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NOTICE

This document contains information of a preliminary nature and was prepared primarily for internal use at the Oak Ridge National Laboratory. It is subject to revision or correction and therefore does not represent a final report.

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The following temperature measurement tabulation consists of two parts. Part I lists all HRT thermocouples, their location, the junction box thru which the leads pass, and their termination, if on an instrument. Part II lists all temperature read out instruments and their location.

Each "TE" number represents a thermocouple. If the "TE" number ends with an "S", it is designated as a spare thermocouple. Each spare thermocouple is placed on the pipe or vessel 180° from the live thermocouple unless otherwise noted. Thermocouples installed inside the reactor cell have 20-ga. chromel-alumel leads coated with enamel and covered over with silicone varnish impregnated fiber-glass insulation.

Thermocouples are installed by individually spot welding to pipe or vessel; in wells spot welded to the bottom of the well when possible or with the thermocouple electrically insulated from grounding to pipe or vessel. After placing a thermocouple, it is taped with asbestos tape and this covered over with fiber-glass tape. Six inches or so from the couple the wires are banded to the pipe or vessel.

The thermocouple lead from the couple goes into a quick disconnect. The mating portion of this disconnect is rigidly mounted in a section of unistrut where it is visible from the top of the cell. From here the thermocouple leads enter thru a compression-type fitting into a water tight junction box. Leads are thence carried in a pressurized conduit thru the north shield wall to a thermocouple patch panel located on the auxiliary floor.

At the patch panel all thermocouple leads are initially terminated unless otherwise noted under remarks. Ultimate termination of thermocouples may be readily changed at the patch panel. Red coded lines at the patch panel have been selected for a particular e.m.f. and should not be changed or removed. On the patch panel the thermocouple jack to the right of the thermocouple number is the live couple and to the left is the spare couple.

Thermocouple leads to instrument termination points pass thru numbered holes on the left side of the upper thermocouple patch panel and thru similar holes on each side of the lower patch panel. Numbered holes beside the lower patch panel are for differential temperature measuring instruments and have a suffix of + (plus) or - (minus). The + indicates where the thermocouple reading the higher temperature should be connected and the - indicates the same thing for the contrasted lower temperature. The hole may also carry a "F" or "W" designation. This occurs where the instrument is used to measure flow by a heat exchanger method and the "F" designates the process line (fuel or blanket); the "W", a water line (may be warm or cold). Changing of leads at the patch panel on differential temperature measuring instruments should only be to the corresponding spare thermocouple.

A total of 577 thermocouples are listed in this tabulation. The roughly 77,000 ft of wire used in connecting them up cost \$6,799. Temperatures are read on 24 instruments. Cost of these was approximately \$15,688. Accessories such as patch panels, conduit, disconnects, etc., used in installing the thermocouples cost about \$8,069. Total cost for material and instruments for temperature measurement comes to approximately \$30,556.

J. D. Grimes
J. D. Grimes

HRT THERMOCOUPLES
FUEL HIGH PRESSURE SYSTEM

Page 4
Part I.
Thermo-
couple
Numbers

Instr. Termination	Vessel or Line No.	Junction Box No.	Location	Remarks
TR-6520 pt. 1	100	JB-18	Core Outlet	
	100	JB-18	Core Outlet	
TI-7000 pt. 41	LE-145	JB-63	Fuel Pressurizer Level Pot (LE-145) Bottom	
TI-7000 pt. 42	LE-145	JB-63	Fuel Pressurizer Level Pot (LE-145) Top	With TC disconnect at pot
TR-6560 purp. (2)	100	JB-18	Core Outlet	
	100	JB-18	Core Outlet	
TI-7000 pt. 43	LE-147	JB-63	Fuel Pressurizer Level Pot (LE-147) Bottom	
TI-7000 pt. 44	LE-147	JB-63	Fuel Pressurizer Level Pot (LE-147) Top	With TC disconnect at pot
	146	JB-17	Pressurizer Gas Letdown Outlet	
	146	JB-17	Pressurizer Gas Letdown Outlet	
TR-6500 pt. 74	5	JB-25	Circulating Pump Bearing	TC Well (W/spare in well)
	5	JB-25	Circulating Pump Bearing	TC Well (W/live in well)
TR-6560 red (1)	103	JB-22	Core Inlet	
	103	JB-22	Core Inlet	
	125	JB-21	Circulating Pump Bleed Outlet	
	125	JB-21	Circulating Pump Bleed Outlet	
TR-6510 pt. 9	101	JB-24	Heat Exchanger Inlet	
	101	JB-24	Heat Exchanger Inlet	
TR-6510 pt. 10	102	JB-24	Heat Exchanger Outlet	
	102	JB-24	Heat Exchanger Outlet	
	106	JB-21	Dump Line Cooler Outlet	

<u>Page 5</u> <u>Thermo-</u> <u>couple</u> <u>Numbers</u>	<u>Instr.</u> <u>Termi-</u> <u>nation</u>	<u>Vessel</u> <u>or</u> <u>Line No.</u>	<u>Junction</u> <u>Box No.</u>	<u>Location</u>	<u>Remarks</u>
TE-1738		106	JB-21	Dump Line Cooler Outlet	
TE-175	TI-175	25*		Sample Station	Leads do not pass thru patch panel
TE-1758		25*		Sample Station	Leads do not pass thru patch panel
TE-176		129	JB-30	Sample Cooler Outlet	
TE-1768		129	JB-30	Sample Cooler Outlet	
TE-177	TR-6500 pt. 14	110	JB-21	Letdown Heat Exchanger Fuel Feed Inlet	
TE-1778		110	JB-21	Letdown Heat Exchanger Fuel Feed Inlet	
TE-178	TR-6500 pt. 15	112	JB-18	Letdown Heat Exchanger Fuel Feed Outlet	
TE-1788		112	JB-18	Letdown Heat Exchanger Fuel Feed Outlet	
TE-179	TR-6500 pt. 18	113	JB-18	Letdown Heat Exchanger Letdown Inlet	
TE-1798		113	JB-18	Letdown Heat Exchanger Letdown Inlet	
TE-180	TR-6510 pt. 1	114	JB-21	Letdown Heat Exchanger Letdown Outlet	
TE-1808	TR-6500 pt. 19	114	JB-21	Letdown Heat Exchanger Letdown Outlet	
TE-181		129	JB-30	Sample Valve (HEV-136) Outlet	
TE-1818		129	JB-30	Sample Valve (HEV-136) Outlet	
TE-182	TR-6510 pt. 5	2	JB-17	Pressurizer Liquid	TC Well (W/spare in well)
TE-1828		2	JB-17	Pressurizer Liquid	TC Well (W/live in well)
TE-183	TR-6510 pt. 6	2	JB-17	Pressurizer Leg	TC Well (W/spare in well)
TE-1838		2	JB-17	Pressurizer Leg	TC Well (W/live in well)

<u>Thermo-couple Number</u>	<u>Instr. Termination</u>	<u>Vessel or Line No.</u>	<u>Junction Box No.</u>	<u>Location</u>	<u>Remarks</u>
TE-184	TDR-6530 pt. 1	101	JB-24	Heat Exchanger Inlet	
TE-184S		101	JB-24	Heat Exchanger Inlet	
TE-185	TDR-6530 pt. 2	102	JB-24	Heat Exchanger Outlet	
TE-185S		102	JB-24	Heat Exchanger Outlet	
TE-186	TDR-6570 pt. 1	100	JB-18	Core Outlet	
TE-186S		100	JB-18	Core Outlet	
TE-187	TDR-6570 pt. 2	103	JB-22	Core Inlet	
TE-187S		103	JB-22	Core Inlet	
TE-188	TR-6580 pt. 1	2d	JB-17	Pressurizer Heater Upper	Inserted thru jacket with TC disc't at heater
TE-188S	TR-6580 pt. 2	2d	JB-17	Pressurizer Heater Lower	" " " " " "
TE-189	TR-6580 pt. 3	2c	JB-17	Pressurizer Heater Upper	" " " " " "
TE-189S	TR-6580 pt. 4	2c	JB-17	Pressurizer Heater Lower	" " " " " "
TE-190	TR-6580 pt. 5	2b	JB-17	Pressurizer Heater Upper	" " " " " "
TE-190S	TR-6580 pt. 6	2b	JB-17	Pressurizer Heater Lower	" " " " " "
TE-191	TR-6500 pt. 16	124	JB-21	Letdown Heat Exch. Purge Inlet	
TE-191S		124	JB-21	Letdown Heat Exch. Purge Inlet	
TE-192	TR-6500 pt. 17	111	JB-21	Letdown Heat Exch. Purge Outlet	
TE-192S		111	JB-21	Letdown Heat Exch. Purge Outlet	
TE-193	TR-6500 pt. 87	166	JB-25	Chem. Proc. Return Valve (HCV-141) Inlet	
TE-193S		166	JB-25	Chem. Proc. Return Valve (HCV-141) Inlet	
TE-194	TR-6500 pt. 89	167	JB-24	Chem. Proc. Take-off Valve (HCV-142) Outlet	
TE-194S		167	JB-24	Chem. Proc. Take-off Valve (HCV-142) Outlet	
TE-195	FR-1500 pt. 1P+	107	JB-31	Fuel Feed Cooler Inlet	With TC insul. from gnd.

<u>Thermocouple Number</u>	<u>Instr. Termination</u>	<u>Vessel or Line No.</u>	<u>Junction Box No.</u>	<u>Location</u>	<u>Remarks</u>
TE-195G	TR-6500 pt. 1	107	JB-31	Fuel Feed Cooler Inlet	With TC insl. from ground
TE-195.1	FR-1500 pt. 1P-	109	JB-20	Fuel Feed Cooler Outlet	With TC insl. from ground
TE-195.1B	TR-6500 pt. 2	109	JB-58	Fuel Feed Cooler Outlet	With TC insl. from ground
TE-196	TDR-6520 pt. 2	103	JB-22	Core Inlet	
TE-196G		103	JB-22	Core Inlet	
TE-197	TR-6580 pt. 7	2a	JB-17	Pressurizer Heater Upper Inserted thru jacket	With TC disc't at heater
TE-197B	TR-6580 pt. 8	2a	JB-17	Pressurizer Heater Lower Inserted thru jacket	With TC disc't at heater
TE-198	FR-1500 pt. 2P+	123	JB-28	Fuel Purge Pump Cooler Inlet	With TC insl. from ground
TE-198B	TR-6500 pt. 5	123	JB-28	Fuel Purge Pump Cooler Inlet	With TC insl. from ground
TE-198.1	FR-1500 pt. 2P-	123	JB-20	Fuel Purge Pump Cooler Outlet	With TC insl. from ground
TE-198.1B	TR-6500 pt. 6	123	JB-58	Fuel Purge Pump Cooler Outlet	With TC insl. from ground
TE-199	FR-1500 pt. 3P-	125	JB-63	Fuel Circ. Pump Purge Heater Inlet	With TC insl. from ground
TE-199B	TR-6500 pt. 9	125	JB-63	Fuel Circ. Pump Purge Heater Inlet	With TC insl. from ground
TE-199.1	FR-1500 pt. 3P+	125	JB-63	Fuel Circ. Pump Purge Heater Outlet	With TC insl. from ground
TE-199.1B	TR-6500 pt. 10	125	JB-63	Fuel Circ. Pump Purge Heater Outlet	With TC insl. from ground

BLANKET HIGH PRESSURE SYSTEM

<u>Page 8</u> <u>Thermo-</u> <u>couple</u> <u>Number</u>	<u>Instr.</u> <u>Termi-</u> <u>nation</u>	<u>Vessel</u> <u>or</u> <u>Line No.</u>	<u>Junction</u> <u>Box No.</u>	<u>Location</u>	<u>Remarks</u>
TE-265	TdT-6520	200	JB-18	Pressure Vessel Outlet	
TE-265S		200	JB-18	Pressure Vessel Outlet	
TE-265.1	TI-7000 pt. 45	LE-247	JB-63	Blanket Pressurizer Level Pot(LE-247) Bottom	
TE-265.1S	TI-7000 pt. 46	LE-247	JB-63	Blanket Pressurizer Level Pot(LE-247) Top	With TC disc't at pot
TE-266		200	JB-18	Pressure Vessel Outlet	
TE-266S		200	JB-18	Pressure Vessel Outlet	
TE-266.1	TI-7000 pt. 47	LE-245	JB-63	Pressure Vessel Outlet Pot (LE-245) Bottom	
TE-266.1S	TI-7000 pt. 48	LE-245	JB-63	Pressure Vessel Outlet Pot (LE-245) Top	With TC disc't at pot
TE-267		246	JB-17	Pressurizer Gas Letdown Outlet	
TE-267S		246	JB-17	Pressurizer Gas Letdown Outlet	
TE-268	TR-6500 pt. 71	28	JB-45	Circulating Pump Bearing	TC Well (W/spare in well)
TE-268S		28	JB-45	Circulating Pump Bearing	TC Well (W/live in well)
TE-269		203	JB-22	Pressure Vessel Inlet	
TE-269S		203	JB-22	Pressure Vessel Inlet	
TE-270		225	JB-42	Circulating Pump Bleed Outlet	
TE-270S		225	JB-42	Circulating Pump Bleed Outlet	
TE-271	TR-6510 pt. 11	201	JB-44	Heat Exchanger Inlet	
TE-271S		201	JB-44	Heat Exchanger Inlet	
TE-272	TR-6510 pt. 12	202	JB-44	Heat Exchanger Outlet	
TE-272S		202	JB-44	Heat Exchanger Outlet	
TE-273		206	JB-42	Dump Line Cooler Outlet	
TE-273S		206	JB-42	Dump Line Cooler Outlet	

Page 9
Thermo-
couple
Number

Instr.
Termin-
ation

Vessel
or
Line No.

Junction
Box No.

Location

Remarks

TE-275	TI-275	38*		Sample Station	Leads do not pass thru patch panel
TE-275B		38*		Sample Station	Leads do not pass thru patch panel
TE-276		229	JB-37	Sample Cooler Outlet	
TE-276B		229	JB-37	Sample Cooler Outlet	
TE-277	TR-6500 pt. 37	210	JB-42	Letdown Heat Exch. Blkt. Feed Inlet	
TE-277B		210	JB-42	Letdown Heat Exch. Blkt. Feed Inlet	
TE-278	TR-6500 pt. 38	212	JB-44	Letdown Heat Exch. Blkt. Feed Outlet	
TE-278B		212	JB-44	Letdown Heat Exch. Blkt. Feed Outlet	
TE-279	TR-6500 pt. 41	213	JB-44	Letdown Heat Exch. Letdown Inlet	
TE-279B		213	JB-44	Letdown Heat Exch. Letdown Inlet	
TE-280	TR-6510 pt. 2	214	JB-42	Letdown Heat Exch. Letdown Outlet	
TE-280B	TR-6500 pt. 42	214	JB-42	Letdown Heat Exch. Letdown Outlet	
TE-281		229	JB-37	Sample Valve (MCV-236) Outlet	
TE-281B		229	JB-37	Sample Valve (MCV-236) Outlet	
TE-282	TR-6510 pt. 7	29	JB-17	Pressurizer Liquid	TC Well (W/spare in well)
TE-282B		29	JB-17	Pressurizer Liquid	TC Well (W/live in well)
TE-283	TR-6510 pt. 8	29	JB-17	Pressurizer Leg	TC Well (W/spare in well)
TE-283B		29	JB-17	Pressurizer Leg	TC Well (W/live in well)
TE-284	TR-6500 pt. 81	32	JB-18	Pressure Vessel North top	
TE-284B	TR-6500 pt. 83	32	JB-22	Pressure Vessel North Bottom	

Page 10
Thermo-
couple
Number

<u>Thermo- couple Number</u>	<u>Inst. Termination</u>	<u>Vessel or Line No.</u>	<u>Junction Box No.</u>	<u>Location</u>	<u>Remarks</u>
TE-285	TI-7000 pt. 11	32	JB-18	Pressure Vessel East Top	
TE-285B	TI-7000 pt. 12	32	JB-22	Pressure Vessel East Bottom	
TE-286	TR-6500 pt. 82	32	JB-18	Pressure Vessel South Top	
TE-286B	TR-6500 pt. 84	32	JB-22	Pressure Vessel South Bottom	
TE-287	TDR-6590 pt. 5+	32	JB-18	Pressure Vessel West Top	
TE-287B	TI-7000 pt. 13	32	JB-22	Pressure Vessel West Bottom	
TE-288	TR-6580 pt. 9	29d	JB-17	Pressurizer Heater Upper	Inserted thru jacket w/TC disc't at heater
TE-288B	TR-6580 pt. 10	29d	JB-17	Pressurizer Heater Lower	Inserted thru jacket w/TC disc't at heater
TE-289	TR-6580 pt. 11	29c	JB-17	Pressurizer Heater Upper	Inserted thru jacket w/TC disc't at heater
TE-289B	TR-6580 pt. 12	29c	JB-17	Pressurizer Heater Lower	Inserted thru jacket w/TC disc't at heater
TE-290	TR-6580 pt. 13	29b	JB-17	Pressurizer Heater Upper	Inserted thru jacket w/TC disc't at heater
TE-290B	TR-6580 pt. 14	29b	JB-17	Pressurizer Heater Lower	Inserted thru jacket w/TC disc't at heater
TE-291	TR-6500 pt. 39	224	JB-42	Letdown Heat Exch. Purge Inlet	
TE-291B		224	JB-42	Letdown Heat Exch. Purge Inlet	
TE-292	TR-6500 pt. 40	211	JB-44	Letdown Heat Exch. Purge Outlet	
TE-292B		211	JB-44	Letdown Heat Exch. Purge Outlet	
TE-293	TR-6500 pt. 85	266	JB-45	Chem. Proc. Return Valve (HCV-241) Inlet	
TE-293B		266	JB-45	Chem. Proc. Return Valve (HCV-241) Inlet	
TE-294	TR-6500 pt. 86	267	JB-44	Chem. Proc. Take-off Valve (HCV-242) Outlet	
TE-294B		267	JB-44	Chem. Proc. Take-off Valve (HCV-242) Outlet	
TE-295	FR-1500 pt. 4P+	207	JB-38	Blanket Feed Cooler Inlet	With TC insul. from ground
TE-295B	TR-6500 pt. 24	207	JB-38	Blanket Feed Cooler Inlet	With TC insul. from ground
TE-295.1	FR-1500 pt. 4P-	209	JB-41	Blanket Feed Cooler Outlet	With TC insul. from ground

Page 11
Thermo-
couple
Number

<u>Thermo- couple Number</u>	<u>Instr. Termi- nation</u>	<u>Vessel or Line No.</u>	<u>Junction Box No.</u>	<u>Location</u>	<u>Remarks</u>
TE-295.1B	TR-6500 pt. 25	209	JB-61	Blanket Feed Cooler Outlet	With TC insl. from ground
TE-296	TR-6590 pt. 5	203	JB-22	Pressure Vessel Inlet	With TC insl. from ground
TE-296B		203	JB-22	Pressure Vessel Inlet	With TC ins. from ground
TE-297	TR-6580 pt. 15	29a	JB-17	Pressurizer Heater Upper	Inserted thru jacket w/TC disc't at heater
TE-297B	TR-6580 pt. 16	29a	JB-17	Pressurizer Heater Lower	Inserted thru jacket w/TC disc't at heater
TE-298	FR-1500 pt. 5P+	223	JB-35	Blanket Purge Pump Cooler Inlet	With TC insl. from ground
TE-298B	TR-6500 pt. 28	223	JB-35	Blanket Purge Pump Cooler Inlet	With TC insl. from ground
TE-298.1	FR-1500 pt. 5P-	223	JB-41	Blanket Purge Pump Cooler Outlet	With TC insl. from ground
TE-298.1B	TR-6500 pt. 29	223	JB-61	Blanket Purge Pump Cooler Outlet	With TC insl. from ground
TE-299	FR-1500 pt. 6P-	225	JB-60	Blanket Circ. Pump Purge Heater Inlet	With TC insl. from ground
TE-299B	TR-6500 pt. 32	225	JB-60	Blanket Circ. Pump Purge Heater Inlet	With TC insl. from ground
TE-299.1	FR-1500 pt. 6P+	225	JB-60	Blanket Circ. Pump Purge Heater Outlet	With TC insl. from ground
TE-299.1B	TR-6500 pt. 34	225	JB-60	Blanket Circ. Pump Purge Heater Outlet	With TC insl. from ground

FUEL LOW PRESSURE SYSTEM

<u>Page 12</u> <u>Thermo-</u> <u>couple</u> <u>Number</u>	<u>Instr.</u> <u>Termi-</u> <u>nation</u>	<u>Vessel</u> <u>or</u> <u>Line No.</u>	<u>Junction</u> <u>Box No.</u>	<u>Location</u>	<u>Remarks</u>
TE-365		106	JB-21	Dump Valve (PCV-152) Outlet	
TE-365B		106	JB-21	Dump Valve (PCV-152) Outlet	
TE-366	TR-6500 pt. 56	19	JB-30	Transfer Tank South Side	TC Well
TE-366B		19	JB-30	Transfer Tank North Side	TC Well
TE-367	TI-367	18*		Sample Station	Leads do not pass thru patch panel
TE-367B		18*		Sample Station	Leads do not pass thru patch panel
TE-368	TR-6500 pt. 54	116	JB-27	Recombiner Cond. Off Gas Outlet	
TE-368B		116	JB-27	Recombiner Cond. Off Gas Outlet	
TE-369		122	JB-26	Condensate Tank Outlet	
TE-369B		122	JB-26	Condensate Tank Outlet	
TE-370		135	JB-30	Fuel Transfer Junction Lines 135 and 164	
TE-370B		135	JB-30	Fuel Transfer Junction Lines 135 and 164	
TE-375	TI-375	8a	JB-26	Recombiner	Insert in well nearest center
TE-375B		8a	JB-26	Recombiner	Insert in well next nearest to center

Thermo-
couple
NumberInstr.
TerminationVessel
or
Line No.Junction
Box No.

Location

Remarks

TE-376	TR-6510 pt. 3	7a	JB-31	Dump Tank Evaporator Inlet	
TE-376B		7a	JB-31	Dump Tank Evaporator Inlet	
TE-377		7b	JB-31	Dump Tank Evaporator Inlet	
TE-377B		7b	JB-31	Dump Tank Evaporator Inlet	
TE-378	TR-6500 pt. 47	16a	JB-32	Storage Tank Evaporator Inlet	
TE-378B		16a	JB-32	Storage Tank Evaporator Inlet	
TE-379		16b	JB-32	Storage Tank Evaporator Inlet	
TE-379B		16b	JB-32	Storage Tank Evaporator Inlet	
TE-381	TR-6500 pt. 57	138	JB-30	Transfer Tank Vent Valve (HCV-733) Outlet	
TE-381B		138	JB-30	Transfer Tank Vent Valve (HCV-733) Outlet	
TE-382		141	JB-23	Chem. Proc. Take-off Valve (HCV-340) Outlet	
TE-382B		141	JB-23	Chem. Proc. Take-off Valve (HCV-340) Outlet	
TE-383		108	JB-30	Fuel Transfer Junction Lines 135 and 108	
TE-383B		108	JB-30	Fuel Transfer Junction Lines 135 and 108	
TE-384	TR-6500 pt. 53	8a	JB-26	Recombiner	TC Well (W/Spare in well)(Outmost well)
TE-384B		8a	JB-26	Recombiner	TC Well (W/Live in well)(Outmost well)
TE-385		107	JB-31	Fuel Feed Transfer Junc. Lines 107 and 108	
TE-385B		107	JB-31	Fuel Feed Transfer Junc. Lines 107 and 108	
TE-386		162	JB-28	Processed Fuel Return Valve (HCV-937) Outlet	
TE-386B		162	JB-28	Processed Fuel Return Valve (HCV-937) Outlet	
TE-387	TR-6500 pt. 79	127	JB-26	Gas Bleed Valve (HCV-139) Outlet	

Page 14
Thermo-
couple
Number

Instr.
Termini-
nation

Vessel
or
Line No.

Junction
Box No.

Location

Remarks

TE-387B

127

JB-26

Gas Bleed Valve (HEV-139) Outlet

TE-389

TR-6500 pt. 46

16a

JB-23

Storage Tank Evaporator Outlet

TE-389B

16a

JB-23

Storage Tank Evaporator Outlet

TE-390

16b

JB-23

Storage Tank Evaporator Outlet

TE-390B

16b

JB-23

Storage Tank Evaporator Outlet

TE-391

TR-6500 pt. 45

7a

JB-29

Dump Tank Evaporator Outlet

TE-391B

7a

JB-29

Dump Tank Evaporator Outlet

TE-392

7b

JB-29

Dump Tank Evaporator Outlet

TE-392B

7b

JB-29

Dump Tank Evaporator Outlet

BLANKET LOW PRESSURE SYSTEM

Page 15
Thermo-
couple
Number

Instr.
Termini-
nation

Vessel
or
Line No.

Junction
Box No.

Location

Remarks

TE-465		206	JB-42	Dump Valve (PCV-252) Outlet	
TE-465B		206	JB-42	Dump Valve (PCV-252) Outlet	
TE-466	TR-6500 pt. 69	42	JB-37	Transfer Tank South Side	TC Well
TE-466B		42	JB-37	Transfer Tank North Side	TC Well
TE-467	TI-467	44*		Sample Station	Leads do not pass thru patch panel
TE-467B		44*		Sample Station	Leads do not pass thru patch panel
TE-468	TR-6500 pt. 68	216	JB-34	Recombiner Condenser Off Gas Outlet	
TE-468B		216	JB-34	Recombiner Condenser Off Gas Outlet	
TE-469		222	JB-33	Condensate Tank Outlet	
TE-469B		222	JB-33	Condensate Tank Outlet	
TE-470		235	JB-37	Fuel Transfer Junction Lines 235 and 264	
TE-470B		235	JB-37	Fuel Transfer Junction Lines 235 and 264	
TE-475	TI-475	35a	JB-33	Recombiner	Insert in well nearest center
TE-475B		35a	JB-33	Recombiner	Insert in well next nearest to center
TE-476	TR-6510 pt. 4	34a	JB-38	Dump Tank Evaporator Inlet	

Page 16
Thermo-
couple
Number

<u>Thermo- couple Number</u>	<u>Instr. Termi- nation</u>	<u>Vessel or Line No.</u>	<u>Junction Box No.</u>	<u>Location</u>	<u>Remarks</u>
TE-4768		34a	JB-38	Dump Tank Evaporator Inlet	
TE-477		34b	JB-38	Dump Tank Evaporator Inlet	
TE-4778		34b	JB-39	Dump Tank Evaporator Inlet	
TE-478	TR-6500 pt. 60	49a	JB-39	Storage Tank Evaporator Inlet	
TE-4788		49a	JB-39	Storage Tank Evaporator Inlet	
TE-479		49b	JB-39	Storage Tank Evaporator Inlet	
TE-4798		49b	JB-39	Storage Tank Evaporator Inlet	
TE-480		241	JB-42	Chem. Proc. Take-off Valve (HCV-440) Outlet	
TE-4808		241	JB-42	Chem. Proc. Take-off Valve (HCV-440) Outlet	
TE-481	TR-6500 pt. 70	238	JB-37	Transfer Tank Vent Valve (HCV-734) Outlet	
TE-4818		238	JB-37	Transfer Tank Vent Valve (HCV-734) Outlet	
TE-482		270	JB-40	LP Systems Withdrawal Valve (HCV-939) Outlet	
TE-4828		270	JB-40	LP Systems Withdrawal Valve (HCV-939) Outlet	
TE-483		208	JB-37	Blkt. Transfer Junction Lines 235 and 208	
TE-4838		208	JB-37	Blkt. Transfer Junction Lines 235 and 208	
TE-484	TR-6500 pt. 67	35a	JB-33	Recombiner	TC Well (w/spare inwell)(Outmost well)
TE-4848		35a	JB-33	Recombiner	TC Well w/live in well) (Outmost well)
TE-485		207	JB-38	Blkt. Feed-Transfer Junct. Lines 207 and 208	
TE-4858		207	JB-38	Blkt. Feed-Transfer Junct. Lines 207 and 208	
TE-486		262	JB-35	Processed Blkt. Return Valve (HCV-938) Outlet	
TE-4868		262	JB-35	Processed Blkt. Return Valve (HCV-938) Outlet	
TE-487	TR-6500 pt. 80	227	JB-33	Gas Bleed Valve (HCV-239) Outlet	
TE-4878		227	JB-33	Gas Bleed Valve (HCV-239) Outlet	

<u>Thermo- couple Number</u>	<u>Instr. Termi- nation</u>	<u>Vessel or Line No.</u>	<u>Junction Box No.</u>	<u>Location</u>	<u>Remarks</u>
TE-489	TR-6500 pt. 59	49a	JB-43	Storage Tank Evaporator Outlet	
TE-489B		49a	JB-43	Storage Tank Evaporator Outlet	
TE-490		49b	JB-43	Storage Tank Evaporator Outlet	
TE-490B		49b	JB-43	Storage Tank Evaporator Outlet	
TE-491	TR-6500 pt. 58	34a	JB-36	Dump Tank Evaporator Outlet	
TE-491B		34a	JB-36	Dump Tank Evaporator Outlet	
TE-492		34b	JB-36	Dump Tank Evaporator Outlet	
TE-492B		34b	JB-36	Dump Tank Evaporator Outlet	

Page 18
Thermo-
couple
Number

Instr.
Terai-
nation

Vessel
or
Line No.

Junction
Box No.

STEAM SYSTEM

Location

Remarks

TE-565	TMR-6590 pt. 1-	301*		Fuel Steam Drum Outlet	
TE-565B		301*		Fuel Steam Drum Outlet	
TE-566	TMR-6590 pt. 7-	303*		Blanket Steam Drum Outlet	
TE-566B		303*		Blanket Steam Drum Outlet	
TE-567	TR-6500 pt. 90	358*		Fuel Heat Exchanger Feedwater	
TE-567B		358*		Fuel Heat Exchanger Feedwater	
TE-568	TR-6500 pt. 91	368*		Blanket Heat Exchanger Feedwater	
TE-568B		368*		Blanket Heat Exchanger Feed Water	
TE-569	TI-7000 pt. 40	354*		Feedwater Pumps Inlet	
TE-569B		354*		Feedwater Pumps Inlet	
TE-570		397*		Deaerator Cond. Coolant Outlet	
TE-570B		397*		Deaerator Cond. Coolant Outlet	
TE-571	TI-7000 pt. 23	389*		Turbine Cond. Coolant Inlet	
TE-571B		389*		Turbine Cond. Coolant Inlet	
TE-572	TI-7000 pt. 24	392*		Turbine Cond. Coolant Outlet	
TE-572B		392*		Turbine Cond. Coolant Outlet	
TE-573	TI-7000 pt. 36	334*		Turbine Steam Flow Orifice	
TE-573B		334*		Turbine Steam Flow Orifice	
TE-574	TI-7000 pt. 34	328*		Fuel Steam Flow Orifice	
TE-574B		328*		Fuel Steam Flow Orifice	
TE-575	TI-7000 pt. 35	331*		Blanket Steam Flow Orifice	
TE-575B		331*		Blanket Steam Flow Orifice	
TE-576	TI-7000 pt. 38	328*		Air Condenser Steam Inlet	

Page 19
Thermo-
couple
Number

<u>Thermo- couple Number</u>	<u>Instr. Termini- nation</u>	<u>Vessel or Line No.</u>	<u>Junction Box No.</u>	<u>Location</u>	<u>Remarks</u>
TE-576B		328*		Air Condenser Steam Inlet	
TE-577	TI-7000 pt. 39	345*		Air Condenser Condensate Outlet	
TE-577B		345*		Air Condenser Condensate Outlet	
TE-578	TI-7000 pt. 37	334*		Turbine Steam Inlet	
TE-578B		334*		Turbine Steam Inlet	
TE-579		59*		Turbine Cond. Hotwell	
TE-579B		59*		Turbine Cond. Hotwell	
TE-580	TR-6500 pt. 94	393*		Cooling Tower Inlet	
TE-580B		393*		Cooling Tower Inlet	
TE-581	TR-6500 pt. 93	390*		Cooling Tower Outlet	
TE-581B		390*		Cooling Tower Outlet	
TE-582	TI-7000 pt. 30	320	JB-27	Fuel Heat Exch. Relief Valve	
TE-582B		320	JB-27	Fuel Heat Exch. Relief Valve	
TE-583	TI-7000 pt. 31	322	JB-23	Fuel Heat Exch. Relief Valve	
TE-583B		322	JB-23	Fuel Heat Exch. Relief Valve	
TE-584	TI-7000 pt. 32	321	JB-34	Blanket Heat Exch. Relief Valve	
TE-584B		321	JB-34	Blanket Heat Exch. Relief Valve	
TE-585	TI-7000 pt. 33	323	JB-43	Blanket Heat Exch. Relief Valve	
TE-585B		323	JB-43	Blanket Heat Exch. Relief Valve	
TE-586	TDR-6590 pt. 2-	4	JB-27	Fuel Heat Exch. Shell, Bottom	With TC insl. from ground
TE-586B		4	JB-27	Fuel Heat Exch. Shell, Bottom	With TC insl. from ground
TE-586.1	TDR-6590 pt. 2+	4	JB-23	Fuel Heat Exch. Shell, Bottom	TC Well (w/spare in well)
TE-586.1B	TDR-6590 pt. 3-	4	JB-23	Fuel Heat Exch. Shell, Bottom	TC Well (w/live in well)

<u>Thermo-couple Number</u>	<u>Instr. Termination</u>	<u>Vessel or Line No.</u>	<u>Junction Box No.</u>	<u>Location</u>	<u>Remarks</u>
TE-587	TDR-6590 pt. 3+	4	JB-27	Fuel Heat Exch. Shell, Top, North Side	With TC insl. from ground
TE-587S	TDR-6590 pt. 1+	4	JB-27	Fuel Heat Exch. Shell, Top, South Side	With TC insl. from ground
TE-588	TDR-6590 pt. 4-	31	JB-34	Blanket Heat Exch. Shell, Bottom	With TC insl. from ground
TE-588S		31	JB-34	Blanket Heat Exch. Shell, Bottom	
TE-588.1	TDR-6590 pt. 4+	31	JB-43	Blanket Heat Exch. Shell, Bottom	TC Well (W/spare in well)
TE-588.1S	TDR-6590 pt. 6-	31	JB-43	Blanket Heat Exch. Shell, Bottom	TC Well (W/live in well)
TE-589	TDR-6590 pt. 7+	31	JB-34	Blanket Heat Exch. Shell, top, North Side	With TC insl from ground
TE-589S	TDR-6590 pt. 6+	31	JB-34	Blanket Heat Exch. Shell, Top, South Side	With TC insl. from ground
TE-589.1	TI-7000 pt. 22	*		Turbine Oil Cooler, Oil Outlet	
TE-589.1S		*		Turbine Oil Cooler, Oil Outlet	

Page 21
Thermo-
couple
Number

Instr.
Termi-
nation

Vessel
or
Line No.

Junction
Box No.

WARM WATER SYSTEM

Location

Remarks

TE-666A

TI-666

846*

Test Heat Exchanger Steam Inlet

Leads do not pass thru patch
Panel

TE-666B

TI-666

847*

Test Heat Exchanger Steam Outlet

Leads do not pass thru patch
Panel

Page 22
Thermo-
couple
Number

Instr.
Termination

Vessel
or
Line No.

Junction
Box No.

OFF GAS SYSTEM

Location

Remarks

TE-765	TR-6500 pt. 50	134	JB-23	Fuel Reflux Cond. Off Gas	
TE-765S		134	JB-23	Fuel Reflux Cond. Off Gas	
TE-766	TR-6500 pt. 63	234	JB-43	Blanket Reflux Cond. Off Gas	
TE-766S		234	JB-43	Blanket Reflux Cond. Off Gas	
TE-767	TR-6500 pt. 101	10a*	JB-56	Adsorber Bed A; 1/2" Line	TC in 3/16" SS Shield
TE-768	TI-7000 pt. 1	10a*	JB-56	Adsorber Bed A; 1" Line	TC in 3/16" SS Shield
TE-769	TI-7000 pt 2	10a*	JB-56	Adsorber Bed A; 2" Line	TC in 3/16" SS Shield
TE-770	TI-7000 pt. 3	10a*	JB-56	Adsorber Bed A; 6" Line	TC in 3/16" SS Shield
TE-771	TI-6500 pt. 102	10B*	JB-56	Adsorber Bed B, 1/2" Line	TC in 3/16" SS Shield
TE-772	TI-7000 pt. 4	10b*	JB-56	Adsorber Bed B, 1" Line	TC in 3/16" SS Shield
TE-773	TI-7000 pt. 5	10b*	JB-56	Adsorber Bed B; 2" Line	TC in 3/16" SS Shield
TE-774	TI-7000 pt. 6	10b*	JB-56	Adsorber Bed B; 6" Line	TC in 3/16" SS Shield
TE-775	TR-6500 pt. 103	10c *	JB-56	Adsorber Bed C; 1/2" Line	TC in 3/16" SS Shield

<u>Thermo- couple Number</u>	<u>Instr. Termi- nation</u>	<u>Vessel or Line No.</u>	<u>Junction Box No.</u>	<u>Location</u>	<u>Remarks</u>
TE-776	TI-7000 pt. 7	10c*	JB-56	Adsorber Bed C; 1" Line	TC in 3/16" SS Shield
TE-777	TI-7000 pt. 8	10c*	JB-56	Adsorber Bed C; 2" Line	TC in 3/16" SS Shield
TE-778	TI-7000 pt. 9	10c*	JB-56	Adsorber Bed C; 6" Line	TC in 3/16" SS Shield
TE-779		117	JB-59	Fuel Storage Recombiner, Top	
TE-779B		117	JB-59	Fuel Storage Recombiner, Top	
TE-780		165	JB-40	Storage Cold Trap Off Gas Line	
TE-780B		165	JB-40	Storage Cold Trap Off Gas Line	

UTILITIES SYSTEM

<u>Thermo-couple Number</u>	<u>Instr. Termination</u>	<u>Vessel or Line No.</u>	<u>Junction or Box No.</u>	<u>Location</u>	<u>Remarks</u>
TE-865	TR-6500pt.20	424	JB-21	Fuel Letdown Heat Exch. CWD	
TE-865S		424	JB-21	Fuel Letdown Heat Exch. CWD	
TE-866	TR-6500 pt. 43	448	JB-42	Blanket Letdown Heat Exch. CWD	
TE-866S		448	JB-42	Blanket Letdown Heat Exch. CWD	
TE-867	TR-6500 pt. 75	422	JB-25	Fuel Circulating Pump CWD	
TE-867S		422	JB-25	Fuel Circulating Pump CWD	
TE-868	TR-6500 pt. 73	446	JB-45	Blanket Circulating Pump CWD	
TE-868S		446	JB-45	Blanket Circulating Pump CWD	
TE-873		410	JB-27	Fuel Recombiner Condenser CWD	
TE-873S		410	JB-27	Fuel Recombiner Condenser CWD	
TE-873.1		409	JB-27	Fuel Recombiner Condenser CWI	
TE-873.1S		409	JB-27	Fuel Recombiner Condenser CWI	
TE-874		434	JB-34	Blanket Recombiner Condenser CWD	
TE-874S		434	JB-34	Blanket Recombiner Condenser CWD	

Page 25
Thermo-
couple
Number

<u>Thermo- couple Number</u>	<u>Instr. Termi- nation</u>	<u>Vessel or Line No.</u>	<u>Junction Box No.</u>	<u>Location</u>	<u>Remarks</u>
TE-875		428	JB-25	Fuel Dump Line Cooler CWD	
TE-875S		428	JB-25	Fuel Dump Line Cooler CWD	
TE-876		452	JB-45	Blanket Dump Line Cooler CWD	
TE-876S		452	JB-45	Blanket Dump Line Cooler CWD	
TE-877	FR-1500 pt. 1W-	417	JB-20	Fuel Feed Line Cooler CWI	With TC insl. from ground
TE-877S	TR-6500 pt. 3	417	JB-58	Fuel Feed Line Cooler CWI	With TC insl. from ground
TE-877.1	FR-1500 pt. 1W+	418	JB-31	Fuel Feed Line Cooler CWD	With TC insl. from ground
TE-877.1S	TR-6500 Pt. 4	418	JB-31	Fuel Feed Line Cooler CWD	With TC insl. from ground
TE-878	FR-1500 pt. 4W-	441	JB-41	Blanket Feed Line Cooler CWI	With TC insl. from ground
TE-878S	TR-6500 pt. 26	441	JB-61	Blanket Feed Line Cooler CWI	With TC insl. from ground
TE-878.1	FR-1500 pt. 4W+	442	JB-38	Blanket Feed Line Cooler CWD	With TC insl. from ground
TE-878.1S	TR-6500 pt. 27	442	JB-38	Blanket Feed Line Cooler CWD	With TC insl. from ground
TE-879		420	JB-25	Fuel Sample Line Cooler CWD	
TE-879S		420	JB-25	Fuel Sample Line Cooler CWD	
TE-880		444	JB-45	Blanket Sample Line Cooler CWD	
TE-880S		444	JB-45	Blanket Sample Line Cooler CWD	
TE-881	TR-6500 pt. 49	414	JB-32	Fuel Reflux Condenser CWD	
TE-881S		414	JB-32	Fuel Reflux Condenser CWD	
TE-881.1	TR-6500 pt. 48	413	JB-32	Fuel Reflux Condenser CWI	
TE-881.1S		413	JB-32	Fuel Reflux Condenser CWI	
TE-882	TR-6500 pt. 62	438	JB-39	Blanket Reflux Condenser CWD	
TE-882S		438	JB-39	Blanket Reflux Condenser CWD	

Page 26
Thermo-
couple
Number

Instr.
Termination

Vessel
or
Line No.

Junction
Box No.

Location

Remarks

TE-882.1	TR-6500 pt. 61	437	JB-39	Blanket Reflux Condenser CWI	
TE-882.1S		437	JB-39	Blanket Reflux Condenser CWI	
TE-883	TR-6500 pt. 52	454	JB-27	Fuel Entrainment Separator CWD	
TE-883S		454	JB-27	Fuel Entrainment Separator CWD	
TE-883.1	TR-6500 pt. 51	453	JB-27	Fuel Entrainment Separator CWI	
TE-883.1S		453	JB-27	Fuel Entrainment Separator CWI	
TE-884	TR-6500 pt. 64	456	JB-34	Blanket Entrainment Separator CWD	
TE-884S		456	JB-34	Blanket Entrainment Separator CWD	
TE-884.1	TR-6500 pt. 65	455	JB-34	Blanket Entrainment Separator CWI	
TE-884.1S		455	JB-34	Blanket Entrainment Separator CWI	
TE-885		620*		Fuel Sample Stations CWD	With TC disc't at sample station
TE-885S		620*		Fuel Sample Station CWD	With TC disc't at sample station
TE-886		621*		Blanket Sample Stations CWD	With TC disc't at sample station
TE-886S		621*		Blanket Sample Stations CWD	With TC disc't at sample station
TE-887		500*		Adsorber Pit Coolant Outlet	TC in 3/16" SS Shield
TE-887S		500*		Adsorber Pit Coolant Outlet	TC in 3/16" SS Shield
TE-888		494*		Waste Evaporator CWD	
TE-888S		494*		Waste Evaporator CWD	
TE-888.1		790	JB-21	Thermal Shield Cooler CWD	
TE-888.1S		790	JB-21	Thermal Shield Cooler CWD	
TE-889.	TI-7000 pt. 17	401	JB-18	Thermal Shield Cooler CWD	
TE-889S		401	JB-18	Thermal Shield Cooler CWD	
TE-889.1	TI-7000 pt. 18	793	JB-16	Thermal Shield Cooler CWD	

<u>Thermo- couple Number</u>	<u>Instr. Termination</u>	<u>Vessel or Line No.</u>	<u>Junction Box No.</u>	<u>Location</u>	<u>Remarks</u>
TE-889.1S		793	JB-18	Thermal Shield Cooler CWD	
TE-890	TI-7000 pt. 16	490	JB-18	Reactor Vessel Cooler CWD	
TE-890S		490	JB-18	Reactor Vessel Cooler CWD	
TE-890.1	TI-7000 pt. 19	792	JB-18	Thermal Shield Cooler CWD	
TE-890.1S		792	JB-18	Thermal Shield Cooler CWD	
TE-891	TI-7000 pt. 14	482	JB-27	Fuel Space Coolers CWD	
TE-891S		482	JB-27	Fuel Space Coolers CWD	
TE-891.1	TI-7000 pt. 20	791	JB-22	Thermal Shield Cooler CWD	
TE-891.1S		791	JB-22	Thermal Shield Cooler CWD	
TE-892	TI-7000 pt. 15	488	JB-34	Blanket Space Coolers CWD	
TE-892S		488	JB-34	Blanket Space Coolers CWD	
TE-893	FR-1500 pt. 3W+	425	JB-63	Fuel Circ. Pump Purge Heater, WI	With TC insl. from ground
TE-893S	TR-6500 pt. 12	425	JB-63	Fuel Circ. Pump Purge Heater, WI	With TC insl. from ground
TE-893.1	FR-1500 pt. 3W-	426	JB-63	Fuel Circ. Pump Purge Heater WD	With TC insl. from ground
TE-893 1S	TR-6500 pt. 13	426	JB-63	Fuel Circ. Pump Purge Heater WD	With TC insl. from ground
TE-894	FR-1500 pt. 6W+	449	JB-60	Blanket Circ. Pump Purge Heater, WI	With TC insl. from ground
TE-894S	TR-6500 pt. 35	449	JB-60	Blanket Circ. Pump Purge Heater, WI	With TC insl. from ground
TE-894.1	FR-1500 pt. 6W-	450	JB-60	Blanket Circ. Pump Purge Heater, WD	With TC insl. from ground
TE-894.1S	TR-6500 pt. 36	450	JB-60	Blanket Circ. Pump Purge Heater, WD	With TC insl. from ground

Thermo-couple Number	Instr. Termination	Vessel or Line No.	Junction Box No.	<u>MISCELLANEOUS</u>	
				Location	Remarks
TE-965	TI-7000 pt. 10	*		Nuclear Instrument Shaft	In 30' Waterproof well (W/spare in well)
TE-965S		*		Nuclear Instrument Shaft	In 30' Waterproof well (W/live in well)
TE-966		264	JB-40	Junction Lines 164 & 264	on inlet to (HCV-939)
TE-966S		264	JB-40	Junction Lines 164 & 264	on inlet to (HCV-939)
TE-967	TR-6500 pt. 78	246	JB-17	Core-Blanket Rupture Disc	
TE-967S		246	JB-17	Core-Blanket Rupture Disc	
TE-968		80a*		Waste Evaporator (80a)	
TE-968S		80a*		Waste Evaporator (80a)	
TE-969		130	JB-63	Fuel Gas Purge Line	
TE-969S		130	JB-63	Fuel Gas Purge Line	
TE-970		230	JB-63	Blanket Gas Venting Line	
TE-970S		230	JB-63	Blanket Gas Venting Line	
TE-971	TR-6500 pt. 21	497*		Fuel Cooling Water Header Inlet	Inserted in line
TE-971S		497*		Fuel Cooling Water Header Inlet	Inserted in line
TE-972	TR-6500 pt. 23	498*		Blanket Cooling Water Heater Inlet	Inserted in line
TE-972S		498*		Blanket Cooling Water Heater Inlet	Inserted in line
TE-973	TR-6500 pt. 92	493*		Cooling Water Header	
TE-973S		493*		Cooling Water Header	
TE-974	FR-1500 pt. 2W-	457	JB-20	Fuel Purge Pump Cooler, WI	With TC insul. from ground
TE-974S	TR-6500 pt. 7	457	JB-58	Fuel Purge Pump Cooler, WI	With TC insul. from ground
TE-974.1	FR-1500 pt. 2W+	458	JB-28	Fuel Purge Pump Cooler, WD	With TC insul. from ground
TE-974.1S	TR-6500 pt. 8	458	JB-28	Fuel Purge Pump Cooler, WD	With TC insul. from ground
TE-975	FR-1500 pt. 5W-	406	JB-41	Blanket Purge Pump Cooler, WI	With TC insul. from ground

<u>Thermo-couple Number</u>	<u>Instr. Termination</u>	<u>Vessel or Line No.</u>	<u>Junction Box No.</u>	<u>Location</u>	<u>Remarks</u>
TE-975B	TR-6500 pt. 30	406	JB-61	Blanket Purge Pump Cooler, WI	With TC insl. from ground
TE-975.1	FR-1500 pt. 5W+	405	JB-35	Blanket Purge Pump Cooler, WD	With TC insl. from ground
TE-975.1B	TR-6500 pt. 31	405	JB-35	Blanket Purge Pump Cooler, WD	With TC insl. from ground
TE-976		663*		Warm Water Header	
TE-976B		663*		Warm Water Header	
TE-976.1		457*		Fuel Purge Pump Coolant Heat Exch. Coolant Outlet	
TE-976.1B		457*		Fuel Purge Pump Coolant Heat Exch. Coolant Outlet	
TE-977	TR-6500 pt. 76	421	JB-63	Fuel Circulating Pump CWI	
TE-977B		421	JB-63	Fuel Circulating Pump CWI	
TE-977.1		406*		Blanket Purge Pump Coolant Heat Exch. Coolant Outlet	
TE-977.1B		406*		Blanket Purge Pump Coolant Heat Exch. Coolant Outlet	
TE-978	TR-6500 pt. 72	445	JB-60	Blanket Circulating Pump CWI	
TE-978B		445	JB-60	Blanket Circulating Pump CWI	
TE-979		171	JB-63	Fuel-Blk't Equalizer Valve (ECV-926) Fuel Side	
TE-979B		171	JB-63	Fuel-Blk't Equalizer Valve (ECV-926) Fuel Side	
TE-980		839*		Demineralized Water Heat Exch. Outlet	
TE-980B		839*		Demineralized Water Heat Exch. Outlet	
TE-982	TI-982	*		Package Boiler Stack	Leads do not pass thru patch panel Iron-Const. TC in well

Thermo-
couple
NumberInstr.
Termi-
nationVessel
or
Line No.Junction
Box No.FUEL-BLANGET OXYGEN SUPPLY SYSTEMLocationRemarks

TE-5001A	TI-5001 pt. 1	*		Oxygen Generator, lower	Copper-Const. TC Leads do not pass thru patch panel
TE-5001AS	TI-5001 pt. 2	*		Oxygen Generator, lower	Copper-Const. TC Leads do not pass thru patch panel
TE-5001B	TI-5001 pt. 3	*		Oxygen Generator, upper	Copper-Const. TC Leads do not pass thru patch panel
TE-5001BS	TI-5001 pt. 4	*		Oxygen Generator, upper	Copper-Const. TC Leads do not pass thru patch panel
TE-5002	TI-5002	*		Oxygen Generator, heater	Leads do not pass thru patch panel

Page 31
Thermo-
couple
Number

Instr.
Termi-
nation

Vessel
or
Line No.

Junction
Box No.

REFRIGERATION AND COLD TRAP SYSTEM

Location

Remarks

<u>Thermo- couple Number</u>	<u>Instr. Termi- nation</u>	<u>Vessel or Line No.</u>	<u>Junction Box No.</u>	<u>Location</u>	<u>Remarks</u>
TE-T66	TI-T66	712*		Cold F-11 Pump Outlet	Leads do not pass thru patch panel
TE-T74A	TI-T74	741*		Outside WIC at Elevation 821'	Leads do not pass thru patch panel
TE-T74B	TI-T74	739*		Outside WIC at Elevation 807'	" " " " " " "
TE-T74C	TI-T74	737*		Outside WIC at Elevation 807'	" " " " " " "
TE-T74D	TI-T74	735*		Outside WIC at Elevation 807'	" " " " " " "
TE-T74E	TI-T74	733*		Outside WIC at Elevation 808'	" " " " " " "
TE-T74F	TI-T74	731*		Outside WIC at Elevation 807'	" " " " " " "
TE-T74G	TI-T74	472*		Fuel Cold Trap (9a) Outlet to ECV-E08D	" " " " " " "
TE-T74H	TI-T74	470*		Fuel Cold Trap (9a) Outlet to ECV-E07B	" " " " " " "
TE-T74I	TI-T74	466*		Blanket Cold Trap (36b) Outlet to ECV-E06B	" " " " " " "
TE-T74J	TI-T74	71*		Chiller and Storage Tank	" " " " " " "
TE-T74K	TI-T74	704*		Inlet to Valve ECV-E09	" " " " " " "
TE-T74L	TI-T74	492*		Condenser (75) Outlet	" " " " " " "
TE-T75A	TI-T75	717*		Outside EIC at Elevation 821'	" " " " " " "
TE-T75B	TI-T75	719*		Outside WIC at Elevation 823'	" " " " " " "

Page 32
Thermo-
couple
Number

Instr.
Termination

Vessel
or
Line No.

Junction
Box No.

Location

Remarks

<u>Thermo-couple Number</u>	<u>Instr. Termination</u>	<u>Vessel or Line No.</u>	<u>Junction Box No.</u>	<u>Location</u>	<u>Remarks</u>
TE-T75C	TI-T75	721*		Outside EIC at Elevation 807'	Leads do not pass thru patch panel
TE-T75D	TI-T75	723*		Outside EIC at Elevation 807'	" " " " " " "
TE-T75E	TI-T75	725*		Outside EIC at Elevation 807'	" " " " " " "
TE-T75F	TI-T75	727*		Outside EIC at Elevation 821'	" " " " " " "
TE-T75G	TI-T75	729*		Outside EIC at Elevation 807'	" " " " " " "
TE-T75H	TI-T75	464*		Storage Cold Trap Outlet to Valve 464A	" " " " " " "
TE-T75I	TI-T75	468*		Blkt. Cold Trap (36a) Outlet to ECV-B05B	" " " " " " "
TE-T75J	TI-T75	72*		Heater and Storage Tank	" " " " " " "
TE-T75K	TI-T75	491*		Condenser (75) Inlet	" " " " " " "
TE-T75L	TI-T75	705-2*		Chiller and Storage Tank Outlet	" " " " " " "
TE-T76A	TI-T76	811*		Above WIC at Elevation 830'	" " " " " " "
TE-T76B	TI-T76	815*		Outside WIC at Elevation 809'	" " " " " " "
TE-T76C	TI-T76	817*		Outside WIC at Elevation 809'	" " " " " " "
TE-T76D	TI-T76	823*		Outside WIC at Elevation 819'	" " " " " " "
TE-T76E	TI-T76	831*		Outside WIC at Elevation 808'	" " " " " " "
TE-T76F	TI-T76	813*		Above EIC at Elevation 830'	" " " " " " "
TE-T76G	TI-T76	819*		Outside EIC at Elevation 808'	" " " " " " "
TE-T76H	TI-T76	821*		Outside EIC at Elevation 808'	" " " " " " "
TE-T76I	TI-T76	827*		Outside EIC at Elevation 818'	" " " " " " "
TE-T76J	TI-T76	833*		Outside EIC at Elevation 819'	" " " " " " "
TE-T76M	TI-T74	471*		Outside WIC at Elevation 824'	Leads do not pass thru patch panel Plug in and read at T74G

Page 33
Thermo-
couple
Number

Instr.
Termin-
ation

Vessel
or
Line No.

Junction
Box No.

Location

Remarks

TE-76H	TI-T74	469*		Outside WIC at Elevation 824'	Leads do not pass thru patch panel Plug in and read at T74H
TE-T76P	TI-T75	467*		Outside EIC at Elevation 824'	Leads do not pass thru patch panel Plug in and read at T75I
TE-T76Q	TI-T74	465*		Outside EIC at Elevation 824'	Leads do not pass thru patch panel Plug in and read at T74I
TE-T76R	TI-T76	825*		Outside WIC at Elevation 819'	Leads do not pass thru patch panel Plug in and read at T76D
TE-T76S	TI-T76	829*		Outside EIC at Elevation 818'	Leads do not pas thru patch panel Plug in and read at T76I

Thermo-
couple
NumberInstr.
TerminationVessel
or
Line No.Junction
Box No.SPARESLocationRemarks

TE-SP-1			JB-28		
TE-SP-2			JB-28		
TE-SP-3			JB-28	Air at Floor of Fuel Reactor Cell	Redesignated TE-X30
TE-SP-4			JB-28		
TE-SP-5	TI-7000 pt. 21	790	JB-21	Thermal Shield Cooler CWD	Redesignated TE-888.1
TE-SP-6		790	JB-21	Thermal Shield Cooler CWD	Redesignated TE-888.1B
TE-SP-7	TR-6500 pt. 17	111	JB-21	Letdown Heat Exch. Purge Outlet	Redesignated TE-192
TE-SP-8		111	JB-21	Letdown Heat Exch. Purge Outlet	Redesignated TE-192B
TE-SP-9	TMR-6590 pt. 2+	4	JB-23	Fuel Heat Exch. Shell, Bottom	Redesignated TE-586.1
TE-SP-10	TMR-6590 pt. 3-	4	JB-23	Fuel Heat Exch. Shell, Bottom	Redesignated TE-586.1B
TE-SP-11			JB-23		
TE-SP-12	TMR-6590 pt. 4+	31	JB-43	Blanket Heat Exch. Shell, Bottom	Redesignated TE-588.1
TE-SP-13	TMR-6590 pt. 6-	31	JB-43	Blanket Heat Exch. Shell, Bottom	Redesignated TE-588.1B
TE-SP-14			JB-43		
TE-SP-15			JB-35		
TE-SP-16			JB-35		
TE-SP-17			JB-35	Air at Floor of Blanket Reactor Cell	Redesignated TE-X31
TE-SP-18			JB-35		
TE-SP-19			JB-42		
TE-SP-20			JB-42		
TE-SP-21			JB-42	Chem. Proc. Take-off Valve (HCV-440) Outlet	Redesignated TE-480
TE-SP-22			JB-42	Chem. Proc. Take-off Valve (HCV-440) Outlet	Redesignated TE-480B
TE-SP-23		10*	JB-56		TC in 3/16" SS Shield

<u>Thermo- couple Number</u>	<u>Instr. Termi- nation</u>	<u>Vessel or Line No.</u>	<u>Junction Box No.</u>	<u>Location</u>	<u>Remarks</u>
TE-SP-24		10*	JB-56		TC in 3/16" SS Shield
TE-SP-25		*			At Steam Pit
TE-SP-26		*			At West Drup.
TE-SP-27			JB-26		Deleted TE-174
TE-SP-28			JB-26		Deleted TE-174S
TE-SP-29			JB-33		Deleted TE-274
TE-SP-30			JB-33		Deleted TE-274S
TE-SP-31			JB-57		
TE-SP-32			JB-57		
TE-SP-33			JB-57		
TE-SP-34			JB-57		
TE-SP-35			JB-58		
TE-SP-36			JB-58		
TE-SP-37			JB-58		
TE-SP-38			JB-58		
TE-SP-39			JB-59		
TE-SP-40			JB-59		
TE-SP-41			JB-59		
TE-SP-42			JB-59		
TE-SP-43			JB-60		
TE-SP-44			JB-60		
TE-SP-45			JB-60		
TE-SP-46			JB-61		

<u>Thermo- couple Number</u>	<u>Instr. Termi- nation</u>	<u>Vessel or Line No.</u>	<u>Junction Box No.</u>	<u>Location</u>	<u>Remarks</u>
TE-SP-47			JB-61		
TE-SP-48			JB-61		
TE-SP-49			JB-61		
TE-SP-50			JB-62		
TE-SP-51			JB-62		
TE-SP-52			JB-62		
TE-SP-53			JB-62		
TE-SP-54			JB-62		
TE-SP-55			JB-62		
TE-SP-56			JB-62		
TE-SP-57			JB-62		
TE-SP-58			JB-62		
TE-SP-59			JB-62		
TE-SP-60			JB-63		
TE-SP-61			JB-63		
TE-SP-62			JB-57		
TE-SP-63					At Waste Evap.

Page 37
Thermo-
couple
Number

Instr.
Termination

Vessel
or
Line No.

Junction
Box No.

EXPERIMENTAL THERMOCOUPLES

Location

Remarks

TE-X1		300	JB-59	Fuel Heat Exch. Steam Outlet	
TE-X2		4	JB-59	Fuel Heat Exch. Shell between Steam Outlets	
TE-X3		1	JB-57	Core Vessel Specimen Holder - Top	Tentative
TE-X4		1	JB-57	Core Vessel Specimen Holder - Middle	"
TE-X5		1	JB-57	Core Vessel Specimen Holder - Bottom	"
TE-X13		104*	JB-56	Adsorber Bed; 1/2" Line	Leads do not pass thru patch panel. HHT-CP TC in 3/16" SS Shield
TE-X14		104*	JB-56	Adsorber Bed; 1" Line	" " " " "
TE-X15		104*	JB-56	Adsorber Bed; 2" Line	" " " " "
TE-X16		104*	JB-56	Adsorber Bed; 6" Line	" " " " "
TE-X17	TI-7000 pt 25	92	JB-17	Thermal Shield E. Side	
TE-X18	TI-7000 pt 26	92	JB-17	Thermal Shield E. Side	
TE-X19	TI-7000 pt 27	92	JB-22	Thermal Shield N. Side	
TE-X20	TI-7000 pt 28	92	JB-22	Thermal Shield Bottom	
TE-X21	TI-7000 pt 29	92	JB-17	Thermal Shield Top	

<u>Thermo- couple Number</u>	<u>Instr. Termin- ation</u>	<u>Vessel or Line No.</u>	<u>Junction Box No.</u>	<u>Location</u>	<u>Remarks</u>
TE-X22	TR-6500 pt. 95		JB-57	Air at Fuel Space Cooler A	
TE-X23	TR-6500 pt. 96		JB-57	Air at Fuel Space Cooler B	
TE-X24	TR-6500 pt. 97		JB-60	Air at Blanket Space Cooler C	
TE-X25	TR-6500 pt. 98		JB-60	Air at Blanket Space Cooler D	
TE-X26			JB-57	Air at Fuel Circulating Pump	
TE-X27			JB-60	Air at Blanket Circulating Pump	
TE-X28		*		Air at Top in West Inst. Cubicle	
TE-X29		*		Air at Top in East Inst. Cubicle	
TE-X30			JB-28	Air at Floor of Fuel Rctr. Cell	
TE-X31			JB-35	Air at Floor of Blanket Rctr. Cell	
TE-X32			JB-57	Air above Fuel Pressurizer	

Thermo-
couple
NumberInstr.
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ationVessel
or
Line No.Junction
Box No.REACTOR SHIELD WALLSLocationRemarks

TE-A1	*	*	JB-55	S. Shield wall near E Reactor at elevation 816'	Leads do not pass thru patch panel
TE-A2	*	*	JB-55	" " " " "	" " " " " " "
TE-A3	*	*	JB-55	" " " " "	" " " " " " "
TE-A4	*	*	JB-55	" " " " "	" " " " " " "
TE-A5	*	*	JB-55	" " " " "	" " " " " " "
TE-A6	*	*	JB-55	" " " " "	" " " " " " "
TE-B1	*	*	JB-55	S. Shield wall 16' W. of Reactor E at elevation 819'	" " " " " " "
TE-B2	*	*	JB-55	" " " " "	" " " " " " "
TE-B3	*	*	JB-55	" " " " "	" " " " " " "
TE-C1	*	*	JB-55	W. Shield Wall near S Reactor at elevation 815'	" " " " " " "
TE-C2	*	*	JB-55	" " " " "	" " " " " " "
TE-C3	*	*	JB-55	" " " " "	" " " " " " "

<u>Instr. No.</u>	<u>Description and Function</u>
TI-175	Simplytrol; 0-300°F C.A.; Single indication; Fuel HP Sampler at Sample Station
TI-275	Simplytrol; 0-300°F C.A.; Single indication; Blanket HP Sampler at Sample Station
TI-367	Simplytrol; 0-300°F C.A.; Single indication; Fuel LP Sampler at Sample Station
TI-375	Simplytrol; 0-800°C C.A.; Single indication with high and low contacts; Fuel Recombiner Control; Main Board 2
TI-467	Simplytrol; 0-300°F C.A.; Single indication; Blanket LP Sampler at Sample Station
TI-475	Simplytrol; 0-800°C C.A.; Single indication with high and low contacts; Blanket Recombiner Control; Main Board 10
TI-665	American Thermometer 30° to 240°F, indicates the temperature of the warm water header, Line 663, Second Level
TI-666	Simplytrol; -75° to 225°F, C.A.; Single indication working into 4 point selector switch for test heat exchanger steam lines, Second Level
TI-982	Simplytrol, 0° to 750°F, Iron-Constantan; Single indication; Flue gas leaving package boiler; package boiler room
FR-1500	M-H Recorder C.A.; 12 point record, records the calculated flow rate of the feed and purge pumps at rated CW and HW flow on coolers and heat exchanger; works in conjunction with TDM-1500A and TDM-1500B and XX-1500, Auxiliary Board 6
TI-5001	Simplytrol; -400° to +100°F Copper-Constantan; Single indication with high contact working thru 4 point selector switch for oxygen generator control; Oxygen supply station panel in control room.
TI-5002	Simplytrol; 0° to 800°C Chromel-Alumel; Single indication with high contact for oxygen generator heater control; Oxygen Generator Supply Station Panel in Control Room
TR-6500	M-H Scanner; 0-350°C C.A.; 108 point record; for secondary readout; alarm set point for each bank of nine thermocouples; Scanner Cabinet in Control Room
TR-6510	M-H Recorder; 0-350°C C.A.; 12 point record; for primary readout; single alarm set point; Main Board 6
TdT-6520	M-H Electro-Pneumatic Transducer; ± 20°C C. 347 SS at 280°C; Blanket Steam Load Control; Auxiliary Panel 4
TdR-6530	M-H Recorder; 0-1.5 to 0-3.0 mv; Single pen record; Reactor Power; Four interlock contacts; Main Board 7
TR-6560	M-H Recorder; 0-350°C C.A.; Two pen record; Core inlet and outlet; five interlock contacts; Main Board 5
TdT-6570	M-H Electro-Pneumatic Transducer; 0-40°C C.A. with adjustable zero; Core average; Auxiliary Board 4
TR-6580	M-H Recorder; 0-700°C C.A.; 16 point record; Pressurizer Heaters; Two interlock contacts; Auxiliary Board 3

Part II Cont'd.

Instr. No.

TdR-6590	M-H Recorder; + 100°C C.A.; 12 point record; Reactor Vessels Differentials; high and low alarm contacts; Auxiliary Board 7
TI-7000	M-H Precision Indicator; 0-700°C C.A.; 48 point indicator; for secondary readout; Auxiliary Board 6
TI-T66	Simplytrol; -75°F to 225°F C.A.; Single indication; Cold F-11 Pump Outlet; Refrigeration Panel.
TI-T74	Simplytrol; -75°F to 225°F C.A.; Single indication working into 12 point selector switch for refrigerant lines; Refrigeration Panel
TI-T75	Simplytrol; -75°F to 225°F C.A.; Single indication working into 12 point selector switch for refrigerant lines; Refrigeration Panel
TI-T76	Simplytrol; -75°F to 225°F C.A.; Single indication working into 12 point selector switch for refrigerant lines; Refrigeration Panel

* Not in Reactor Cell

END