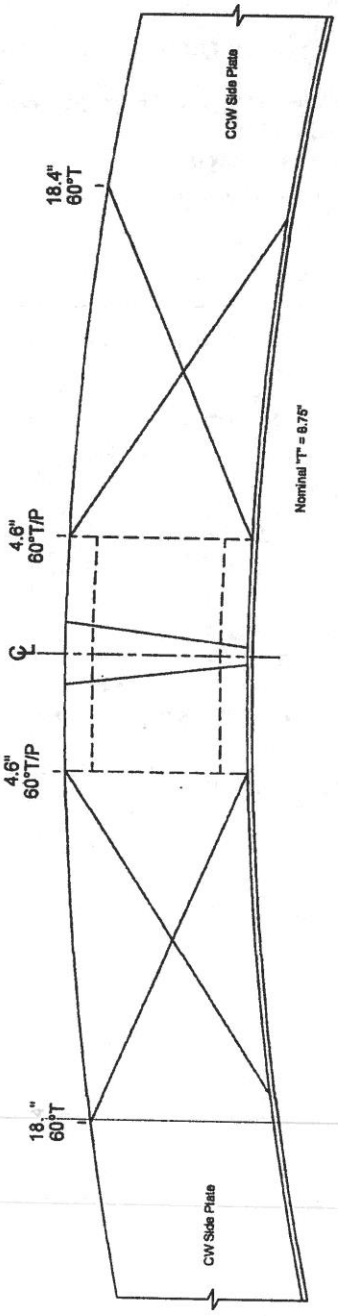
Relief Request 3ISI-16

Columbia Generating Station
Bottom Head Meridional

S4 60° scan volume = 9.5 Sq. In.
S6 NS 60° scan volume = 9.3 Sq. In.
S6 FV 60° scan volume = 43.8 Sq. In.

S4 60° T-Scan achieved = 9.5 Sq. In.
S6 NS 60° T-Scan achieved = 9.3 Sq. In.
S6 FV 60° T-Scan achieved = 43.8 Sq. In.

S4 60° P-Scan achieved = 9.5 Sq. In.
S6 NS 60° P-Scan achieved = 9.3 Sq. In.
S6 FV 60° P-Scan achieved = 43.8 Sq. In.



Columbia Generating Station - R21

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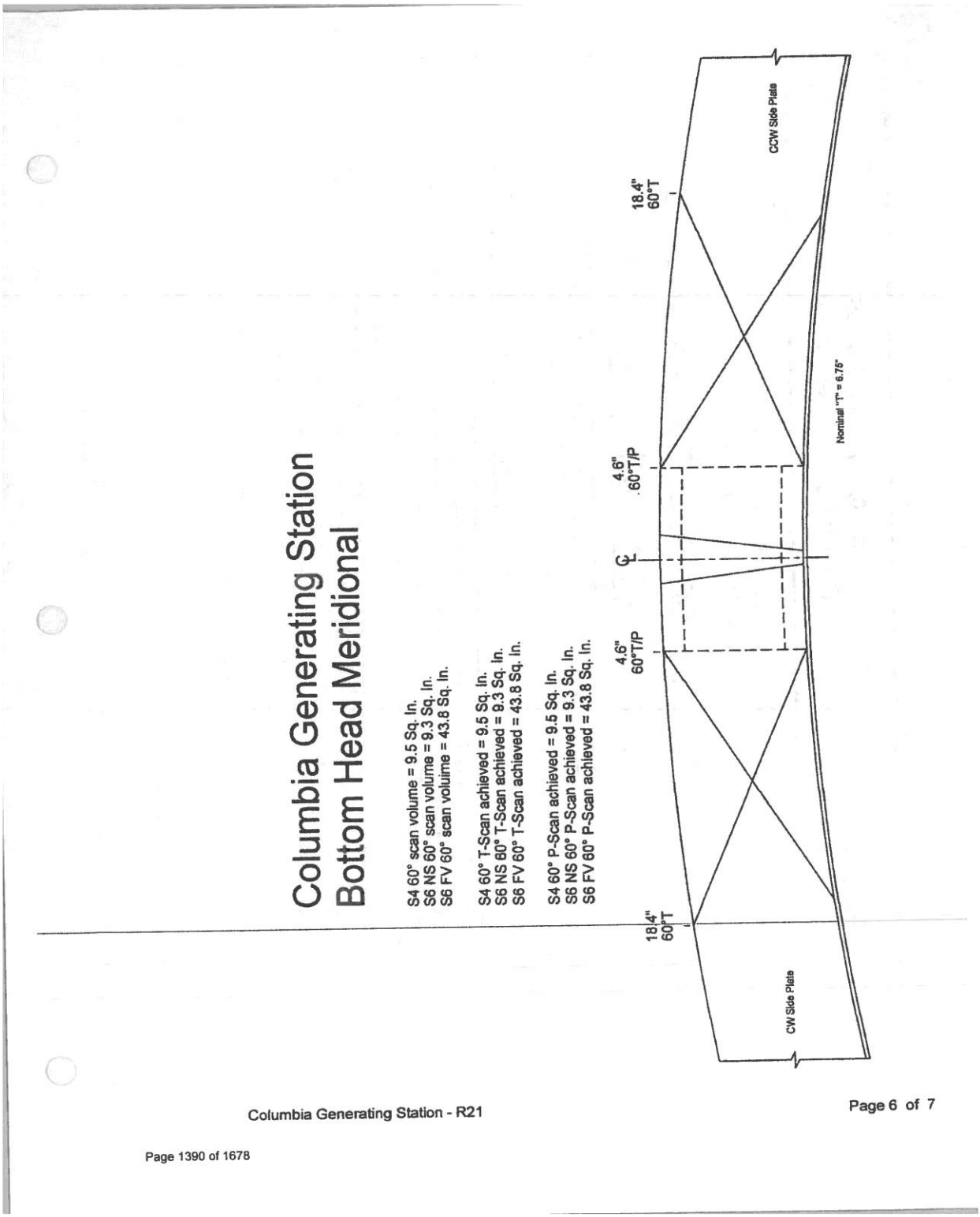
Scan Plan for UT Report on DE weld

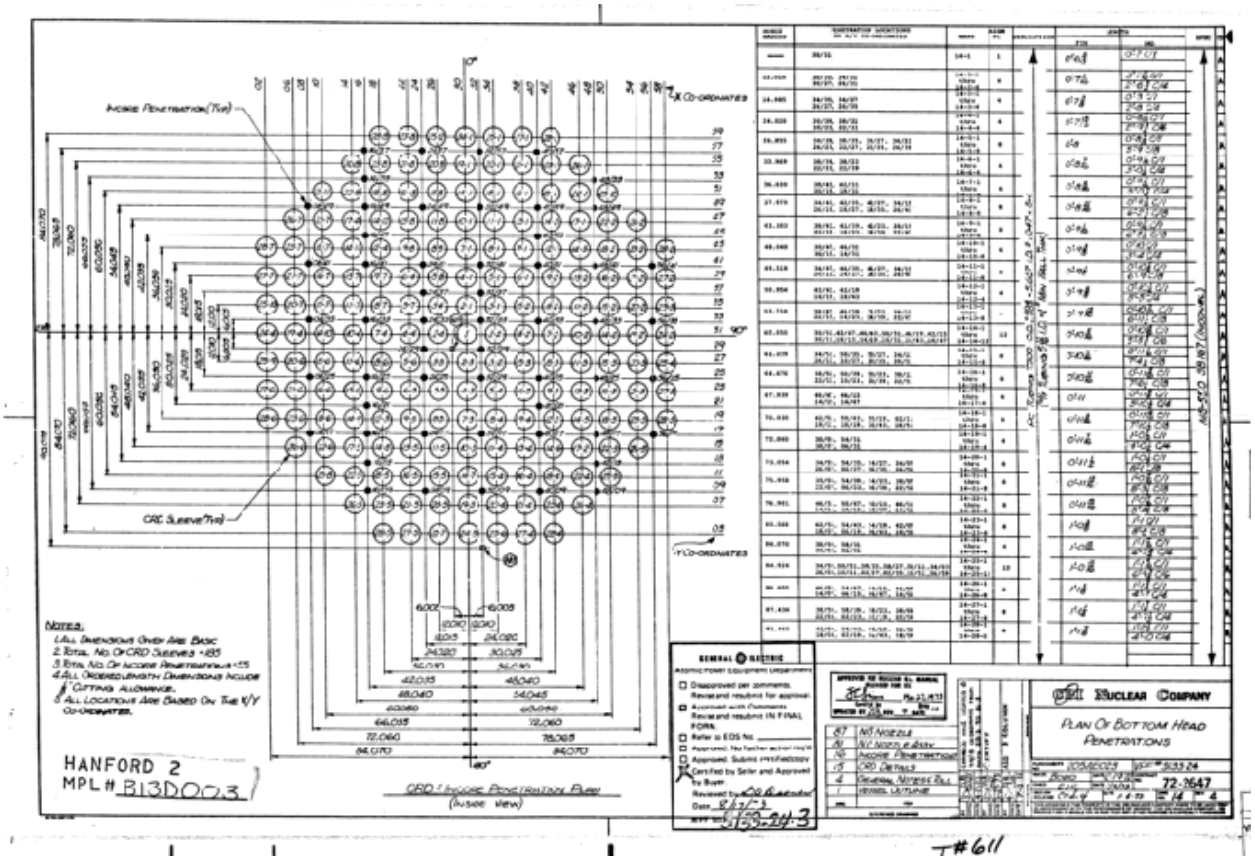
Relief Request 3ISI-16



Scan Plan for UT Report on DF weld

Relief Request 3ISI-16

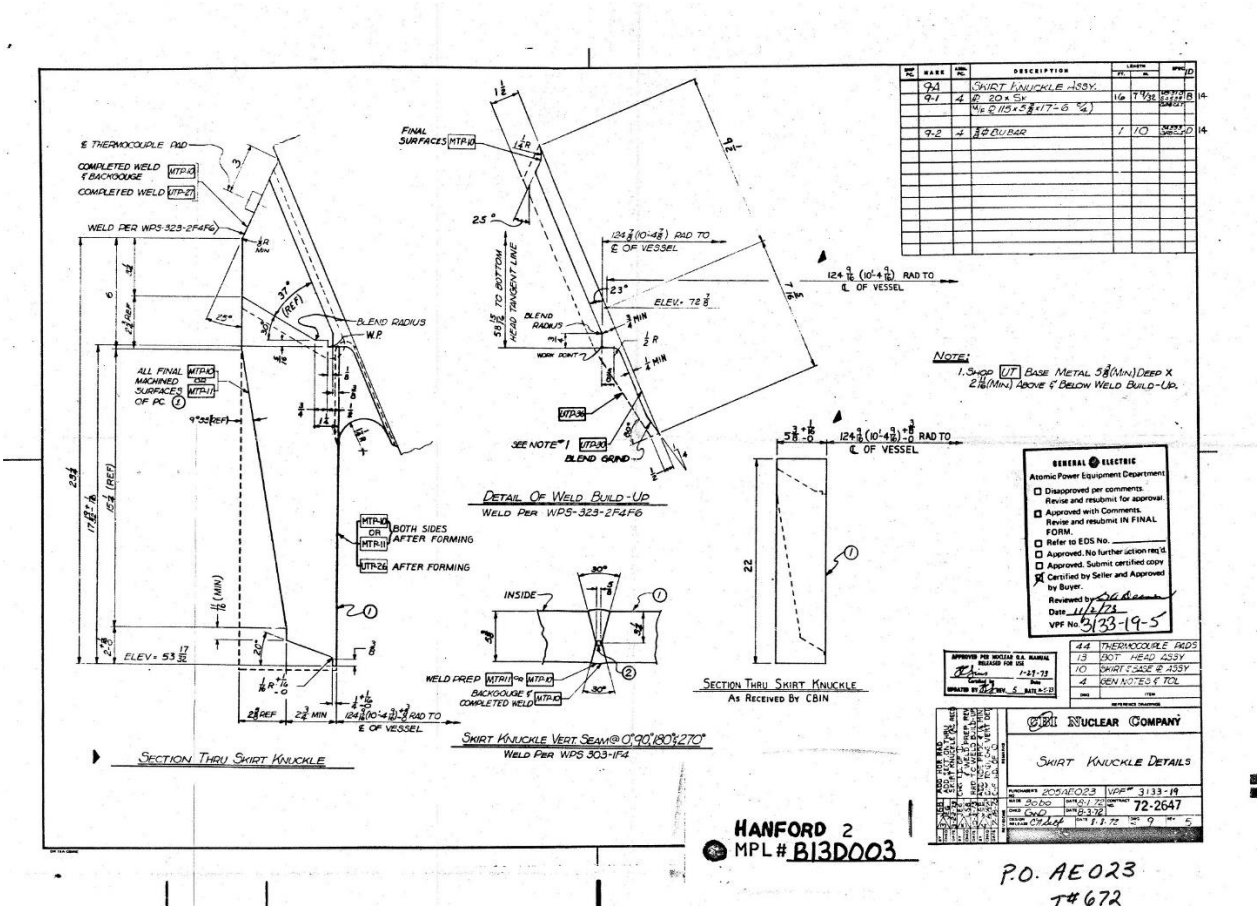
DWG: CVI 02B13-06,52



Certified Vendor Drawing showing Bottom Head penetrations that interfered with UT examinations.

Relief Request 3ISI-16

DWG: CVI 02B13-06,74



Certified Vendor Drawing showing the RPV skirt interference with the UT examinations.

Attachment 2

Relief Request 3ISI-17

10 CFR 50.55a Request Number 3ISI-17

NDE Coverage Limitations on Dissimilar Metal Piping Welds

1. ASME Code Component(s) Affected

Description:	Alternative Requirements to the Examination of Dissimilar Metal (DM) Piping Welds
ASME Code Class:	Class 1
Examination Category:	B-J
Item Number:	B9.11
Components Affected:	Safe-End to Valve and Safe-End Extension Welds (See Table 3ISI-17.1)

2. Applicable Code Edition and Addenda

The Columbia Generating Station (Columbia) Inservice Inspection (ISI) third ten-year interval ASME Section XI Code is the 2001 Edition through 2003 Addenda.

3. Applicable Code Requirement

ASME Section XI, Table IWB-2500-1, Examination Category B-J, "Pressure Retaining Welds in Piping":

> Item B9.11 requires a volumetric and surface examination of essentially 100% of the weld length of circumferential piping welds NPS 4 or larger in accordance with the examination requirements illustrated in Figure IWB-2500-8.

Code Case N-460

This Code Case states that when the entire examination volume or area cannot be examined due to interference by another component or part geometry, a reduction in examination coverage on any Class 1 or Class 2 weld may be accepted provided the reduction in coverage for that weld is less than 10%. The applicable examination records shall identify both the cause and percentage of reduced examination coverage.

4. Impracticality of Compliance

During ultrasonic examination of the circumferential piping welds listed in Table 3ISI-17.1, greater than 90% coverage of the required examination volume could not be obtained. Examinations were performed utilizing a Performance Demonstration Initiative (PDI) Appendix VIII qualified procedure specific to dissimilar metal (DM) piping welds.

Due to the geometric configuration on welds 4RRC(4)A-11 and 4RRC(4)B-12, volumetric examination coverage was limited as noted in Table 3ISI-17.1. The use of 45° shear, 45° and 60° refracted longitudinal (RL) beam angles in the axial and circumferential direction were not able to achieve greater than 90% code required volume as required by NRC approved Code Case N-460. See Table 3ISI-17.1 for additional information.

Welds 4RRC(4)A-11 and 4RRC(4)B-12 were examined using a PDI procedure qualified for single side coverage (50% coverage). The DM welds were scanned using at a minimum 45° RL and 60° RL waves and 45^{o} shear waves. The 4RRC(4)A-11 weld examination was limited to forty-five percent (45%) total composite axial and circumferential coverage due to the proximity of the valve taper (See Figure 3ISI-17.1).

Weld 4RRC(4)B-12 is a similar pipe-to-valve weld with a valve of the same design as 4RRC(4)A-11 (Figure 3ISI-17.1). As such the valve taper interfered with the coverage of the weld in the same manner. Examination of the 4RRC(4)B-12 weld occurred in 2015 using manual DM weld techniques and achieved thirty percent (30%) coverage. The coverage obtained on weld 4RRC(4)B-12 was less than 4RRC(4)A-11 due to additional surface mismatch conditions as shown in Figure 3ISI-17.2.

As noted on Table 3ISI-17.1, weld 10LPCS(1)-3 safe-end taper limited the volumetric examination coverage. This weld was examined with a phased array system utilizing two-dimensional phased array probes. Circumferential flaw examinations require the 45° RL and the 60° RL transducer scans to cover the required volume at a minimum in one direction. The looking down (LKDN) examinations covered 100% of the required volume that included the 45° RL and the 60° RL transducers. No examination was performed in the looking up (LKUP) direction (against the flow) due to the proximity of the safe-end taper. Calculations were performed prior to the setup that revealed the 30° RL transducer could not perform a meaningful examination from the downstream side. Meaningful examination is defined as the qualified angle being able to pass through the weld root area. Circumferential flaw examinations account for 50% of the required examination volume. One hundred percent (100%) of the circumferential flaw examinations were credited, therefore fifty percent (50%) of the overall coverage was obtained.

Examinations for the detection of axial flaws require a minimum of two angles in the clockwise and counterclockwise directions. Code credit was achieved up to the point where the center of the probe lifted off the taper. A total of fifty-four percent (54%) of the axial flaw examinations were credited, equaling twenty-seven percent (27%) of the overall coverage in the circumferential direction looking for axial flaws.

A composite of seventy-seven percent (77%) of the combined coverages in the axial and circumferential directions was achieved. The remaining area was then reviewed to

determine if manual examinations would have resulted in additional coverage. Manual probe sizes and qualifications could not provide any additional coverage than what was already achieved.

NRC approved ASME Code Case N-663, *Alternative Requirements for Classes 1 and 2 Surface Examinations* was applied to these welds. Energy Northwest has not identified these welds as susceptible to outside surface attack, and therefore, they do not require surface examination. Drawings and scan plans from the Ultrasonic Testing (UT) reports are provided for reference and clarification.

5. Burden Caused by Compliance

To effectively perform any significant additional Code allowable ultrasonic examinations, modification and/or replacement of the component would be required.

6. Proposed Alternative and Basis for Use

No alternative examination is proposed at this time.

Energy Northwest has examined the welds identified in Table 3ISI-17.1 to the extent practical and determined that results are acceptable with no recordable indications.

These piping welds are also subject to VT-2 visual examination during system pressure testing in accordance with the requirements of Examination Category B-P and successfully passed their VT-2 examinations.

Energy Northwest requests the proposed relief be authorized pursuant to 10 CFR 50.55a(g)(6)(i).

7. Duration of Proposed Alternative

Relief is requested for the third ten-year inspection interval of the Inservice Inspection Program for Columbia Generating Station.

Relief Request 3ISI-17

Table 3ISI-17.1 Examination Category B-J							
Cat	**Item No**	**Comp ID/ Line Drawing**	**Item Description**	**Material 1 and Product Form**	**Material 2 and Product Form**	**Examination Code Coverage Obtained**	**Examination Limitations and Results**
B-J	B9.11	4RRC(4)A-11 RRC-108	Safe-End to Valve RWCU-V-100	Pipe, Safe-End – 4" SA-312 TP304	Valve – 4" SA-105 Gr.II	45%	Examination coverage is limited due to the safe-end to valve configuration. No indications associated with IGSCC were recorded.
B-J	B9.11	4RRC(4)B-12 RRC-109	Safe-End to Valve RWCU-V-106	Pipe, Safe-End – 4" SA-312 TP304	Valve – 4" SA-105 Gr.II	30%	Examination coverage is limited due to the safe-end to valve configuration. No indications associated with IGSCC were recorded.
B-J	B9.11	10LPCS(1)-3 LPCS-101-2 RPV-109	Safe-End Extension to Safe-End on Nozzle N5	Safe-End Extension – 10" SA-508 Cl.1	Safe-End – 10" SB-166	77%	Examination coverage is limited due to the safe-end configuration. Inside surface geometry, non-relevant indications, and root geometry were recorded during the circumferential flaw examinations. No indications associated with IGSCC were recorded.

Relief Request 3ISI-17

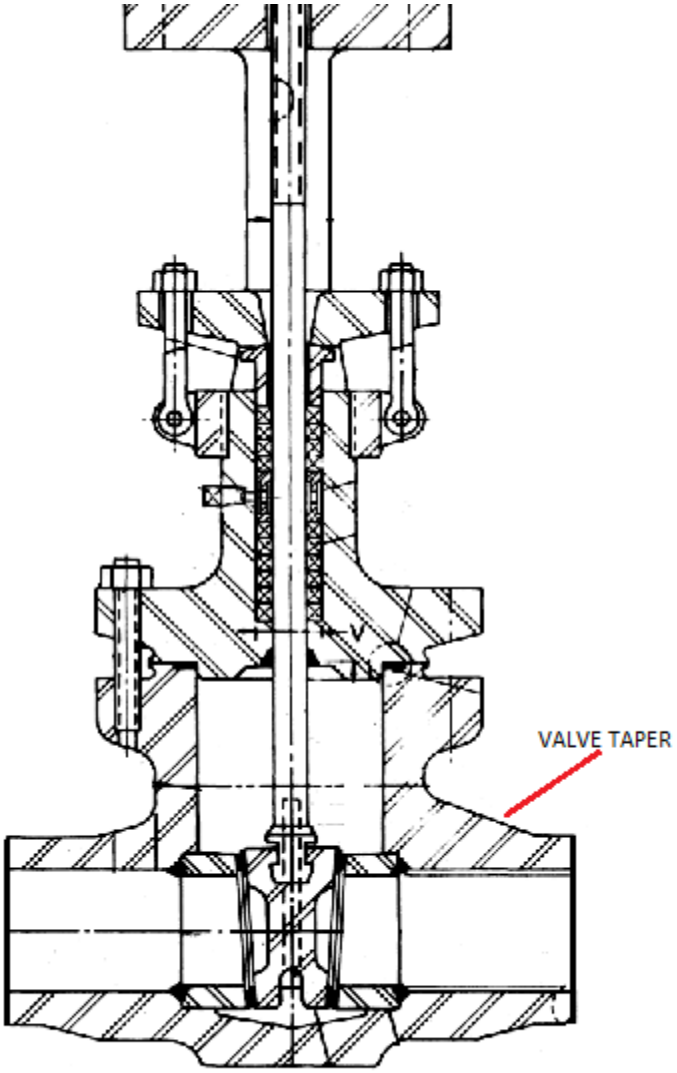
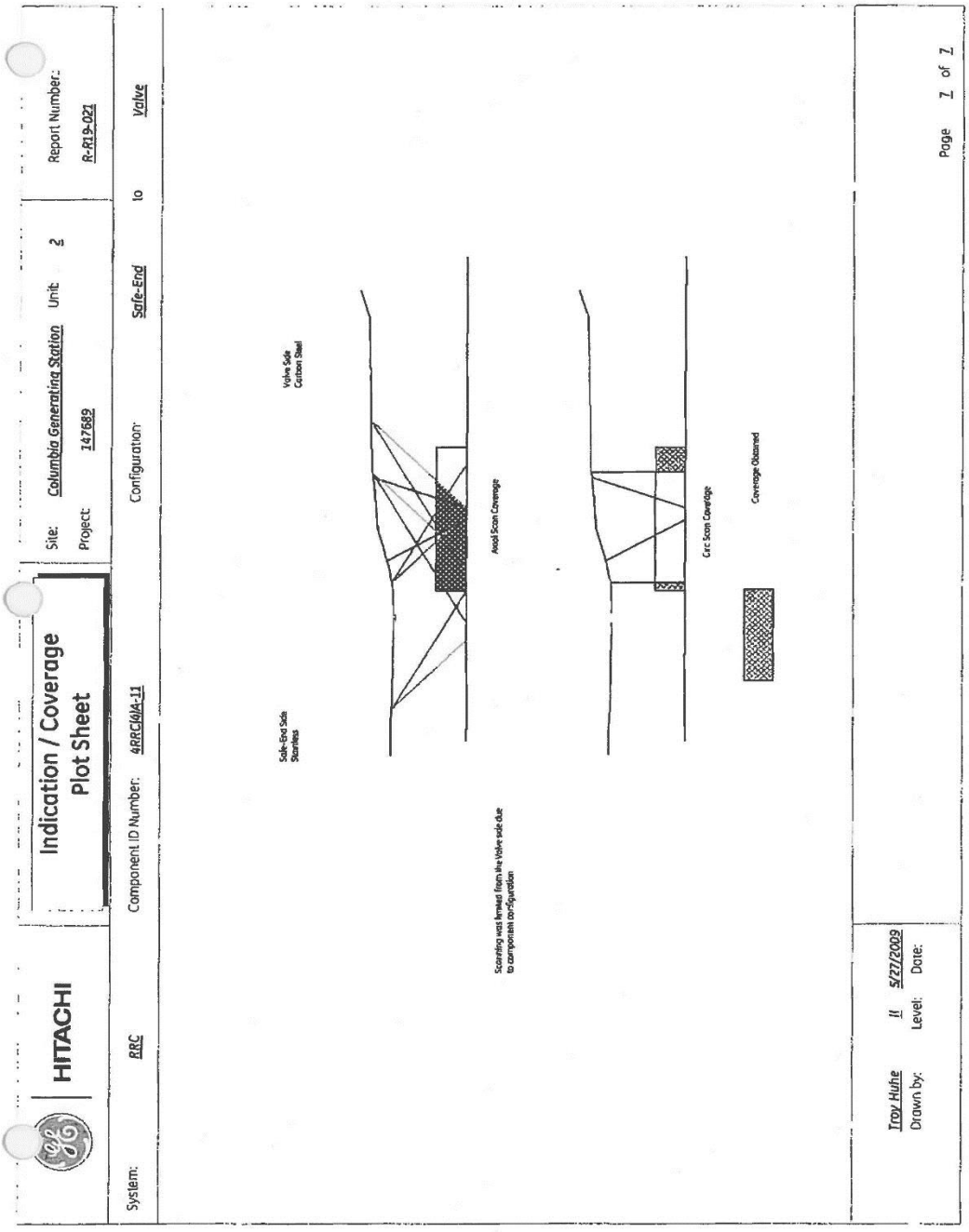


Figure 3ISI-17.1 Valve body associated with welds 4RRC(4)A-11 and 4RRC(4)B-12

Figure 3ISI-17.2 Photograph of weld 4RRC(4)B-12 highlighting the mismatch in the transition area from the pipe to the valve taper.

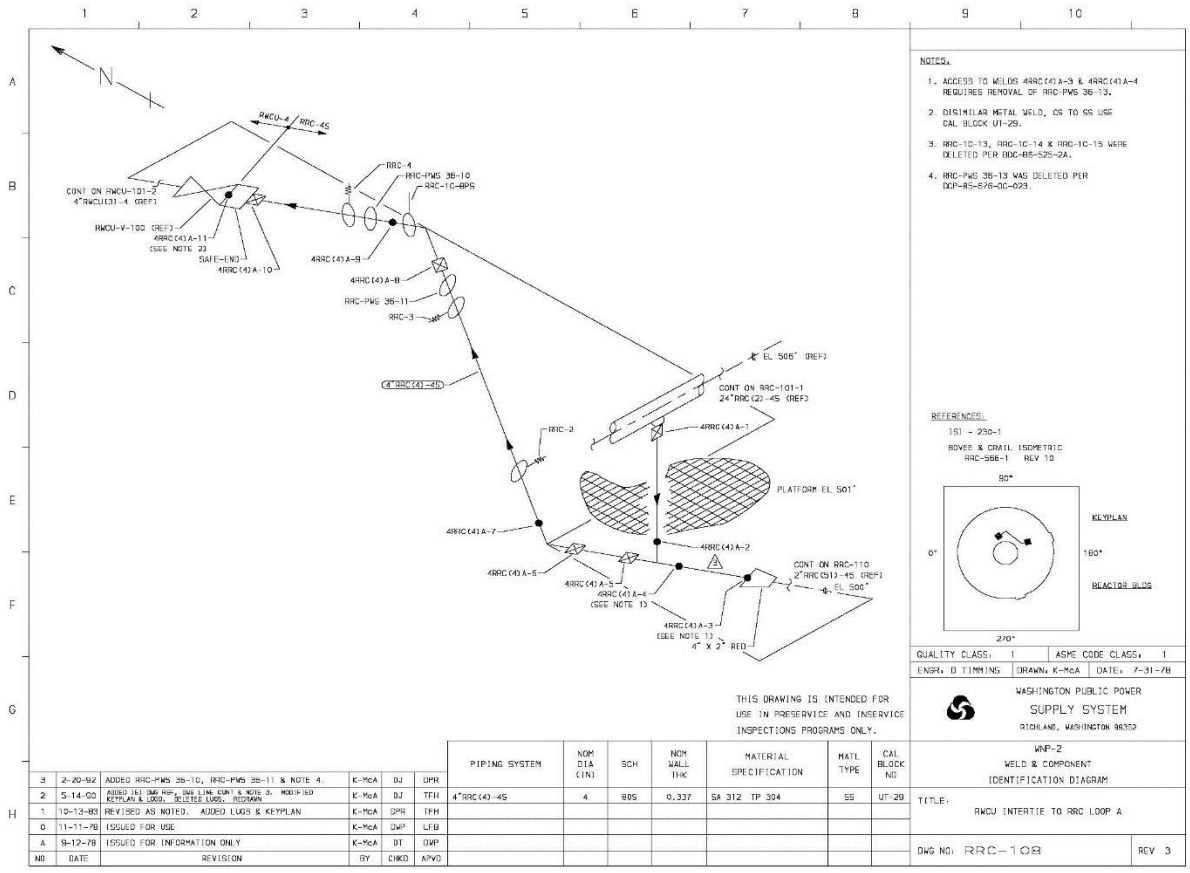
Relief Request 3ISI-17



Scan Plan for UT Report on RRC-108 weld

Relief Request 3ISI-17

DWG: RRC-108

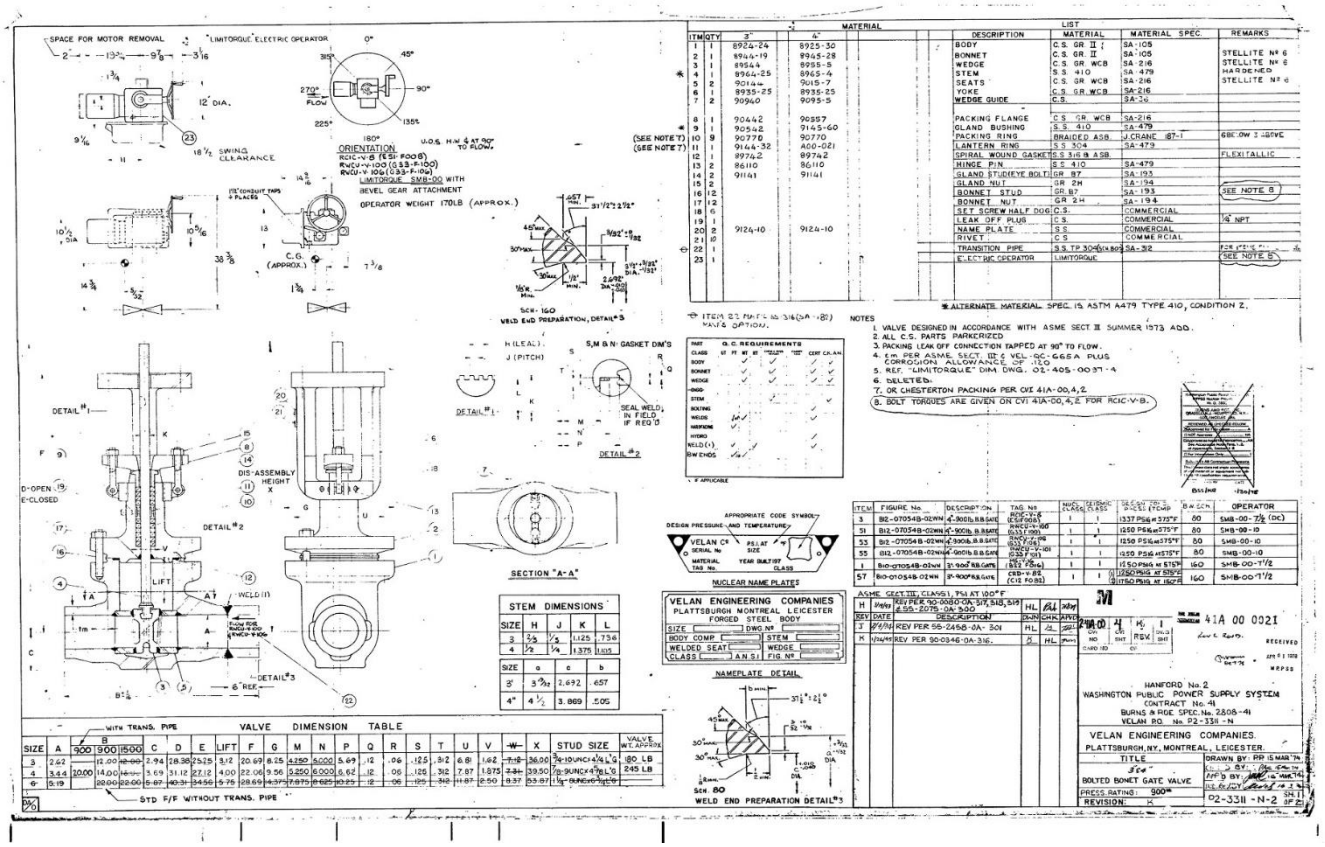


NO	DATE	REVISION	BY	CHKD	APVD
3	2-20-92	ADDED RRC-PWS 36-10, RRC-PWS 36-11 & NOTE 4.	K-McA	DJ	DPR
2	5-14-00	ADDED ISI DWG REF, DWG LINE CONT & NOTE 3. MODIFIED KEYPLAN & LOCO. DELETES LUGS. REDRAWN	K-McA	DJ	TFH
1	10-13-83	REVISED AS NOTED. ADDED LUGS & KEYPLAN	K-McA	DPR	TFH
0	11-11-78	ISSUED FOR USE	K-McA	DWP	LFB
A	9-12-78	ISSUED FOR INFORMATION ONLY	K-McA	DT	DWP

PIPING SYSTEM	NOM DIA (IN)	SCH	NOM WALL THK	MATERIAL SPECIFICATION	MATL TYPE	CAL BLOCK NO
4"RRC(4)-45	4	80S	0.337	SA 312 TP 304	SS	UT-29

Relief Request 3ISI-17

DWG: CVI 41-00,4,1 (Valve RWCU-V-100)



ITM	QTY	3"	4"	DESCRIPTION	MATERIAL	MATERIAL SPEC.	REMARKS
1	1	8924-24	8925-30	BODY	C.S. GR II	SA-105	
2	1	8944-19	8945-28	BONNET	C.S. GR II	SA-105	STELLITE № 6
3	1	89544	8955-5	WEDGE	C.S. GR WCB	SA-216	STELLITE № 6
4	1	8964-25	8965-4	STEM	S.S. 410	SA-479	HARDENED
5	2	90144	9015-7	SEATS	C.S. GR WCB	SA-216	STELLITE № 6
6	1	8935-25	8935-25	YOKE	C.S. GR.WCB	SA-216	
7	2	90940	9095-5	WEDGE GUIDE	C.S.	SA-216	
8	1	90442	90557	PACKING FLANGE	C.S. GR WCB	SA-216	
9	1	90542	9145-60	GLAND BUSHING	S.S. 410	SA-479	
10	9	90770	90770	PACKING RING	BRAIDED ASB	J.CRANE 87-1	68E.OW 3 -68WE
11	1	9144-32	A00-021	LANTERN RING	S.S 304	SA-479	
12	1	89742	89742	SPIRAL WOUND GASKET	S.S 316 & ASB		FLEXITALLIC
13	2	86110	86110	HINGE PIN	S.S 410	SA-479	
14	2	91141	91141	GLAND STUD/EYE BOLT	GR. B7	SA-193	
15	2			GLAND NUT	GR 2H	SA-194	
16	12			BONNET STUD	GR.B7	SA-193	SEE NOTE 6
17	12			BONNET NUT	GR 2H	SA-194	
18	6			SET SCREW HALF DOG	C.S.	COMMERCIAL	
19	1			LEAK OFF PLUG	C.S.	COMMERCIAL	¼" NPT
20	2	9124-40	9124-10	NAME PLATE	S.S	COMMERCIAL	
21	10			RIVET	C.S	COMMERCIAL	
22	1			TRANSITION PIPE	S.S. TP 304(SX80)	SA-312	FOR VELAN P.O.
23	1			ELECTRIC OPERATOR	LIMITORQUE		SEE NOTE 5

ITEM 22 MAY BE 316(SA-182) MATL'S OPTION.

* ALTERNATE MATERIAL SPEC. IS ASTM A479 TYPE 410, CONDITION Z.

NOTES
1. VALVE DESIGNED IN ACCORDANCE WITH ASME SECT III SUMMER 1973 ADD.
2. ALL C.S. PARTS PARKERIZED
3. PACKING LEAK OFF CONNECTION TAPPED AT 90° TO FLOW.
4. t.m. PER ASME SECT. III ◊ VEL-QC-665A PLUS CORROSION ALLOWANCE OF .110
5. REF. "LIMITORQUE" DIM DWG. 02-405-0031-4
6. DELETED.
7. OR CHESTERTON PACKING PER CVI 41A-00,4,2
8. BOLT TORQUES ARE GIVEN ON CVI 41A-00,4,2 FOR RCIC-V-8.

PART	Q.C. REQUIREMENTS
CLASS	UT PT MT RT VISUAL PRESS TEST CORR. CH. ANA
BODY	✓ ✓ ✓ ✓ ✓ ✓ ✓
WEDGE	✓ ✓ ✓ ✓ ✓ ✓ ✓
BONNET	✓ ✓ ✓ ✓ ✓ ✓ ✓
ENDS	✓ ✓ ✓ ✓ ✓ ✓ ✓
STEM	✓ ✓ ✓ ✓ ✓ ✓ ✓
BOLTING	✓ ✓ ✓ ✓ ✓ ✓ ✓
WELDS	✓ ✓ ✓ ✓ ✓ ✓ ✓
HARDFACING	✓ ✓ ✓ ✓ ✓ ✓ ✓
HYDRO	✓ ✓ ✓ ✓ ✓ ✓ ✓
WELD (-)	✓ ✓ ✓ ✓ ✓ ✓ ✓
BW ENDS	✓ ✓ ✓ ✓ ✓ ✓ ✓

* IF APPLICABLE

ITEM	FIGURE No.	DESCRIPTION	TAG NR.	MATL. SPEC. CLASS	CLASS	TEST PRESS. (TCAP)	BW SCH.	OPERATOR
3	B12-07054B-02WN	4-300lb BB GATE	RCIC-V-8 (ESF 9008)	1	1	1337 PSIG at 575°F	80	SMB-00-7½ (DC)
51	B12-07054B-02WN	4"-900lb BB GATE	RWCU-V-100 (G33 F 100)	1	1	1650 PSIG at 575°F	80	SMB-00-10
55	B12-07054B-02WN	4"-900lb BB GATE	RWCU-V-106 (G33 F 104)	1	1	1650 PSIG at 575°F	80	SMB-00-10
55	B12-07054B-02WN	4"-900lb BB GATE	RWCU-V-101 (G33 F 101)	1	1	1650 PSIG at 575°F	80	SMB-00-10
1	B10-07054B-02WN	3"-900# RB GATE	(RB-V-85)	1	1	1650PSIG at 575°F	160	SMB-00-7½
57	B10-07054B-02WN	3"-900#RB GATE	(RB-V-85 (1/2 POSS)	1	1	1650PSIG at 575°F (3)1750 PSIG at 150°F	160	SMB-00-7½

ASME SECT. III, CLASS 1, 1% AT 100°F

REV	DATE	DESCRIPTION	BY	CHK	APVD
J	9/15/76	REV PER 90-0080-0A-317, 318, 319 & 95-2075-0A-300	HL	EHL	JWH
K	10/4/76	REV PER 90-0346-0A-316.	HL	EHL	JWH

SIZE	H	J	K	L
3	3/8	1/8	.125	.756
4	1/2	1/8	.1375	1.005

SIZE	a	c	b
3"	3 29/32	2.692	.657
4"	4 1/2	3.869	.505

VALVE DIMENSION TABLE

SIZE	A	B 900	B 900	B 1500	C	D	E	LIFT	F	G	M	N	P	Q	R	S	T	U	V	W	X	STUD SIZE	VALVE WT. APPROX
3	2.62		12.00	12.00	2.94	28.38	25.25	3.12	20.69	8.25	4.250	6.000	5.69	.12	.06	.125	.312	6.81	1.62	7.12	36.00	7/8-10UNC-4A	180 LB
4	3.44	10.00	14.00	14.00	3.69	31.12	27.12	4.00	22.06	9.56	5.250	6.000	6.62	.12	.06	.125	.312	7.87	1.875	7.34	39.50	7/8-8UNC-4A	245 LB
6	5.19		20.00	22.00	5.67	40.31	34.56	5.75	28.69	14.375	7.875	8.625	10.25	.12	.06	.125	.312	11.87	2.50	9.37	53.87	1 1/8-8UNC-4A	

WITH TRANS. PIPE

Relief Request 3ISI-17

HITACHI

Wall Thickness Profile Sheet

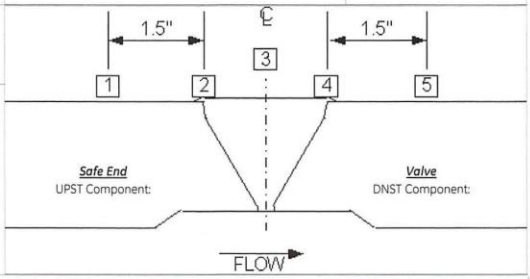
Site: *Columbia Generating Station*
Project: *188012*
Report No.: *R-R22-027*

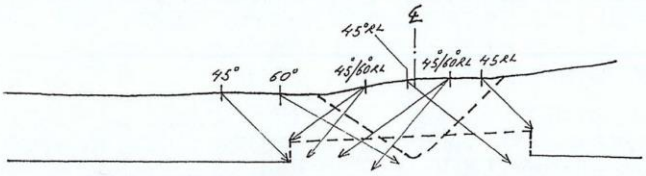
System: *RRC*

Position	0°	90°	180°	270°
1	.59"	N/A	N/A	N/A
2	.59"	N/A	N/A	N/A
3	.63"	N/A	N/A	N/A
4	.69"	N/A	N/A	N/A
5	N/A	N/A	N/A	N/A

Component ID Number: *4RRC(4)B-12*

Crown Height: *.05"*
Crown Width: *1.7"*
Nominal Diameter: *4.0"*
Weld Length: *17.3"*





CO — Initials: | Chad Olson — Drawn by: | II — Level: | 5/29/2015 — Date:

GE Reviewed By: | Level: II | Date: 6-2-15

Utility Review: | Date: 6-2-15

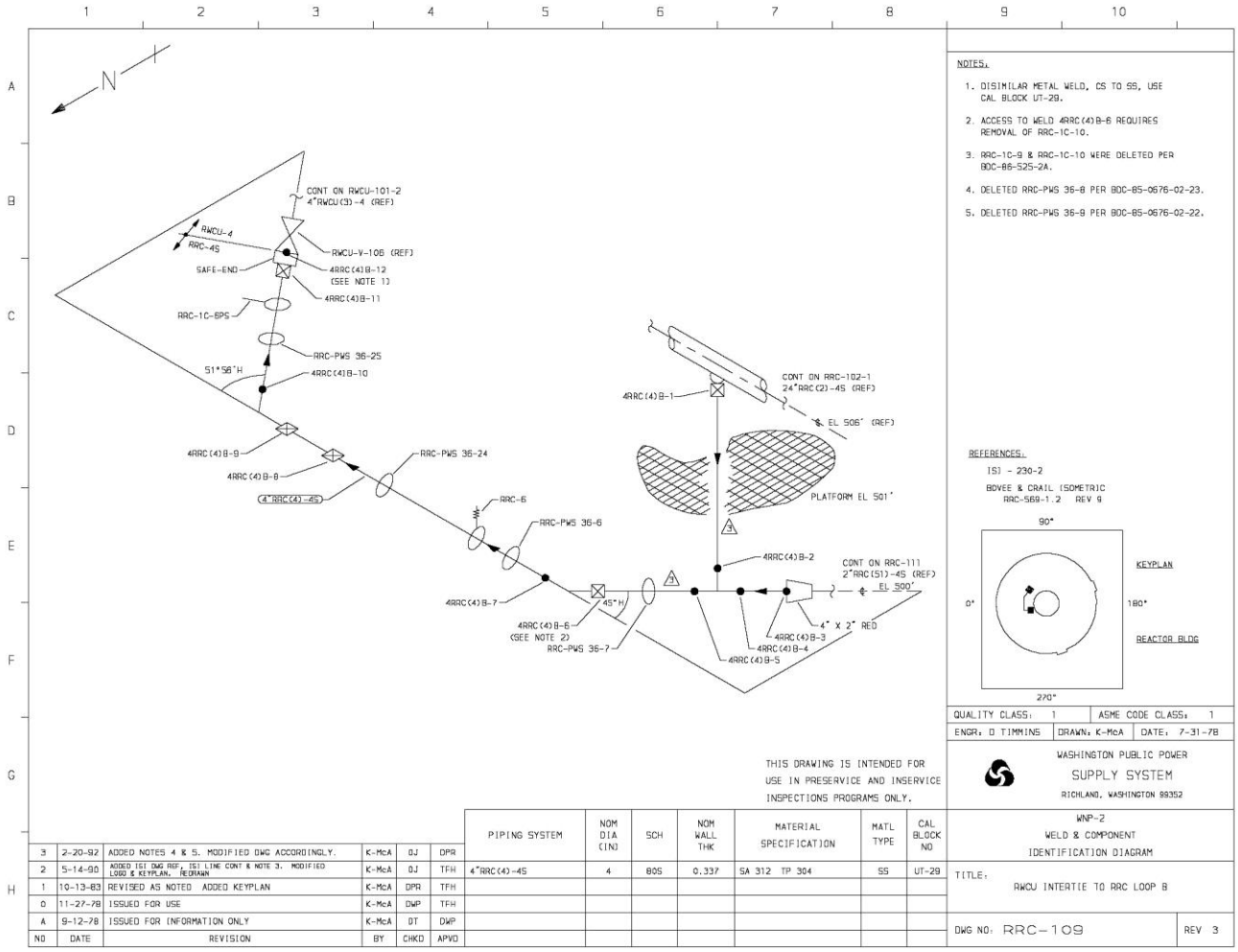
ANII Review: | Date: 6-4-15

Page 7 of 10

Scan Plan for UT Report on RRC-109 weld

Relief Request 3ISI-17

DWG: RRC-109



NOTES:

1. DISIMILAR METAL WELD, CS TO SS, USE CAL BLOCK UT-29.
2. ACCESS TO WELD 4RRC(4)B-6 REQUIRES REMOVAL OF RRC-1C-10.
3. RRC-1C-9 & RRC-1C-10 WERE DELETED PER BDC-86-525-2A.
4. DELETED RRC-PWS 36-8 PER BDC-85-0676-02-23.
5. DELETED RRC-PWS 36-9 PER BDC-85-0676-02-22.

REFERENCES:

ISI - 230-2

BOVEE & CRAIL ISOMETRIC
RRC-569-1.2 REV 9

3	2-20-92	ADDED NOTES 4 & 5. MODIFIED DWG ACCORDINGLY.	K-McA	OJ	DPR	PIPING SYSTEM	NOM DIA (IN)	SCH	NOM WALL THK	MATERIAL SPECIFICATION	MATL TYPE	CAL BLOCK NO
2	5-14-90	ADDED ISI DWG REF, ISI LINE CONT & NOTE 3. MODIFIED LOGO & KEYPLAN. REDRAWN	K-McA	OJ	TFH	4"RRC(4)-4S	4	80S	0.337	SA 312 TP 304	SS	UT-29
1	10-13-83	REVISED AS NOTED ADDED KEYPLAN	K-McA	DPR	TFH							
0	11-27-78	ISSUED FOR USE	K-McA	DWP	TFH							
A	9-12-78	ISSUED FOR INFORMATION ONLY	K-McA	DT	DWP							
NO	DATE	REVISION	BY	CHKD	APVD							

THIS DRAWING IS INTENDED FOR USE IN PRESERVICE AND INSERVICE INSPECTIONS PROGRAMS ONLY.

QUALITY CLASS: 1 | ASME CODE CLASS: 1

ENGR: D TIMMINS | DRAWN: K-McA | DATE: 7-31-78

WASHINGTON PUBLIC POWER SUPPLY SYSTEM
RICHLAND, WASHINGTON 99352

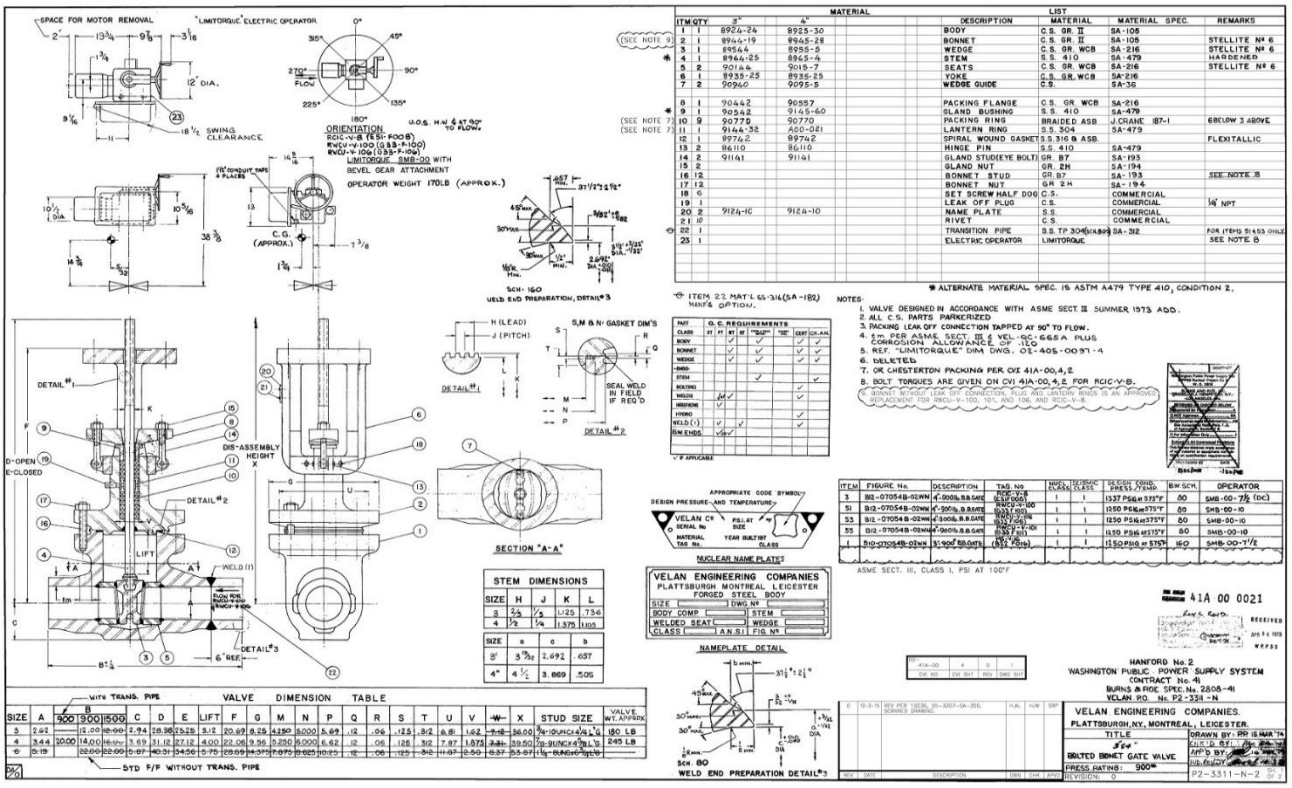
WNP-2
WELD & COMPONENT IDENTIFICATION DIAGRAM

TITLE: RWCU INTERTIE TO RRC LOOP B

DWG NO: RRC-109 REV 3

Relief Request 3ISI-17

DWG: CVI 41A-00,4,1 (Valve RWCU-V-106)



Relief Request 3ISI-17

HITACHI

Wall Thickness Profile Sheet

Site: Columbia Generating Station Unit: 2 Report No.: R-R19-037

Project: 147689

System: LPCS

Component ID Number: 10LPCS(1)-3

Position	0°	90°	180°	270°
1	21mm	21mm	21mm	21mm
2	21mm	21mm	21mm	21mm
3	22mm	22mm	22mm	22mm
4	N/A	N/A	N/A	N/A
5	N/A	N/A	N/A	N/A

Crown Height: FLUSH

Crown Width: 24 mm

Nominal Diameter: 293.0 mm

Weld Length: 914.0 mm

Andrei Rachal II 5/26/2009 Robert Healey III 5/27/09

Drawn by: Level: Date: GE Reviewed By: Level: Date:

Page 2 of 19

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Scan Plan for UT Report on RPV-109 (10LPCS(1)-3 weld

Relief Request 3ISI-17

HITACHI

Indication / Coverage Plot Sheet

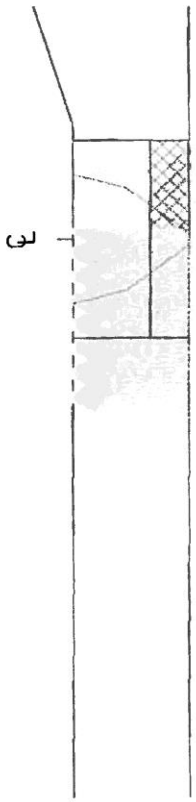
System: LPCS

Component ID Number: 10LPCS(1)-3

Site: Columbia Generating Station Unit: 2 Report Number: R-R19-037

Project: 147689

Configuration: SAFE-END EXT to SAFE END



CODE VOLUME MISSED

Andre' Rachal II 5/27/2009 Robert Healey III 5/27/2009

Drawn by: Level: Date: GE Reviewed by: Level: Date:

Page 3 of 19

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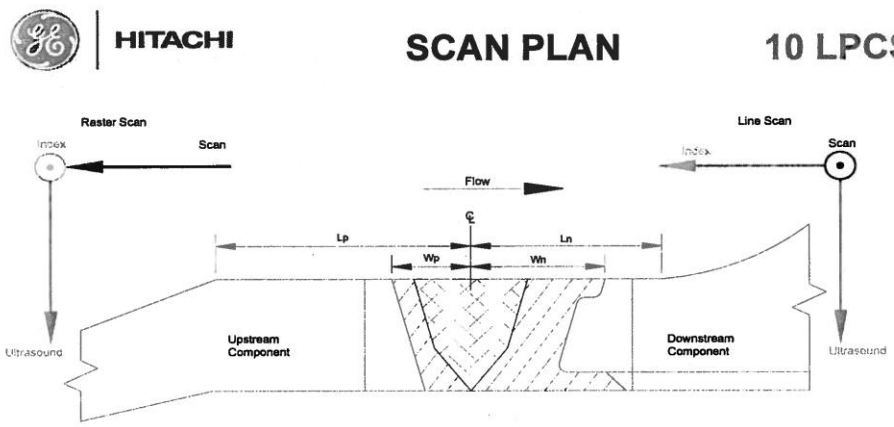
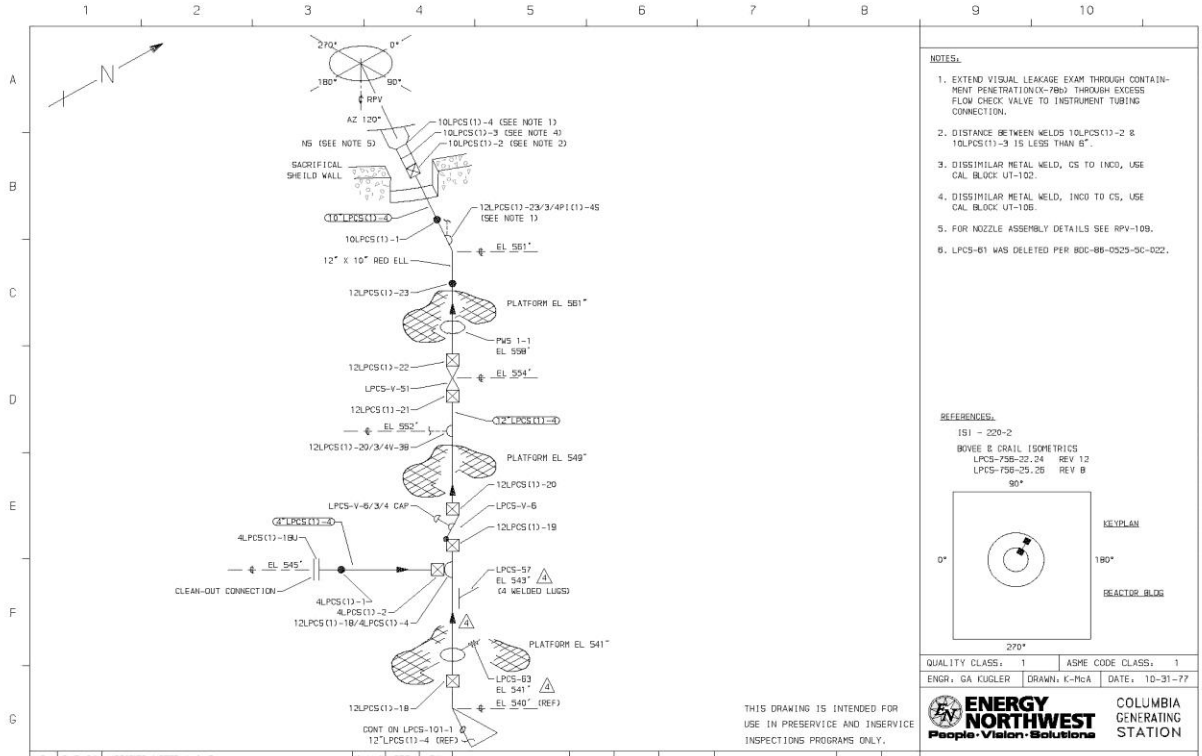
Scan Plan for UT Report on RPV-109 (10LPCS(1)-3) weld



Scan Plan for UT Report on RPV-109 (10LPCS(1)-3) weld

Relief Request 3ISI-17

DWG: LPCS-101-2



THIS DRAWING IS INTENDED FOR USE IN PRESERVICE AND INSERVICE INSPECTIONS PROGRAMS ONLY.

NOTES:

1. EXTEND VISUAL LEAKAGE EXAM THROUGH CONTAINMENT PENETRATION(X-78b) THROUGH EXCESS FLOW CHECK VALVE TO INSTRUMENT TUBING CONNECTION.
2. DISTANCE BETWEEN WELDS 10LPCS(1)-2 & 10LPCS(1)-3 IS LESS THAN 6".
3. DISSIMILAR METAL WELD, CS TO INCO, USE CAL BLOCK UT-102.
4. DISSIMILAR METAL WELD, INCO TO CS, USE CAL BLOCK UT-108.
5. FOR NOZZLE ASSEMBLY DETAILS SEE RPV-109.
6. LPCS-81 WAS DELETED PER BDC-88-0525-SC-022.

REFERENCES:
ISI - 220-2
BOVEE & CRAIL ISOMETRICS
LPCS-758-22.24 REV 12
LPCS-758-25.26 REV 8

QUALITY CLASS: 1	ASME CODE CLASS: 1
ENGR: GA KUGLER	DRAWN: K-McA DATE: 10-31-77

ENERGY NORTHWEST People·Vision·Solutions — COLUMBIA GENERATING STATION

NO	DATE	REVISION	BY	CHKD	APVD
5	6-7-94	MODIFIED NOTES 1 & 2.	K-McA	DPR	DW
4	11-13-92	ADDED ISI DWG REF, DWG LINE CONT, NOTE 6, ELEV & KEYPLAN. MODIFIED LOGO. DELETED UT-48. REDRAWN.	K-McA	DPR	DRK
3	9-26-83	ADDED SUPPORTS, LUGS. 3/4LOC CAPPED.	K-McA	DPR	TFH
2	11-5-80	ADDED NOTE 5 & AS NOTED.	K-McA	TFH DWP	DWP
1	1-10-79	REVISED REFERENCE TO NOTES 3 & 4.	K-McA	TFH DWP DWP	LFB
0	11-27-78	ISSUED FOR USE (REDRAWN)	K-McA	DWP	LFB
6	11-30-05	REVISED LOGO	JL	DPR	TMC

PIPING SYSTEM	NOM DIA CINO	SCH	NOM WALL THK	MATERIAL SPECIFICATION	MATL TYPE	CAL BLOCK NO
12"LPCS(1)-4	12	80	0.688	SA 106 GR B	CS	UT-17
4"LPCS(1)-4	4	80	0.337	SA 106 GR B	CS	UT-30
10"LPCS(1)-4	10	80	0.594	SA 106 GR B	CS	UT-22

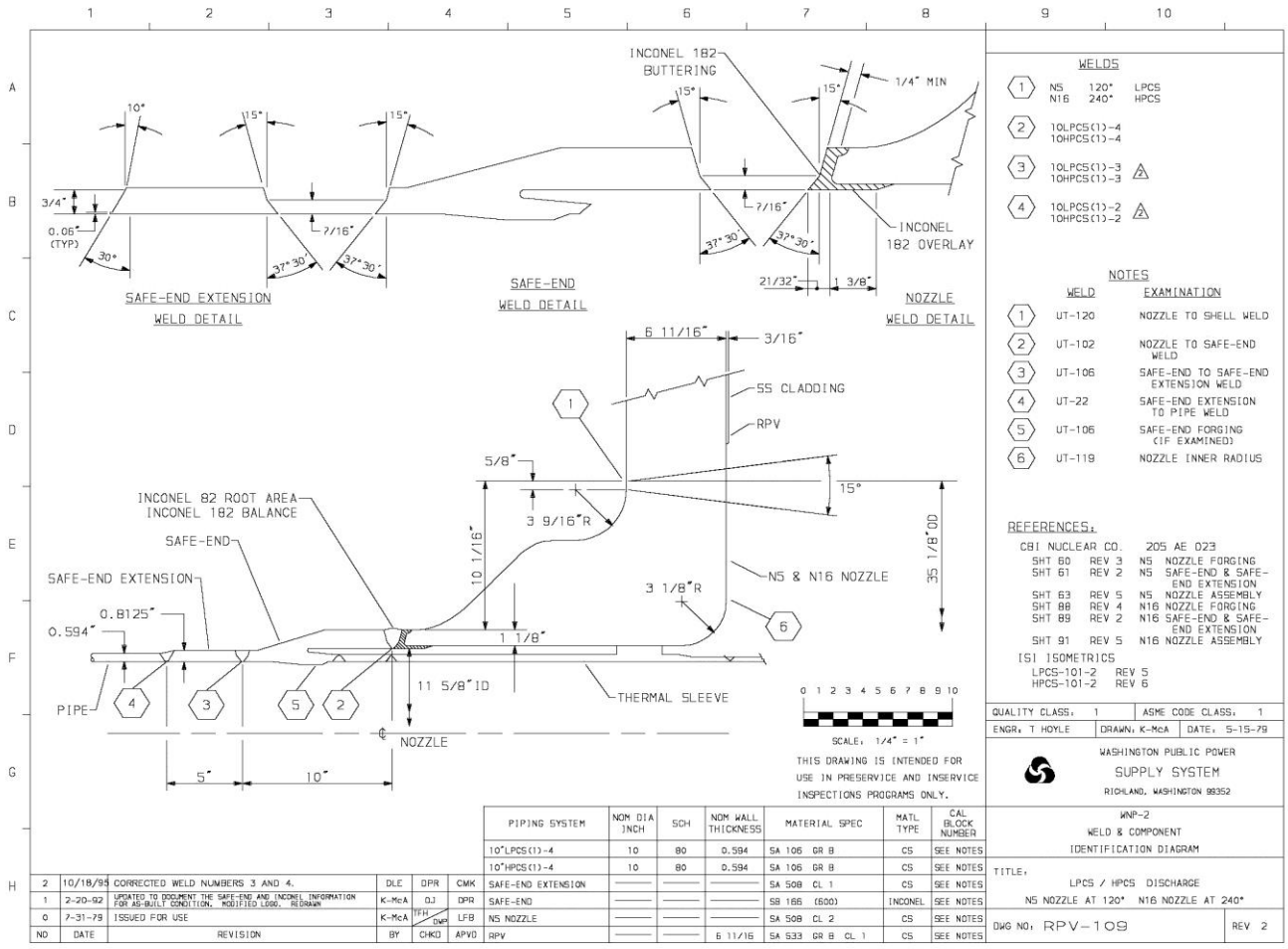
WELD & COMPONENT IDENTIFICATION DIAGRAM

TITLE:
LPCS DISCHARGE TO VESSEL

DWG NO: LPCS-101-2 REV 6

Relief Request 3ISI-17

DWG: RPV-109



WELDS

1	N5	120°	LPCS
	N16	240°	HPCS
2	10LPCS(1)-4		
	10HPCS(1)-4		
3	10LPCS(1)-3		A
	10HPCS(1)-3		
4	10LPCS(1)-2		A
	10HPCS(1)-2		

NOTES

	WELD	EXAMINATION
1	UT-120	NOZZLE TO SHELL WELD
2	UT-102	NOZZLE TO SAFE-END WELD
3	UT-106	SAFE-END TO SAFE-END EXTENSION WELD
4	UT-22	SAFE-END EXTENSION TO PIPE WELD
5	UT-106	SAFE-END FORGING (IF EXAMINED)
6	UT-119	NOZZLE INNER RADIUS

REFERENCES:

CBI NUCLEAR CO. 205 AE 023
SHT 60 REV 3 N5 NOZZLE FORGING
SHT 61 REV 2 N5 SAFE-END & SAFE-END EXTENSION
SHT 63 REV 5 N5 NOZZLE ASSEMBLY
SHT 88 REV 4 N16 NOZZLE FORGING
SHT 89 REV 2 N16 SAFE-END & SAFE-END EXTENSION
SHT 91 REV 5 N16 NOZZLE ASSEMBLY
[SI] ISOMETRICS
LPCS-101-2 REV 5
HPCS-101-2 REV 6

QUALITY CLASS: 1	ASME CODE CLASS: 1	
ENGR: T HOYLE	DRAWN: K-McA	DATE: 5-15-79

WASHINGTON PUBLIC POWER SUPPLY SYSTEM
RICHLAND, WASHINGTON 99352

PIPING SYSTEM	NOM DIA INCH	SCH	NOM WALL THICKNESS	MATERIAL SPEC	MATL TYPE	CAL BLOCK NUMBER
10"LPCS(1)-4	10	80	0.594	SA 106 GR B	CS	SEE NOTES
10"HPCS(1)-4	10	80	0.594	SA 106 GR B	CS	SEE NOTES
SAFE-END EXTENSION	———	———	———	SA 508 CL 1	CS	SEE NOTES
SAFE-END	———	———	———	SB 166 (600)	INCONEL	SEE NOTES
N5 NOZZLE	———	———	———	SA 508 CL 2	CS	SEE NOTES
RPV	———	———	6 11/16	SA 533 GR B CL 1	CS	SEE NOTES

NO	DATE	REVISION	BY	CHKD	APVD
2	10/18/95	CORRECTED WELD NUMBERS 3 AND 4.	DLE	DPR	CMK
1	2-20-92	UPDATED TO DOCUMENT THE SAFE-END AND INCONEL INFORMATION FOR AS-BUILT CONDITION. MODIFIED LOOC. REDRAWN	K-McA	OJ	DPR
0	7-31-79	ISSUED FOR USE	K-McA	TFH DWP	LFB

WNP-2
WELD & COMPONENT
IDENTIFICATION DIAGRAM

TITLE:
LPCS / HPCS DISCHARGE
N5 NOZZLE AT 120° N16 NOZZLE AT 240°

DWG NO: RPV-109 REV 2

Attachment 3

Relief Request 3ISI-18

Relief Request 3ISI-18

10 CFR 50.55a Request Number 3ISI-18

NDE Coverage Limitations on Austenitic Stainless Steel Piping Welds
and Austenitic Stainless Steel Branch Connection Welds

1. ASME Code Component(s) Affected

Description:	Alternative Requirements to the Examination of Austenitic Stainless Steel Piping Welds and Austenitic Stainless Steel Branch Connections
ASME Code Class:	Class 1
Examination Category:	B-J
Item Number:	B9.11 and B9.31
Components Affected:	Valves and Fittings (See Table 3ISI-18.1)

2. Applicable Code Edition and Addenda

The Columbia Generating Station (Columbia) Inservice Inspection (ISI) third ten-year interval ASME Section XI Code is the 2001 Edition through 2003 Addenda.

3. Applicable Code Requirement

ASME Section XI, Table IWB-2500-1, Examination Category B-J, “Pressure Retaining Welds in Piping”:

> Item B9.11 requires a volumetric and surface examination of essentially 100% of the weld length of circumferential piping welds NPS 4 or larger in accordance with the examination requirements illustrated in Figure IWB-2500-8.
>
> Item B9.31 requires a volumetric and surface examination of essentially 100% of the weld length of branch pipe connection welds NPS 4 or larger in accordance with the examination requirements illustrated in Figures IWB-2500-9, 10, and 11.

Code Case N-460

This Code Case states that when the entire examination volume or area cannot be examined due to interference by another component or part geometry, a reduction in examination coverage on any Class 1 or Class 2 weld may be accepted provided the reduction in coverage for that weld is less than 10%. The applicable examination records shall identify both the cause and percentage of reduced examination coverage.

Relief Request 3ISI-18

4. Impracticality of Compliance

During ultrasonic examination of the circumferential piping welds listed in Table 3ISI-18.1, greater than 90% coverage of the required examination volume could not be obtained. Examinations were performed utilizing a Performance Demonstration Initiative (PDI) Appendix VIII qualified procedure specific to austenitic stainless steel piping welds.

Due to the geometric configuration of the components, effective volumetric examination could only be performed as noted in Table 3ISI-18.1. The 45° and 60° beam angles used in the axial and circumferential directions were not able to achieve greater than 90% code required volume as required by NRC approved Code Case N-460. In each case coverage was limited to one side of the weld (50%) due to the configuration of the component. See Table 3ISI-18.1 and Figures 3ISI-18.1, 18.2, 18.3 and 18.4 for additional information.

Drawings and scan plans from the Ultrasonic Testing (UT) reports are provided for reference and clarification.

5. Burden Caused by Compliance

To effectively perform any significant additional Code allowable ultrasonic examinations, modification and/or replacement of the component would be required.

6. Proposed Alternative and Basis for Use

No alternative examination is proposed at this time.

Energy Northwest has examined the welds identified in Table 3ISI-18.1 to the extent practical. Energy Northwest has also examined the B-J welds of other piping as directed by the Inservice Inspection program and determined that results are acceptable with no recordable indications.

These piping welds are also subject to VT-2 visual examination during system pressure testing in accordance with the requirements of Examination Category B-P and successfully passed their VT-2 examinations.

Energy Northwest requests the proposed relief be authorized pursuant to 10 CFR 50.55a(g)(6)(i).

7. Duration of Proposed Alternative

Relief is requested for the third ten-year inspection interval of the Inservice Inspection Program for Columbia Generating Station.

Relief Request 3ISI-18

Table 3ISI-18.1 Examination Category R-A							
Cat	**Item No**	**Comp ID/ Line Drawing**	**Item Description**	**Material 1 and Product Form**	**Material 2 and Product Form**	**Examination Code Coverage Obtained**	**Examination Limitations and Results**
B-J	B9.11	12RRC(7)A-1 RRC-106	Valve RHR-V-112A to Pipe	Valve – 12" SA-182 F316	Pipe – 12" SA-358 CL1 GR 304	50%	Coverage is limited due to single sided exam. No signal from valve side due to valve body taper. No relevant indications were recorded. Figure 3ISI-18.1.
B-J	B9.11	12RRC(7)B-1 RRC-107	Valve RHR-V-112B to Pipe	Valve – 12" SA-182 F316	Pipe – 12" SA-358 CL1 GR 304	50%	Coverage is limited due to single sided exam. No signal from valve side due to valve body taper. No relevant indications were recorded. Figure 3ISI-18.1.
B-J	B9.11	20RRC(6)-1 RRC-105	Reducing Tee to Pipe	Reducing Tee – 24" x 24" x 20" SA-403 WP304	Pipe – 20" SA-358 CL1 GR 304	50%	Coverage is limited due to single sided exam. No signal from valve side due to tee taper. No relevant indications were recorded. Figure 3ISI-18.2.
B-J	B9.31	24RRC(1)A-13 / 4RRC(8)-4S RRC-101-2	Pipe to Sweep-O-Let	Pipe – 24" SA-358 CL1 GR 304	Sweep-O-Let 24" SA-403 WP304	50%	Coverage is limited due to single sided exam. No signal from valve side due to Sweep-O-Let taper. No relevant indications were recorded. Figure 3ISI-18.3.
B-J	B9.11	24RRC(1)A-15 RRC-101-2	Valve RRC-V60A to Pipe	Valve – 24" SA-351 CF8M	Pipe – 24" SA-358 CL1 GR 304	50%	Coverage is limited due to single sided exam. No signal from valve side due to valve body taper. No relevant indications were recorded. Figure 3ISI-18.4.

Relief Request 3ISI-18

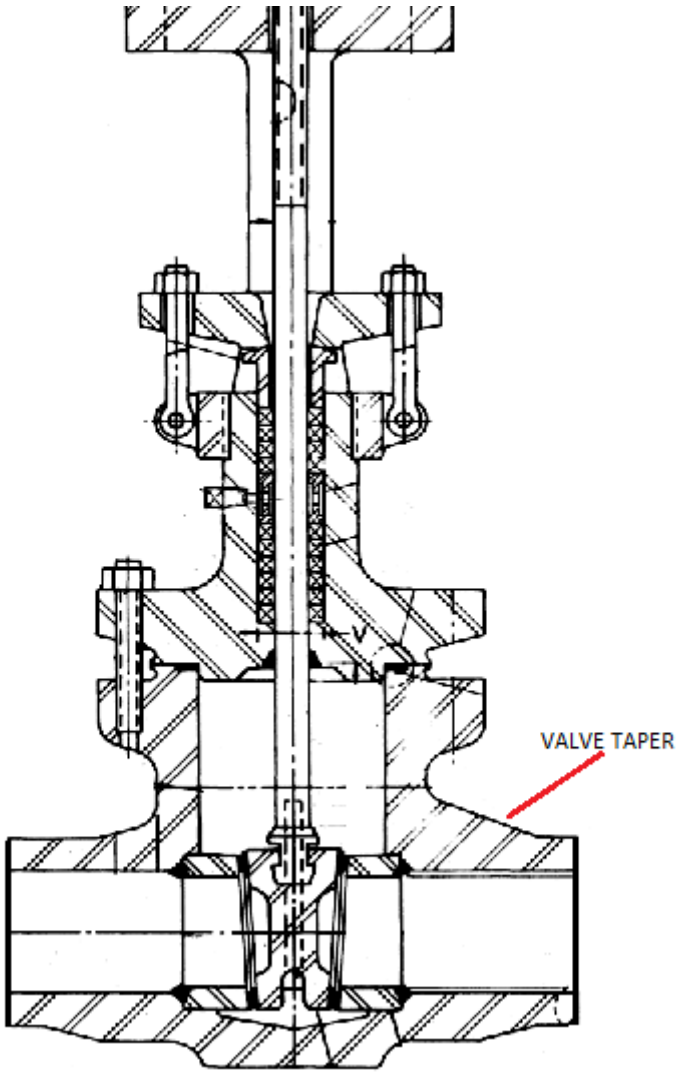


Figure 3ISI-18.1 Valve taper on RHR-V-112A and B for welds 12RRC(7)A-1 and 12RRC(7)B-1.

Relief Request 3ISI-18

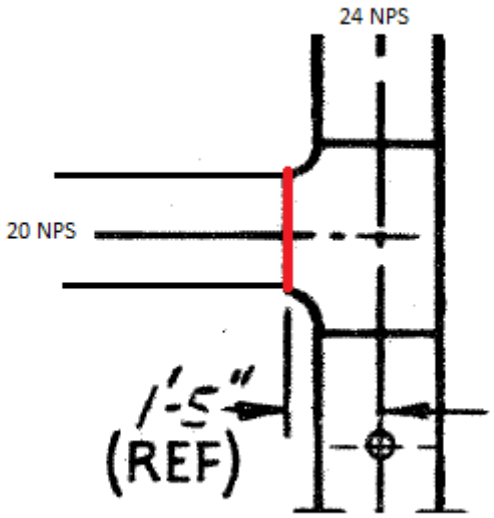


Figure 3ISI-18.2 Taper on 20NPS RRC Reducing Tee for weld 20RRC(6)-1 highlighted in red.

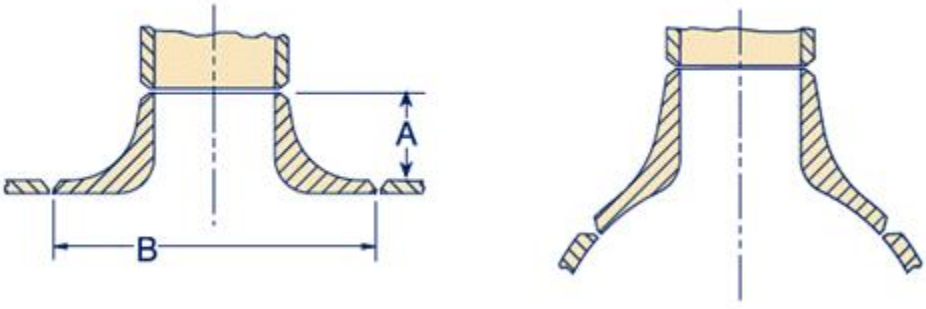


Figure 3ISI-18.3 Standard Sweep-O-Let contours for weld 24RRC(1)A-13/4RRC(8)-4S.

Relief Request 3ISI-18

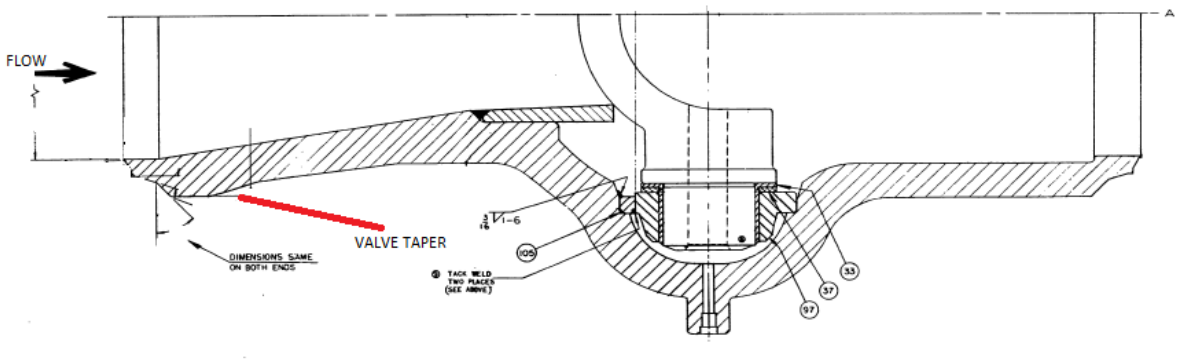
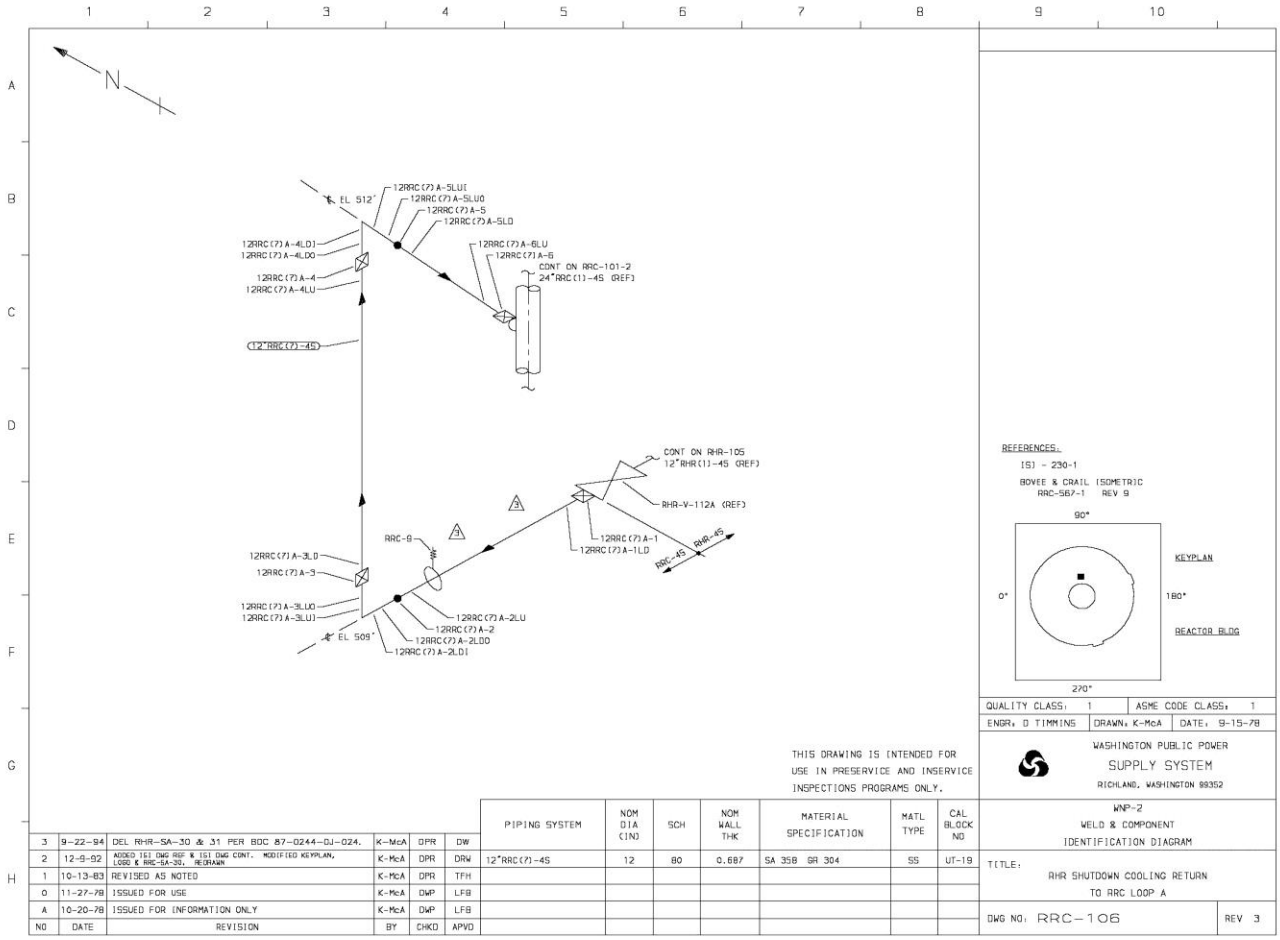


Figure 3ISI-18.4 Valve taper on RRC-V-60A for weld 24RRC(1)A-15

Relief Request 3ISI-18

DWG: RRC-106

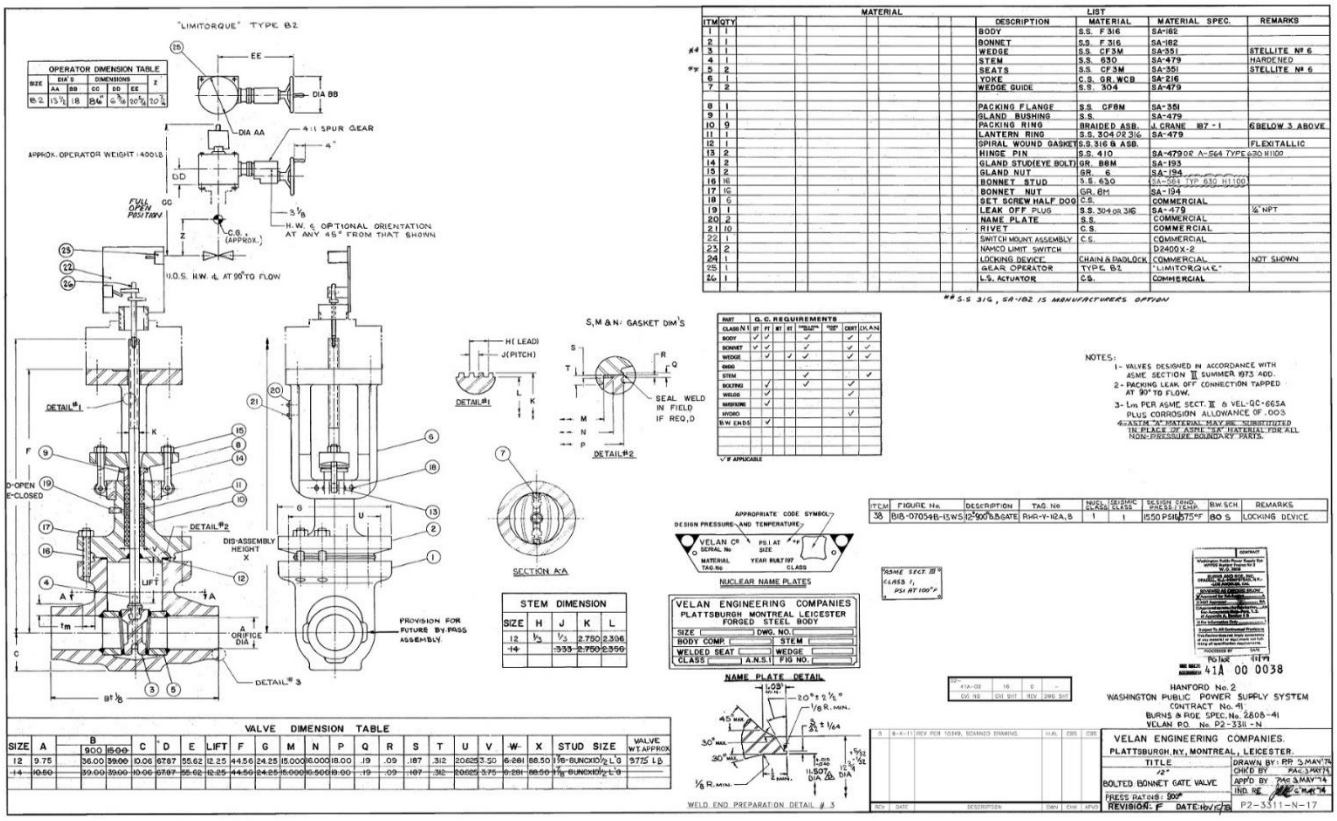


NO	DATE	REVISION	BY	CHKD	APVD
3	9-22-94	DEL RHR-SA-30 & 31 PER BOC 87-0244-DJ-024.	K-McA	DPR	DW
2	12-5-92	ADDED ISI DWG REF & ISI DWG CONT. MODIFIED KEYPLAN, LOGO & RRC-SA-32, REDRAWN	K-McA	DPR	DRW
1	10-13-83	REVISED AS NOTED	K-McA	DPR	TFH
0	11-27-78	ISSUED FOR USE	K-McA	DWP	LFB
A	10-20-78	ISSUED FOR INFORMATION ONLY	K-McA	DWP	LFB

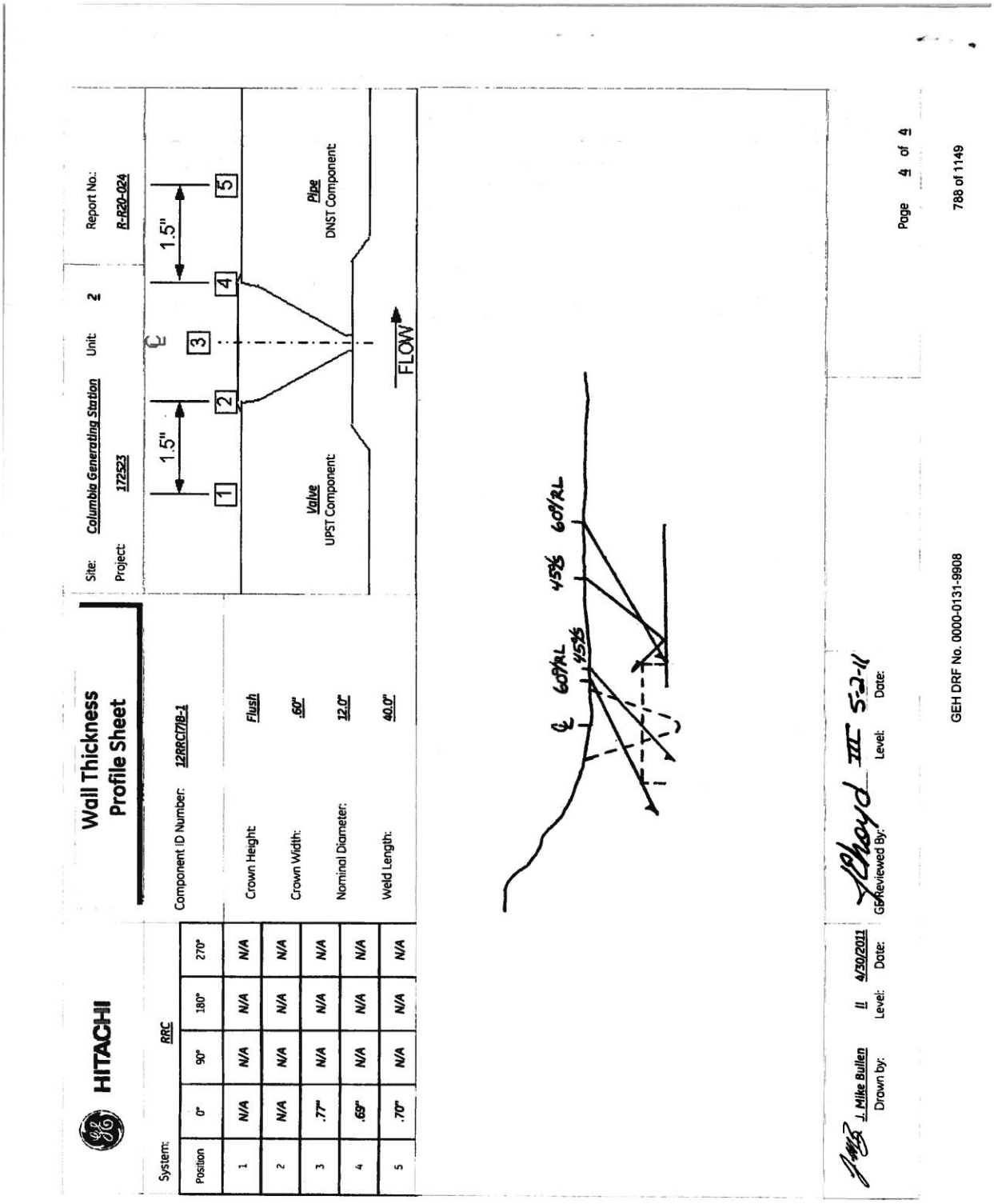
PIPING SYSTEM	NOM DIA (IN)	SCH	NOM WALL THK	MATERIAL SPECIFICATION	MATL TYPE	CAL BLOCK NO
12"RRC(7)-45	12	80	0.687	SA 358 GR 304	SS	UT-19

Relief Request 3ISI-18

DWG: CVI 41A-00,16 (Valve RHR-V-112A)



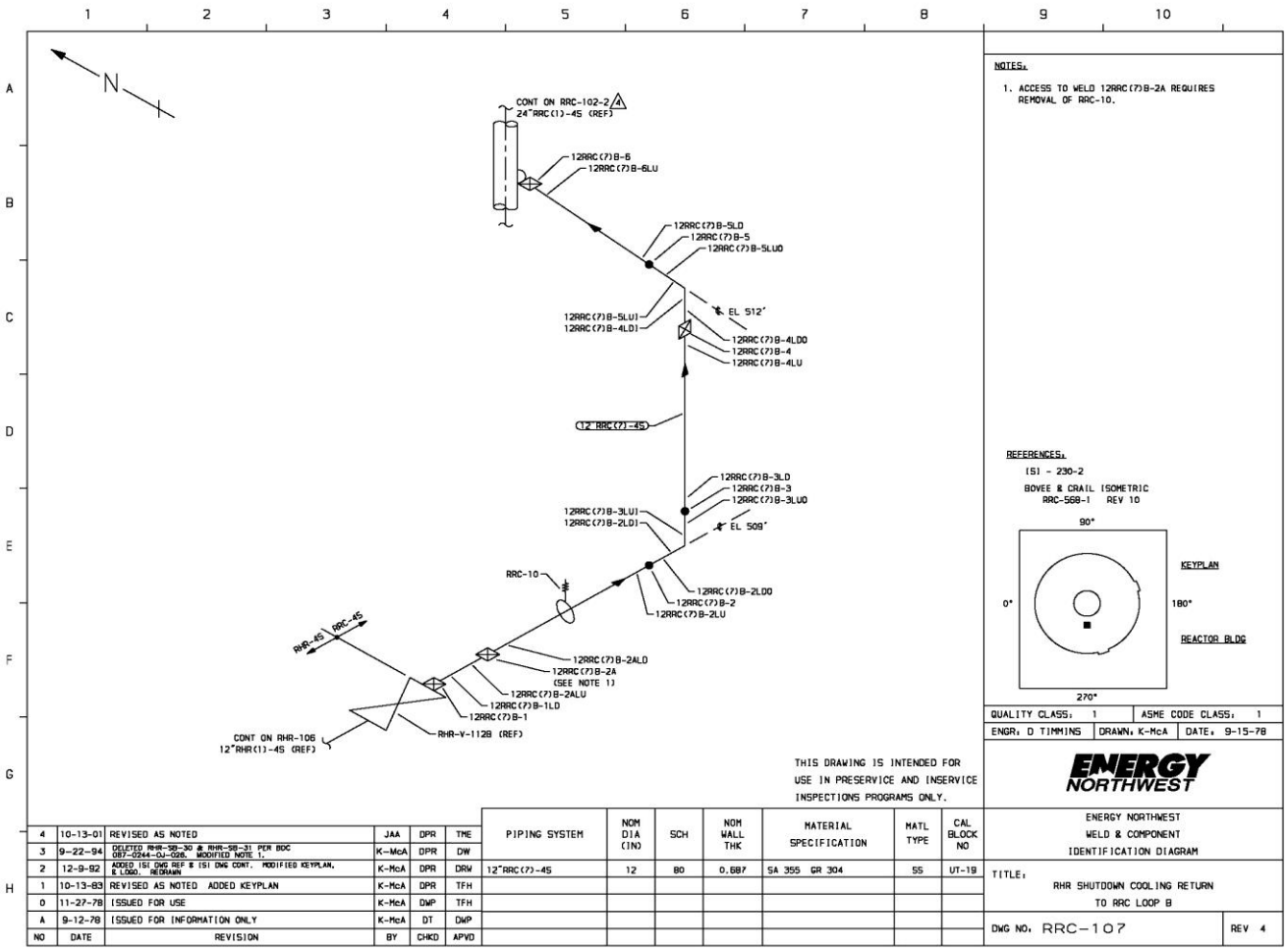
Relief Request 3ISI-18



Scan Plan for UT Report on RRC-107 weld

Relief Request 3ISI-18

DWG: RRC-107



NOTES:

1. ACCESS TO WELD 12RRC(7)B-2A REQUIRES REMOVAL OF RRC-10.

REFERENCES:

(S) - 230-2
BOVEE & CRAIL ISOMETRIC
RRC-568-1 REV 10

QUALITY CLASS: 1 | ASME CODE CLASS: 1
ENGR: D TIMMINS | DRAWN: K-McA | DATE: 9-15-78

THIS DRAWING IS INTENDED FOR USE IN PRESERVICE AND INSERVICE INSPECTIONS PROGRAMS ONLY.

ENERGY NORTHWEST

NO	DATE	REVISION	BY	CHKD	APVD
4	10-13-01	REVISED AS NOTED	JAA	DPR	TME
3	9-22-94	DELETED RHR-SB-30 & RHR-SB-31 PER BDC 087-0244-GU-S06. MODIFIED NOTE 1.	K-McA	DPR	DW
2	12-9-92	ADDED ISI DWG REF & ISI DWG CONT. MODIFIED KEYPLAN, & LOGO. REDRAWN	K-McA	DPR	DRW
1	10-13-83	REVISED AS NOTED ADDED KEYPLAN	K-McA	DPR	TFH
0	11-27-78	ISSUED FOR USE	K-McA	DWP	TFH
A	9-12-78	ISSUED FOR INFORMATION ONLY	K-McA	DT	DWP

PIPING SYSTEM	NOM DIA (IN)	SCH	NOM WALL THK	MATERIAL SPECIFICATION	MATL TYPE	CAL BLOCK NO
12"RRC(7)-4S	12	80	0.687	SA 355 GR 304	S5	UT-19

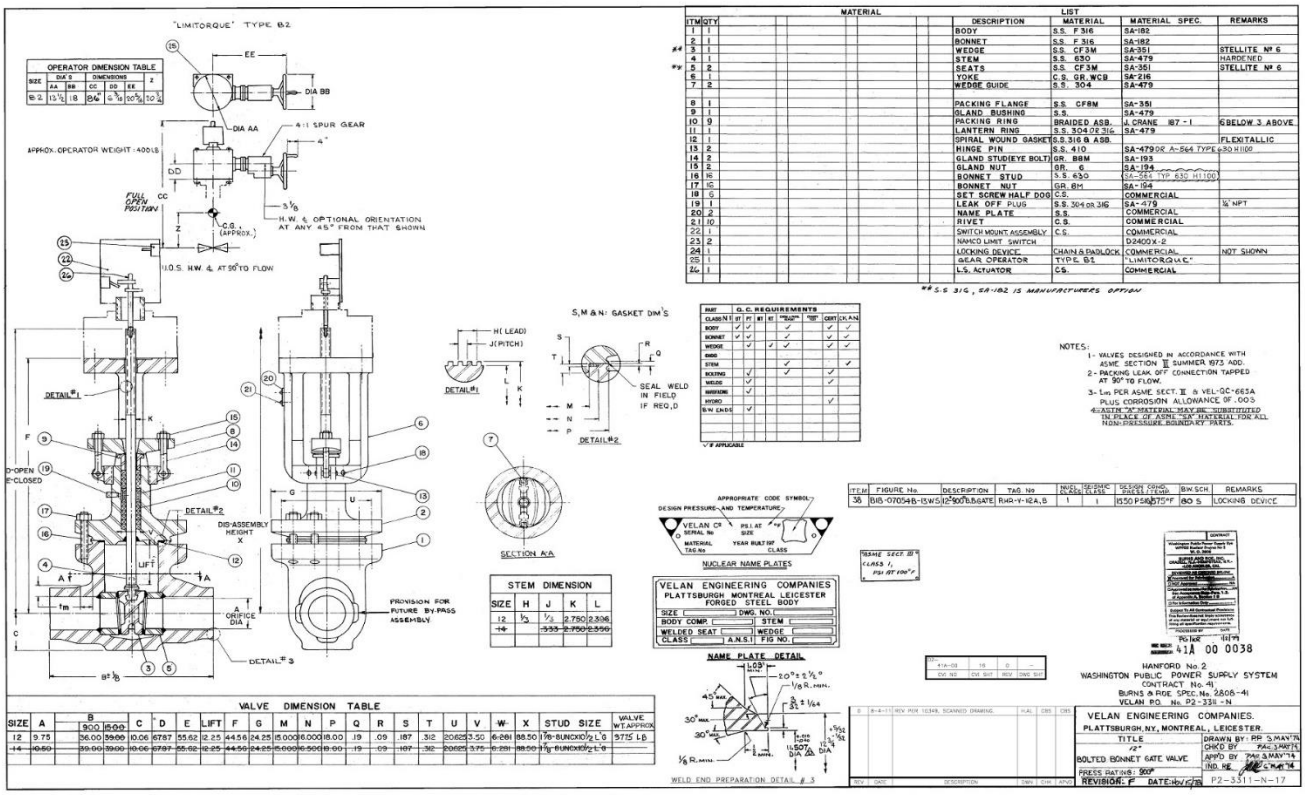
ENERGY NORTHWEST
WELD & COMPONENT
IDENTIFICATION DIAGRAM

TITLE:
RHR SHUTDOWN COOLING RETURN
TO RRC LOOP B

DWG NO. RRC-107 REV 4

Relief Request 3ISI-18

DWG: CVI 41A-00,16 (Valve RHR-V-112B)



VALVE DIMENSION TABLE																						
SIZE	A	B 900	B 600	C	D	E	LIFT	F	G	M	N	P	Q	R	S	T	U	V	W	X	STUD SIZE	VALVE WT APPROX
12	9.75	36.00	39.00	10.06	6787	55.62	2.25	44.56	24.25	15.00	16.000	18.00	.19	.09	.187	.312	20625	3.50	6-281	88.50	1⅛-8UNC X 10½ L G	5775 LB
14	10.50	39.00	39.00	10.06	6787	55.62	2.25	44.56	24.25	15.000	16.500	18.00	.19	.09	.187	.312	20625	3.75	6-281	88.50	1⅛-8UNC X 10½ L G	

STEM DIMENSION				
SIZE	H	J	K	L
12	⅓	⅞	2.750	2.306
14		.535	2.750	2.599

ITEM	FIGURE No.	DESCRIPTION	TAG. No	MATL SPEC/GRADE CLASS	DESIGN COND. PRESS/TEMP	B/W SCH	REMARKS
38	815-07054B-15WS	12" 900# BB GATE	RHR-V-112A,B	1 1	1550 PSIG/575°F	80 S	LOCKING DEVICE

MATERIAL LIST				
ITM	QTY	DESCRIPTION	MATERIAL	MATERIAL SPEC.	REMARKS
1	1	BODY	S.S. F 316	SA-182	
2	1	BONNET	S.S. F 316	SA-182	
#4 3	1	WEDGE	S.S. CF3M	SA-351	STELLITE Nº 6
4	1	STEM	S.S. 630	SA-479	HARDENED
#9 5	2	SEATS	S.S. CF3M	SA-351	STELLITE Nº 6
6	1	YOKE	C.S. GR. WCB	SA-216	
7	2	WEDGE GUIDE	S.S. 304	SA-479	
8	1	PACKING FLANGE	S.S. CF8M	SA-351	
9	1	GLAND BUSHING	S.S.	SA-479	
10	9	PACKING RING	BRAIDED ASB.	J. CRANE 187-1	6 BELOW 3 ABOVE
11	1	LANTERN RING	S.S. 304 OR 316	SA-479	
12	1	SPIRAL WOUND GASKET	S.S. 316 & ASB.		FLEXITALLIC
13	2	HINGE PIN	S.S. 410	SA-479 OR A-564 TYPE 630 H1100	
14	2	GLAND STUD (EYE BOLT)	GR. B8M	SA-193	
15	2	GLAND NUT	GR. 6	SA-194	
16	16	BONNET STUD	S.S. 630	SA-564 TYP 630 H1100	
17	16	BONNET NUT	GR. 8M	SA-194	
18	6	SET SCREW HALF DOG	C.S.	COMMERCIAL	
19	1	LEAK OFF PLUG	S.S. 304 OR 316	SA-479	½ NPT
20	2	NAME PLATE	S.S.	COMMERCIAL	
21	10	RIVET	C.S.	COMMERCIAL	
22	1	SWITCH MOUNT ASSEMBLY	C.S.	COMMERCIAL	
23	2	NAMCO LIMIT SWITCH		D2400X-2	
24	1	LOCKING DEVICE	CHAIN & PADLOCK	COMMERCIAL	NOT SHOWN
25	1	GEAR OPERATOR	TYPE B1	"LIMITORQUE"	
26	1	L.S. ACTUATOR	C.S.	COMMERCIAL	

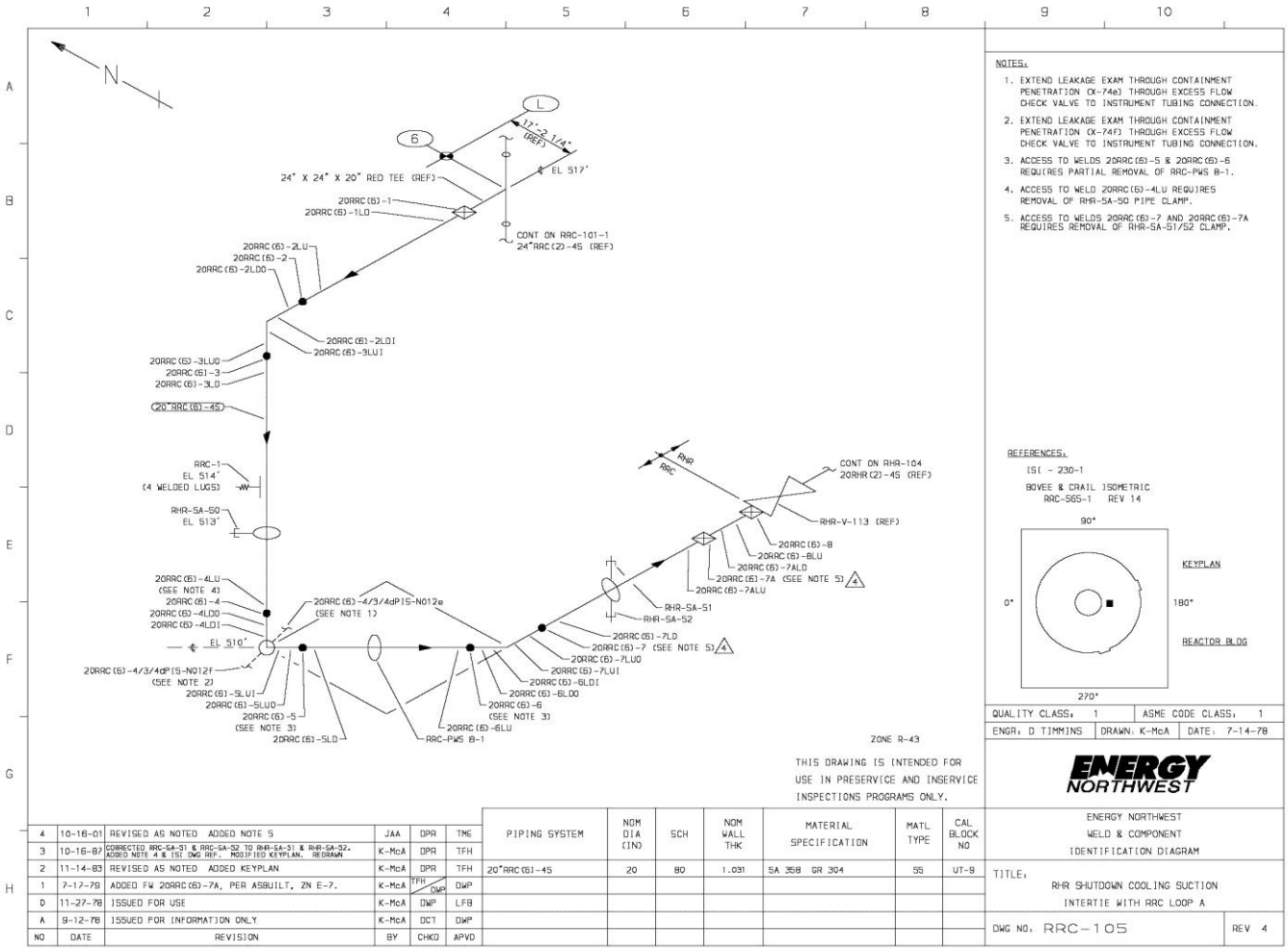
** S.S. 316, SA-182 IS MANUFACTURERS OPTION

G.C. REQUIREMENTS								
PART	CLASS N	PT	MT	RT	VISUAL EXAM	UT	CERT	CK. ANAL
BODY		✓	✓			✓	✓	✓
BONNET		✓	✓			✓	✓	✓
WEDGE		✓		✓	✓		✓	✓
GUIDE								
STEM					✓			✓
SEATING		✓			✓		✓	
WELDS		✓					✓	
HARDFACING		✓						
HYDRO							✓	
B/W ENDS		✓						

✓ = APPLICABLE

Relief Request 3ISI-18

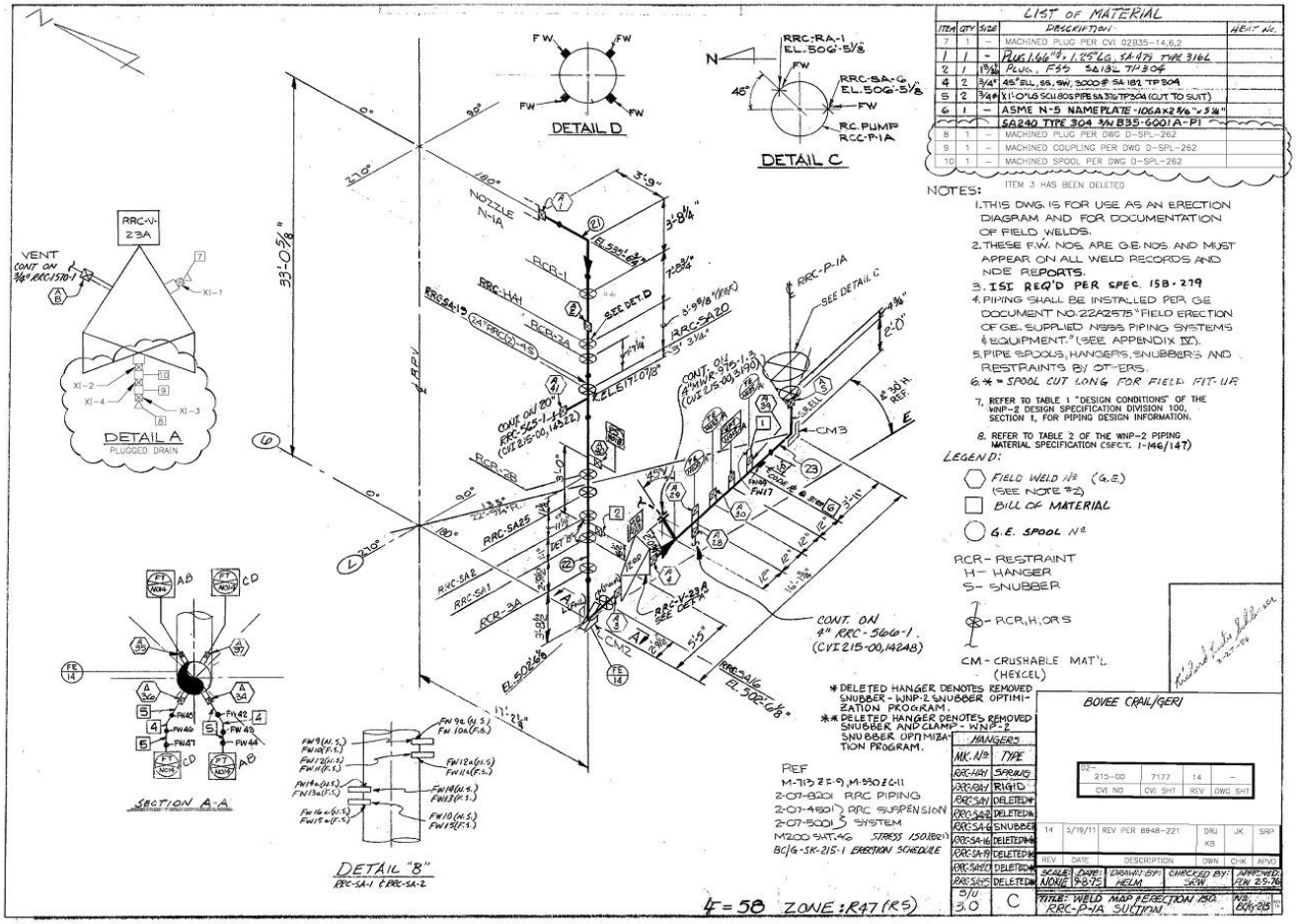
DWG: RRC-105



NO	DATE	REVISION	BY	CHKD	APVD	PIPING SYSTEM	NOM DIA (IN)	SCH	NOM WALL THK	MATERIAL SPECIFICATION	MATL TYPE	CAL BLOCK NO
4	10-16-01	REVISED AS NOTED ADDED NOTE 5	JAA	DPR	TME							
3	10-16-87	CORRECTED RRC-SA-51 & RRC-SA-52 TO RHR-SA-51 & RHR-SA-52. ADDED NOTE 4 & ISI DWG REF. MODIFIED KEYPLAN. REDRAWN	K-McA	DPR	TFH							
2	11-14-83	REVISED AS NOTED ADDED KEYPLAN	K-McA	DPR	TFH	20"RRC(6)-45	20	80	1.031	SA 358 GR 304	SS	UT-9
1	7-17-79	ADDED FW 20RRC(6)-7A, PER ASBUILT, ZN E-7.	K-McA	TFH DWP	DWP							
0	11-27-78	ISSUED FOR USE	K-McA	DWP	LFB							
A	9-12-78	ISSUED FOR INFORMATION ONLY	K-McA	DCT	DWP							

Relief Request 3ISI-18

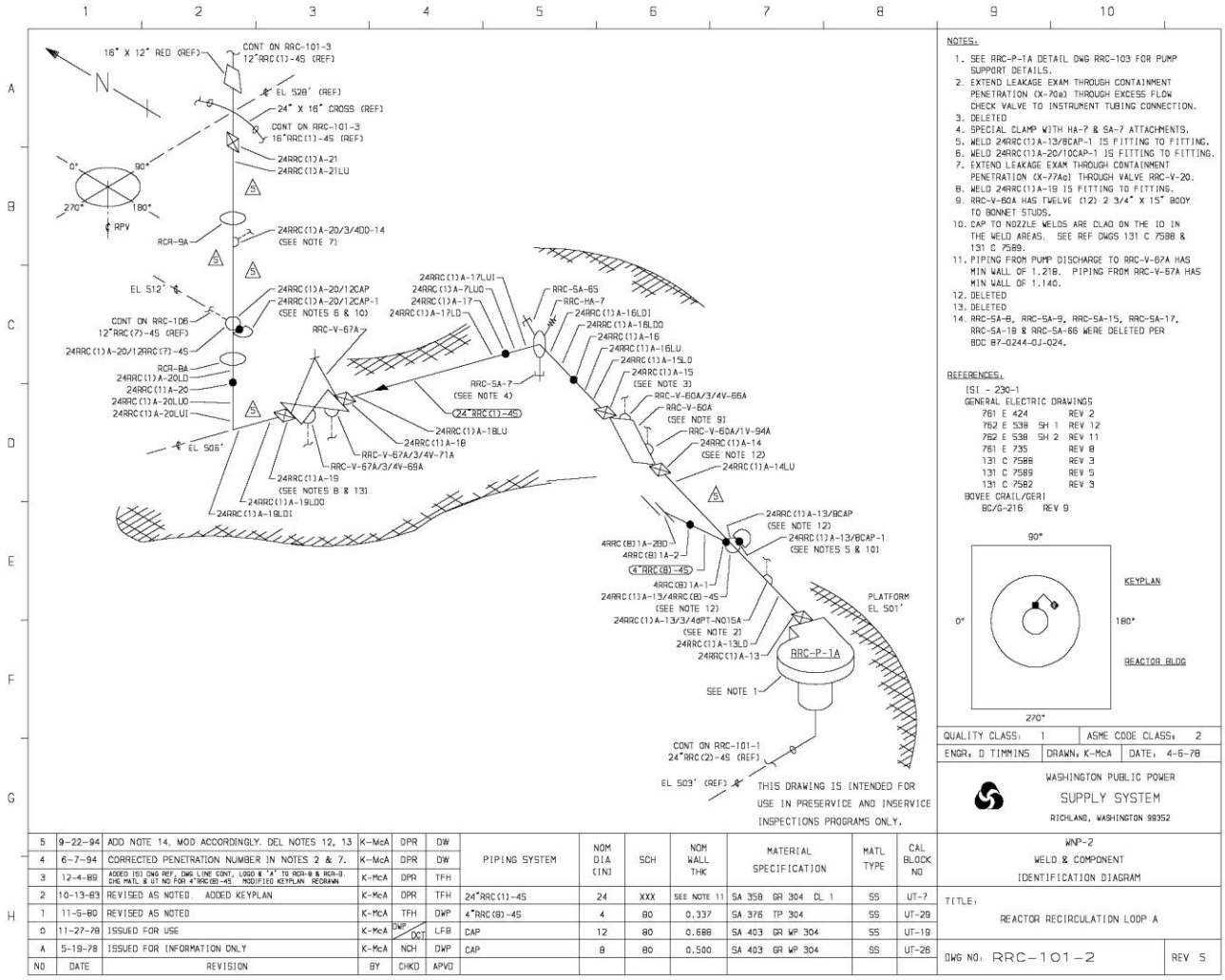
DWG: CVI 215-00,7177



Certified Vendor Drawing showing relative location of branch connection for 20RRC(6)-1.

Relief Request 3ISI-18

DWG: RRC-101-2



NOTES:

1. SEE RRC-P-1A DETAIL DWG RRC-103 FOR PUMP SUPPORT DETAILS.
2. EXTEND LEAKAGE EXAM THROUGH CONTAINMENT PENETRATION (X-70a) THROUGH EXCESS FLOW CHECK VALVE TO INSTRUMENT TUBING CONNECTION.
3. DELETED
4. SPECIAL CLAMP WITH HA-7 & SA-7 ATTACHMENTS.
5. WELD 24RRC(1)A-13/8CAP-1 IS FITTING TO FITTING.
6. WELD 24RRC(1)A-20/10CAP-1 IS FITTING TO FITTING.
7. EXTEND LEAKAGE EXAM THROUGH CONTAINMENT PENETRATION (X-77Ao) THROUGH VALVE RRC-V-20.
8. WELD 24RRC(1)A-19 IS FITTING TO FITTING.
9. RRC-V-60A HAS TWELVE (12) 2 3/4" X 15" BODY TO BONNET STUDS.
10. CAP TO NOZZLE WELDS ARE CLAD ON THE ID IN THE WELD AREAS. SEE REF DWGS 131 C 7588 & 131 C 7589.
11. PIPING FROM PUMP DISCHARGE TO RRC-V-67A HAS MIN WALL OF 1.218. PIPING FROM RRC-V-67A HAS MIN WALL OF 1.140.
12. DELETED
13. DELETED
14. RRC-5A-8, RRC-5A-9, RRC-5A-15, RRC-5A-17, RRC-5A-18 & RRC-5A-66 WERE DELETED PER BOC 87-0244-0J-024.

REFERENCES:

ISI - 230-1
GENERAL ELECTRIC DRAWINGS
761 E 424 REV 2
762 E 538 SH 1 REV 12
762 E 538 SH 2 REV 11
761 E 735 REV 8
131 C 7588 REV 3
131 C 7589 REV 5
131 C 7582 REV 3
BOVEE CRAIL/GERI
BC/G-216 REV 9

5	9-22-94	ADD NOTE 14, MOD ACCORDINGLY. DEL NOTES 12, 13	K-McA	DPR	DW	PIPING SYSTEM	NOM DIA (IN)	SCH	NOM WALL THK	MATERIAL SPECIFICATION	MATL TYPE	CAL BLOCK NO
4	6-7-94	CORRECTED PENETRATION NUMBER IN NOTES 2 & 7.	K-McA	DPR	DW							
3	12-4-89	ADDED (8) DWG REF, DWG LINE CONT, LOGO & "A" TO RCR-8 & RCR-9. CHG MATL & UT NO FOR 4"RRC(8)-4S. MODIFIED KEYPLAN. REDRAWN	K-McA	DPR	TFH							
2	10-13-83	REVISED AS NOTED. ADDED KEYPLAN	K-McA	DPR	TFH	24"RRC(1)-4S	24	XXX	SEE NOTE 11	SA 358 GR 304 CL 1	SS	UT-7
1	11-5-80	REVISED AS NOTED	K-McA	TFH	DWP	4"RRC(8)-4S	4	80	0.337	SA 376 TP 304	SS	UT-29
0	11-27-79	ISSUED FOR USE	K-McA	DWP/DCT	LFB	CAP	12	80	0.688	SA 403 GR WP 304	SS	UT-19
A	5-19-78	ISSUED FOR INFORMATION ONLY	K-McA	NCH	DWP	CAP	8	80	0.500	SA 403 GR WP 304	SS	UT-26
NO	DATE	REVISION	BY	CHKD	APVD							

QUALITY CLASS: 1 | ASME CODE CLASS: 2
ENGR: D TIMMINS | DRAWN: K-McA | DATE: 4-6-78

WASHINGTON PUBLIC POWER
SUPPLY SYSTEM
RICHLAND, WASHINGTON 99352

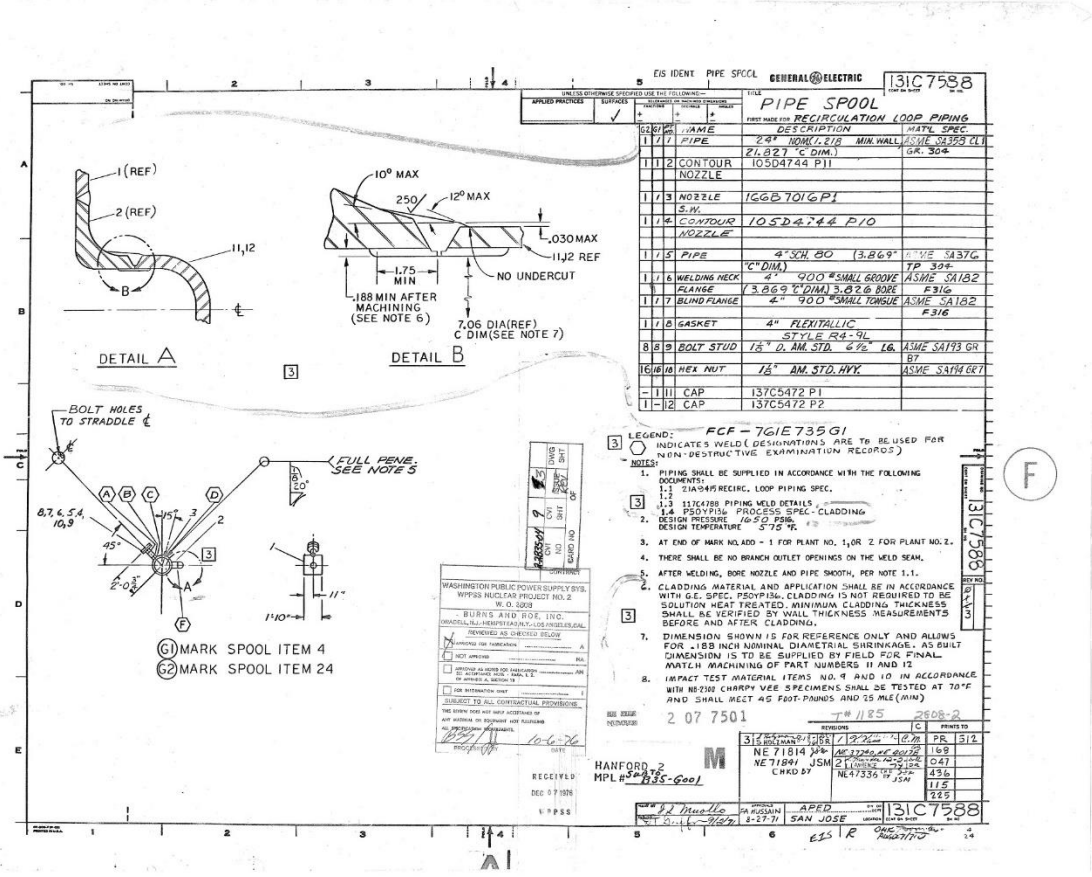
WNP-2
WELD & COMPONENT
IDENTIFICATION DIAGRAM

TITLE:
REACTOR RECIRCULATION LOOP A

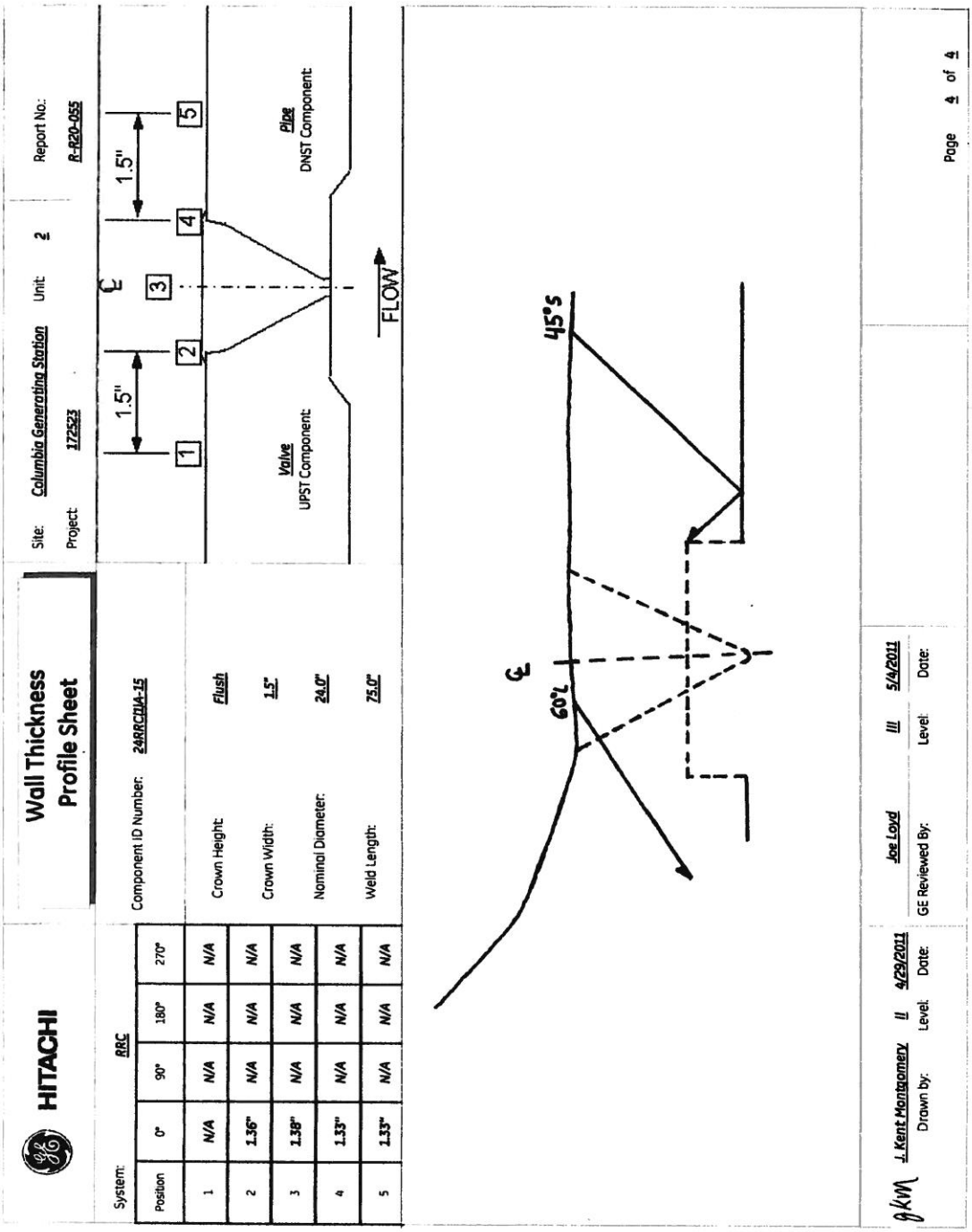
DWG NO: RRC-101-2 REV 5

Relief Request 3ISI-18

DWG: CVI 02B35-04,9



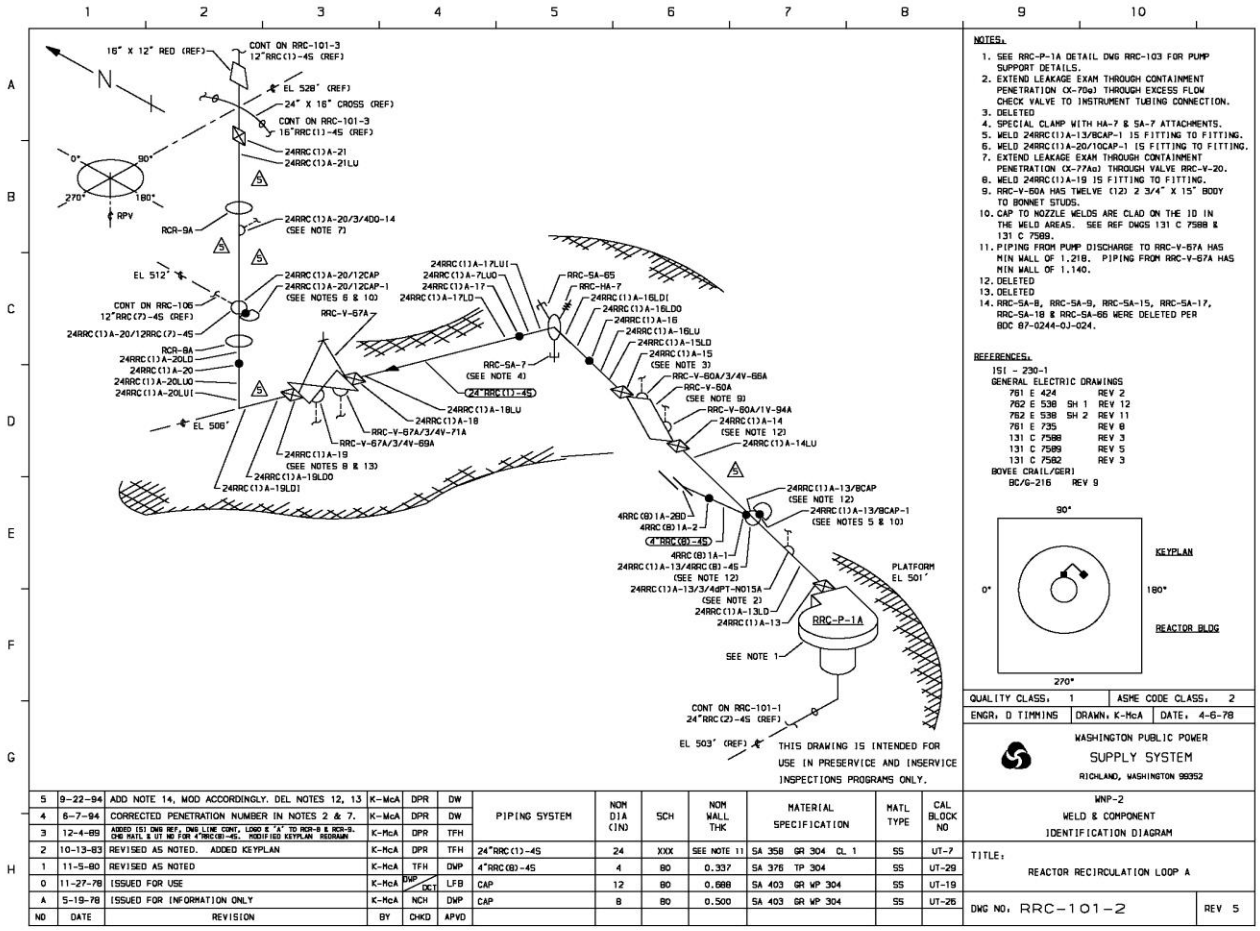
Relief Request 3ISI-18



Scan Plan for UT Report on RRC-101-2

Relief Request 3ISI-18

DWG: RRC-101-2



NOTES:

1. SEE RRC-P-1A DETAIL DWG RRC-103 FOR PUMP SUPPORT DETAILS.
2. EXTEND LEAKAGE EXAM THROUGH CONTAINMENT PENETRATION (X-70a) THROUGH EXCESS FLOW CHECK VALVE TO INSTRUMENT TUBING CONNECTION.
3. DELETED
4. SPECIAL CLAMP WITH HA-7 & SA-7 ATTACHMENTS.
5. WELD 24RRC(1)A-13/BCAP-1 IS FITTING TO FITTING.
6. WELD 24RRC(1)A-20/10CAP-1 IS FITTING TO FITTING.
7. EXTEND LEAKAGE EXAM THROUGH CONTAINMENT PENETRATION (X-77Aa) THROUGH VALVE RRC-V-20.
8. WELD 24RRC(1)A-19 IS FITTING TO FITTING.
9. RRC-V-69A HAS TWELVE (12) 2 3/4" X 15" BODY TO BONNET STUDS.
10. CAP TO NOZZLE WELDS ARE CLAD ON THE ID IN THE WELD AREAS. SEE REF DWGS 131 C 7588 & 131 C 7589.
11. PIPING FROM PUMP DISCHARGE TO RRC-V-67A HAS MIN WALL OF 1.218. PIPING FROM RRC-V-67A HAS MIN WALL OF 1.140.
12. DELETED
13. DELETED
14. RRC-SA-8, RRC-SA-9, RRC-SA-15, RRC-SA-17, RRC-SA-18 & RRC-SA-66 WERE DELETED PER BDC 87-0244-0J-024.

REFERENCES:

ISI - 230-1
GENERAL ELECTRIC DRAWINGS
761 E 424 REV 2
762 E 538 SH 1 REV 12
762 E 538 SH 2 REV 11
761 E 735 REV 8
131 C 7588 REV 3
131 C 7589 REV 5
131 C 7582 REV 3
BOVEE CRAIL/GER)
BC/G-216 REV 9

QUALITY CLASS: 1	ASME CODE CLASS: 2
ENGR: D TIMMINS	DRAWN: K-McA DATE: 4-6-78

WASHINGTON PUBLIC POWER SUPPLY SYSTEM
RICHLAND, WASHINGTON 99352

NO	DATE	REVISION	BY	CHKD	APVD
5	9-22-94	ADD NOTE 14, MOD ACCORDINGLY. DEL NOTES 12, 13	K-McA	DPR	DW
4	8-7-94	CORRECTED PENETRATION NUMBER IN NOTES 2 & 7.	K-McA	DPR	DW
3	12-4-89	ADDED (5) DWG REF, DWG LINE CONT, LOGO & "A" TO RCR-8 & RCR-9. CHG MATL & UT NO FOR 4"RRC(B)-4S. MODIFIED KEYPLAN REDRAWN	K-McA	DPR	TFH
2	10-13-83	REVISED AS NOTED. ADDED KEYPLAN	K-McA	DPR	TFH
1	11-5-80	REVISED AS NOTED	K-McA	TFH	DWP
0	11-27-78	ISSUED FOR USE	K-McA	DWP DCT	LFB
A	5-19-78	ISSUED FOR INFORMATION ONLY	K-McA	NCH	DWP

PIPING SYSTEM	NOM DIA (IN)	SCH	NOM WALL THK	MATERIAL SPECIFICATION	MATL TYPE	CAL BLOCK NO
24"RRC(1)-4S	24	XXX	SEE NOTE 11	SA 358 GR 304 CL 1	SS	UT-7
4"RRC(B)-4S	4	80	0.337	SA 376 TP 304	SS	UT-29
CAP	12	80	0.688	SA 403 GR WP 304	SS	UT-19
CAP	8	80	0.500	SA 403 GR WP 304	SS	UT-26

WNP-2
WELD & COMPONENT IDENTIFICATION DIAGRAM

TITLE:
REACTOR RECIRCULATION LOOP A

DWG NO. RRC-101-2 REV 5

Attachment 4

Relief Request 3ISI-19

Relief Request 3ISI-19

10 CFR 50.55a Request Number 3ISI-19

NDE Coverage Limitations on Residual Heat Removal (RHR) Heat Exchanger Support Attachment Welds

1. ASME Code Component(s) Affected

Description:	Alternative Requirements to the Examination of RHR Heat Exchanger Attachment Welds
ASME Code Class:	Class 2
Examination Category:	C-C
Item Number:	C3.10
Components Affected:	RHR "A" Heat Exchanger Support Attachment Welds, AS-1

2. Applicable Code Edition and Addenda

The Columbia Generating Station (Columbia) Inservice Inspection (ISI) third ten-year interval ASME Section XI Code is the 2001 Edition through 2003 Addenda.

3. Applicable Code Requirement

ASME Section XI, Table IWC-2500-1, Examination Category C-C, "Welded Attachments for Vessels, Piping, Pumps, and Valves":

> Item C3.10 requires a surface examination of essentially 100% of required areas of each welded attachment in accordance with the examination requirements illustrated in Figure IWC-2500-5.

Code Case N-460

This Code Case states that when the entire examination volume or area cannot be examined due to interference by another component or part geometry, a reduction in examination coverage on any Class 1 or Class 2 weld may be accepted provided the reduction in coverage for that weld is less than 10%. The applicable examination records shall identify both the cause and percentage of reduced examination coverage.

4. Impracticality of Compliance

During magnetic particle examination of the support attachment welds to the "A" RHR heat exchanger, greater than 90% coverage of the required examination surface could not be obtained as required by NRC approved Code Case N-460.

The bottom welds on each of four (4) heat exchanger support welded attachments are inaccessible. The heat exchanger is oriented vertically and is approximately 357 inches high, 58 inches in diameter, and 65,000 lbs dry weight. The four supports rest on the

floor at elevation 572'-0" making the bottom welds inaccessible. The horizontal welds are 38 linear inches giving an arc length of 41.5 inches. The vertical weld length is 35 inches. Therefore the total weld length for each welded attachment (4 welds) (using arc length for the horizontal welds) is 153 inches. With the bottom welds being inaccessible, the examinable weld length for each support welded attachment is 111.5 inches. Therefore the examination coverage achieved for each of four RHR "A" heat exchanger support welded attachments is approximately 72% which is less than the Code requirement of greater than 90%.

Drawings are provided for reference and clarification.

5. Burden Caused by Compliance

To effectively perform any significant additional Code allowable surface examination, modification and/or replacement of the component would be required.

6. Proposed Alternative and Basis for Use

No alternative examination is proposed at this time.

Energy Northwest has examined these welds to the extent practical and determined that results are acceptable with no recordable indications. In addition to these examinations, other Category C-C attachment welds are examined as directed by the Inservice Inspection program and these results are also acceptable with no recordable indications.

The "A" RHR system is also subject to VT-2 visual examination during system pressure testing in accordance with the requirements of Examination Category C-H. There were no recorded leaks during the "A" RHR system pressure tests last interval.

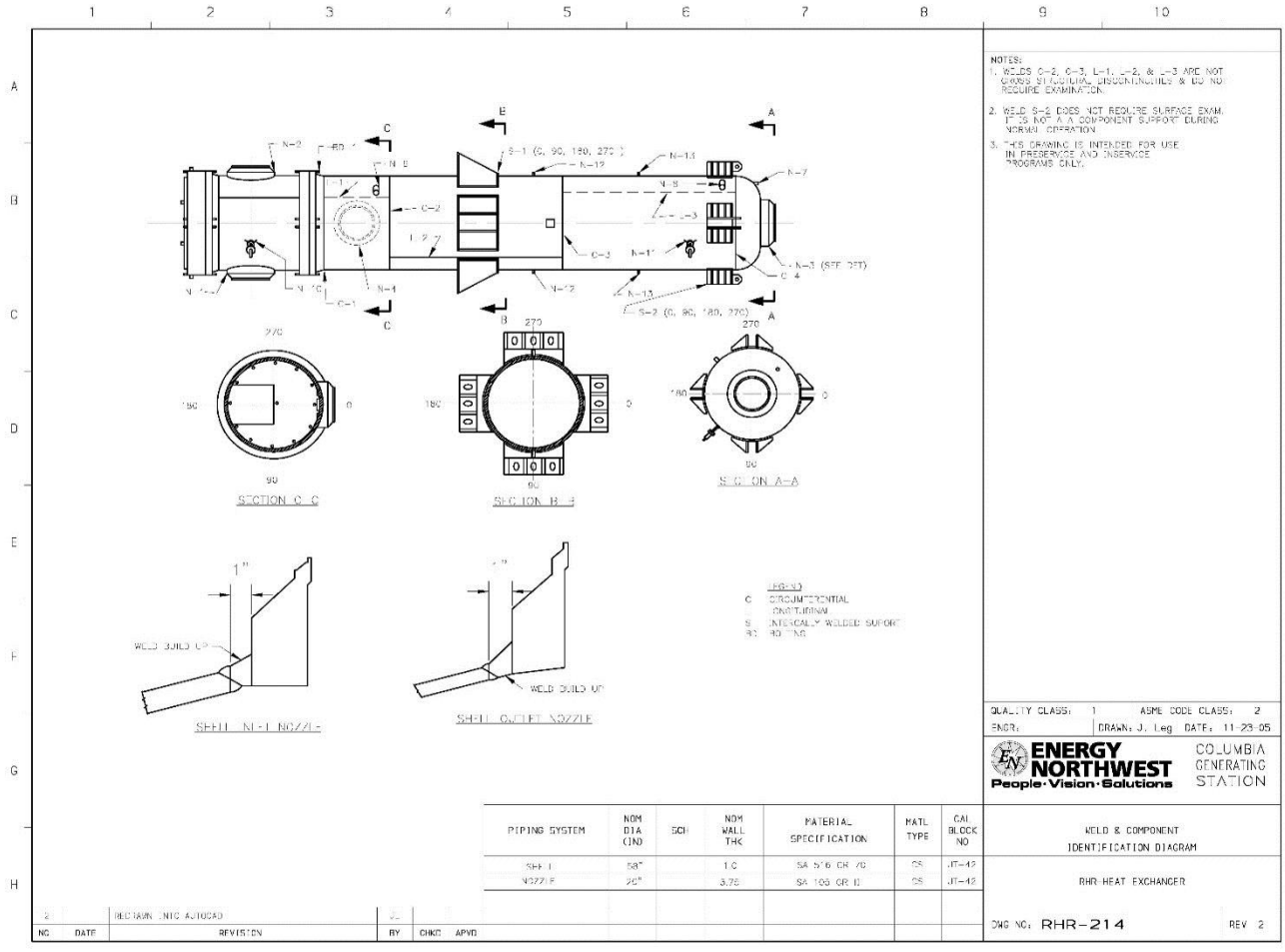
Energy Northwest requests the proposed relief be authorized pursuant to 10 CFR 50.55a(g)(6)(i).

7. Duration of Proposed Alternative

Relief is requested for the third ten-year inspection interval of the Inservice Inspection Program for Columbia Generating Station.

Relief Request 3ISI-19

DWG: RHR-214



Relief Request 3ISI-19

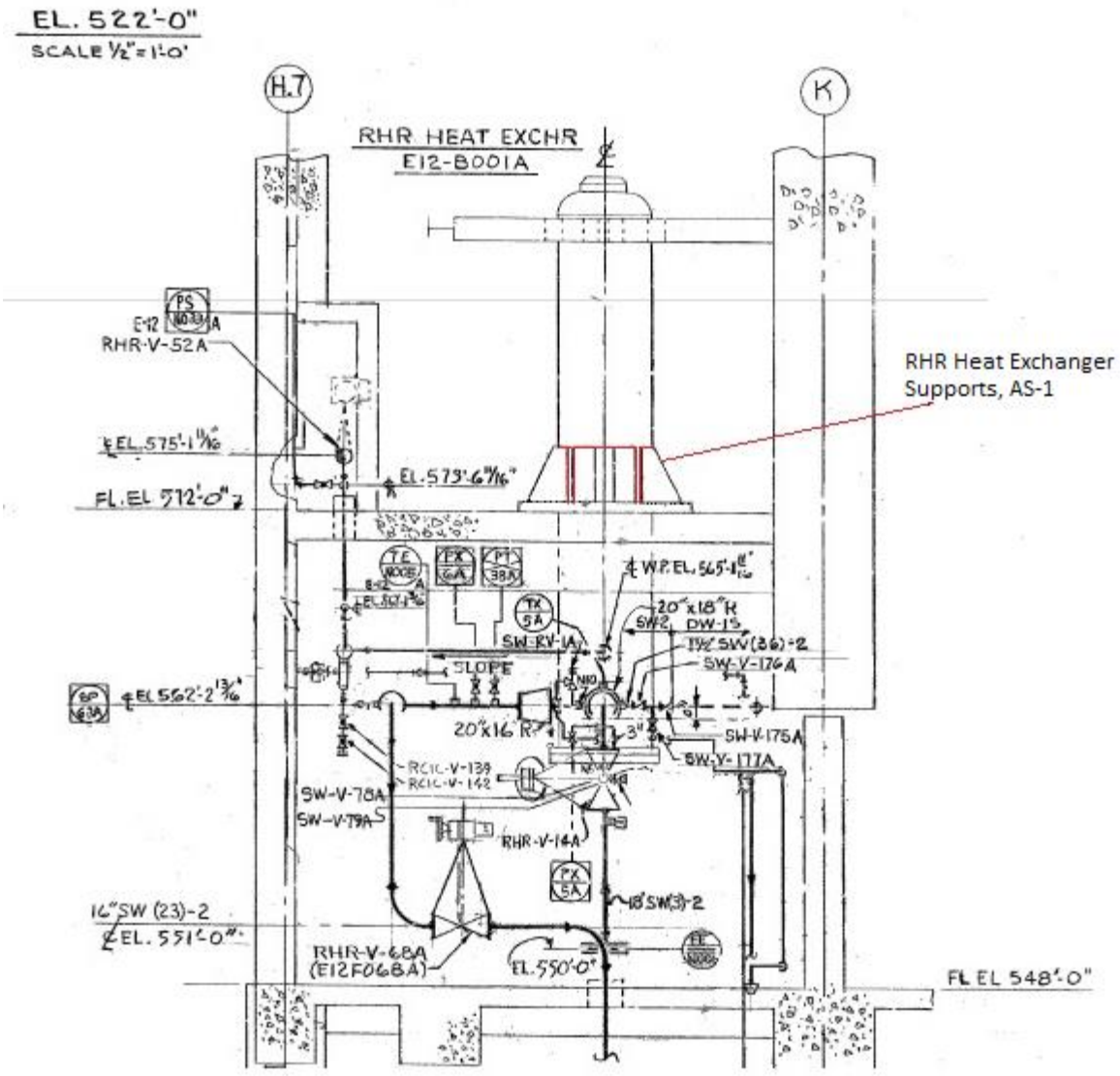


Figure 3ISI-19.1 Schematic of the A RHR Heat Exchanger showing building and physical impediments. Heat exchanger supports are mounted to the floor at elevation 572'.

Relief Request 3ISI-19

Figure 3ISI-19.2 Photograph of RHR heat exchanger S-1 supports with insulation. The Insulation is removed for surface examinations.