

WATTS BAR NUCLEAR PLANT

SURVEILLANCE INSTRUCTION

SI-4.4.10.1

PRESERVICE BASELINE INSPECTION
AND INSERVICE INSPECTION PROGRAM FOR
TENNESSEE VALLEY AUTHORITY
WATTS BAR NUCLEAR PLANT

UNITS 1 AND 2

Rev. By	Rev. No.	Date	Revised Pages
1		11/17/75	37,38,39,43,44, 58,58a,58b
2		1-24-79	4,37,38,39,43,44 58,58a-58c
3		3-19-79	19,25,41,45, 59-1 thru 59-7
4		4-11-79	2a and punchlines
5		4-30-79	2a,4,10,19,20, 25,38,41,43,44, 45,59-1 thru 59-7
6		5-22-79	60
7		6-12-79	Pgs.20,23,25,45 59-1 thru 59-13
8		8-8-79	8,26,37,45, 59-14 thru 59-19
9		8-16-79	26,45,59-20 thru 59-23
10	JDB	11-23-80	2a, 41, 45, added 59-24 - 30
11		1-28-80	2a, 71, 72

The last page of this instruction is number 72.

05/6

1C Plant Master File
 Superintendent
 1U Assistant Superintendent
 1U Mechanical Maintenance Supervisor
 1C Results Supervisor
 1C Operations Supervisor
 1C Quality Assurance Supervisor
 1C Health Physicist
 Administrative Supervisor
 Chemical Laboratory
 Instrument Shop
 1C Shift Engineer's Office
 1C Unit Control Room
 Health Physics Laboratory
 PSU Supervisor
 1C Mechanical Engineer
 Reactor Engineer
 Chemical Engineer
 Instrument Maintenance Supervisor
 2U Asst. Director of Nuc Power (Oper)
 1C Electrical Maintenance Supervisor
 2C Plant Industrial Engineer
 Outage Director
 1U NRC
 1C Nuclear Safety Review Staff
 1C Asst. Mechanical Maint. Supervisor
 1C Supervisor, Metallurgy And NDT Section, 505 EB-C
 1C Training Center Coordinator
 1C Nuclear Power QA Representative
 1U EN DES-MEB-NEG, 204 GB-K
 1U WBNP, Project Manager

Prepared By G. W. CurtisSubmitted By D. S. Willis

Supervisor

FORC Review 10-15-79

Date

Approved By [Signature]

Superintendent

Date Approved 10-15-79

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Various portions of the baseline and inservice program will be performed by either NUC PR QA Staff personnel or contractors retained as required. Contract preparation, administration, and supervision will be the responsibility of the NUC PR QA Staff.

Inspection plans and/or Quality Assurance Programs submitted by outside contractors shall be reviewed and approved by the NUC PR QA Staff and submitted to the plant superintendent for approval prior to use. All specific NDE procedures used during the inspection program shall be reviewed and approved in accordance with OQAM Part II, Section 6.3.

Whenever inspection requirements are being accomplished a NUC PR QA Staff representative shall be onsite to coordinate activities. The NUC PR QA Staff representative's responsibilities shall include but are not limited to: coordinating with Health Physics Section when work is to be accomplished in radiation areas, to ensure scaffolding and lighting is provided as required, to coordinate insulation removal in inspection areas and to interface with the Shift Engineer in regards to cold shutdown status of the unit. He will be the designated TVA representative to ensure contract compliance, proper disposition of needed procedure changes to both TVA and/or contractor procedures in accordance with approved vendor QA programs and Section 6.3, Part II of the OQAM.

Additionally the NUC PR QA Staff representative will be responsible for notifying the Plant QA Supervisor of all indications as soon as practical. Whenever an indication is discovered, the procedure and form in Appendix B shall be utilized. In those cases where an outside contractor is furnishing baseline and/or inservice inspection services, it will be the responsibility of the contractor to initiate the form in Appendix D under the supervision of the NUC PR QA Staff representative.

Ebasco Services Inc. has been selected as the contractor for providing personnel and equipment for the baseline inspection beginning January 23, 1980. Ebasco Services Inc. shall provide and maintain qualified personnel and certified equipment as required by Ebasco Services Inc. procedures. Ebasco Services Inc. QA manual, Revision 0, dated October 12, 1975, Section ISI-III-3, Control and Calibration of Measuring and Test Equipment; and Ebasco Services Inc. Procedure for Training, Examination, and Certification of Nondestructive Examination Personnel, Revision 8, dated January 1980, including any changes to these procedures, shall be reviewed and approved by NUC PR QA Staff and the plant superintendent before use.

3.1.8 Control Rod Drive Housings

There are 78 control rod housings penetrating the closure heads. The housings consist of a 6-inch O.D. adapter (A-182, 304SS) and a 4-inch O.D. body (SB-167, Inconel).

For the preservice baseline, approximately 17 CRD housing welds will be ultrasonically examined (17 peripheral CRD housing). Two welds shall be examined during the first inspection interval.

* 3.1.9 Auxiliary Head Adapter

There are four auxiliary head adapters. The adapters consist of (SB-166) steel, (SA-182 304SS), Inconel, Inconel butter, low alloy butter and SA-533. For the preservice baseline, 16 welds will be ultrasonically examined.

3.2 Pressurizer

3.2.1 Longitudinal and Circumferential Seam Welds

There are five circumferential seam welds, each approximately 24 feet in length, totaling 120 feet, and four vertical welds, totaling approximately 44 feet in the shell cylindrical region. All seam welds are accessible from the exterior surface and will be inspected from the O.D. as part of the preservice baseline and inservice inspection. There are no circumferential or meridional head welds.

All shell and head sections are fabricated of SA-533, Gr. A, class 2, manganese-molybdenum steel and are clad with austenitic stainless steel.

3.2.2 Nozzle-to-Vessel Welds and Nozzle Safe Ends

There are four 6-inch nozzles, one 4-inch nozzle, and one 14-inch nozzle and one 16-inch I.D. manway pad which will be examined ultrasonically from the O.D. for the preservice baseline and inservice inspection interval. The inside radii of each of these will be examined at the time the nozzle-to-vessel welds are being inspected.

4.3.1.3 Feedwater

- * There are 283 class B circumferential welds subject to examination. Approximately
- * 40 of these welds will be examined during the first inservice inspection interval, and welds during the 4 intervals and for the preservice baseline.

The entire system is carbon steel.

In appendix A, Table B lists the weld size, number of welds, scheduled inspections, and type of examinations. Weld maps are included in Attachment 7.

TVA intends to terminate feedwater class B on each feedwater loop after the outermost containment isolation valve (FCV 3-33, 3-47, 3-87, 3-100) for baseline and ISI purposes. This is consistent with Regulatory Guide 1.26.

4.3.2 Pressure-Retaining Bolting

Pressure-retaining bolting larger than 1 inch in diameter shall be visually examined for the preservice baseline and each inservice interval in accordance with IWC-2100 and IWC-2411 of Section XI. Ten percent of the pressure-retaining bolting (or 2 bolts or studs whichever is greater) in each joint selected for examination in accordance with IWC-2100 and IWC-2411 shall be ultrasonically examined for the preservice baseline and 4 inspection intervals.

4.3.3 Integrally-Welded Supports and Support Components

Integrally-welded supports shall be surface examined for the preservice baseline and during the inservice inspection intervals in accordance with IWC-2100 and IWC-2411.

All nonintegrally welded supports selected for examination in accordance with IWC-2100 and IWC-2411 shall be visually examined for the baseline and each inspection interval.

Unless a condition exists which should merit a detail record of the condition, only a checkoff sheet record will be maintained verifying visual inspection of supports.

TABLE A

Watts Bar Inservice Inspection Program - Class "A" Components

<u>Component</u>	<u>Total Sample</u>	<u>Sample Tested</u>	<u>Method of Inspection</u>	<u>Quantity Inspected</u>			<u>Examination Category From Table IWB-2600, Section XI</u>	<u>Reference Drawing Number and Remarks</u>	<u>Procedure Number</u>
				<u>40 Month</u>	<u>80 Month</u>	<u>120 Month</u>			
16. Vessel cladding	6 Patches		VT	2	2	2	B-I-1	N/A	N-VT-1
17. Vessel interior surfaces and core support structures			VT	General Surveillance			B-N-1 B-N-3	N/A	N-VT-1
* 18. Control rod drive housings	17	2	UT	1	1	-	B-O	* From O.D. & CEM2685B	* LMT-UT-2 Rev. 11 * LMT-UT-2 Rev. 11 and N-UT-1
* 19. Auxiliary Head Adapter	16	16	UT				B-B		
B. Pressurizer									
1. Circumferential welds	120 ft.	7.5 ft.	UT	1.5 ft.	3 ft.	3 ft.	B-B	From O.D.	LMT-UT-2 Rev. 11
2. Longitudinal welds	44 ft.	4 ft.	UT	1 ft.	1 ft.	2 ft.	B-B	CH-M-2570-A From O.D.	LMT-UT-2 Rev. 11
3. Nozzle-to-vessel welds and nozzle-to-vessel inside radius sections	7	7	UT	2	3	2	B-D	CH-M-2570-A From O.D.	LMT-UT-2 Rev. 11
4. Heater penetrations	78	20	VT	6	7	7	B-E	From exterior (IWA-5000)	N-VT-1
5. Nozzle-to-safe end welds	6	6	UT PT	2	2	2	B-F	From O.D.	WB-UT-1 WB-PT-1
6. Pressure-retaining bolting	16	16	VT	5	5	6	B-G-2		N-VT-1
7. Vessel support skirt weld	23 ft.	2.5 ft.	UT	.5 ft.	1 ft.	1 ft.	B-H	From O.D.	LMT-UT-2 Rev. 11
8. Vessel cladding	1 Patch		VT	1	--	--	B-I-2	Remote viewing	N-VT-1

Ø See ATTACHMENT 3

TABLE A

Watts Bar Inservice Inspection Program - Class "A" Components

Component	Total Sample	Sample Tested	Method of Inspection	Quantity Inspected			Examination Category From Table IWB-2600, Section XI	Reference Drawing Number and Remarks	Procedure Number
				40	80	120			
				Month	Month	Month			
3. Residual heat removal system									
Circumferential and socket welds									
14" SS	21		UT				B-J	From O. D. CH-M-2636-C	WB-UT-1
10" SS	10		UT				B-J	CH-M-2636-C	WB-UT-1
8" SS	13		UT				B-J	CH-M-2636-C	WB-UT-1
6" SS	15		UT				B-J	CH-M-2636-C	WB-UT-1
2" SS	(later)		PT				B-J	CH-M-2636-C	WB-PT-1
Branch pipe connection welds									
14" SS	1		UT				B-J	From O.D. CH-M-2636-C	WB-UT-1
6" SS	2		PT				B-J	CH-M-2636-C	WB-PT-1
2" SS	(later)		PT				B-J	CH-M-2636-C	WB-PT-1
Safety injection system									
Circumferential and socket welds									
* 10" SS			UT				B-J	From O.D. CH-M-2758-C	WB-UT-1
* 6" SS			UT				B-J	CH-M-2758-C	WB-UT-1
* 3" SS			UT				B-J	CH-M-2758-C	WB-UT-1
* 2-1/2" SS			PT				B-J	CH-M-2758-C	WB-PT-1
* 2" SS			PT				B-J	CH-M-2758-C	WB-PT-1
* 1-1/2" SS			PT				B-J	CH-M-2758-C	WB-PT-1

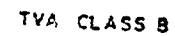
TABLE B

Watts Bar Inservice Inspection Program - Class "B" Components

Component	40-Year	Sample	Method of	Quantity Inspected			Examination Category	Reference	Procedure
	Sample	Tested	Inspection	From Table			Drawing Number		
				IWC-2600, Section XI			and Remarks	Number	
				40	80	120			
				Month	Month	Month			
C. Piping									
1. Residual heat removal system									
Circumferential welds									
18" SS	1		UT					CH-M-2636-C	WB-UT-1
14" SS	48		UT					CH-M-2636-C	WB-UT-1
12" SS	21		UT				C-F	CH-M-2636-C	WB-UT-1
10" SS	4		UT					CH-M-2636-C	WB-UT-1
8" SS	72		UT				C-F	CH-M-2636-C	WB-UT-1
Longitudinal Seam Welds	64		UT				C-F	CH-M-2636-C	WB-UT-1
2. Safety Injection System									
Circumferential Welds									
* 8" SS			UT				C-F	From O.D.	
* 6" SS			UT				C-F	CH-M-2758-C	WB-UT-1
3. Main Steam									
Circumferential welds									
32" CS	15		UT				C-G	From O.D.	
30" CS	2		UT				C-G	CH-M-2669-C	WB-UT-1
9" CS	3		UT				C-G	CH-M-2669-C	WB-UT-1
6" CS	2		UT				C-G	CH-M-2669-C	WB-UT-1
4. Feedwater									
Circumferential welds									
18" CS	1		UT				C-G	From O.D.	
16" CS	11		UT				C-G	CH-M-2671-C	N-UT-1
6" CS	28		UT				C-G	Sheets 1-4	N-UT-1
							C-G	Sheets 5-8	*N-UT-1

For Rodney Daniel, PPMB

By: Tommy L. Kille Date 8-8-79



PIPE

18 SA-333 GR-6 SCH 80

15-54-333 GR-6 SCH 80

FITTINGS

16" X 16" SA-420 WPLS SCH 80, 5MLS

16° 90' E IIS 4-620 W FL 6 SCH 80, SMLS

REF. DRAWING:

DRAVO E-2879 IC-1

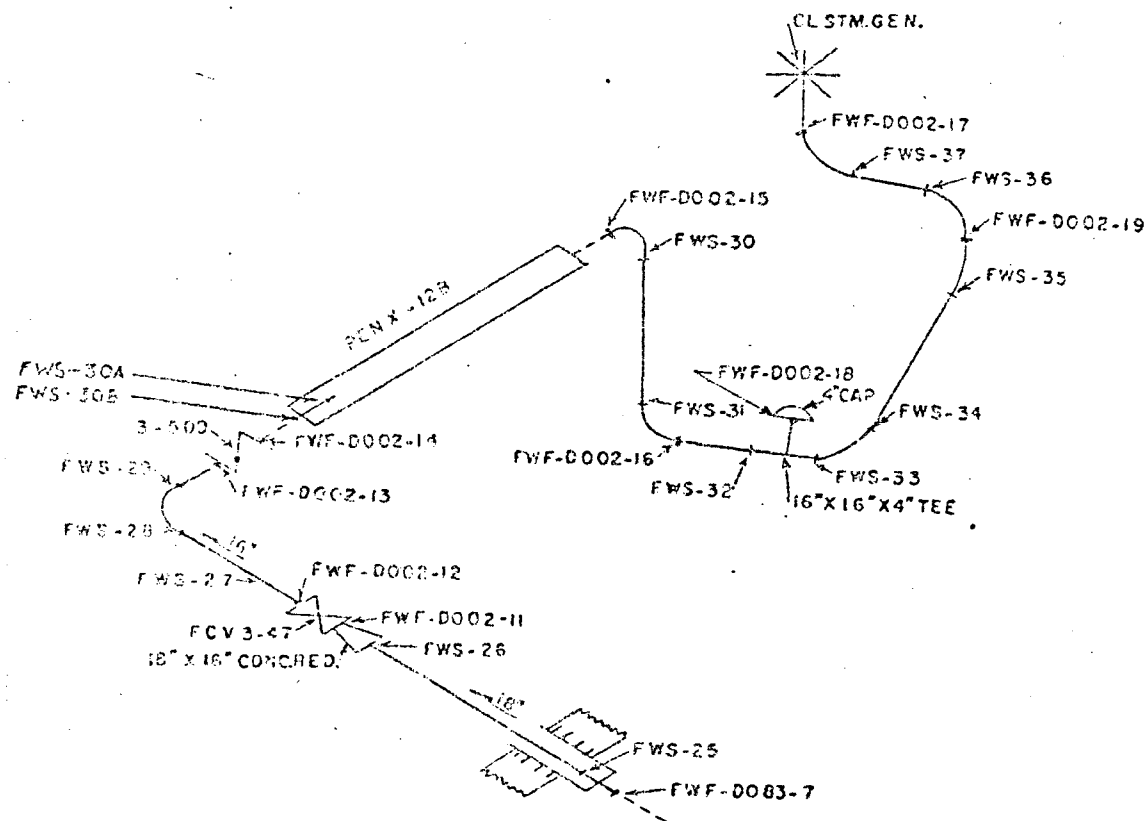
47W401-182

TENNESSEE VALLEY AUTHORITY
 DIVISION OF POWER PROTECTION
 WB NP
 FEEDWATER WELD MAP
 UNIT 1 LOOP 1

WBNP
SI-4.4.10.1
Attachment 7
* Page 59-15
Revision 8

For Rodney Daniel, PPh.

By: *Tommy L. Hale* Date: 8-8-79



SEE SHEET ONE FOR NOTES

REF DRAWINGS

DRAW E-2873 IC-2

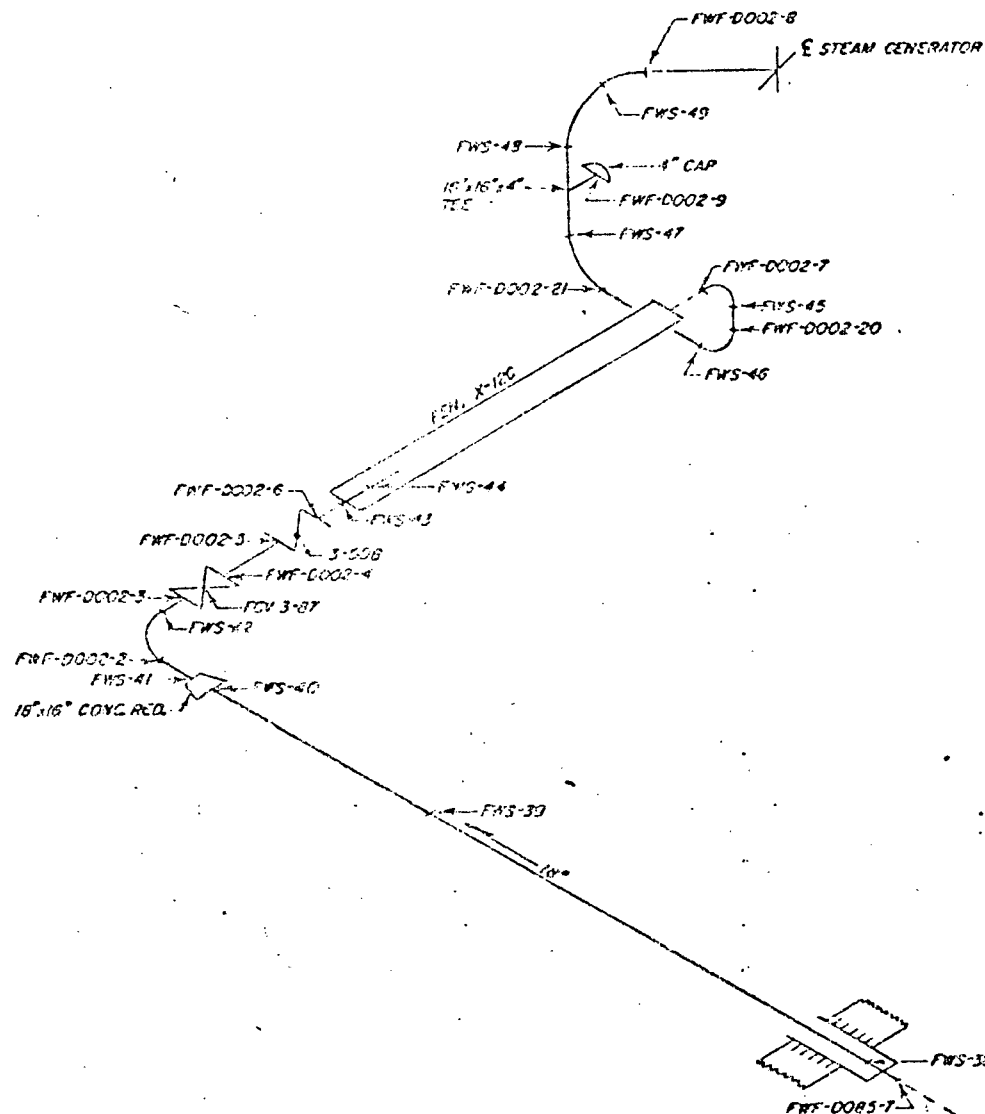
47W10-15.4

TENNESSEE VALLEY AUTHORITY	
DIVISION OF POWER PRODUCTION	
WBNP	
FEEDWATER WELD MAP	
UNIT	LOCP 2
DRAWN BY: <i>Tommy L. Hale</i>	
CHECKED BY: <i>CHURCH</i>	

WBNP
SI-4,4.10.1
Attachment 7
* Page 59-16
Revision 8

For Rodney Daniel, PPMB

BY: *Tommy L. Hale* Date: 8-8-79



REF. DRAWING
DRAW'G E-2579 IC-2
47W401-1 B 4

SEE SHEET 1 FOR NOTES

TECHNICAL VALLEY AUTHORITY
DRAWING NO. 47W401-1 B 4

WATTS BAR NUCLEAR PLANT
UNIT 1
FEEDWATER
WELD NIP LOOP 5

DATE: 8-8-79
BY: *Tommy L. Hale*
CHECKED: *...*
APPROVED: *...*

TENNESSEE VALLEY AUTHORITY
 DIVISION OF FISH PROTECTION
 WBNP
 FEEDWATER WELD MAP
 UNIT 1 LOCP 4

WBNP
SI-4.4.10.1
Attachment 7
* Page 59-18
Revision 8

For Rodney Daniel, PPMB

By: *Johnny L. Hale* Date 8-8-77

DETAIL-B



INCONEL

SEE DETAIL-B

SB-166

INCONEL
BUTTER

UPIAH-1-A,B,C,D*
LOW ALLOY
BUTTER

SA-182
304SS

UPIAH-4-A,B,C,D*

UPIAH-3-A,B,C,D*

INCONEL

UPIAH-2-A,B,C,D*

SA-533

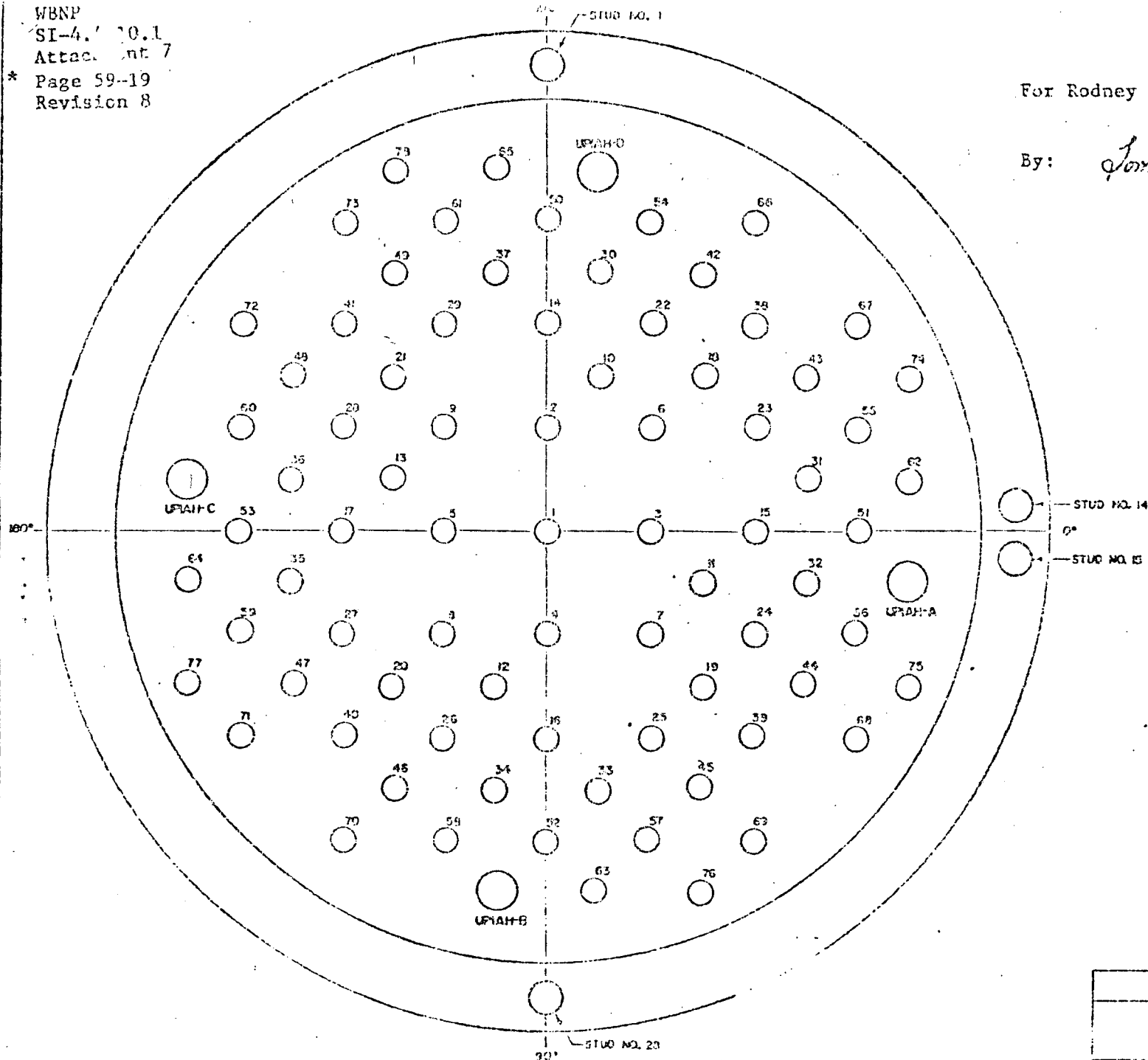
CL OF AUXILIARY HEAD ADAPTER
TYPICAL FOR 4 PLACES
WELD NO'S. UPIAH-1,2,3&4

A REF. TO CHM-2684-C FOR
LOCATION ON HEAD

TENSILE VALVE & ADAPTER DIVISION OF POWER TECHNOLOGY	WBNP
AUXILIARY HEAD ADAPTER	CHM-2684-C

For Rodney Daniel, PPMB

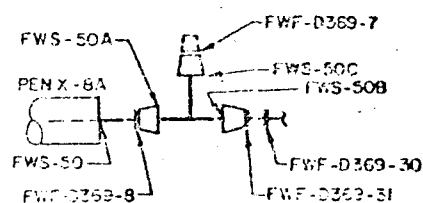
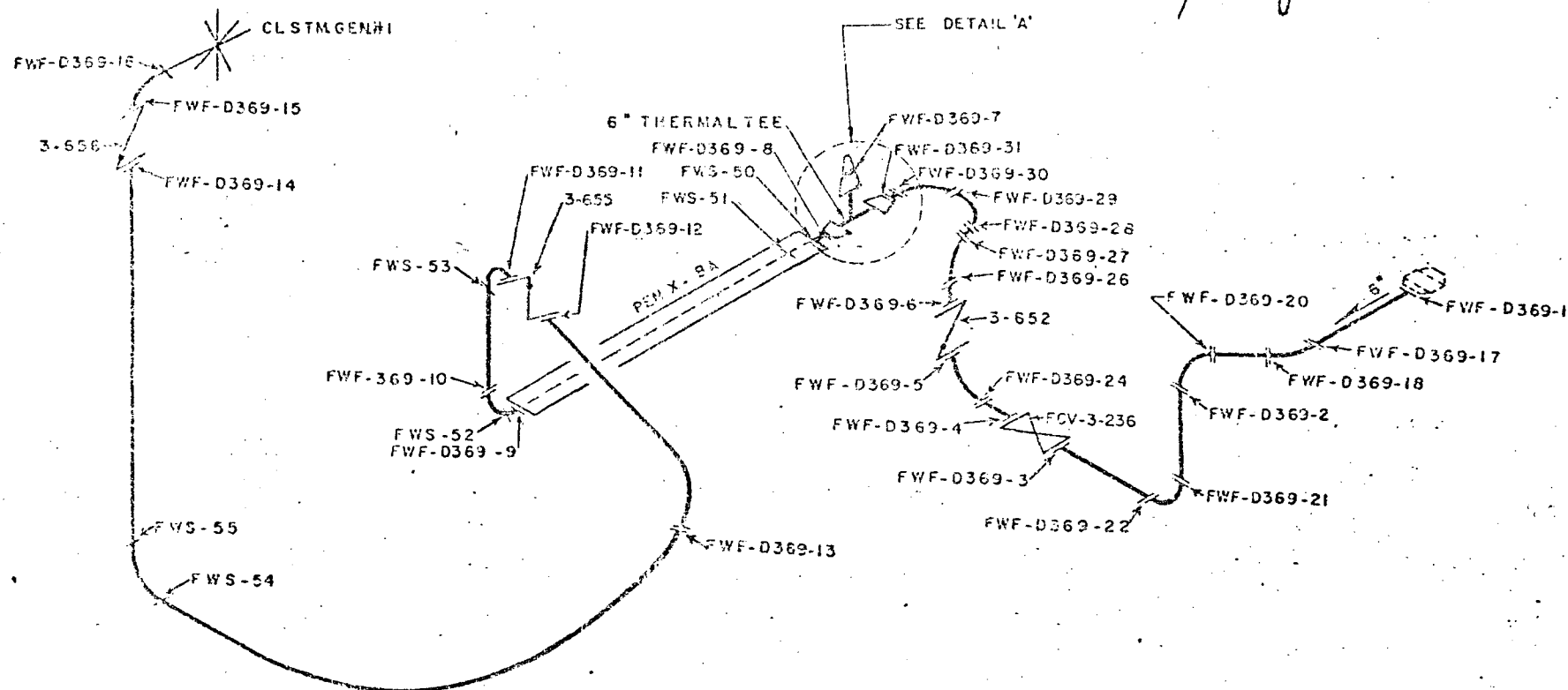
By: *Tommy L. Hale* Date: 8-8-79



NOTE
ALL CROW NUMBERS ARE PRECEDED
BY CROW FOR THE WELD NUMBERS

TENNESSEE QUALITY AUTHORITY DIVISION OF METALS & STRUCTURES
WBNP CROW HOLDING WELD MAP - UNIT 1

By Johnny L. Hale Date 8-10-79



DETAIL 'A'

REF DRAWING
 DRAVO E-2879 IC 369
 47W401-7 & 8

TVA CLASS B

PIPE

6" SA-333 GR6 SCH 80

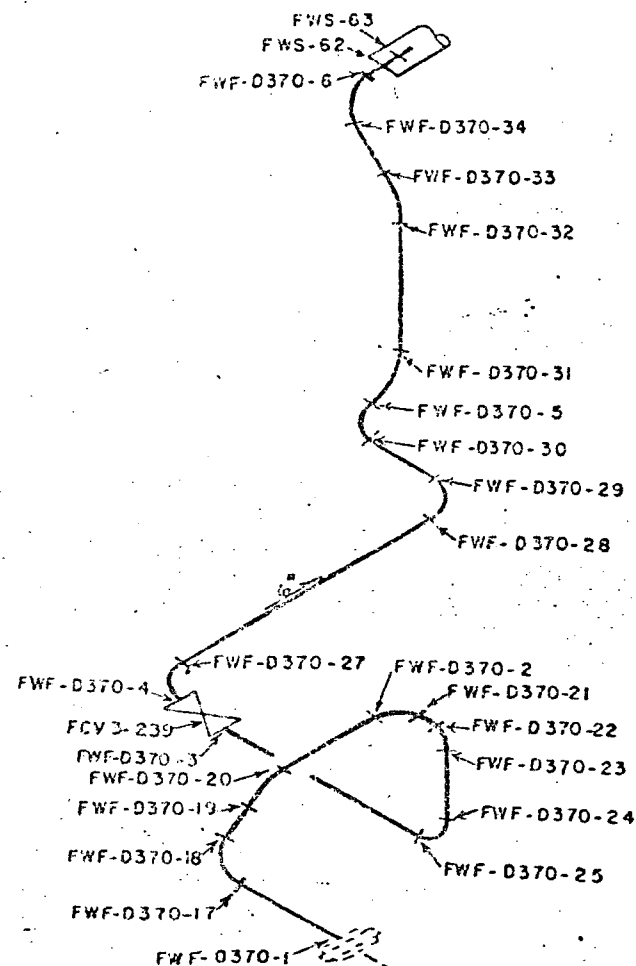
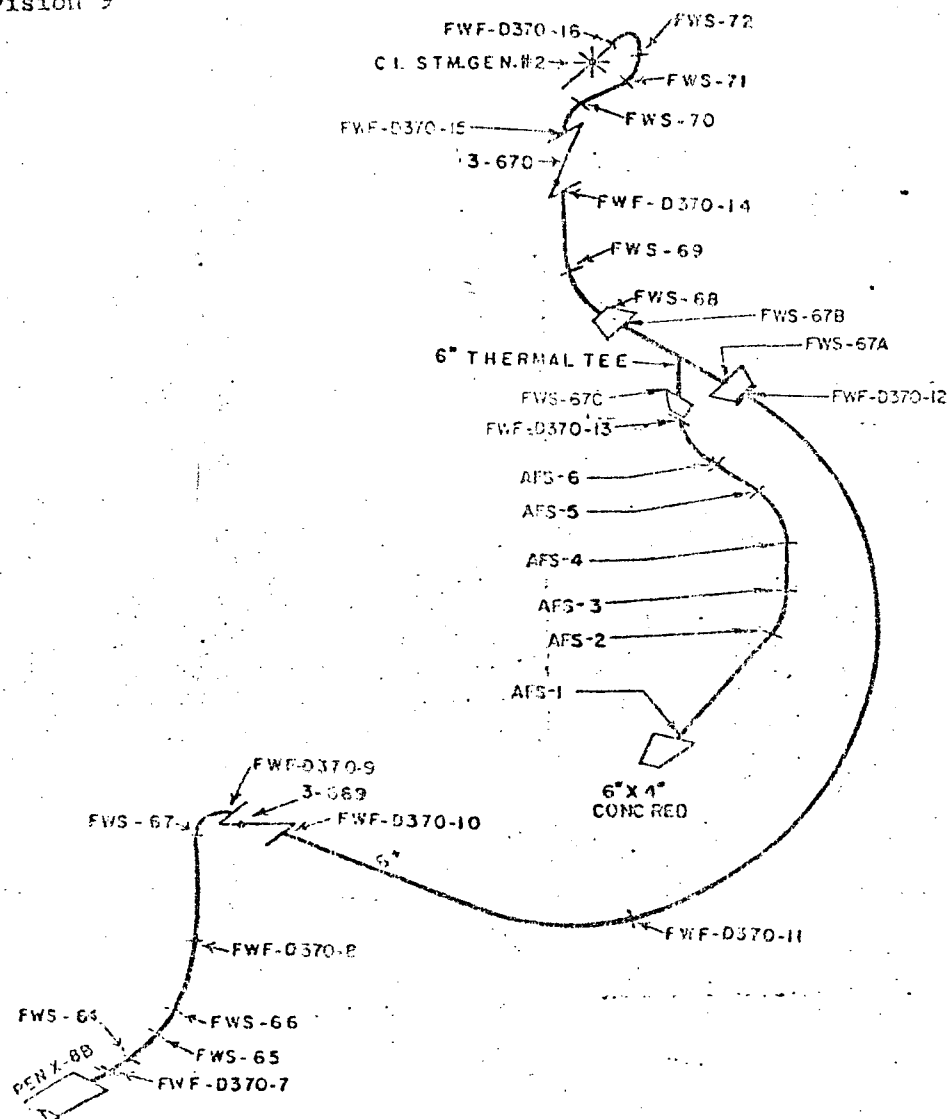
FITTINGS

6" SA-420 WPL6 SCH80

TENNESSEE VALLEY AUTHORITY BUREAU OF POWER DELIVERY	
WBP	
6" FEEDWATER WELD MAP	
UNIT: 1	LOOP: 1
CHW-227-C	

SI-4.4 J.1
Attachment 7
Page 59-21
Revision 9

By: Thomas L. Hale 1-8-10-79



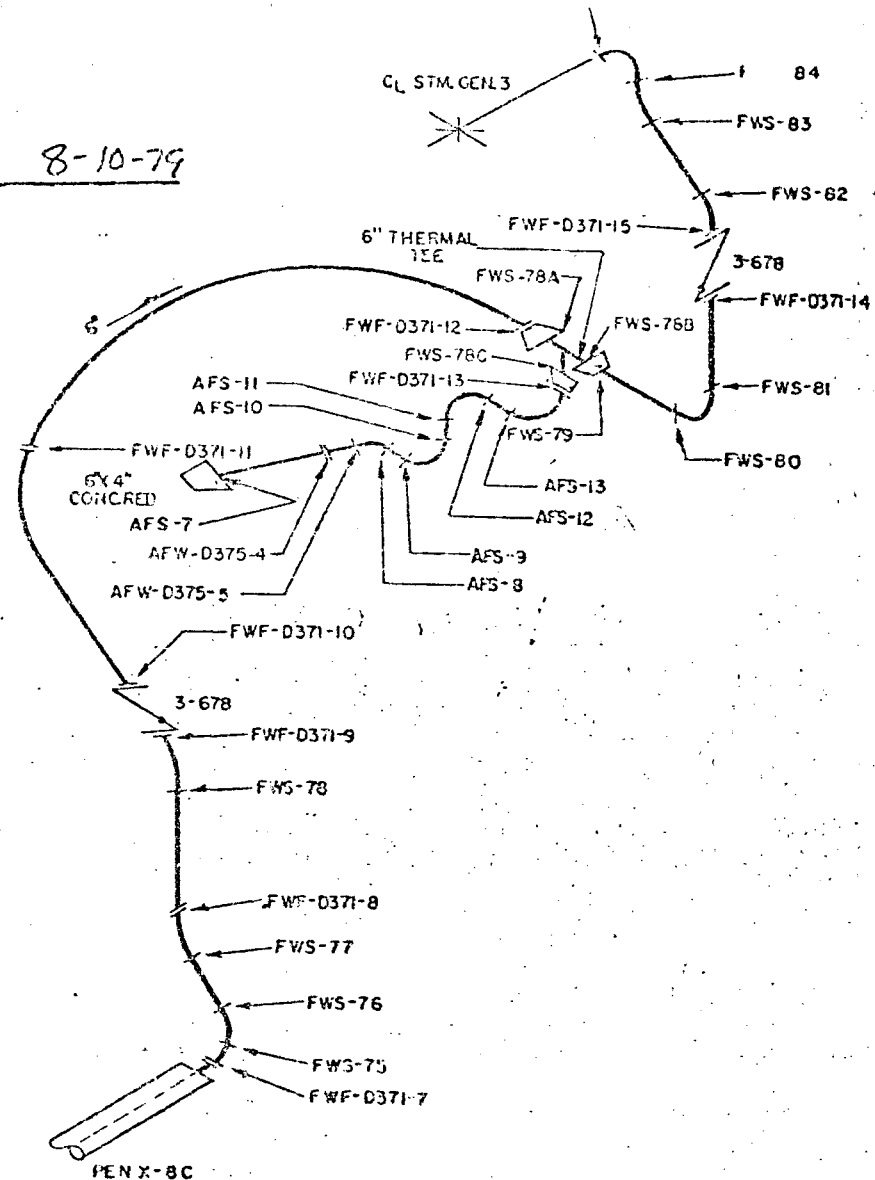
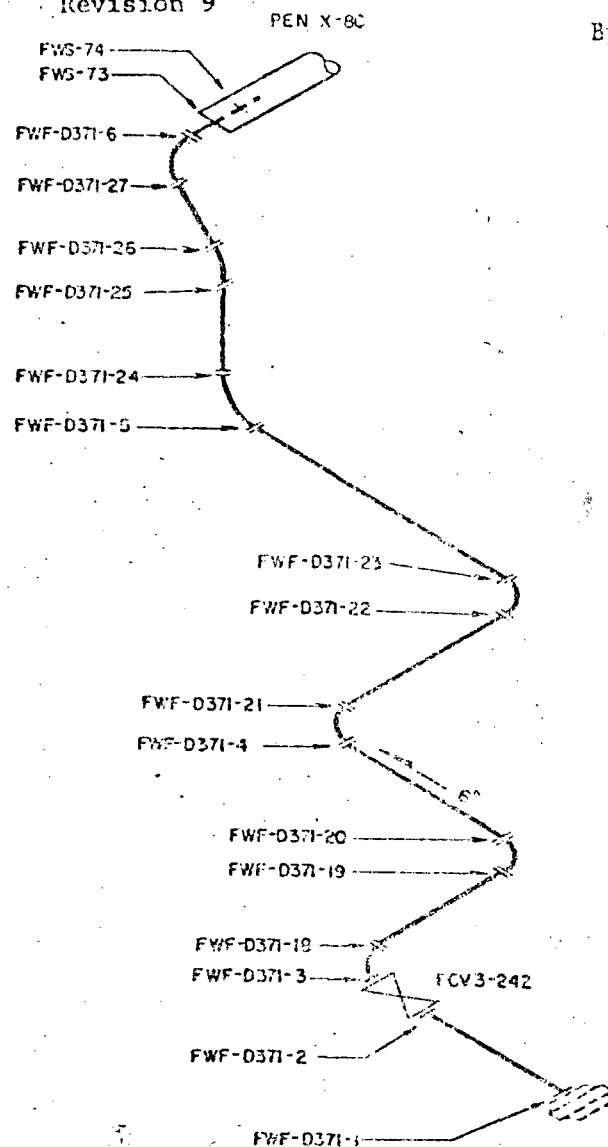
SEE SHEET #5 FOR NOTES

REF DRAWING
DRAYO E-2870 IC-370
47W401-78E IC-374
47W427-5

TENNESSEE VALLEY AUTHORITY		
DIVISION OF POWER PRODUCTION		
WBNP		
6" FEEDWATER WELD MAP		
UNIT 1 LOOP 2		
44-11-1 44-11-2 44-11-3	44-11-4 44-11-5 44-11-6	44-11-7 44-11-8 44-11-9 44-11-10 44-11-11 44-11-12 44-11-13 44-11-14 44-11-15 44-11-16 44-11-17 44-11-18 44-11-19 44-11-20 44-11-21 44-11-22 44-11-23 44-11-24 44-11-25 44-11-26 44-11-27 44-11-28 44-11-29 44-11-30 44-11-31 44-11-32 44-11-33 44-11-34 44-11-35 44-11-36 44-11-37 44-11-38 44-11-39 44-11-40 44-11-41 44-11-42 44-11-43 44-11-44 44-11-45 44-11-46 44-11-47 44-11-48 44-11-49 44-11-50 44-11-51 44-11-52 44-11-53 44-11-54 44-11-55 44-11-56 44-11-57 44-11-58 44-11-59 44-11-60 44-11-61 44-11-62 44-11-63 44-11-64 44-11-65 44-11-66 44-11-67 44-11-68 44-11-69 44-11-70 44-11-71 44-11-72 44-11-73 44-11-74 44-11-75 44-11-76 44-11-77 44-11-78 44-11-79 44-11-80 44-11-81 44-11-82 44-11-83 44-11-84 44-11-85 44-11-86 44-11-87 44-11-88 44-11-89 44-11-90 44-11-91 44-11-92 44-11-93 44-11-94 44-11-95 44-11-96 44-11-97 44-11-98 44-11-99 44-11-100
44-11-101 44-11-102 44-11-103 44-11-104 44-11-105 44-11-106 44-11-107 44-11-108 44-11-109 44-11-110 44-11-111 44-11-112 44-11-113 44-11-114 44-11-115 44-11-116 44-11-117 44-11-118 44-11-119 44-11-120 44-11-121 44-11-122 44-11-123 44-11-124 44-11-125 44-11-126 44-11-127 44-11-128 44-11-129 44-11-130 44-11-131 44-11-132 44-11-133 44-11-134 44-11-135 44-11-136 44-11-137 44-11-138 44-11-139 44-11-140 44-11-141 44-11-142 44-11-143 44-11-144 44-11-145 44-11-146 44-11-147 44-11-148 44-11-149 44-11-150 44-11-151 44-11-152 44-11-153 44-11-154 44-11-155 44-11-156 44-11-157 44-11-158 44-11-159 44-11-160 44-11-161 44-11-162 44-11-163 44-11-164 44-11-165 44-11-166 44-11-167 44-11-168 44-11-169 44-11-170 44-11-171 44-11-172 44-11-173 44-11-174 44-11-175 44-11-176 44-11-177 44-11-178 44-11-179 44-11-180 44-11-181 44-11-182 44-11-183 44-11-184 44-11-185 44-11-186 44-11-187 44-11-188 44-11-189 44-11-190 44-11-191 44-11-192 44-11-193 44-11-194 44-11-195 44-11-196 44-11-197 44-11-198 44-11-199 44-11-200		

SI-4.4.10.1
 Attachment 7
 Page 59-22
 Revision 9

For Rodney Daniel, PPMB
 By Johnny L. Hale Date 8-10-79



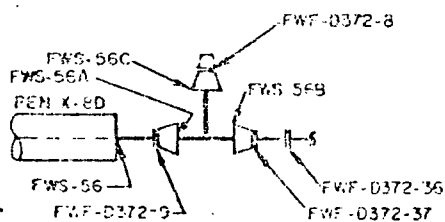
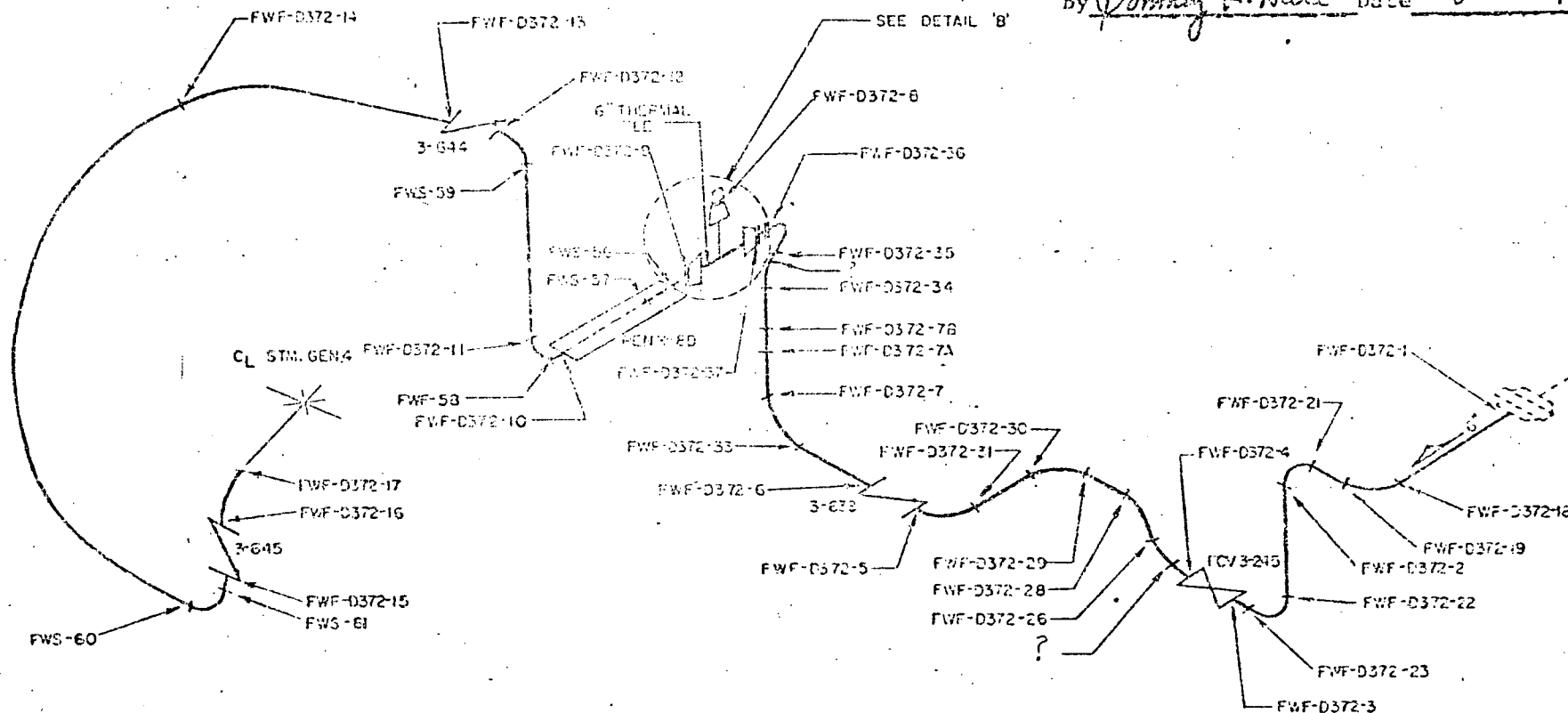
REF DRAWING
 DRAVO E-2879 IC-371, IC-375
 47W401-788
 47W427-5

SEE SHEET #5 FOR NOTES

TENNESSEE VALLEY AUTHORITY DIVISION OF POWER PRODUCTION	
WBNP 6" SEEDWATER WELD MAP UNIT 1 LOOP 3	
DATE: 8-10-79	BY: J. L. HALE
CDM-267-C	

For Rodney Daniel, FPMB

By Johnny L. Hale Date 8-10-79



DETAIL 'B'

SEE DRAWING
DRAWG E 2879 IC-372
47W401-7B.8

SEE SHEET #5 FOR NOTES

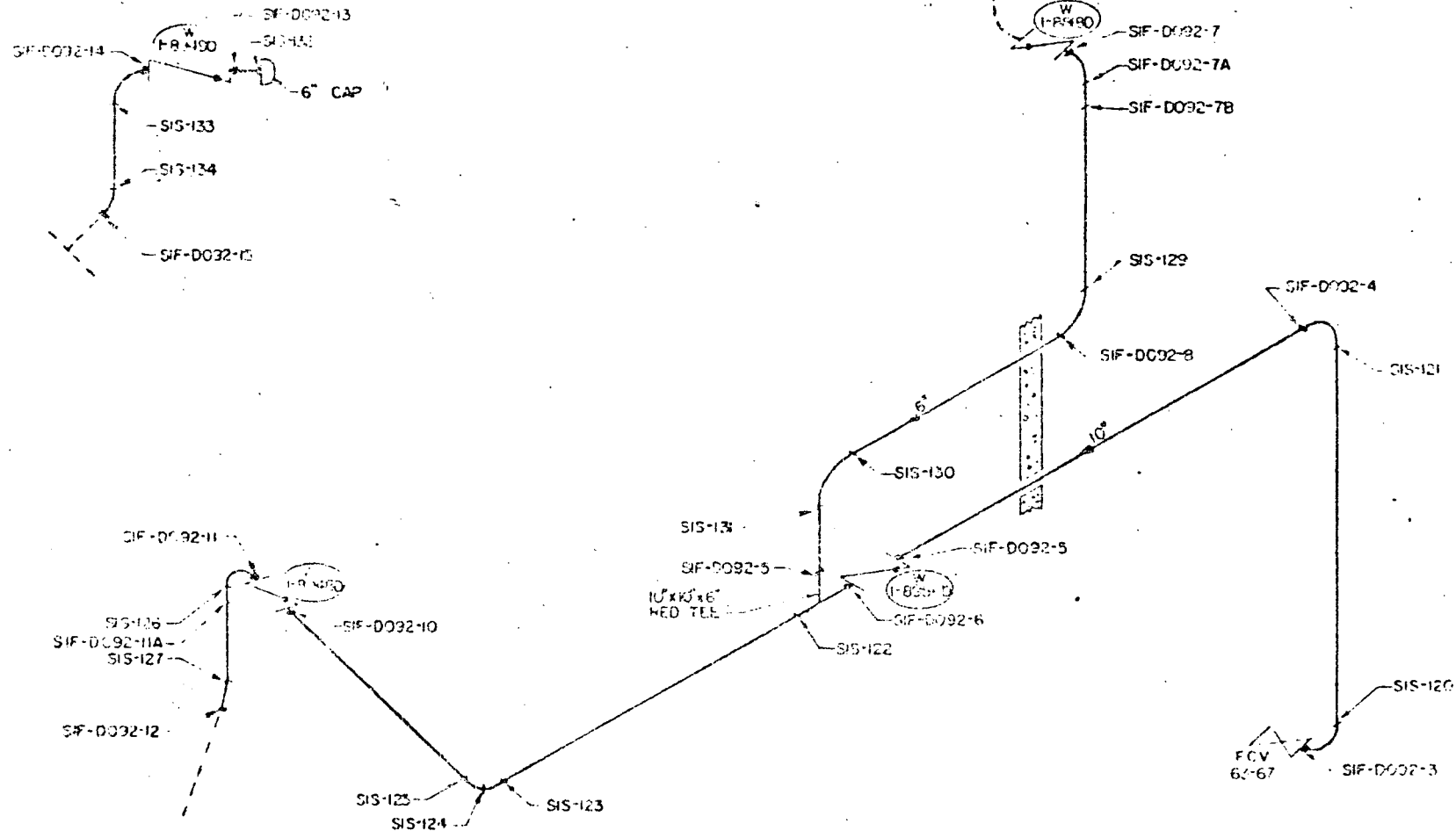
TENNESSEE VALLEY AUTHORITY	
DIVISION OF PLANT & PROJECTS	
WBNP	
6" FEEDWATER FIELD MAP	
UNIT 1	LOOP 4
DATE: 8-10-79	BY: J. L. HALE
CHECKED: [Signature]	APPROVED: [Signature]

WBNP
SI-4.4.10.1
Attachment 7
Page 59-24
Revision 10

For Rodney Daniel, PPMB

By: *John Holt*

Date: *1/23/88*



TVA CLASS A

PIPE

6" SCH 160 SA-376 TP 316
10" SCH 40 SA-376 TP 316

FITTING

6" SCH 160 SA-403 WP 316S
10" SCH 40 SA-413 WP 316S

DELETED SIS-128

REF. DRAWING:

DRAW E-2879 10-92
47W435-6

TENNESSEE VALLEY AUTHORITY		
DIVISION OF POWER DEVELOPMENT		
WBNP		
SAFETY INJECTION AILL MAP		
UNIT 1 - 1 - 4		
SCALE	SUBMITTER	DATE
1" = 10'	WBNP	1/23/88
1" = 20'		
1" = 40'		
1" = 80'		

CHG 1/23/88

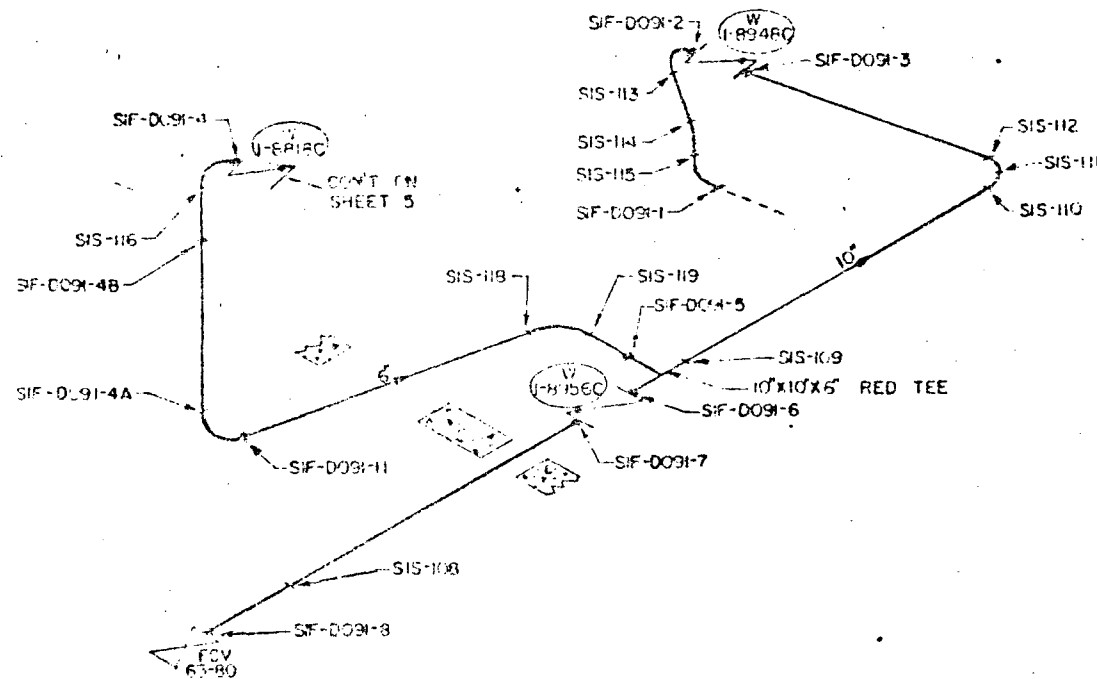
WBNP
S1-4.4.10.1
Attachment 7
Page 59-25
Revision 10

For Rodney Daniel, PPMB

By:

John Hall

Date: 1/23/80



TVA CLASS A

PIPE

6" SCH 160 SA-275 TP 316
10" SCH 160 SA-376 TP 316

FITTINGS

6" SCH 160 SA-275 TP 316 W/S
10" SCH 160 SA-376 TP 316 W/S

DELETED SIS-117

REF. DRAWING:

DRAWG E-2879 10-91
47W435-9

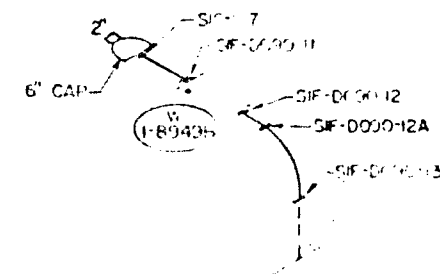
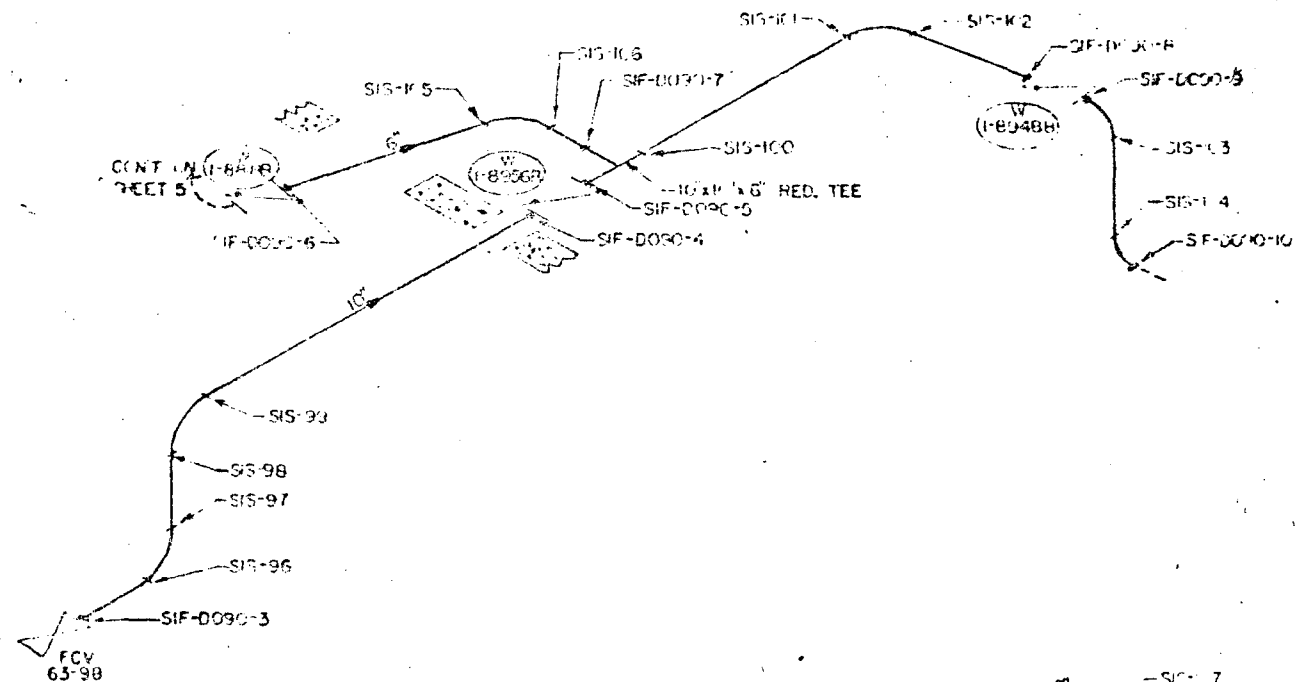
TENNESSEE VALLEY AUTHORITY DIVISION OF POWER PRODUCTION	
WBNP SAFETY INJECTION SYSTEM MAP UNIT 1 LOOP 2	
DATE	1/23/80
BY	JOHN HALL
CHECKED	CHM 2756 C

WRNP
SI-4.4.10.1
Attachment 7
Page 59-26
Revision 10

For Rodney Daniel, PPMB

By: *John Hall*

Date: 1/23/91



TVA CLASS A

SPE

6" SCH 160 SA-376 TP 316
10" SCH 140 SA-376 TP 316

ELLINGS

6" SCH 160 SA-403 WP 316S
10" SCH 140 SA-403 WP 316S

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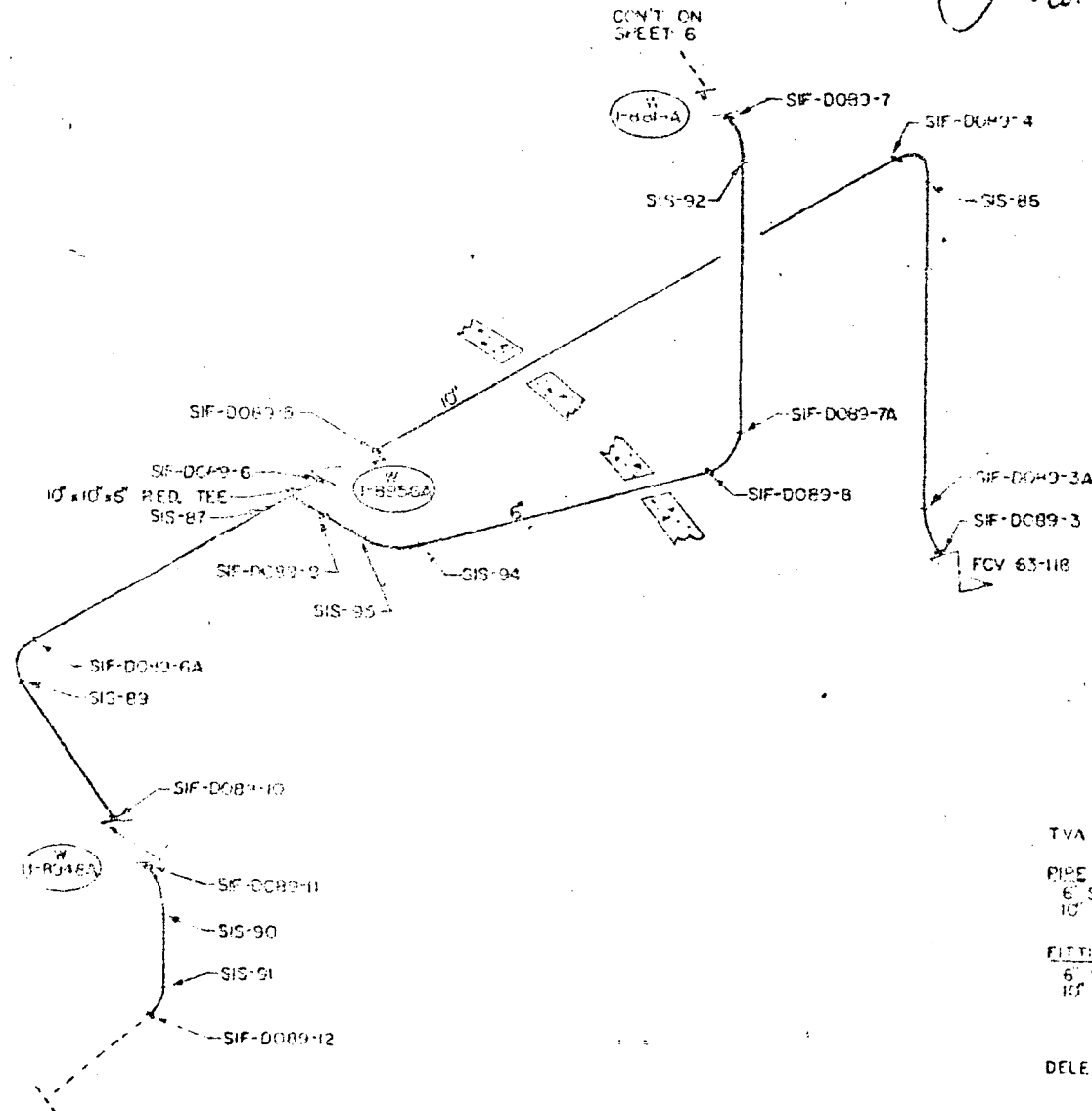
DRAWG E-2079 IC-90
47W435-B

TENNESSEE VALLEY AUTHORITY	
Division of Electric Power	
WRNP	
SAFETY INJECTION WELD MAP	
UNIT 1	LOU-2
CHG 274	

WBNE
SI-4.4.10.1
Attachment 7
Page 59-27
Revision 10

For Rodney Daniel, PPMB

By: *J. A. Kelly* Date: 1/27/91



TVA CLASS A

PIPE

6\"/>

FITTING

6\"/>

DELETED SIS-85, 89 & 93

REF. DRAWING:

DRAWING E-2879 IC-89
47W435-7

TENNESSEE VALLEY AUTHORITY DIVISION OF POWER DISTRIBUTION			
SAFETY PRE-CON FIELD MAP UNIT 1			
SCALE	REVISIONS	APPROVED	DATE

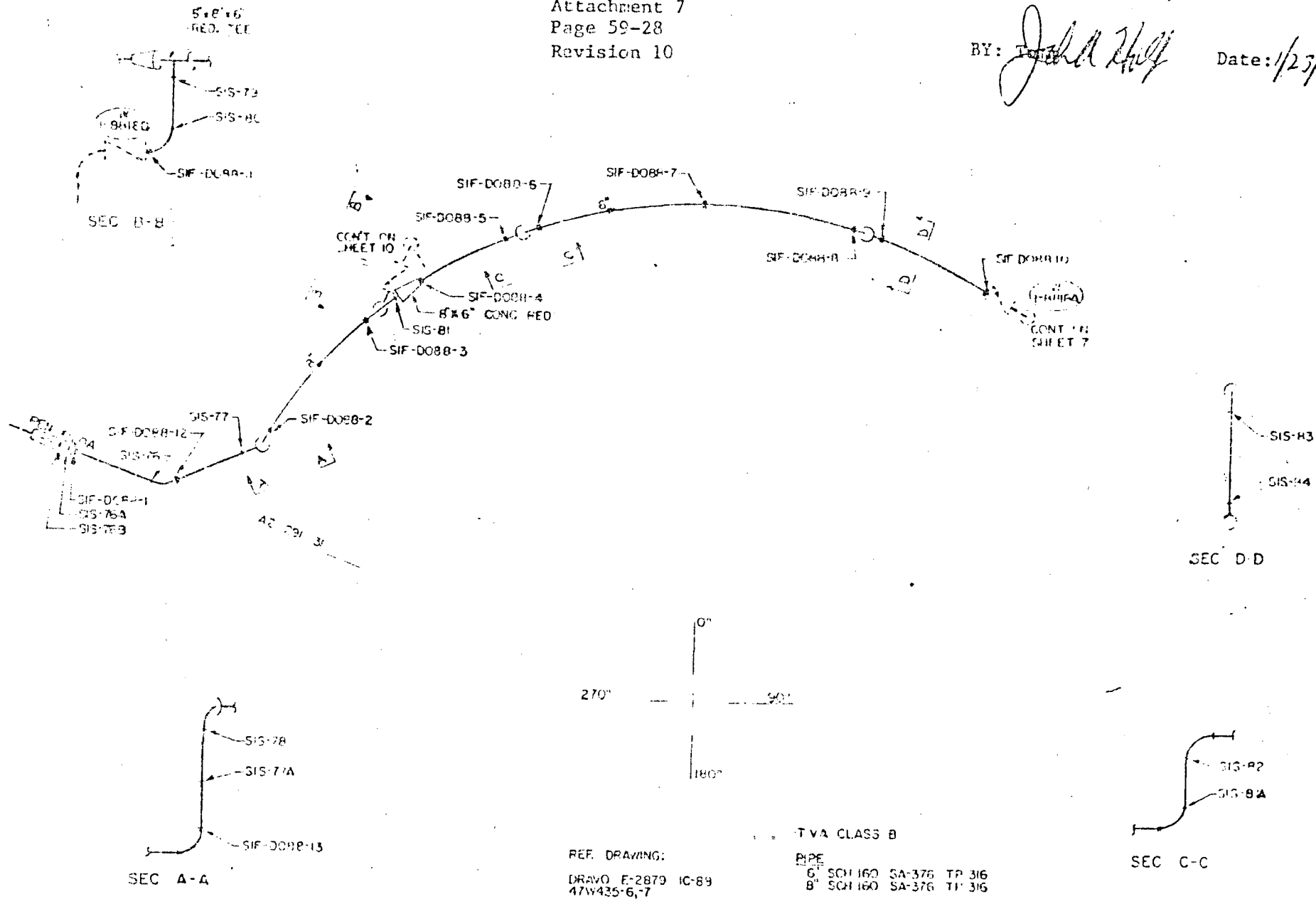
CH 27-B-C

WBNP
SI-4.4.10.1
Attachment 7
Page 59-28
Revision 10

For Rodney Daniel, PPMB

BY: *John A. Hill*

Date: 1/25/01



REF. DRAWING:
DRAWING E-2879 IC-89
47W435-6,7

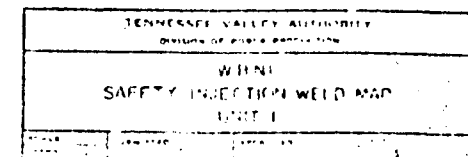
TVA CLASS B

PIPE
6" SCH 160 SA-376 TP 316
8" SCH 160 SA-376 TP 316

FITTINGS
6" SCH 160 SA-403 WP 316S
8" SCH 160 SA-403 WP 316S

TENNESSEE VALLEY AUTHORITY DIVISION OF POWER RESEARCH	
WBNP SAFETY INJECTION - ELD WNP UNIT 1	
DATE	REVISION
1/25/01	1
CHM 2754	

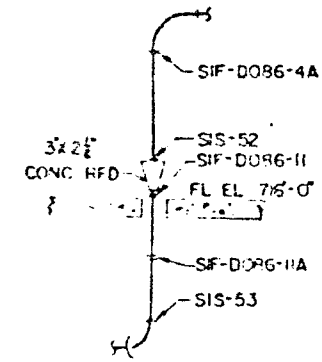
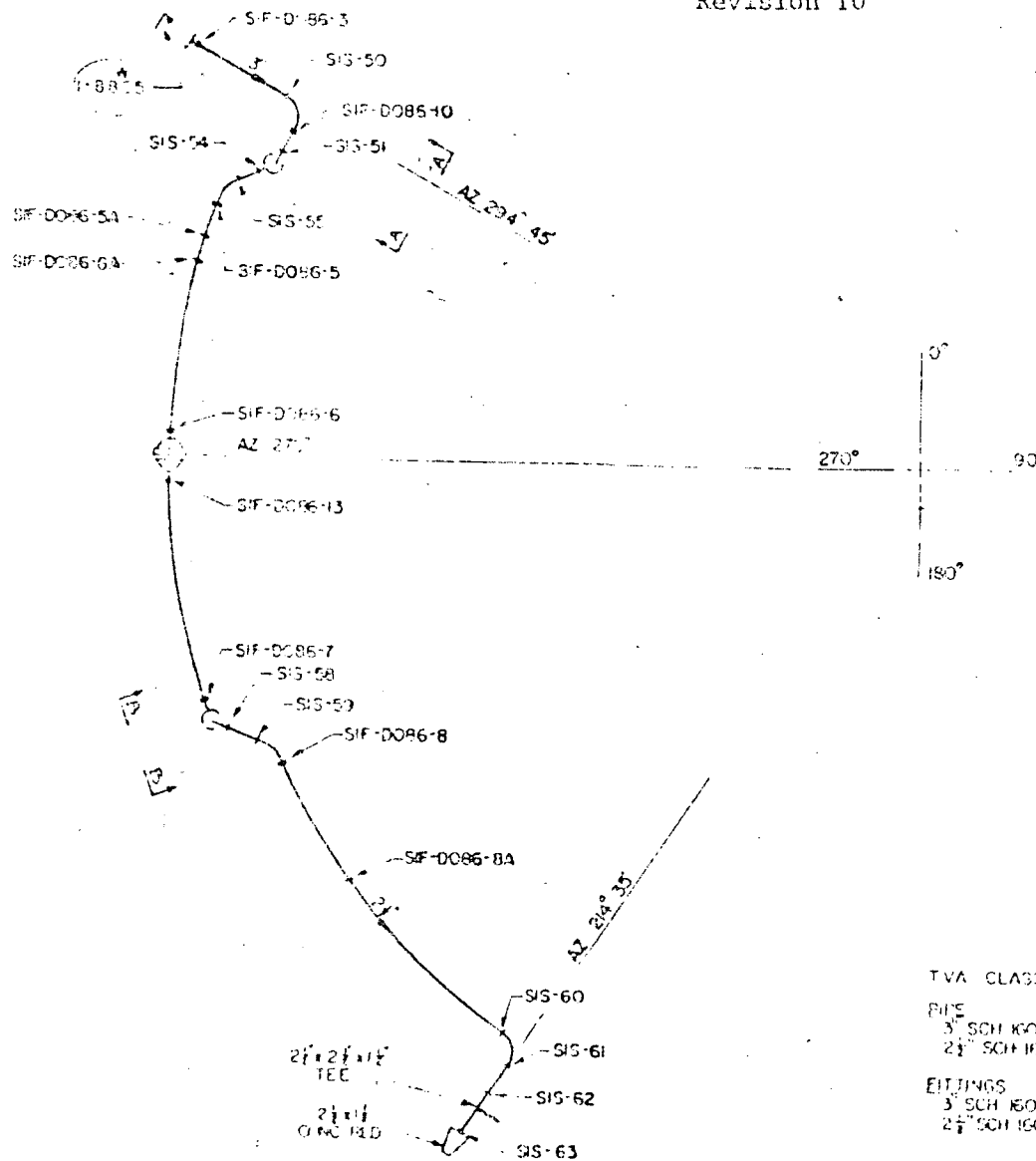
By: *John H. H.* Date: *1/23/61*



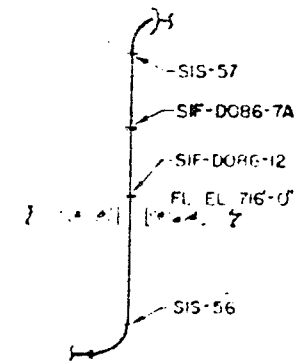
WBNP
SI-4.4.10.1
Attachment 7
Page 59-30
Revision 10

For Rodney Daniel, PPMB

By: *[Signature]* Date: 1/23/94



SEC A-A



SEC B-B

TVA CLASS A

Pipe
3" SCH 160 SA-375 TP 304
2 1/2" SCH 160 SA-375 TP 304

Fittings
3" SCH 160 SA-403 WP 304S
2 1/2" SCH 160 SA-403 WP 304S

R.I.F. DRAWING:

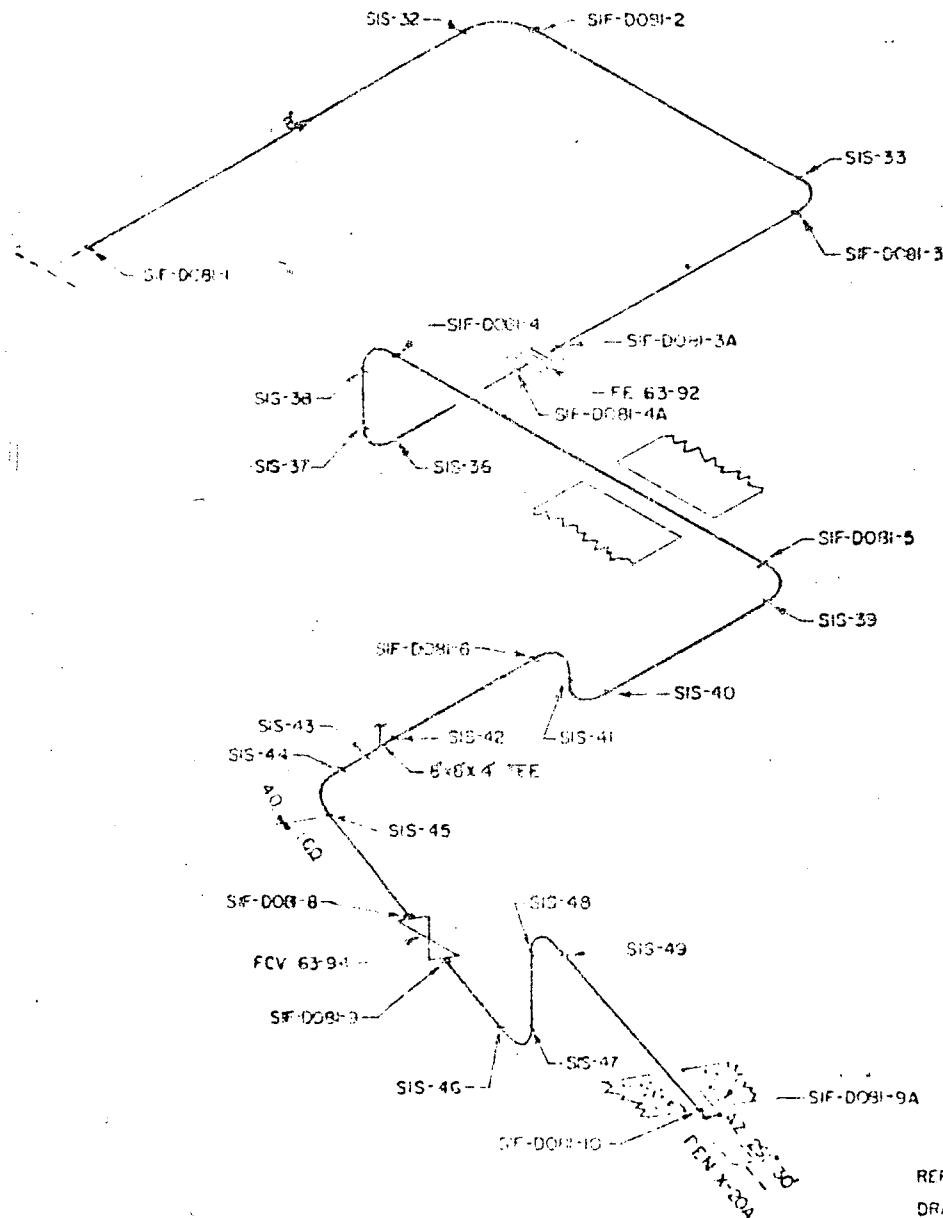
DAVID E-2870 IC-96
47W435-6,-9

TENNESSEE VALLEY AUTHORITY DIVISION OF PLANT PROTECTION	
WBNP SAFETY INJECTION WELD MAP UNIT 1	
DATE	01/23/94

01/23/94

For Rodney Daniel, PPMB

By: *John H. H.* Date: 1/23/00



TVA CLASS 8

PIPE
8" SCH 160 SA-376 TP 304
8" STD WT SA-312 TP 304

ELLINGS
8" SCH 160 SA-403 WP 304 W/S
8" STD WT SA-403 WP 304 W/S

DELETED SIS-34, -35

REF. DRAWING:
DRAVO E-2679 IC-81
47W435-1

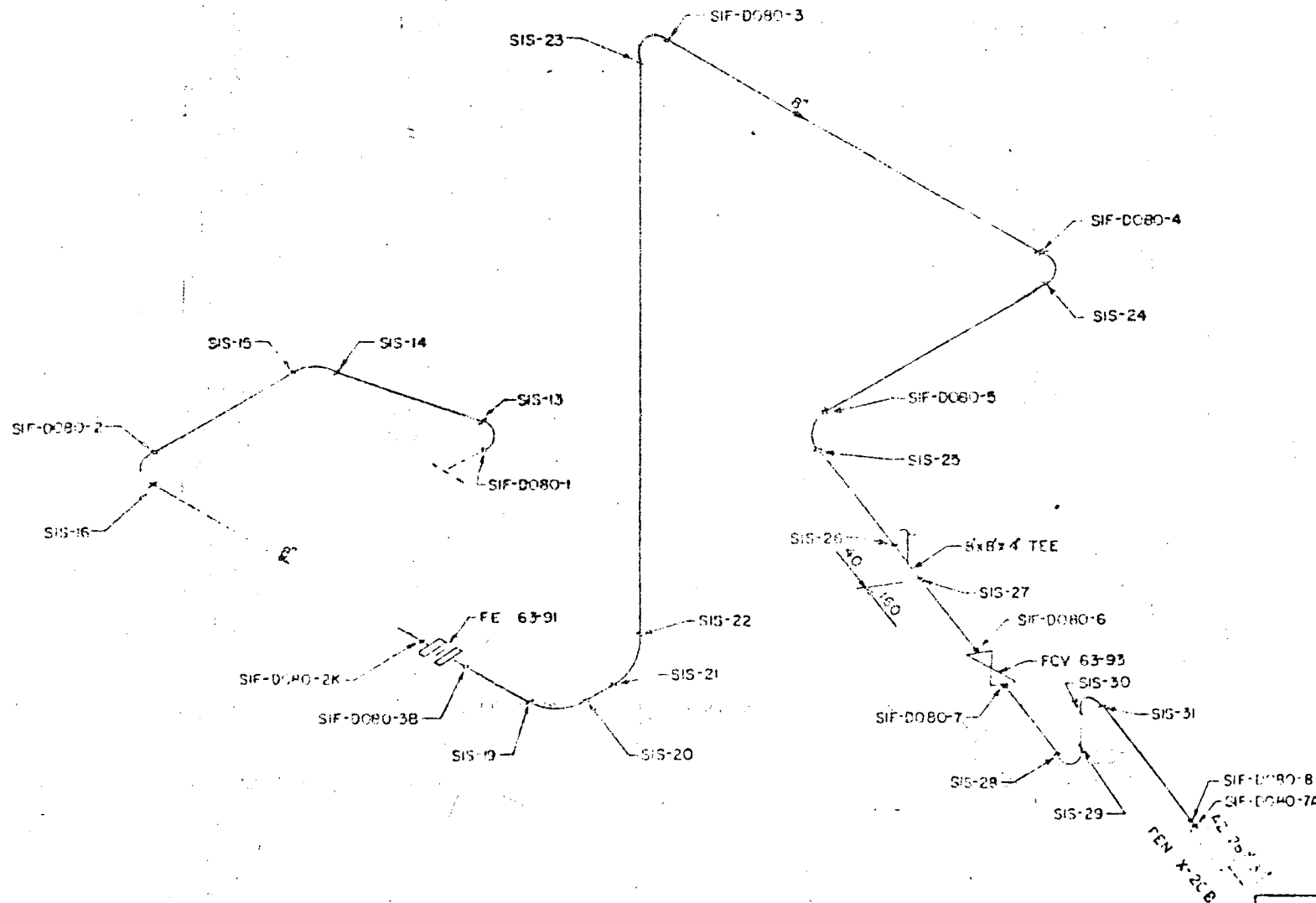
TENNESSEE VALLEY AUTHORITY			
DIVISION OF POWER PLANT ENGINEERING			
WBNP			
SAFETY INJECTION WELD MAP			
UNIT 1			
DATE	REVISION	BY	CHKD
1/23/00	1	J.H.H.	J.H.H.

WBNP
SI-4.4.10.1
Attachment 7
Page 59-32
Revision 10

For Rodney Daniel, PPMB

By: *John Holt*

Date: 1/23/81



TVA CLASS B

PIPE

8" SA-312 TP 304

8" SCH 160 SA-376 TP 304

ELTINGS

8" STD WT SA-403 WP 304 W/S

8" SCH 160 SA-403 WP 304 W/S

DELETED SIS-17, 18

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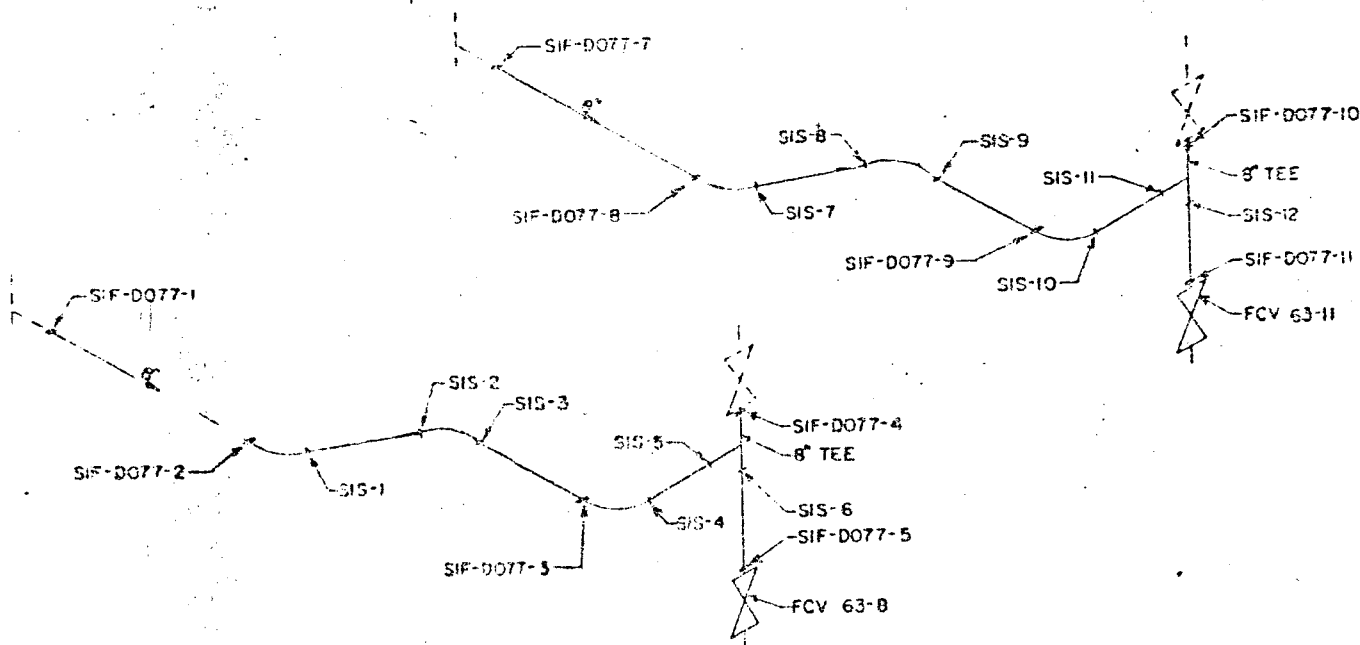
CRAGO E-2879 IC-80
47W435-1

TECHNICAL VALLEY AUTHORITY	
DIVISION OF POWER GENERATION	
WBNP	
SAFETY INJECTION WELD MAP	
UNIT I	
DATE	1/23/81
BY	John Holt
CHKD	2758

WBNP
SI-4.4.10.1
Attachment 7
Page 59-33
Revision 10

For Rodney Daniel, PFMB

By: *John A. [Signature]* Date: 1/27/86



TVA CLASS B

PIPE
8\"/>

FITTINGS
8\"/>

REF. DRAWING:
DRAVO E-2879 IC-77
47W435-1

TENNESSEE VALLEY AUTHORITY DIVISION OF PLANT PRODUCTION			
WBNP SAFETY INJECTION WELD MAP UNIT 1			
SCALE	REVISIONS	APPROVED	DATE
			01-27

APPENDIX D

NOTIFICATION OF INDICATION

1. This document establishes the procedure to formally notify Plant Management and/or NUC PR QA Staff of the presence of indications detected during the performance of non-destructive examinations.
2. This document applies to those indications defined as potentially reportable by the applicable procedure.
3. Formal notification shall consist of completing and submitting to the NUC PR QA Staff representative the attached form, "Notification of Indication."
4. The "Notification of Indication" shall be completed as signed by the Level II or III examiner detecting the indication, and reviewed and signed by the Field Supervisor.
5. One copy of the completed form shall be submitted to the NUC PR QA Staff representative, one copy to the Plant QA Staff Supervisor, and one copy shall be filed with the examination report.
6. Part II of the "Notification of Indications" form shall be completed for evaluation of findings by TVA Level III Examiner. The TVA Level III examiner shall indicate under "DISPOSITION" the disposition of the indication. Any corrective action documents shall be referenced.

WBNP
SI-4.4.10.1
Appendix D
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Revision 11

*NOTIFICATION OF INDICATION

PART I - FINDINGS:

Examination Report No. _____ Test Performed _____

Weld Map No. _____ NDT Method _____

Description of Indication: (Attach Sketch/Photograph)

Signature of Examiner/Certif. Level _____ Date _____

Signature of Field Supervisor (Contractor) _____ Date _____

Baseline and ISI Representative _____ Date _____

PART II - DISPOSITION:

Disposition Approved by TVA Level-III Examiner _____ Date _____



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

390/MA/4

April 25, 1980

ALL POWER REACTOR LICENSEES

Gentlemen:

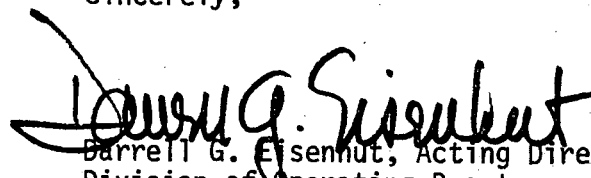
SUBJECT: CLARIFICATION OF NRC REQUIREMENTS FOR EMERGENCY RESPONSE
FACILITIES AT EACH SITE

Over the past several months the NRC staff has been conducting reviews of each licensee's proposal to upgrade their plant to cope with emergencies. The lessons learned and emergency planning review teams have identified areas where clarification of the NRC position is necessary. Our previous requirements for the TSC have been modified to allow an onsite TSC in close proximity to the control room that would not meet the habitability requirements, provided that a backup, habitable TSC is located near the site.

It is the purpose of this letter to set forth clarification of NRR's requirements for the three emergency response facilities defined in my September 13, 1979 letter to "All Operating Nuclear Power Plants". Additional specific criteria for these facilities is under development. The schedule for implementing these requirements has not changed.

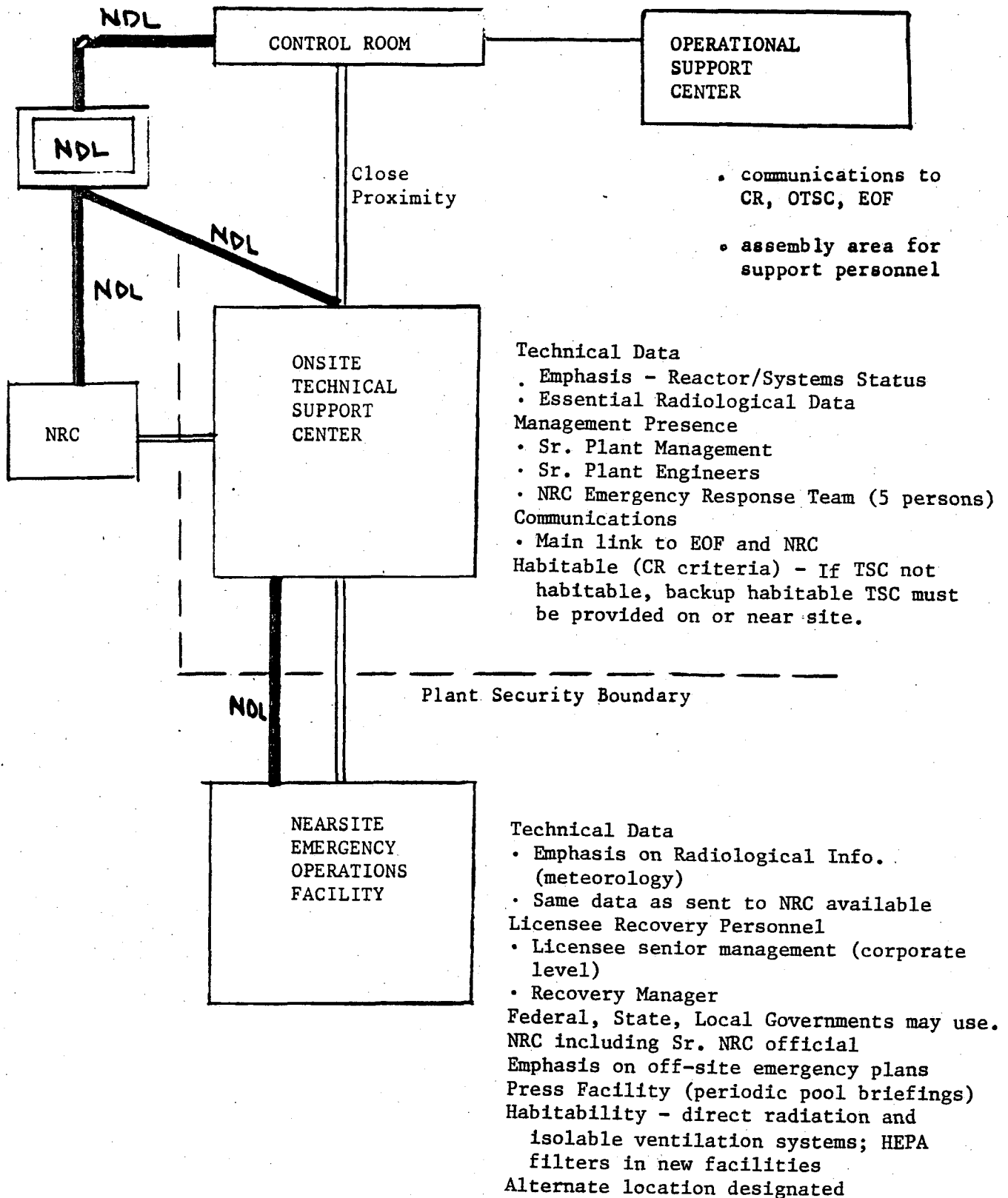
If you have any questions regarding this clarification, please contact the NRC Project Manager for your facility.

Sincerely,


Barrell G. Eisenhut, Acting Director
Division of Operating Reactors
Office of Nuclear Reactor Regulation

Enclosure:
Emergency Response
Facilities

EMERGENCY RESPONSE FACILITIES



EMERGENCY RESPONSE FACILITIES

Onsite Technical Support Center

An onsite technical support center (TSC) shall be maintained by each operating nuclear power plant. The TSC shall be separate from, but in very close proximity to, the control room and be within the plant security boundary. While care must be taken in selecting technical input available in the TSC, it appears likely that access to additional control room data would be required during an emergency. The location of the TSC shall also be such as to facilitate occasional face-to-face contact between key control room and TSC supervisors (management presence). The emphasis in designing the TSC information displays should be on reactor systems status. Those individuals who are knowledgeable of and responsible for engineering and management support of reactor operations in the event of an accident will report to the TSC (minimum size 25 persons including 5 NRC). Those persons who are responsible for the overall management of the utility resources including recovery following an accident (e.g., corporate managers) should report to the EOF (see below). Upon activation, the TSC will provide the main communication link between the plant and the operator's near-site Emergency Operations Facility, and the main communication link to the NRC for plant operations matters. The TSC must be habitable to the same degree as the control room for postulated accidents (SRP 6.4 as revised by NUREG-0660). Where the primary, in-plant, TSC is not made habitable because of site-specific considerations, a backup TSC which does meet the habitability requirements must be provided on or near the site. Parameters transmitted by any nuclear data link installed to meet future NRC requirements should be available for display in the TSC and the EOF.

Onsite Operational Support Center (Assembly Area)

The Operational Support Center shall be the place to which the operations support personnel report in an emergency situation. Communications will be provided with the control room, OTSC and EOF.

Emergency Operations Facility (Near-Site)

The Emergency Operations Facility (EOF) will be operated by the licensee for continued evaluation and coordination of licensee activities related to an emergency having or potentially having environmental consequences. The EOF must have the capability to display the same plant data and radiological information as will be required for transmittal to the NRC. The EOF will have sufficient space to accommodate representatives from Federal, State and local governments if desired by those agencies, including facilities for the senior NRC representative (10) on-site. In addition, the major State and local response agencies may perform data analysis jointly with the licensee. Overall management of utility resources including recovery operations following an accident (e.g., by corporate management) shall be managed from this facility. Press facilities for about 20 people shall be available at the Emergency Operations Facility (periodic use). Site meteorology should be used to the extent practical for determining the EOF location. The EOF should be located within about one mile of the reactor. The EOF should be a substantial structure, providing significant shielding factors from direct radiation and the capability to isolate ventilation systems. Filtration systems (at least HEPA filters) shall be provided in new structures. Arrangements shall be made to activate an alternate EOF in the event that the nearsite EOF becomes uninhabitable.

Emergency Response Facilities

Center	Location	Activation Required?	Occupants			Function	Data Display	Habitability	Back-up if Not Habitable
			In Charge	Number	Skills				
Existing Control Room Upgraded Control Room	In Plant	No	Shift Supervisor or Senior Plant Official	Utility - Variable NRC (1)	Operational & Technical	Plant Control		Wide Accident Spectrum (SRP 6.4 with NUREG-0660)	-
Interim Technical Support Center (TSC) (by 1/1/81)	Should be near Control Room	Yes	Senior Plant Official	Utility - Variable NRC (5)	Engineering & Senior Plant Management	Emergency Engineering Support for Control Room	Direct Display or Call-up of Plant Parameters Necessary for Assessment	No Requirement	Control Room
Permanent TSC (by 1/1/81)	Must be in very close proximity to Control Room	Yes, for Alert, Site Emergency or General Emergency Class	Senior Plant Official	25 (5 NRC)	Engineering & Senior Plant Management	Accident Assessment by Operations Engineers; Support to Control Room during Accidents	Direct Display of plant safety system parameters, call-up display of radiological parameters	Either TSC or backup must be same as Control Room Except for System Redundancy	Habitable TSC near site if primary TSC not habitable
Emergency Operations Facility (EOF)	Near Site (within about 1 mile)	Yes, for Alert, Site Emergency or General Emergency Class	Senior Plant or Corporate Official	10 NRC, including Regional Director, 20 utility including radiological accident assessment and Corporate management, 5 State and local. (periodic)	Corporate Management, Radiological Accident Assessment	1. Overall Management of Utility Resources 2. Analysis of Plant effluents met; offsite monitoring for offsite action decisions 3. Briefing location for offsite officials and press pools.	Direct display of radiological and meteorological parameters. At least that provided to NRC	Shielding against direct radiation & ventilation isolation capability	Alternate EOF required away from site; no habitability requirements for alternate