Date: 29.06.2016

ANNEXURE TO CORRIGENDUM –I

Ref Enq: NKR0000117 dt. 24.06.2016

1. Complete set of specification PS4102028 for Darlipali and Annexure 1 and Annexure 2 of specification PS4152282 for North Karanpura is attached.
2. Correct Material code for sl. no. 2 and 3 in Pg. 2/77 of tender documents is PR0460000600
3. If any new vendor is not having Digital Signature Certificate (Signing + Encryption) and willing to participate in the tender, vendor need to inform BHEL at least before two days of due date for tender submission and request BHEL for extension of due date. Vendor has to submit the proof of application for getting new DSC and expected date of getting new DSC. Based on the above BHEL will take suitable action. If any vendor is requesting for due date extension for getting fresh DSC and not quoting for the tender even after due date extension, it will be viewed seriously.

ANNEXURE-1 OF PS4152282
Panel construction and other details

1. **INTENT**:

   Supply of outdoor panel with IP55 protection class and Computer room mounted panel of IP32 class.

2. **DIMENSIONS**:
   - § Panel to be fabricated using CRCA sheet, using welded/bolted construction. Basic Panel should generally have the following internal dimensions (minimum): 750mm (W) x 750mm (D) x 2200mm (H). If signals are more Suit of Two panel should be used.
   - § Bottom frame height- 50mm

3. **FRAME WORK**:

   Framework material shall be CRCA (Cold Rolled Carbon Steel Sheet, Annealed).

4. **DOORS, PANELS & COVERS**:
   - § Doors shall be minimum 2.0mm CRCA sheet. Side plates should be minimum 1.5mm thick CRCA sheet. Top and bottom covers should be minimum 1.5mm thick CRCA sheet.
   - § Removable Gland Plates – 3.0 mm thick CRCA sheet

5. **DOORS**:
   - § 2 doors in front and 2 doors at rear per panel. Master key for all the panels shall be provided.
   - § Door switches:
     - Front of the panel – 2 switch for the lighting and Door Open Alarm Contact
     - Rear of the panel – 2 switch for the lighting and Door Open Alarm Contact

6. **CANOPY (Top plate) CONSTRUCTION**:

   Canopy (Top plate) shall be made of 1.5mm CRCA sheet (Minimum)

7. **PAINTING**:
   a. Finished surface to be free from waves, belies or other imperfections.
   b. Epoxy based and Powder coated
   c. Doors, Canopy – Off-white RAL 9002 Semi glossy finish both interior and exterior
   d. Side plates – Exterior – Blue to shade RAL 5012; Interior – Off-white RAL 9002 Semi glossy
   e. Minimum thickness is 65-75 microns.

8. **ADDITIONAL REQUIREMENTS**:

   Supplier to submit a document detailing out the lifting mechanism provided for the panels.

ANNEXURE-1 OF PS4152282
Panel construction and other details

9. **GENERAL**:

Location of erection of the panels: Outdoor

Environmental specification (where the panel will be erected):

Ambient	Pressure	Rel. Humidity	Atmosphere
55 Deg C	Atm	100% max	Air (Dirty)
4 deg C	Atm	5% Min	Air (Dirty)

- Protection class of the Panel: IP 55 for outdoor and IP32 for Indoor panel.
- Glands & Gland plate: Panels to be provided with suitable IP55 removable gland modules that will be fixed to the bottom of the panel. Glands shall be Nickel plated double compression Brass cable glands. Exact qty/sizes will be decided detailed engineering. Make of glands shall be indicated in the offer by vendor and \ subject to approval by BHEL.
- Suitable Gaskets to be provided for all openings.
- Anti-vibration pads shall be provided for the panels.
- Cable entry will be from the bottom.
- OGA Drawing to be submitted for approval before manufacture.
- Suppliers internal Test Certificate for dimensions, Visual inspection, Paint to be submitted before giving inspection call to BHEL.
- Inspection by BHEL/Customer at suppliers works.
- Item shall be packed in all-weather proof packing with sufficient cushioning to avoid transit damages.
- Name plate of 2mm thick Stainless steel with following details is to be provided inside each panel:

  - ITEM : As per PO
  - PROJECT NAME / UNIT No : As per PO
  - CUSTOMER NAME : As per PO
  - BHEL ORDER No. : As per PO
  - Date of Dispatch to Site :

- +24VDC Redundant Power supply feeders will be made available at the panel terminal block for FF system use. Vendor to provide necessary protection for the power supply circuit. Also, one feeder of 230VAC power will be provided for panel illumination etc. only. Any other power supply requirement shall be taken care of by the supplier.
- Panels shall be provided with CFL lamp (operating at 230VAC,50Hz) in both front and back of the panels

Type test certificate for IP55/IP32 protection class (Based on tests done on similar \ panels and not more than 5 yrs. old) shall be furnished along with the offer for the panel.

- Smoke detector: Suitable mounting bracket for the smoke detector needs to be provided.
- Nomenclature plate: To be provided on the top of the panel at both front and rear of the panels. Details will be provided during detailed engineering stage.
- Any other type of construction, generally meeting above requirement is also applicable, subject to approval by BHEL/End user.

ANNEXURE-1 OF PS4152282
Panel construction and other details

v LIST OF APPROVED VENDORS FOR PANELS

1. M/s Pyrotech, Udaipur
2. M/s Rittal, Bangalore
3. M/s MPP, Bangalore
4. M/s Hochmann,India

NOTE: Panels of sizes other than as specified under S.no.2 above will also be considered provided they have sufficient space to mount all the components. For this, vendor to furnish General arrangement drawing with all dimensional details for approval by BHEL during offer.

HARDWARE TO BE PROVIDED

- Provision to accept 2 nos. redundant feeders of +24VDC, 20 Amps. power supply with necessary TBs and Breakers
- Provision to accept 1 UPS feeder of 230VAC for Panel illumination and power supply socket with necessary TBs and breakers
- DIN rails for components mounting.
- Terminal Blocks suitable for Cage Clamp type of connections – As required.
- Cable channels for cable routing inside the panel.
- Tin Plated Copper Bus bar each for panel Earthling and Screen/Shield
- Panel internal mounting arrangement of various components will be approved by BHEL during detailed engineering stage.
- All internal wiring to be done with FRLS insulated Cables.
- Suitable provision to monitor panel internal temperature to be provided. Individual Alarm Contact (suitable to 230 VAC 0.5 amp) wired up to TBs to be provided. The temperature shall be settable within the range 0-85 DEGC Makes
- **Makes**
    - Terminal Blocks : Wago/Phoenix/Elmax
    - MCB/Breakers : ABB/Schneider/Siemens/Indo Kopp/MDS Load contact/Merlin Gerin
    - De-coupling Diode : Vendor to propose make for approval
    - Under/Over Voltage, Feeder Fault Monitoring: Vendor to propose make for approval.
    - Panel Temp Monitoring – Rittal/Indfos/Danfoss /Any other make subjected to BHEL approval.
    - Network Switch – Cisco/MOXA/N-TRON/Hirschman

ANNEXURE-2 OF PS4152282
LIST OF SIGNALS

PANEL/LOCATION-1					
SEGMENT-1 (AT PLAT. 87500 BETWEEN S11L AND S12L)					
SL NO	TAG	DESCRIPTION	RANGE	UNIT	SENSOR TYPE
1	10HAD30CT031	REAR VERT WALL HANGER TUBE	0.00 - 600.00	°C	TYPE K TC
2	10HAD30CT032	REAR VERT WALL SCREEN TUBE	0.00 - 600.00	°C	TYPE K TC
3	10HAD30CT033	REAR VERT WALL SCREEN TUBE	0.00 - 600.00	°C	TYPE K TC
4	10HAD30CT034	REAR VERT WALL HANGER TUBE	0.00 - 600.00	°C	TYPE K TC
5	10HAD30CT035	REAR VERT WALL SCREEN TUBE	0.00 - 600.00	°C	TYPE K TC
6	10HAD30CT036	REAR VERT WALL SCREEN TUBE	0.00 - 600.00	°C	TYPE K TC
7	10HAD30CT037	REAR VERT WALL HANGER TUBE	0.00 - 600.00	°C	TYPE K TC
8	10HAD30CT038	REAR VERT WALL HANGER TUBE	0.00 - 600.00	°C	TYPE K TC
9	10HAD30CT039	REAR VERT WALL SCREEN TUBE	0.00 - 600.00	°C	TYPE K TC
10	10HAD30CT040	REAR VERT WALL HANGER TUBE	0.00 - 600.00	°C	TYPE K TC
11	10HAH41CT001	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
12	10HAH41CT002	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
13	10HAH41CT003	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
14	10HAH41CT004	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
15	10HAH41CT005	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
16	10HAH41CT006	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
17	10HAH41CT007	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
18	10HAH41CT008	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
19	10HAH41CT009	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
20	10HAH41CT010	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
21	10HAH41CT011	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
22	10HAH41CT012	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
23	10HAH41CT013	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
24	10HAH41CT014	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
25	10HAH41CT015	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
26	10HAH41CT016	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
27	10HAH41CT017	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
28	10HAH41CT018	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
29	10HAH41CT019	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
30	10HAH41CT020	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
31	10HAH41CT021	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
32	10HAH41CT022	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
33	10HAH41CT023	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
34	10HAH41CT024	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
35	10HAH41CT025	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
36	10HAH41CT026	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
37	10HAH41CT027	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
38	10HAH41CT028	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
39	10HAH41CT029	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
40	10HAH41CT030	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
41	10HAH41CT031	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
42	10HAH41CT032	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
43	10HAH41CT033	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
44	10HAH41CT034	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
45	10HAH41CT035	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
46	10HAH41CT036	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
47	10HAH41CT037	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
48	10HAH41CT038	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
49	10HAH41CT039	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
50	10HAH41CT040	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
51	10HAH41CT041	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC

ANNEXURE-2 OF PS4152282
LIST OF SIGNALS

PANEL/LOCATION-1					
SEGMENT-1 (AT PLAT. 87500 BETWEEN S11L AND S12L)					
SL NO	TAG	DESCRIPTION	RANGE	UNIT	SENSOR TYPE
52	10HAH41CT042	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
53	10HAH41CT043	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
54	10HAH41CT044	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
55	10HAH41CT045	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
56	10HAH41CT046	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
57	10HAH41CT047	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
58	10HAH41CT048	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
59	10HAH41CT049	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
60	10HAH41CT050	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
61	10HAH41CT051	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
62	10HAH41CT052	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
63	10HAH41CT053	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
64	10HAH41CT054	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
65	10HAH41CT055	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
66	10HAH41CT056	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
67	10HAH41CT057	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
68	10HAH41CT058	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
69	10HAH41CT126	SH FINISHING TUBE INSIDE GAS PASS	0.00-800.00	°C	TYPE K TC
70	10HAH41CT127	SH FINISHING TUBE INSIDE GAS PASS	0.00-800.00	°C	TYPE K TC
71	10HAH41CT128	SH FINISHING TUBE INSIDE GAS PASS	0.00-800.00	°C	TYPE K TC
72	10HAH41CT129	SH FINISHING TUBE INSIDE GAS PASS	0.00-800.00	°C	TYPE K TC
73	10HAH41CT130	SH FINISHING TUBE INSIDE GAS PASS	0.00-800.00	°C	TYPE K TC
74	10HAH41CT131	SH FINISHING TUBE INSIDE GAS PASS	0.00-800.00	°C	TYPE K TC
75	10HAH41CT132	SH FINISHING TUBE INSIDE GAS PASS	0.00-800.00	°C	TYPE K TC
76	10HAH41CT133	SH FINISHING TUBE INSIDE GAS PASS	0.00-800.00	°C	TYPE K TC
77	10HAH41CT134	SH FINISHING TUBE INSIDE GAS PASS	0.00-800.00	°C	TYPE K TC
78	10HAJ07CT001	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
79	10HAJ07CT002	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
80	10HAJ07CT003	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
81	10HAJ07CT004	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
82	10HAJ07CT005	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
83	10HAJ07CT006	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
84	10HAJ07CT007	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
85	10HAJ07CT008	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
86	10HAJ07CT009	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
87	10HAJ07CT010	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
88	10HAJ07CT011	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
89	10HAJ07CT012	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
90	10HAJ07CT013	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
91	10HAJ07CT014	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
92	10HAJ07CT015	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
93	10HAJ07CT016	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
94	10HAJ07CT017	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
95	10HAJ07CT018	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
96	10HAJ07CT019	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
97	10HAJ07CT020	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
98	10HAJ07CT021	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
99	10HAJ07CT022	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
100	10HAJ07CT023	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
101	10HAJ07CT024	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
102	10HAJ07CT025	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC

ANNEXURE-2 OF PS4152282
LIST OF SIGNALS

PANEL/LOCATION-1					
SEGMENT-1 (AT PLAT. 87500 BETWEEN S11L AND S12L)					
SL NO	TAG	DESCRIPTION	RANGE	UNIT	SENSOR TYPE
103	10HAJ07CT026	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
104	10HAJ07CT027	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
105	10HAJ07CT028	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
106	10HAJ07CT029	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
107	10HAJ07CT030	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
108	10HAJ07CT031	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
109	10HAJ07CT032	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
110	10HAJ07CT033	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
111	10HAJ07CT034	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
112	10HAJ07CT035	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
113	10HAJ07CT036	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
114	10HAJ07CT037	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
115	10HAJ07CT038	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
116	10HAJ07CT039	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
117	10HAJ07CT040	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
118	10HAJ07CT041	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
119	10HAJ07CT042	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
120	10HAJ07CT043	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
121	10HAJ07CT044	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
122	10HAJ07CT045	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
123	10HAJ07CT046	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
124	10HAJ07CT047	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
125	10HAJ07CT048	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
126	10HAJ07CT049	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
127	10HAJ07CT050	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
128	10HAJ07CT051	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
129	10HAJ07CT052	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
130	10HAJ07CT053	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
131	10HAJ07CT054	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
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133	10HAJ07CT056	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
134	10HAJ07CT057	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
135	10HAJ07CT058	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
136	10HAJ07CT059	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
137	10HAJ07CT060	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
138	10HAJ07CT061	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
139	10HAJ07CT062	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
140	10HAJ07CT126	LTRH TUBE INSIDE GAS PASS	0.00-800.00	°C	TYPE K TC
141	10HAJ07CT127	LTRH TUBE INSIDE GAS PASS	0.00-800.00	°C	TYPE K TC
142	10HAJ07CT128	LTRH TUBE INSIDE GAS PASS	0.00-800.00	°C	TYPE K TC
143	10HAJ07CT129	LTRH TUBE INSIDE GAS PASS	0.00-800.00	°C	TYPE K TC
144	10HAJ07CT130	LTRH TUBE INSIDE GAS PASS	0.00-800.00	°C	TYPE K TC
145	10HAJ07CT131	LTRH TUBE INSIDE GAS PASS	0.00-800.00	°C	TYPE K TC
146	10HAJ07CT132	LTRH TUBE INSIDE GAS PASS	0.00-800.00	°C	TYPE K TC
147	10HAJ07CT133	LTRH TUBE INSIDE GAS PASS	0.00-800.00	°C	TYPE K TC
148	10HAJ07CT134	LTRH TUBE INSIDE GAS PASS	0.00-800.00	°C	TYPE K TC
149	10HAD50CT001	SH FURNACE ROOF TUBE	0.00-800.00	°C	TYPE K TC
150	10HAD50CT002	SH FURNACE ROOF TUBE	0.00-800.00	°C	TYPE K TC
151	10HAD50CT003	SH FURNACE ROOF TUBE	0.00-800.00	°C	TYPE K TC
152	10HAD50CT004	SH FURNACE ROOF TUBE	0.00-800.00	°C	TYPE K TC

ANNEXURE-2 OF PS4152282
LIST OF SIGNALS

PANEL/LOCATION-2					
SEGMENT-2 (AT PLAT. 87500 BETWEEN S11R AND S12R)					
SL NO	TAG	DESCRIPTION	RANGE	UNIT	SENSOR TYPE
1	10HAD30CT041	REAR VERT WALL SCREEN TUBE	0.00 - 600.00	°C	TYPE K TC
2	10HAD30CT042	REAR VERT WALL SCREEN TUBE	0.00 - 600.00	°C	TYPE K TC
3	10HAD30CT043	REAR VERT WALL HANGER TUBE	0.00 - 600.00	°C	TYPE K TC
4	10HAD30CT044	REAR VERT WALL SCREEN TUBE	0.00 - 600.00	°C	TYPE K TC
5	10HAD30CT045	REAR VERT WALL SCREEN TUBE	0.00 - 600.00	°C	TYPE K TC
6	10HAD30CT046	REAR VERT WALL SCREEN TUBE	0.00 - 600.00	°C	TYPE K TC
7	10HAD30CT047	REAR VERT WALL HANGER TUBE	0.00 - 600.00	°C	TYPE K TC
8	10HAD30CT048	REAR VERT WALL SCREEN TUBE	0.00 - 600.00	°C	TYPE K TC
9	10HAD30CT049	REAR VERT WALL HANGER TUBE	0.00 - 600.00	°C	TYPE K TC
10	10HAD30CT050	REAR VERT WALL SCREEN TUBE	0.00 - 600.00	°C	TYPE K TC
11	10HAH41CT059	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
12	10HAH41CT060	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
13	10HAH41CT061	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
14	10HAH41CT062	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
15	10HAH41CT063	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
16	10HAH41CT064	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
17	10HAH41CT065	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
18	10HAH41CT066	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
19	10HAH41CT067	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
20	10HAH41CT068	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
21	10HAH41CT069	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
22	10HAH41CT070	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
23	10HAH41CT071	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
24	10HAH41CT072	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
25	10HAH41CT073	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
26	10HAH41CT074	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
27	10HAH41CT075	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
28	10HAH41CT076	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
29	10HAH41CT077	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
30	10HAH41CT078	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
31	10HAH41CT079	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
32	10HAH41CT080	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
33	10HAH41CT081	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
34	10HAH41CT082	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
35	10HAH41CT083	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
36	10HAH41CT084	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
37	10HAH41CT085	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
38	10HAH41CT086	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
39	10HAH41CT087	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
40	10HAH41CT088	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
41	10HAH41CT089	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
42	10HAH41CT090	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
43	10HAH41CT091	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
44	10HAH41CT092	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
45	10HAH41CT093	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
46	10HAH41CT094	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
47	10HAH41CT095	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
48	10HAH41CT096	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
49	10HAH41CT097	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
50	10HAH41CT098	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
51	10HAH41CT099	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC

ANNEXURE-2 OF PS4152282
LIST OF SIGNALS

PANEL/LOCATION-2					
SEGMENT-2 (AT PLAT. 87500 BETWEEN S11R AND S12R)					
SL NO	TAG	DESCRIPTION	RANGE	UNIT	SENSOR TYPE
52	10HAH41CT100	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
53	10HAH41CT101	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
54	10HAH41CT102	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
55	10HAH41CT103	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
56	10HAH41CT104	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
57	10HAH41CT105	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
58	10HAH41CT106	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
59	10HAH41CT107	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
60	10HAH41CT108	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
61	10HAH41CT109	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
62	10HAH41CT110	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
63	10HAH41CT111	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
64	10HAH41CT112	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
65	10HAH41CT113	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
66	10HAH41CT114	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
67	10HAH41CT115	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
68	10HAH41CT116	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
69	10HAH41CT117	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
70	10HAH41CT118	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
71	10HAH41CT119	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
72	10HAH41CT120	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
73	10HAH41CT121	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
74	10HAH41CT122	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
75	10HAH41CT123	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
76	10HAH41CT124	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
77	10HAH41CT125	SH FINISHING S-41 TUBE	0.00-800.00	°C	TYPE K TC
78	10HAH41CT135	SH FINISHING TUBE INSIDE GAS PASS	0.00-800.00	°C	TYPE K TC
79	10HAH41CT136	SH FINISHING TUBE INSIDE GAS PASS	0.00-800.00	°C	TYPE K TC
80	10HAH41CT137	SH FINISHING TUBE INSIDE GAS PASS	0.00-800.00	°C	TYPE K TC
81	10HAH41CT138	SH FINISHING TUBE INSIDE GAS PASS	0.00-800.00	°C	TYPE K TC
82	10HAH41CT139	SH FINISHING TUBE INSIDE GAS PASS	0.00-800.00	°C	TYPE K TC
83	10HAH41CT140	SH FINISHING TUBE INSIDE GAS PASS	0.00-800.00	°C	TYPE K TC
84	10HAH41CT141	SH FINISHING TUBE INSIDE GAS PASS	0.00-800.00	°C	TYPE K TC
85	10HAH41CT142	SH FINISHING TUBE INSIDE GAS PASS	0.00-800.00	°C	TYPE K TC
86	10HAH41CT143	SH FINISHING TUBE INSIDE GAS PASS	0.00-800.00	°C	TYPE K TC
87	10HAJ07CT063	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
88	10HAJ07CT064	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
89	10HAJ07CT065	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
90	10HAJ07CT066	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
91	10HAJ07CT067	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
92	10HAJ07CT068	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
93	10HAJ07CT069	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
94	10HAJ07CT070	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
95	10HAJ07CT071	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
96	10HAJ07CT072	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
97	10HAJ07CT073	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
98	10HAJ07CT074	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
99	10HAJ07CT075	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
100	10HAJ07CT076	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
101	10HAJ07CT077	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
102	10HAJ07CT078	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC

ANNEXURE-2 OF PS4152282
LIST OF SIGNALS

PANEL/LOCATION-2					
SEGMENT-2 (AT PLAT. 87500 BETWEEN S11R AND S12R)					
SL NO	TAG	DESCRIPTION	RANGE	UNIT	SENSOR TYPE
103	10HAJ07CT079	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
104	10HAJ07CT080	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
105	10HAJ07CT081	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
106	10HAJ07CT082	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
107	10HAJ07CT083	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
108	10HAJ07CT084	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
109	10HAJ07CT085	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
110	10HAJ07CT086	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
111	10HAJ07CT087	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
112	10HAJ07CT088	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
113	10HAJ07CT089	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
114	10HAJ07CT090	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
115	10HAJ07CT091	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
116	10HAJ07CT092	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
117	10HAJ07CT093	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
118	10HAJ07CT094	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
119	10HAJ07CT095	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
120	10HAJ07CT096	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
121	10HAJ07CT097	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
122	10HAJ07CT098	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
123	10HAJ07CT099	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
124	10HAJ07CT100	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
125	10HAJ07CT101	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
126	10HAJ07CT102	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
127	10HAJ07CT103	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
128	10HAJ07CT104	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
129	10HAJ07CT105	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
130	10HAJ07CT106	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
131	10HAJ07CT107	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
132	10HAJ07CT108	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
133	10HAJ07CT109	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
134	10HAJ07CT110	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
135	10HAJ07CT111	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
136	10HAJ07CT112	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
137	10HAJ07CT113	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
138	10HAJ07CT114	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
139	10HAJ07CT115	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
140	10HAJ07CT116	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
141	10HAJ07CT117	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
142	10HAJ07CT118	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
143	10HAJ07CT119	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
144	10HAJ07CT120	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
145	10HAJ07CT121	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
146	10HAJ07CT122	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
147	10HAJ07CT123	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
148	10HAJ07CT124	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
149	10HAJ07CT125	LTRH R-08 TUBE	0.00-800.00	°C	TYPE K TC
150	10HAJ07CT135	LTRH TUBE INSIDE GAS PASS	0.00-800.00	°C	TYPE K TC
151	10HAJ07CT136	LTRH TUBE INSIDE GAS PASS	0.00-800.00	°C	TYPE K TC
152	10HAJ07CT137	LTRH TUBE INSIDE GAS PASS	0.00-800.00	°C	TYPE K TC
153	10HAJ07CT138	LTRH TUBE INSIDE GAS PASS	0.00-800.00	°C	TYPE K TC
154	10HAJ07CT139	LTRH TUBE INSIDE GAS PASS	0.00-800.00	°C	TYPE K TC
155	10HAJ07CT140	LTRH TUBE INSIDE GAS PASS	0.00-800.00	°C	TYPE K TC
156	10HAJ07CT141	LTRH TUBE INSIDE GAS PASS	0.00-800.00	°C	TYPE K TC
157	10HAJ07CT142	LTRH TUBE INSIDE GAS PASS	0.00-800.00	°C	TYPE K TC
158	10HAJ07CT143	LTRH TUBE INSIDE GAS PASS	0.00-800.00	°C	TYPE K TC
159	10HAD50CT005	SH FURNACE ROOF TUBE	0.00-800.00	°C	TYPE K TC
160	10HAD50CT006	SH FURNACE ROOF TUBE	0.00-800.00	°C	TYPE K TC
161	10HAD50CT007	SH FURNACE ROOF TUBE	0.00-800.00	°C	TYPE K TC

ANNEXURE-2 OF PS4152282
LIST OF SIGNALS

PANEL/LOCATION-3					
SEGMENT-3 (AT PLAT. 87500 BETWEEN S9L AND S10L)					
SL NO	TAG	DESCRIPTION	RANGE	UNIT	SENSOR TYPE
1	10HAD10CT031	LEFT VERT WALL COLD TUBE	0.00 - 600.00	°C	TYPE K TC
2	10HAD10CT032	LEFT VERT WALL SHADED TUBE	0.00 - 600.00	°C	TYPE K TC
3	10HAD10CT033	LEFT VERT WALL SHADED TUBE	0.00 - 600.00	°C	TYPE K TC
4	10HAD10CT034	LEFT VERT WALL SHADED TUBE	0.00 - 600.00	°C	TYPE K TC
5	10HAD10CT035	LEFT VERT WALL PLATEN TUBE	0.00 - 600.00	°C	TYPE K TC
6	10HAD10CT036	LEFT VERT WALL PLATEN TUBE	0.00 - 600.00	°C	TYPE K TC
7	10HAD10CT037	LEFT VERT WALL PLATEN TUBE	0.00 - 600.00	°C	TYPE K TC
8	10HAD10CT038	LEFT VERT WALL PLATEN TUBE	0.00 - 600.00	°C	TYPE K TC
9	10HAD10CT039	LEFT VERT WALL PLATEN TUBE	0.00 - 600.00	°C	TYPE K TC
10	10HAD10CT040	LEFT VERT WALL PLATEN TUBE	0.00 - 600.00	°C	TYPE K TC
11	10HAD10CT041	LEFT VERT WALL PANEL TUBE	0.00 - 600.00	°C	TYPE K TC
12	10HAD10CT042	LEFT VERT WALL PANEL TUBE	0.00 - 600.00	°C	TYPE K TC
13	10HAD10CT043	LEFT VERT WALL PANEL TUBE	0.00 - 600.00	°C	TYPE K TC
14	10HAD10CT044	LEFT VERT WALL PANEL TUBE	0.00 - 600.00	°C	TYPE K TC
15	10HAD10CT045	LEFT VERT WALL PANEL TUBE	0.00 - 600.00	°C	TYPE K TC
16	10HAD10CT046	LEFT VERT WALL PANEL TUBE	0.00 - 600.00	°C	TYPE K TC
17	10HAD10CT047	LEFT VERT WALL PANEL TUBE	0.00 - 600.00	°C	TYPE K TC
18	10HAD10CT048	LEFT VERT WALL PANEL TUBE	0.00 - 600.00	°C	TYPE K TC
19	10HAD20CT031	FRONT VERT WALL OUTLET TUBE	0.00 - 600.00	°C	TYPE K TC
20	10HAD20CT032	FRONT VERT WALL OUTLET TUBE	0.00 - 600.00	°C	TYPE K TC
21	10HAD20CT033	FRONT VERT WALL OUTLET TUBE	0.00 - 600.00	°C	TYPE K TC
22	10HAD20CT034	FRONT VERT WALL OUTLET TUBE	0.00 - 600.00	°C	TYPE K TC
23	10HAD20CT035	FRONT VERT WALL OUTLET TUBE	0.00 - 600.00	°C	TYPE K TC
24	10HAD20CT036	FRONT VERT WALL OUTLET TUBE	0.00 - 600.00	°C	TYPE K TC
25	10HAD20CT037	FRONT VERT WALL OUTLET TUBE	0.00 - 600.00	°C	TYPE K TC
26	10HAD20CT038	FRONT VERT WALL OUTLET TUBE	0.00 - 600.00	°C	TYPE K TC
27	10HAD20CT039	FRONT VERT WALL OUTLET TUBE	0.00 - 600.00	°C	TYPE K TC
28	10HAD20CT040	FRONT VERT WALL OUTLET TUBE	0.00 - 600.00	°C	TYPE K TC
29	10HAH34CT001	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
30	10HAH34CT002	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
31	10HAH34CT003	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
32	10HAH34CT004	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
33	10HAH34CT005	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
34	10HAH34CT006	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
35	10HAH34CT007	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
36	10HAH34CT008	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
37	10HAH34CT009	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
38	10HAH34CT010	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
39	10HAH34CT011	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
40	10HAH34CT012	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
41	10HAH34CT013	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
42	10HAH34CT014	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
43	10HAH34CT015	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
44	10HAH34CT016	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
45	10HAH34CT017	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
46	10HAH34CT018	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
47	10HAH34CT019	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
48	10HAH34CT020	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
49	10HAH34CT021	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
50	10HAH34CT022	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
51	10HAH34CT023	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
52	10HAH34CT024	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
53	10HAH34CT025	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
54	10HAH34CT026	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
55	10HAH34CT027	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
56	10HAH34CT028	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
57	10HAH34CT029	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
58	10HAH34CT030	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
59	10HAH34CT031	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
60	10HAH34CT032	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
61	10HAH34CT033	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC

ANNEXURE-2 OF PS4152282
LIST OF SIGNALS

PANEL/LOCATION-3					
SEGMENT-3 (AT PLAT. 87500 BETWEEN S9L AND S10L)					
SL NO	TAG	DESCRIPTION	RANGE	UNIT	SENSOR TYPE
62	10HAH34CT034	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
63	10HAH34CT035	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
64	10HAH34CT036	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
65	10HAH34CT037	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
66	10HAH34CT038	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
67	10HAH34CT039	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
68	10HAH34CT040	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
69	10HAH34CT041	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
70	10HAH34CT042	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
71	10HAH34CT043	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
72	10HAH34CT044	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
73	10HAH34CT089	SH PLATEN FRONT TUBE INSIDE GAS PASS	0.00 - 650.00	°C	TYPE K TC
74	10HAH34CT090	SH PLATEN FRONT TUBE INSIDE GAS PASS	0.00 - 650.00	°C	TYPE K TC
75	10HAH34CT091	SH PLATEN FRONT TUBE INSIDE GAS PASS	0.00 - 650.00	°C	TYPE K TC
76	10HAH34CT092	SH PLATEN FRONT TUBE INSIDE GAS PASS	0.00 - 650.00	°C	TYPE K TC
77	10HAH34CT093	SH PLATEN FRONT TUBE INSIDE GAS PASS	0.00 - 650.00	°C	TYPE K TC
78	10HAH34CT094	SH PLATEN FRONT TUBE INSIDE GAS PASS	0.00 - 650.00	°C	TYPE K TC
79	10HAH34CT095	SH PLATEN FRONT TUBE INSIDE GAS PASS	0.00 - 650.00	°C	TYPE K TC
80	10HAH34CT096	SH PLATEN FRONT TUBE INSIDE GAS PASS	0.00 - 650.00	°C	TYPE K TC
81	10HAH36CT001	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
82	10HAH36CT002	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
83	10HAH36CT003	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
84	10HAH36CT004	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
85	10HAH36CT005	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
86	10HAH36CT006	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
87	10HAH36CT007	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
88	10HAH36CT008	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
89	10HAH36CT009	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
90	10HAH36CT010	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
91	10HAH36CT011	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
92	10HAH36CT012	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
93	10HAH36CT013	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
94	10HAH36CT014	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
95	10HAH36CT015	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
96	10HAH36CT016	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
97	10HAH36CT017	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
98	10HAH36CT018	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
99	10HAH36CT019	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
100	10HAH36CT020	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
101	10HAH36CT021	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
102	10HAH36CT022	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
103	10HAH36CT023	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
104	10HAH36CT024	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
105	10HAH36CT025	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
106	10HAH36CT026	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
107	10HAH36CT027	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
108	10HAH36CT028	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
109	10HAH36CT029	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
110	10HAH36CT030	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
111	10HAH36CT031	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
112	10HAH36CT032	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
113	10HAH36CT033	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
114	10HAH36CT034	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
115	10HAH36CT035	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
116	10HAH36CT036	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
117	10HAH36CT037	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
118	10HAH36CT038	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
119	10HAH36CT039	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
120	10HAH36CT040	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
121	10HAH36CT041	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
122	10HAH36CT042	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC

ANNEXURE-2 OF PS4152282
LIST OF SIGNALS

PANEL/LOCATION-3					
SEGMENT-3 (AT PLAT. 87500 BETWEEN S9L AND S10L)					
SL NO	TAG	DESCRIPTION	RANGE	UNIT	SENSOR TYPE
123	10HAH36CT043	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
124	10HAH36CT044	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
125	10HAH36CT089	SH PLATEN REAR TUBE INSIDE GAS PASS	0.00 - 650.00	°C	TYPE K TC
126	10HAH36CT090	SH PLATEN REAR TUBE INSIDE GAS PASS	0.00 - 650.00	°C	TYPE K TC
127	10HAH36CT091	SH PLATEN REAR TUBE INSIDE GAS PASS	0.00 - 650.00	°C	TYPE K TC
128	10HAH36CT092	SH PLATEN REAR TUBE INSIDE GAS PASS	0.00 - 650.00	°C	TYPE K TC
129	10HAH36CT093	SH PLATEN REAR TUBE INSIDE GAS PASS	0.00 - 650.00	°C	TYPE K TC
130	10HAH36CT094	SH PLATEN REAR TUBE INSIDE GAS PASS	0.00 - 650.00	°C	TYPE K TC
131	10HAH36CT095	SH PLATEN REAR TUBE INSIDE GAS PASS	0.00 - 650.00	°C	TYPE K TC
132	10HAH36CT096	SH PLATEN REAR TUBE INSIDE GAS PASS	0.00 - 650.00	°C	TYPE K TC
133	10HAJ30CT001	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
134	10HAJ30CT002	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
135	10HAJ30CT003	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
136	10HAJ30CT004	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
137	10HAJ30CT005	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
138	10HAJ30CT006	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
139	10HAJ30CT007	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
140	10HAJ30CT008	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
141	10HAJ30CT009	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
142	10HAJ30CT010	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
143	10HAJ30CT011	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
144	10HAJ30CT012	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
145	10HAJ30CT013	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
146	10HAJ30CT014	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
147	10HAJ30CT015	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
148	10HAJ30CT016	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
149	10HAJ30CT017	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
150	10HAJ30CT018	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
151	10HAJ30CT019	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
152	10HAJ30CT020	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
153	10HAJ30CT021	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
154	10HAJ30CT022	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
155	10HAJ30CT023	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
156	10HAJ30CT024	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
157	10HAJ30CT025	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
158	10HAJ30CT026	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
159	10HAJ30CT027	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
160	10HAJ30CT028	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
161	10HAJ30CT029	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
162	10HAJ30CT030	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
163	10HAJ30CT031	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
164	10HAJ30CT032	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
165	10HAJ30CT033	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
166	10HAJ30CT034	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
167	10HAJ30CT035	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
168	10HAJ30CT036	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
169	10HAJ30CT037	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
170	10HAJ30CT038	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
171	10HAJ30CT039	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
172	10HAJ30CT040	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
173	10HAJ30CT041	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
174	10HAJ30CT042	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
175	10HAJ30CT085	RH FINISHING TUBE INSIDE GAS PASS	0.00-800.00	°C	TYPE K TC
176	10HAJ30CT086	RH FINISHING TUBE INSIDE GAS PASS	0.00-800.00	°C	TYPE K TC
177	10HAJ30CT087	RH FINISHING TUBE INSIDE GAS PASS	0.00-800.00	°C	TYPE K TC
178	10HAJ30CT088	RH FINISHING TUBE INSIDE GAS PASS	0.00-800.00	°C	TYPE K TC
179	10HAJ30CT089	RH FINISHING TUBE INSIDE GAS PASS	0.00-800.00	°C	TYPE K TC
180	10HAJ30CT090	RH FINISHING TUBE INSIDE GAS PASS	0.00-800.00	°C	TYPE K TC

ANNEXURE-2 OF PS4152282
LIST OF SIGNALS

PANEL/LOCATION-4					
SEGMENT-4 (AT PLAT. 87500 BETWEEN S9R AND S10R)					
SL NO	TAG	DESCRIPTION	RANGE	UNIT	SENSOR TYPE
1	10HAD20CT041	FRONT VERT WALL OUTLET TUBE	0.00 - 600.00	°C	TYPE K TC
2	10HAD20CT042	FRONT VERT WALL OUTLET TUBE	0.00 - 600.00	°C	TYPE K TC
3	10HAD20CT043	FRONT VERT WALL OUTLET TUBE	0.00 - 600.00	°C	TYPE K TC
4	10HAD20CT044	FRONT VERT WALL OUTLET TUBE	0.00 - 600.00	°C	TYPE K TC
5	10HAD20CT045	FRONT VERT WALL OUTLET TUBE	0.00 - 600.00	°C	TYPE K TC
6	10HAD20CT046	FRONT VERT WALL OUTLET TUBE	0.00 - 600.00	°C	TYPE K TC
7	10HAD20CT047	FRONT VERT WALL OUTLET TUBE	0.00 - 600.00	°C	TYPE K TC
8	10HAD20CT048	FRONT VERT WALL OUTLET TUBE	0.00 - 600.00	°C	TYPE K TC
9	10HAD20CT049	FRONT VERT WALL OUTLET TUBE	0.00 - 600.00	°C	TYPE K TC
10	10HAD20CT050	FRONT VERT WALL OUTLET TUBE	0.00 - 600.00	°C	TYPE K TC
11	10HAD40CT031	RIGHT VERT WALL PANEL TUBE	0.00 - 600.00	°C	TYPE K TC
12	10HAD40CT032	RIGHT VERT WALL PANEL TUBE	0.00 - 600.00	°C	TYPE K TC
13	10HAD40CT033	RIGHT VERT WALL PANEL TUBE	0.00 - 600.00	°C	TYPE K TC
14	10HAD40CT034	RIGHT VERT WALL PANEL TUBE	0.00 - 600.00	°C	TYPE K TC
15	10HAD40CT035	RIGHT VERT WALL PANEL TUBE	0.00 - 600.00	°C	TYPE K TC
16	10HAD40CT036	RIGHT VERT WALL PANEL TUBE	0.00 - 600.00	°C	TYPE K TC
17	10HAD40CT037	RIGHT VERT WALL PANEL TUBE	0.00 - 600.00	°C	TYPE K TC
18	10HAD40CT038	RIGHT VERT WALL PANEL TUBE	0.00 - 600.00	°C	TYPE K TC
19	10HAD40CT039	RIGHT VERT WALL PANEL TUBE	0.00 - 600.00	°C	TYPE K TC
20	10HAD40CT040	RIGHT VERT WALL PANEL TUBE	0.00 - 600.00	°C	TYPE K TC
21	10HAD40CT041	RIGHT VERT WALL PANEL TUBE	0.00 - 600.00	°C	TYPE K TC
22	10HAD40CT042	RIGHT VERT WALL PLATEN TUBE	0.00 - 600.00	°C	TYPE K TC
23	10HAD40CT043	RIGHT VERT WALL PLATEN TUBE	0.00 - 600.00	°C	TYPE K TC
24	10HAD40CT044	RIGHT VERT WALL PLATEN TUBE	0.00 - 600.00	°C	TYPE K TC
25	10HAD40CT045	RIGHT VERT WALL SHADED TUBE	0.00 - 600.00	°C	TYPE K TC
26	10HAD40CT046	RIGHT VERT WALL SHADED TUBE	0.00 - 600.00	°C	TYPE K TC
27	10HAD40CT047	RIGHT VERT WALL SHADED TUBE	0.00 - 600.00	°C	TYPE K TC
28	10HAD40CT048	RIGHT VERT WALL COLD TUBE	0.00 - 600.00	°C	TYPE K TC
29	10HAH34CT045	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
30	10HAH34CT046	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
31	10HAH34CT047	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
32	10HAH34CT048	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
33	10HAH34CT049	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
34	10HAH34CT050	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
35	10HAH34CT051	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
36	10HAH34CT052	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
37	10HAH34CT053	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
38	10HAH34CT054	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
39	10HAH34CT055	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
40	10HAH34CT056	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
41	10HAH34CT057	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
42	10HAH34CT058	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
43	10HAH34CT059	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
44	10HAH34CT060	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
45	10HAH34CT061	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
46	10HAH34CT062	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
47	10HAH34CT063	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
48	10HAH34CT064	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
49	10HAH34CT065	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
50	10HAH34CT066	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
51	10HAH34CT067	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
52	10HAH34CT068	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
53	10HAH34CT069	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
54	10HAH34CT070	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
55	10HAH34CT071	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
56	10HAH34CT072	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
57	10HAH34CT073	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
58	10HAH34CT074	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
59	10HAH34CT075	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
60	10HAH34CT076	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
61	10HAH34CT077	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC

ANNEXURE-2 OF PS4152282
LIST OF SIGNALS

PANEL/LOCATION-4					
SEGMENT-4 (AT PLAT. 87500 BETWEEN S9R AND S10R)					
SL NO	TAG	DESCRIPTION	RANGE	UNIT	SENSOR TYPE
62	10HAH34CT078	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
63	10HAH34CT079	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
64	10HAH34CT080	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
65	10HAH34CT081	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
66	10HAH34CT082	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
67	10HAH34CT083	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
68	10HAH34CT084	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
69	10HAH34CT085	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
70	10HAH34CT086	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
71	10HAH34CT087	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
72	10HAH34CT088	SH PLATEN FRONT S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
73	10HAH34CT097	SH PLATEN FRONT TUBE INSIDE GAS PASS	0.00 - 650.00	°C	TYPE K TC
74	10HAH34CT098	SH PLATEN FRONT TUBE INSIDE GAS PASS	0.00 - 650.00	°C	TYPE K TC
75	10HAH34CT099	SH PLATEN FRONT TUBE INSIDE GAS PASS	0.00 - 650.00	°C	TYPE K TC
76	10HAH34CT100	SH PLATEN FRONT TUBE INSIDE GAS PASS	0.00 - 650.00	°C	TYPE K TC
77	10HAH34CT101	SH PLATEN FRONT TUBE INSIDE GAS PASS	0.00 - 650.00	°C	TYPE K TC
78	10HAH34CT102	SH PLATEN FRONT TUBE INSIDE GAS PASS	0.00 - 650.00	°C	TYPE K TC
79	10HAH34CT103	SH PLATEN FRONT TUBE INSIDE GAS PASS	0.00 - 650.00	°C	TYPE K TC
80	10HAH34CT104	SH PLATEN FRONT TUBE INSIDE GAS PASS	0.00 - 650.00	°C	TYPE K TC
81	10HAH36CT045	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
82	10HAH36CT046	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
83	10HAH36CT047	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
84	10HAH36CT048	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
85	10HAH36CT049	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
86	10HAH36CT050	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
87	10HAH36CT051	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
88	10HAH36CT052	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
89	10HAH36CT053	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
90	10HAH36CT054	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
91	10HAH36CT055	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
92	10HAH36CT056	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
93	10HAH36CT057	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
94	10HAH36CT058	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
95	10HAH36CT059	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
96	10HAH36CT060	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
97	10HAH36CT061	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
98	10HAH36CT062	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
99	10HAH36CT063	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
100	10HAH36CT064	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
101	10HAH36CT065	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
102	10HAH36CT066	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
103	10HAH36CT067	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
104	10HAH36CT068	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
105	10HAH36CT069	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
106	10HAH36CT070	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
107	10HAH36CT071	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
108	10HAH36CT072	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
109	10HAH36CT073	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
110	10HAH36CT074	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
111	10HAH36CT075	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
112	10HAH36CT076	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
113	10HAH36CT077	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
114	10HAH36CT078	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
115	10HAH36CT079	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
116	10HAH36CT080	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
117	10HAH36CT081	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
118	10HAH36CT082	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
119	10HAH36CT083	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
120	10HAH36CT084	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
121	10HAH36CT085	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
122	10HAH36CT086	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC

ANNEXURE-2 OF PS4152282
LIST OF SIGNALS

PANEL/LOCATION-4					
SEGMENT-4 (AT PLAT. 87500 BETWEEN S9R AND S10R)					
SL NO	TAG	DESCRIPTION	RANGE	UNIT	SENSOR TYPE
123	10HAH36CT087	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
124	10HAH36CT088	SH PLATEN REAR S-34 TUBE	0.00 - 650.00	°C	TYPE K TC
125	10HAH36CT097	SH PLATEN REAR TUBE INSIDE GAS PASS	0.00 - 650.00	°C	TYPE K TC
126	10HAH36CT098	SH PLATEN REAR TUBE INSIDE GAS PASS	0.00 - 650.00	°C	TYPE K TC
127	10HAH36CT099	SH PLATEN REAR TUBE INSIDE GAS PASS	0.00 - 650.00	°C	TYPE K TC
128	10HAH36CT100	SH PLATEN REAR TUBE INSIDE GAS PASS	0.00 - 650.00	°C	TYPE K TC
129	10HAH36CT101	SH PLATEN REAR TUBE INSIDE GAS PASS	0.00 - 650.00	°C	TYPE K TC
130	10HAH36CT102	SH PLATEN REAR TUBE INSIDE GAS PASS	0.00 - 650.00	°C	TYPE K TC
131	10HAH36CT103	SH PLATEN REAR TUBE INSIDE GAS PASS	0.00 - 650.00	°C	TYPE K TC
132	10HAH36CT104	SH PLATEN REAR TUBE INSIDE GAS PASS	0.00 - 650.00	°C	TYPE K TC
133	10HAJ30CT043	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
134	10HAJ30CT044	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
135	10HAJ30CT045	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
136	10HAJ30CT046	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
137	10HAJ30CT047	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
138	10HAJ30CT048	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
139	10HAJ30CT049	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
140	10HAJ30CT050	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
141	10HAJ30CT051	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
142	10HAJ30CT052	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
143	10HAJ30CT053	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
144	10HAJ30CT054	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
145	10HAJ30CT055	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
146	10HAJ30CT056	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
147	10HAJ30CT057	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
148	10HAJ30CT058	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
149	10HAJ30CT059	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
150	10HAJ30CT060	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
151	10HAJ30CT061	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
152	10HAJ30CT062	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
153	10HAJ30CT063	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
154	10HAJ30CT064	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
155	10HAJ30CT065	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
156	10HAJ30CT066	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
157	10HAJ30CT067	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
158	10HAJ30CT068	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
159	10HAJ30CT069	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
160	10HAJ30CT070	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
161	10HAJ30CT071	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
162	10HAJ30CT072	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
163	10HAJ30CT073	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
164	10HAJ30CT074	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
165	10HAJ30CT075	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
166	10HAJ30CT076	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
167	10HAJ30CT077	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
168	10HAJ30CT078	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
169	10HAJ30CT079	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
170	10HAJ30CT080	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
171	10HAJ30CT081	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
172	10HAJ30CT082	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
173	10HAJ30CT083	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
174	10HAJ30CT084	RH FINISHING R-14 TUBE	0.00-800.00	°C	TYPE K TC
175	10HAJ30CT091	RH FINISHING TUBE INSIDE GAS PASS	0.00-800.00	°C	TYPE K TC
176	10HAJ30CT092	RH FINISHING TUBE INSIDE GAS PASS	0.00-800.00	°C	TYPE K TC
177	10HAJ30CT093	RH FINISHING TUBE INSIDE GAS PASS	0.00-800.00	°C	TYPE K TC
178	10HAJ30CT094	RH FINISHING TUBE INSIDE GAS PASS	0.00-800.00	°C	TYPE K TC
179	10HAJ30CT095	RH FINISHING TUBE INSIDE GAS PASS	0.00-800.00	°C	TYPE K TC
180	10HAJ30CT096	RH FINISHING TUBE INSIDE GAS PASS	0.00-800.00	°C	TYPE K TC
181	10HAJ30CT097	RH FINISHING TUBE INSIDE GAS PASS	0.00-800.00	°C	TYPE K TC

PURCHASE SPECIFICATION FOR FOUNDATION FIELD BUS BASED I/O SYSTEM

(FOR SG C&I PACKAGE)

PROJECT : DARLIPALI STPP STAGE-I (2 X 800MW)

CUSTOMER : **NTPC**

	CHECKED BY	APPROVED BY	
	MUKESH KUMAR	**S B BANIK**	
	PREPARED	ISSUED	DATE
	DINAKARA P	**410 ENGG**	**05/05/2016**

REVISION HISTORY SHEET

REV NO.	DATE	NATURE OF CHANGE	REASON	PREPARED BY	APPROVED BY
00	05/05/2016	FIRST ISSUE	-------	DP	SBB

CHECKED BY	APPROVED BY
MUKESH KUMAR	S B BANIK

PREPARED	ISSUED	DATE
DINAKARA P	410 ENGG	05/05/2016

1. GENERAL

This specification specifies broadly the requirement of Engineering, Manufacturing, Testing, Erection supervision and Commissioning of Foundation fieldbus based I/O system of proven technology to be supplied by the vendor.

The proposed system shall be installed in Safe Zone of power plants for which BHEL is supplying control system.

2. CONTROL PANEL

The offered system shall be housed in panels of IP55 protection class and placed in field (locally near the equipment). Panel located in control room shall be IP32 minimum.
Panel construction and other details, shall be as per Annexure-1 of this specification.

3. FOUNDATION FIELDBUS I/O SYSTEM TECHNICAL DETAILS

This specification covers broadly the requirement of Foundation Fieldbus based system with 8 Channel Temperature Input Devices/Multiplexers, power supplies, Power Conditioners with terminators, Mega-blocks /segment couplers with terminators, Surge suppressors/segment, FF- H1/HSE Gateway , connectors, terminators, communication cable, plugs, configuration/ diagnostic software, configuration PC (Laptop) and any other component etc. not specifically mentioned, but required to make the system complete. It is the responsibility of the vendor to ensure that all the components etc. are considered in the offer to make it complete and if any need arises during Engineering/ Testing/ Erections/ Commissioning stage, then same to be supplied by the vendor at no extra cost to BHEL.

System shall be capable to acquire signals from 3/4 Wire PT100 RTD (0-100 Deg C range), CuCuNi thermocouple (0-150 Deg C range), NiCrNi Thermocouple (0-700 Deg C range), TC-K Thermocouple (0-800 Deg C range). Details of total signals are attached as Annexure-2.

These signals to be acquired using 8 channel Temperature input devices / Multiplexers housed in a control panel located in the field. All other associated components like Megablock etc. will also to be housed in the same panel. All these system components shall have operating Temperature range from 0 – 85 Deg C.

Signals from field shall be terminated at the FF I/O panel end by BHEL. These field cables will be 0.5 sq mm dia. multi core Copper cable for RTDs and 0.5 Sqmm dia multicore thermocouple extension cable for thermocouples, being regularly used in power plants. All field RTD signals shall be terminated in the panel using cage clamp TBs and Thermocouple signals will be terminated directly at 8 channel Temperature Input devices. All thermocouples in SG area are Duplex thermocouples, One element will be directly connected to 8 channel temperature Input devices and second element shall be connected to cage clamp TBs mounted in the field panel. Any specific field cable requirement may be informed to BHEL at the time of offer itself.

The offered system shall be with simple configuration for I/Os and communication system. Power supply and Power Conditioner/Hub shall be with N+N redundancy and any failure of one power supply and Power Conditioner module shall not affect performance of the system. These power conditioner shall be provided with suitable diagnostic capability and all diagnostic information shall be available through soft link (via Linking devices), which is connected to BHEL DCS. +24VDC Redundant power supply feeders shall be provided by BHEL at Panel end and supplier to arrange for further decoupling/distribution/monitoring etc. Supplier to ensure that, even in case of failure of one +24VDC power supply feeder, system is available. Supplier to inform Power supply feeder requirement/rating in the offer. Undervoltage, Overvoltage and Loss of power for each 24VDC incoming feeder to be monitored and Potential free Alarm contacts to be provided. Make of such devices shall be indicated in the offer and is subject to approval by BHEL.

All Linking devices/Gateways and Power supplies, Power conditioners, diagnostic module ,surge suppressors etc. shall be mounted in a Computer room mounted panel of IP32 class.

The proposed system will be connected to BHEL's OPC server through Ethernet switch, located in Computer Room. All communication cable within the field mounted panels and Computer room mounted panels are in the scope of vendor. Foundation Fieldbus cable from field mounted panel to Computer Room mounted panel shall also be in the scope of supplier. Foundation Fieldbus Communication cables from field mounted panels to Control room mounted panels shall be armoured cable. Cable route length between Field Mounted panels to Control room mounted **panel shall be taken 400 m. for signals under Annexure-2**.

4. SPARE REQUIREMENT

4.1 Offered system shall be expandable. Various in-built spare capacity (per panel / Location basis) shall be as follows

I. 20% spare I/O channels wired up to Terminal Blocks for each type of signal, on overall basis in a panel.

II. 20% spare Terminal blocks in each panel

4.2 Mandatory Spare quantities, apart from the required qty, shall be as below (On per Project basis)

I. Prefab interconnection cables with connector- 2 no of each variety.
II. System Bus cable with connector-2 no of each variety.
III. Power supply modules and power - conditioners, megablocks, surge suppressors 20% or 4 nos of each type and model, whichever is more
IV. All types of modules including I/O cards, controller/CPU/connectors etc.-10% or 2 nos of each whichever is more
V. FF gateway/linking device, Interface hardware for communication -10% or 2 nos of each
VI. Fuses etc. - 200% of each type & variety
VII. Foundation Fieldbus cable - per meter rate to be indicated in the offer. Quantity for spares will be decided during detailed engineering.
VIII. Any other item, which vendor recommends is required for trouble free operation for 2 years and not covered above, shall also be indicated and included in the offer with optional price.

NOTE: All mandatory spares items shall be quoted with Unit price along with required quantities, as per spec.

5. SYSTEM REQUIREMENT

Offered system shall be of proven technology. Vendor to submit, for the offered system's reference list and operating experience of the listed services in thermal power plants/any other industries, for more than 2 years with similar kind of application. Any other reference letters from the user of the system/any other industry etc. may also be submitted for information. Operating experience / Reference list of Individual components forming the whole system may also be furnished All field mounted components in offered system shall meet following requirements, as minimum

i. Input : K/T -type thermocouple / PT-100 RTD
ii. CJC Compensation : Integral
iii. Accuracy : Minimum 0.2% at 0-800 Deg C span or Better
iv. Operating Temperature** : 0- 85 Deg C (continuous operation)
v. Diagnostics: Wire Break monitoring, Power supply healthiness etc.
vi. Mounting : DIN Rail Mounting
vii. Accessories : All required Accessories to make the system complete , shall be provided
viii. EMC: EN61326 Standard.

** Control room mounted equipment shall be suitable for operating temperature up to 50 Deg C.(continuous operation).

6. MAKE OF VARIOUS COMPONENTS

Vendors to note that various FF items/components etc. shall be Foundation Fieldbus approved and from one of the below mentioned make only. Vendor to mention make and Model no. Proposed in the offer.

6.1 **ELECTRONIC MODULES/COMPONENTS** related to FF bus system (Multiplexer/ Power supply/ Surge suppressor/ Megablock / linking device /Network switches etc.)

I. M/s Pepperl & Fuchs
II. M/s MTL Instruments
III. M/s Endress & Hauser
IV. M/s Emerson Process Management
V. M/s Smar
VI. M/s Softing
VII. M/s Moore Hawke
VIII. M/s R.Stahl
IX. M/s Phoenix Contact

6.2 PANEL/ENCLOSURES

I. M/s Rittal India
II. M/s Pyrotech, Udaipur
III. M/s MPP,Bangalore
IV. M/s Hoffman India

6.3 FOUNDATION FIELDBUS CABLES

I. M/s Belden
II. M/s Leoni Kerpen
III. M/s Phoenix Contacts

NOTE : Vendor may offer any other make under S.No. 6.1/6.2/6.3 above also, as OPTION along with main offer, however, same will be subjected to BHEL's approval.

C O P

7. QUALITY REQUIREMENT

The equipment covered under this specification shall be subject to vendor's Quality Plan to be approved by M/s BHEL/ End user before start of manufacture. To ensure that quality is in-built in each equipment the Quality Assurance System manual & Quality Plan indicating the system followed by the vendor shall be submitted to purchaser for his review along with the offer.

The vendor shall give at least 15 days written advance notice to purchaser for witnessing the tests/inspection at various stages. The expenses for all such test/inspection shall be to Manufacturer's account except for the expenses of purchaser's representatives witnessing the test. The purchaser shall attend such test/inspection or advice that the manufacturer may proceed with the test, which shall be deemed to have in purchaser's presence and shall furnish relevant test result and test certificates to the purchaser for his review who will then issue Material Dispatch Clearance Certificate (MDCC) enabling supplier to dispatch the equipment.

7.1 TYPE TEST REQUIREMENT:

The Vendor shall give the type test report for the offered System and the test requirement shall cover CMRR, NMRR Verification. Submission of type test results and certificate shall be acceptable provided.

i) The same has been carried out by the Vendor on exactly the same model / rating of equipment.

ii) There has been no change in the components from the offered equipment & tested equipment.

iii) The test has been carried out as per the latest standards along with amendments as on the date of Bid opening and as indicated below :

7.2 SPECIAL REQUIREMENT FOR SOLID STATE EQUIPMENTS/ SYSTEMS

The minimum type lest reports, which are to be submitted for each of the major C&I systems shall be as indicated below:

i) Surge Withstand Capability (SWC) for Solid State Equipment Systems
All solid state systems/equipment shall be able to withstand the electrical noise and surges as encountered in actual service conditions and inherent in a power plant. All the solid state systems/equipment shall be provided with all required protections that needs the surge withstand capability as defined in ANSI 37.90.1/ IEEE-472.Hence, all front end cards which receive external signals like Analog input & output modules, Binary input & output modules etc. including power supply, data highway

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data links shall be provided with protections that meets the surge withstand capability as defined in ANSI 37.90.1/ IEEE-472. Complete details of the features incorporated in electronics systems to meet this requirement, the relevant tests carried out, the test certificates etc. shall be submitted along with the proposal.

As an alternative to above, suitable class of EN 61000-4-12 which is equivalent to ANSI /37.90.1/IEEE-472 may also be adopted for SWC test.

ii) Dry Heat test as per IEC-68-2-2 or equivalent.
iii) Damp Heat test as per IEC-68-2-3 or equivalent.
iv) Vibration test as per IEC-68-2-6 or equivalent.
v) Electrostatic discharge tests as per EN 61000-4·2 or equivalent.
vi) Radio frequency immunity test as per EN 61000-4-6 or equivalent.
vii) Electromagnetic Field immunity as per EN 61000-4-3 or equivalent.

Test listed at item no. v, vi, vii, above are applicable for electronic cards only**.**

Note: If Type Tests and other tests (as specified under 7.1 and 7.2) have been conducted with reference to standards different than what have been specified in the specification, then vendor to clearly indicate these specification with equivalent specifications in the offer.

8.0 CONFIGURATION & DIAGNOSTIC SOFTWARE

8.1 All software required for configuration of the offered Foundation Fieldbus system to be considered and offered. Similarly, software for Diagnostics /Troubleshooting is also to be part of offer. Any license, if required, to be considered on Project/Site basis and not on Unit basis. System Configuration PC (Laptop) required to load these software will be provided by Vendor. Configuration PC (Laptop) shall be from reputed vendors (Dell/IBM/Compaq) and of latest configuration with all the required basic software/operating system. All these software along-with necessary Device Description files to be supplied in CD or any other storage media only, even though it may be available in Supplier's Web Site or otherwise. Any cable required for communication during configuration also be considered in the offer.

8.2 Supplier to provide all necessary technical support to establish communication between the offered system and BHEL's control system. Any software OR Configuration file etc. required establishing meaningful communication shall be part of the Offered system.

8.3 Supplier to provide **network switch** in their panel for interconnection with BHEL OPC server.
Any additional software/configuration file etc. required during Engineering/Testing/Commissioning etc. to be supplied by Vendor with no extra cost to BHEL.

9 WARRENTY

The offered system/ equipment shall be guaranteed for satisfactory operation of 18 months from the date of commissioning OR 24 months from the date of supply whichever is earlier.

10 ERECTION & COMMISSIONING SCOPE

10.1 All panel erection, cable laying, cable termination etc. will be done by BHEL under supervision of Vendor's engineer. All cable termination details etc. to be given by Vendor to BHEL for cable terminations.

10.2 All system commissioning including Pre-commissioning checks, Panel energizing, Loop checking, Communication establishment with Host DCS system etc. is the responsibility of the Vendor. Vendor to indicate per unit separate Lump-sum price for this activity in the offer.

11 TRAINING

Vendor to provide One day On-site training per unit to BHEL/End User's engineers on all aspects of the Foundation Fieldbus system being offered/supplied. Tentatively 10-15 Engineers will participate in this training. Training shall necessarily include Technical details of Foundation Fieldbus system, Operating principle, system configuration supplied, system trouble-shooting and maintenance, as minimum requirement.

12 DOCUMENTATION

12.1 Documents to be furnished along-with offer (1 set)

- Technical write-up(functional)
- Technical literature/catalog of each component
- Configuration drawing/Segment design including power supply and monitoring scheme.
- Detailed bill of material with make & model
- Data sheet of each component offered
- Clause-wise confirmation/deviation list
- Reference List/Operating experience
- Quality Plan
- List of Software to be supplied
- Overall General Arrangement drg.
- General Arrangement drg.
- Calculation considering various distances between different components.
- Clear list of items/software etc. NOT CONSIDERED but required to complete the system

12.2 Documents to be furnished after placement of order (for Approval by BHEL/ End User- 2 sets hardcopies + soft copy in PDF format) Technical write-up(functional)

- Technical literature/catalog of each component
- Configuration drawing/segment design
- Detailed bill of material with make & model
- Data sheet
- Schematic diagram/Loop diagram including Termination details
- Quality Plan
- List of Software to be supplied
- Type test reports for the Tests mentioned under clause 6.0
- IP55/32 Protection class Type Test Certificate for control panel.

12.3 Documents to be furnished before dispatch for review/ acceptance by M/s BHEL/End user (2 sets hardcopies + soft copy in .PDF format)

- Visual/ Dimensional Test report
- Calibration report
- Test Report/Certificate/Type test reports
- Schematic diagram/Loop diagram including Termination details
- HV/IR Test Report.

12.4 Final Operation & Maintenance Manual (O&M Manual) shall contain minimum of following:

- Technical write-up(functional)
- Technical literature/catalog of each component
- Configuration drawing/segment design
- Detailed bill of material with make & model
- Data sheet
- Schematic diagram/Loop diagram including Termination details
- Details of Software being supplied
- Trouble shooting procedure and Maintenance guidelines
- Overall General Arrangement drg.
- General Arrangement drg.
- O&M Manuals to be submitted at the Time of Dispatch. (2 sets hardcopies + 1 soft copy in .PDF format)

NOTES :

1. Vendor must furnish, all documents, in line with specification along with offer. Clause-wise specific acceptance/deviations shall be furnished. Deviations, if any, must be clearly brought out in offer. Failure to provide Clause-wise acceptance/deviations may result in Technical disqualification.

2. It is the responsibility of vendor to check for completeness of the offered system. If any additional component/software etc. is required during Engineering/Testing/Erection/Commissioning, then same to be provided by Vendor with NO EXTRA COST TO BHEL.

3. Any clarification required from BHEL side may be obtained during offer stage only.

4. Usages for each component shall be as below:
   - 4.1 Input Temperature Multiplexer - Max. 7 I/Ps to be used. 8th channel to be kept for spare and can be considered for spare wired calculation.
   - 4.2 Megablock/Segment coupler/Wiring Block/Gateway linking device
     - 4.2.1 4 Channel - Max. 3 to be used
     - 4.2.2 8 Channel - Max. 7 to be used
     - 4.2.3 10/12 Channel - Max 8 to be used
   - 4.3 Power conditioner (In redundant mode with Diagnostic module)
     - 4.3.1 4 Redundant channel - Max. 3 to be used
     - 4.3.2 8 Redundant channel - Max. 7 to be used

   All Power conditioners offered shall be fully loaded, even if No. of channels used is less than the specified above.

   - 4.4 Max. No of devices/segment shall not be more than 8.
   - 4.5 Surge suppressors to be provided at both ends i.e at control room panel end as well as at field panel end. Surge Withstand Capability details are provided in cl. 7.2

ANNEXURE-1 OF PS4102028
Panel construction and other details

1. **INTENT**:
   Supply of outdoor panel with IP55 protection class and Computer room mounted panel of IP32 class.
2. **DIMENSIONS**:
   - Panel to be fabricated using CRCA sheet, using welded/bolted construction. Basic Panel should generally have the following internal dimensions (minimum): 750mm (W) x 750mm (D) x 2200mm (H). If signals are more Suit of Two panel should be used.
   - Bottom frame height- 50mm

3. **FRAME WORK**:
   Framework material shall be CRCA (Cold Rolled Carbon Steel Sheet, Annealed).

4. **DOORS, PANELS & COVERS**:
   - Doors shall be minimum 2.0mm CRCA sheet. Side plates should be minimum 1.5mm thick CRCA sheet. Top and bottom covers should be minimum 1.5mm thick CRCA sheet.
   - Removable Gland Plates – 3.0 mm thick CRCA sheet

5. **DOORS**:
   - 2 doors in front and 2 doors at rear per panel. Master key for all the panels shall be provided.
   - Door switches:
     - Front of the panel – 2 switch for the lighting and Door Open Alarm Contact
     - Rear of the panel – 2 switch for the lighting and Door Open Alarm Contact

6. **CANOPY (Top plate) CONSTRUCTION**:
   Canopy (Top plate) shall be made of 1.5mm CRCA sheet (Minimum)

7. **PAINTING**:
   a. Finished surface to be free from waves, belies or other imperfections.
   b. Epoxy based and Powder coated
   c. Doors, Canopy – Off-white RAL 9002 Semi glossy finish both interior and exterior
   d. Side plates – Exterior – Blue to shade RAL 5012; Interior – Off-white RAL 9002 Semi glossy
   e. Minimum thickness is 65-75 microns.

8. **ADDITIONAL REQUIREMENTS**:
   Supplier to submit a document detailing out the lifting mechanism provided for the panels.
9. **GENERAL**:
   Location of erection of the panels: Outdoor
   Environmental specification (where the panel will be erected):

Ambient	Pressure	Rel. Humidity	Atmosphere
55 Deg C	Atm	100% max	Air (Dirty)
4 deg C	Atm	5% Min	Air (Dirty)

ANNEXURE-1 OF PS4102028
Panel construction and other details

- Protection class of the Panel: IP 55 for outdoor and IP32 for Indoor panel.
- Glands & Gland plate: Panels to be provided with suitable IP55 removable gland modules that will be fixed to the bottom of the panel. Glands shall be Nickel plated double compression Brass cable glands. Exact qty/sizes will be decided detailed engineering. Make of glands shall be indicated in the offer by vendor and \ subject to approval by BHEL.
- Suitable Gaskets to be provided for all openings.
- Anti-vibration pads shall be provided for the panels.
- Cable entry will be from the bottom.
- OGA Drawing to be submitted for approval before manufacture.
- Suppliers internal Test Certificate for dimensions, Visual inspection, Paint to be submitted before giving inspection call to BHEL.
- Inspection by BHEL/Customer at suppliers works.
- Item shall be packed in all-weather proof packing with sufficient cushioning to avoid transit damages.
- Name plate of 2mm thick Stainless steel with following details is to be provided inside each panel:

  - **ITEM : As per PO**
  - **PROJECT NAME / UNIT No : As per PO**
  - **CUSTOMER NAME : As per PO**
  - **BHEL ORDER No. : As per PO**
  - **Date of Dispatch to Site :**

- +24VDC Redundant Power supply feeders will be made available at the panel terminal block for FF system use. Vendor to provide necessary protection for the power supply circuit. Also, one feeder of 230VAC power will be provided for panel illumination etc. only. Any other power supply requirement shall be taken care of by the supplier.
- Panels shall be provided with CFL lamp (operating at 230VAC,50Hz) in both front and back of the panels

Type test certificate for IP55/IP32 protection class (Based on tests done on similar \ panels and not more than 5 yrs. old) shall be furnished along with the offer for the panel.

- Smoke detector: Suitable mounting bracket for the smoke detector needs to be provided.
- Nomenclature plate: To be provided on the top of the panel at both front and rear of the panels. Details will be provided during detailed engineering stage.
- Any other type of construction, generally meeting above requirement is also applicable, subject to approval by BHEL/End user.
- **LIST OF APPROVED VENDORS FOR PANELS**

  1. M/s Pyrotech, Udaipur
  2. M/s Rittal,Bangalore
  3. M/s MPP,. Bangalore
  4. M/s Hochmann,India

ANNEXURE-1 OF PS4102028
Panel construction and other details

NOTE : Panels of sizes other than as specified under S.no.2 above will also be considered provided they have sufficient space to mount all the components. For this vendor to furnish General arrangement drawing with all dimensional details for approval by BHEL during offer.

HARDWARE TO BE PROVIDED

- Provision to accept 2 nos. redundant feeders of +24VDC, 20 Amps. power supply with necessary TBs and Breakers
- Provision to accept 1 UPS feeder of 230VAC for Panel illumination and power supply socket with necessary TBs and breakers
- DIN rails for components mounting.
- Terminal Blocks suitable for Cage Clamp type of connections – As required.
- Cable channels for cable routing inside the panel.
- Tin Plated Copper Bus bar each for panel Earthling and Screen/Shield
- Panel internal mounting arrangement of various components will be approved by BHEL during detailed engineering stage.
- All internal wiring to be done with FRLS insulated Cables.
- Suitable provision to monitor panel internal temperature to be provided. Individual Alarm Contact (suitable to 230 VAC 0.5 amp) wired up to TBs to be provided. The temperature shall be settable within the range 0□85 DEGC Makes
- **Makes**
    - Terminal Blocks : Wago/Phoenix/Elmax
    - MCB/Breakers : ABB/Schneider/Siemens/Indo Kopp/MDS Load contact/Merlin Gerin
    - De-coupling Diode : Vendor to propose make for approval
    - Under/Over Voltage, Feeder Fault Monitoring: Vendor to propose make for approval.
    - Panel Temp Monitoring – Rittal/Indfos/Danfoss /Any other make subjected to BHEL approval.
    - Network Switch : Cisco /Moxa /N-TRON /Hirschman

PANEL/LOCATION-1								
SEGMENT - 1 (AT PLAT. 97500 BETWEEN S9L AND S10L)								
SL	TAG	DESCRIPTION	RANGE	UNI	SENSOR	SENSOR	Rev	Rev Remarks
1	10HAH34CT001	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
2	10HAH34CT002	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
3	10HAH34CT003	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
4	10HAH34CT004	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
5	10HAH34CT005	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
6	10HAH34CT006	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
7	10HAH34CT007	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
8	10HAH34CT008	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
9	10HAH34CT009	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
10	10HAH34CT010	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
11	10HAH34CT011	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
12	10HAH34CT012	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
13	10HAH34CT013	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
14	10HAH34CT014	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
15	10HAH34CT015	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
16	10HAH34CT016	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
17	10HAH34CT017	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
18	10HAH34CT018	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
19	10HAH34CT019	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
20	10HAH34CT020	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
21	10HAH34CT021	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
22	10HAH34CT022	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
23	10HAH34CT023	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
24	10HAH34CT024	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
25	10HAH34CT025	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
26	10HAH34CT026	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
27	10HAH34CT027	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
28	10HAH34CT028	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
29	10HAH34CT029	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
30	10HAH34CT030	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
31	10HAH34CT031	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
32	10HAH34CT032	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
33	10HAH34CT033	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
34	10HAH34CT034	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
35	10HAH34CT035	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
36	10HAH34CT036	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
37	10HAH34CT037	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
38	10HAH34CT038	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
39	10HAH34CT039	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
40	10HAH34CT040	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
41	10HAH34CT041	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
42	10HAH34CT042	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
43	10HAH34CT043	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
44	10HAH34CT044	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
45	10HAH34CT045	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
46	10HAH34CT046	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
47	10HAH34CT047	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
48	10HAH34CT048	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
49	10HAH34CT049	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
50	10HAH34CT050	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
51	10HAH34CT099	SH PLATEN TUBE INSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
52	10HAH34CT100	SH PLATEN TUBE INSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
53	10HAH34CT101	SH PLATEN TUBE INSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
54	10HAH34CT102	SH PLATEN TUBE INSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
55	10HAH34CT103	SH PLATEN TUBE INSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
56	10HAH34CT104	SH PLATEN TUBE INSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
57	10HAH34CT105	SH PLATEN TUBE INSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
58	10HAH34CT106	SH PLATEN TUBE INSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
59	10HAH34CT107	SH PLATEN TUBE INSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
60	10HAH34CT108	SH PLATEN TUBE INSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
61	10HAH34CT109	SH PLATEN TUBE INSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
62	10HAH34CT110	SH PLATEN TUBE INSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	

SL	TAG	DESCRIPTION	RANGE	UNI	SENSOR	SENSOR	Rev	Rev Remarks
63	10HAH34CT111	SH PLATEN TUBE INSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
64	10HAH34CT112	SH PLATEN TUBE INSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
65	10HAH34CT113	SH PLATEN TUBE INSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
66	10HAH34CT114	SH PLATEN TUBE INSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
67	10HAJ30CT001	RH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
68	10HAJ30CT002	RH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
69	10HAJ30CT003	RH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
70	10HAJ30CT004	RH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
71	10HAJ30CT005	RH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
72	10HAJ30CT006	RH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
73	10HAJ30CT007	RH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
74	10HAJ30CT008	RH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
75	10HAJ30CT009	RH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
76	10HAJ30CT010	RH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
77	10HAJ30CT011	RH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
78	10HAJ30CT012	RH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
79	10HAJ30CT013	RH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
80	10HAJ30CT014	RH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
81	10HAJ30CT015	RH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
82	10HAJ30CT016	RH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
83	10HAJ30CT017	RH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
84	10HAJ30CT018	RH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
85	10HAJ30CT019	RH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
86	10HAJ30CT020	RH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
87	10HAJ30CT021	RH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
88	10HAJ30CT022	RH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
89	10HAJ30CT023	RH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
90	10HAJ30CT024	RH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
91	10HAJ30CT025	RH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
92	10HAJ30CT026	RH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
93	10HAJ30CT027	RH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
94	10HAJ30CT028	RH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
95	10HAJ30CT029	RH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
96	10HAJ30CT030	RH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
97	10HAJ30CT031	RH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
98	10HAJ30CT032	RH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
99	10HAJ30CT033	RH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
100	10HAJ30CT034	RH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
101	10HAJ30CT035	RH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
102	10HAJ30CT036	RH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
103	10HAJ30CT037	RH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
104	10HAJ30CT038	RH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
105	10HAJ30CT039	RH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
106	10HAJ30CT040	RH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
107	10HAJ30CT041	RH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
108	10HAJ30CT042	RH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
109	10HAJ30CT043	RH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
110	10HAJ30CT044	RH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
111	10HAJ30CT045	RH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
112	10HAJ30CT046	RH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
113	10HAJ30CT131	RH FINISHING TUBE INSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
114	10HAJ30CT132	RH FINISHING TUBE INSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
115	10HAJ30CT133	RH FINISHING TUBE INSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
116	10HAJ30CT134	RH FINISHING TUBE INSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
117	10HAD10CT031	LEFT VERT WALL PANEL TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
118	10HAD10CT032	LEFT VERT WALL PANEL TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
119	10HAD10CT033	LEFT VERT WALL PANEL TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
120	10HAD10CT034	LEFT VERT WALL PANEL TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
121	10HAD10CT035	LEFT VERT WALL PANEL TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
122	10HAD10CT036	LEFT VERT WALL PANEL TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
123	10HAD10CT037	LEFT VERT WALL PANEL TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
124	10HAD10CT038	LEFT VERT WALL PANEL TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
125	10HAD10CT039	LEFT VERT WALL PANEL TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
126	10HAD10CT040	LEFT VERT WALL PANEL TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	

SL	TAG	DESCRIPTION	RANGE	UNI	SENSOR	SENSOR	Rev	Rev Remarks
127	10HAD10CT041	LEFT VERT WALL PANEL TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
128	10HAD10CT042	LEFT VERT WALL PANEL TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
129	10HAD10CT043	LEFT VERT WALL PANEL TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
130	10HAD10CT044	LEFT VERT WALL PANEL TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
131	10HAD10CT045	LEFT VERT WALL PANEL TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
132	10HAD10CT046	LEFT VERT WALL PANEL TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
133	10HAD10CT047	LEFT VERT WALL PANEL TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
134	10HAD10CT048	LEFT VERT WALL PANEL TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
135	10HAD10CT049	LEFT VERT WALL PANEL TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
136	10HAD10CT050	LEFT VERT WALL PANEL TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
137	10HAD20CT031	FRONT VERT WALL OUTLET TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
138	10HAD20CT032	FRONT VERT WALL OUTLET TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
139	10HAD20CT033	FRONT VERT WALL OUTLET TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
140	10HAD20CT034	FRONT VERT WALL OUTLET TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
141	10HAD20CT035	FRONT VERT WALL OUTLET TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
142	10HAD20CT036	FRONT VERT WALL OUTLET TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
143	10HAD20CT037	FRONT VERT WALL OUTLET TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
144	10HAD20CT038	FRONT VERT WALL OUTLET TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
145	10HAD20CT039	FRONT VERT WALL OUTLET TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
146	10HAD20CT040	FRONT VERT WALL OUTLET TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	

PANEL/LOCATION-2

SEGMENT-2 (AT PLAT. 97500 BETWEEN S09R AND S10R)

SL	TAG	DESCRIPTION	RANGE	UNI	SENSOR	SENSOR	Rev	Rev Remarks
1	10HAH34CT051	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
2	10HAH34CT052	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
3	10HAH34CT053	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
4	10HAH34CT054	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
5	10HAH34CT055	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
6	10HAH34CT056	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
7	10HAH34CT057	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
8	10HAH34CT058	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
9	10HAH34CT059	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
10	10HAH34CT060	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
11	10HAH34CT061	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
12	10HAH34CT062	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
13	10HAH34CT063	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
14	10HAH34CT064	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
15	10HAH34CT065	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
16	10HAH34CT066	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
17	10HAH34CT067	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
18	10HAH34CT068	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
19	10HAH34CT069	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
20	10HAH34CT070	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
21	10HAH34CT071	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
22	10HAH34CT072	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
23	10HAH34CT073	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
24	10HAH34CT074	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
25	10HAH34CT075	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
26	10HAH34CT076	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
27	10HAH34CT077	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
28	10HAH34CT078	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
29	10HAH34CT079	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
30	10HAH34CT080	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
31	10HAH34CT081	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
32	10HAH34CT082	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
33	10HAH34CT083	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
34	10HAH34CT084	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
35	10HAH34CT085	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
36	10HAH34CT086	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
37	10HAH34CT087	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
38	10HAH34CT088	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
39	10HAH34CT089	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
40	10HAH34CT090	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	

SL	TAG	DESCRIPTION	RANGE	UNI	SENSOR	SENSOR	Rev	Rev Remarks
41	10HAH34CT091	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
42	10HAH34CT092	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
43	10HAH34CT093	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
44	10HAH34CT094	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
45	10HAH34CT095	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
46	10HAH34CT096	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
47	10HAH34CT097	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
48	10HAH34CT098	SH PLATEN TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
49	10HAH34CT115	SH PLATEN TUBE INSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
50	10HAH34CT116	SH PLATEN TUBE INSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
51	10HAH34CT117	SH PLATEN TUBE INSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
52	10HAH34CT118	SH PLATEN TUBE INSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
53	10HAH34CT119	SH PLATEN TUBE INSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
54	10HAH34CT120	SH PLATEN TUBE INSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
55	10HAH34CT121	SH PLATEN TUBE INSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
56	10HAH34CT122	SH PLATEN TUBE INSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
57	10HAH34CT123	SH PLATEN TUBE INSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
58	10HAH34CT124	SH PLATEN TUBE INSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
59	10HAH34CT125	SH PLATEN TUBE INSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
60	10HAH34CT126	SH PLATEN TUBE INSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
61	10HAH34CT127	SH PLATEN TUBE INSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
62	10HAH34CT128	SH PLATEN TUBE INSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
63	10HAH34CT129	SH PLATEN TUBE INSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
64	10HAH34CT130	SH PLATEN TUBE INSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
65	10HAJ30CT047	RH FINISHING OUTSIDE GAS PASS	0.00 - 700.00	°C	THERMOCOUPLE	TYPE K TC	0	
66	10HAJ30CT048	RH FINISHING OUTSIDE GAS PASS	0.00 - 700.00	°C	THERMOCOUPLE	TYPE K TC	0	
67	10HAJ30CT049	RH FINISHING OUTSIDE GAS PASS	0.00 - 700.00	°C	THERMOCOUPLE	TYPE K TC	0	
68	10HAJ30CT050	RH FINISHING OUTSIDE GAS PASS	0.00 - 700.00	°C	THERMOCOUPLE	TYPE K TC	0	
69	10HAJ30CT051	RH FINISHING OUTSIDE GAS PASS	0.00 - 700.00	°C	THERMOCOUPLE	TYPE K TC	0	
70	10HAJ30CT052	RH FINISHING OUTSIDE GAS PASS	0.00 - 700.00	°C	THERMOCOUPLE	TYPE K TC	0	
71	10HAJ30CT053	RH FINISHING OUTSIDE GAS PASS	0.00 - 700.00	°C	THERMOCOUPLE	TYPE K TC	0	
72	10HAJ30CT054	RH FINISHING OUTSIDE GAS PASS	0.00 - 700.00	°C	THERMOCOUPLE	TYPE K TC	0	
73	10HAJ30CT055	RH FINISHING OUTSIDE GAS PASS	0.00 - 700.00	°C	THERMOCOUPLE	TYPE K TC	0	
74	10HAJ30CT056	RH FINISHING OUTSIDE GAS PASS	0.00 - 700.00	°C	THERMOCOUPLE	TYPE K TC	0	
75	10HAJ30CT057	RH FINISHING OUTSIDE GAS PASS	0.00 - 700.00	°C	THERMOCOUPLE	TYPE K TC	0	
76	10HAJ30CT058	RH FINISHING OUTSIDE GAS PASS	0.00 - 700.00	°C	THERMOCOUPLE	TYPE K TC	0	
77	10HAJ30CT059	RH FINISHING OUTSIDE GAS PASS	0.00 - 700.00	°C	THERMOCOUPLE	TYPE K TC	0	
78	10HAJ30CT060	RH FINISHING OUTSIDE GAS PASS	0.00 - 700.00	°C	THERMOCOUPLE	TYPE K TC	0	
79	10HAJ30CT061	RH FINISHING OUTSIDE GAS PASS	0.00 - 700.00	°C	THERMOCOUPLE	TYPE K TC	0	
80	10HAJ30CT062	RH FINISHING OUTSIDE GAS PASS	0.00 - 700.00	°C	THERMOCOUPLE	TYPE K TC	0	
81	10HAJ30CT063	RH FINISHING OUTSIDE GAS PASS	0.00 - 700.00	°C	THERMOCOUPLE	TYPE K TC	0	
82	10HAJ30CT064	RH FINISHING OUTSIDE GAS PASS	0.00 - 700.00	°C	THERMOCOUPLE	TYPE K TC	0	
83	10HAJ30CT065	RH FINISHING OUTSIDE GAS PASS	0.00 - 700.00	°C	THERMOCOUPLE	TYPE K TC	0	
84	10HAJ30CT066	RH FINISHING OUTSIDE GAS PASS	0.00 - 700.00	°C	THERMOCOUPLE	TYPE K TC	0	
85	10HAJ30CT067	RH FINISHING OUTSIDE GAS PASS	0.00 - 700.00	°C	THERMOCOUPLE	TYPE K TC	0	
86	10HAJ30CT068	RH FINISHING OUTSIDE GAS PASS	0.00 - 700.00	°C	THERMOCOUPLE	TYPE K TC	0	
87	10HAJ30CT069	RH FINISHING OUTSIDE GAS PASS	0.00 - 700.00	°C	THERMOCOUPLE	TYPE K TC	0	
88	10HAJ30CT070	RH FINISHING OUTSIDE GAS PASS	0.00 - 700.00	°C	THERMOCOUPLE	TYPE K TC	0	
89	10HAJ30CT071	RH FINISHING OUTSIDE GAS PASS	0.00 - 700.00	°C	THERMOCOUPLE	TYPE K TC	0	
90	10HAJ30CT072	RH FINISHING OUTSIDE GAS PASS	0.00 - 700.00	°C	THERMOCOUPLE	TYPE K TC	0	
91	10HAJ30CT073	RH FINISHING OUTSIDE GAS PASS	0.00 - 700.00	°C	THERMOCOUPLE	TYPE K TC	0	
92	10HAJ30CT074	RH FINISHING OUTSIDE GAS PASS	0.00 - 700.00	°C	THERMOCOUPLE	TYPE K TC	0	
93	10HAJ30CT075	RH FINISHING OUTSIDE GAS PASS	0.00 - 700.00	°C	THERMOCOUPLE	TYPE K TC	0	
94	10HAJ30CT076	RH FINISHING OUTSIDE GAS PASS	0.00 - 700.00	°C	THERMOCOUPLE	TYPE K TC	0	
95	10HAJ30CT077	RH FINISHING OUTSIDE GAS PASS	0.00 - 700.00	°C	THERMOCOUPLE	TYPE K TC	0	
96	10HAJ30CT078	RH FINISHING OUTSIDE GAS PASS	0.00 - 700.00	°C	THERMOCOUPLE	TYPE K TC	0	
97	10HAJ30CT079	RH FINISHING OUTSIDE GAS PASS	0.00 - 700.00	°C	THERMOCOUPLE	TYPE K TC	0	
98	10HAJ30CT080	RH FINISHING OUTSIDE GAS PASS	0.00 - 700.00	°C	THERMOCOUPLE	TYPE K TC	0	
99	10HAJ30CT081	RH FINISHING OUTSIDE GAS PASS	0.00 - 700.00	°C	THERMOCOUPLE	TYPE K TC	0	
100	10HAJ30CT082	RH FINISHING OUTSIDE GAS PASS	0.00 - 700.00	°C	THERMOCOUPLE	TYPE K TC	0	
101	10HAJ30CT083	RH FINISHING OUTSIDE GAS PASS	0.00 - 700.00	°C	THERMOCOUPLE	TYPE K TC	0	
102	10HAJ30CT084	RH FINISHING OUTSIDE GAS PASS	0.00 - 700.00	°C	THERMOCOUPLE	TYPE K TC	0	
103	10HAJ30CT085	RH FINISHING OUTSIDE GAS PASS	0.00 - 700.00	°C	THERMOCOUPLE	TYPE K TC	0	
104	10HAJ30CT086	RH FINISHING OUTSIDE GAS PASS	0.00 - 700.00	°C	THERMOCOUPLE	TYPE K TC	0	

SL	TAG	DESCRIPTION	RANGE	UNI	SENSOR	SENSOR	Rev	Rev Remarks
105	10HAJ30CT087	RH FINISHING OUTSIDE GAS PASS	0.00 - 700.00	°C	THERMOCOUPLE	TYPE K TC	0	
106	10HAJ30CT088	RH FINISHING OUTSIDE GAS PASS	0.00 - 700.00	°C	THERMOCOUPLE	TYPE K TC	0	
107	10HAJ30CT089	RH FINISHING OUTSIDE GAS PASS	0.00 - 700.00	°C	THERMOCOUPLE	TYPE K TC	0	
108	10HAJ30CT090	RH FINISHING OUTSIDE GAS PASS	0.00 - 700.00	°C	THERMOCOUPLE	TYPE K TC	0	
109	10HAJ30CT091	RH FINISHING OUTSIDE GAS PASS	0.00 - 700.00	°C	THERMOCOUPLE	TYPE K TC	0	
110	10HAJ30CT092	RH FINISHING OUTSIDE GAS PASS	0.00 - 700.00	°C	THERMOCOUPLE	TYPE K TC	0	
111	10HAJ30CT135	RH FINISHING TUBE INSIDE GAS PASS	0.00 - 700.00	°C	THERMOCOUPLE	TYPE K TC	0	
112	10HAJ30CT136	RH FINISHING TUBE INSIDE GAS PASS	0.00 - 700.00	°C	THERMOCOUPLE	TYPE K TC	0	
113	10HAJ30CT137	RH FINISHING TUBE INSIDE GAS PASS	0.00 - 700.00	°C	THERMOCOUPLE	TYPE K TC	0	
114	10HAJ30CT138	RH FINISHING TUBE INSIDE GAS PASS	0.00 - 700.00	°C	THERMOCOUPLE	TYPE K TC	0	
115	10HAD40CT031	RIGHT VERT WALL PANEL TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
116	10HAD40CT032	RIGHT VERT WALL PANEL TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
117	10HAD40CT033	RIGHT VERT WALL PANEL TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
118	10HAD40CT034	RIGHT VERT WALL PANEL TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
119	10HAD40CT035	RIGHT VERT WALL PANEL TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
120	10HAD40CT036	RIGHT VERT WALL PANEL TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
121	10HAD40CT037	RIGHT VERT WALL PANEL TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
122	10HAD40CT038	RIGHT VERT WALL PANEL TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
123	10HAD40CT039	RIGHT VERT WALL PANEL TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
124	10HAD40CT040	RIGHT VERT WALL PANEL TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
125	10HAD40CT041	RIGHT VERT WALL PANEL TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
126	10HAD40CT042	RIGHT VERT WALL PANEL TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
127	10HAD40CT043	RIGHT VERT WALL PANEL TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
128	10HAD40CT044	RIGHT VERT WALL PANEL TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
129	10HAD40CT045	RIGHT VERT WALL PANEL TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
130	10HAD40CT046	RIGHT VERT WALL PANEL TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
131	10HAD40CT047	RIGHT VERT WALL PANEL TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
132	10HAD40CT048	RIGHT VERT WALL PANEL TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
133	10HAD40CT049	RIGHT VERT WALL PANEL TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
134	10HAD40CT050	RIGHT VERT WALL PANEL TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
135	10HAD20CT041	FRONT VERT WALL OUTLET TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
136	10HAD20CT042	FRONT VERT WALL OUTLET TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
137	10HAD20CT043	FRONT VERT WALL OUTLET TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
138	10HAD20CT044	FRONT VERT WALL OUTLET TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
139	10HAD20CT045	FRONT VERT WALL OUTLET TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
140	10HAD20CT046	FRONT VERT WALL OUTLET TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
141	10HAD20CT047	FRONT VERT WALL OUTLET TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
142	10HAD20CT048	FRONT VERT WALL OUTLET TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
143	10HAD20CT049	FRONT VERT WALL OUTLET TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
144	10HAD20CT050	FRONT VERT WALL OUTLET TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
145	10HAD20CT051	FRONT VERT WALL OUTLET TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
PANEL/LOCATION-3								
SEGMENT-3 (AT PLAT. 97500 BETWEEN S11L AND S12L)								
SL	TAG	DESCRIPTION	RANGE	UNI T	SENSOR	SENSOR TYPE	Revisi on	Rev Remarks
1	10HAH41CT001	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
2	10HAH41CT002	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
3	10HAH41CT003	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
4	10HAH41CT004	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
5	10HAH41CT005	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
6	10HAH41CT006	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
7	10HAH41CT007	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
8	10HAH41CT008	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
9	10HAH41CT009	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
10	10HAH41CT010	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
11	10HAH41CT011	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
12	10HAH41CT012	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
13	10HAH41CT013	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
14	10HAH41CT014	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
15	10HAH41CT015	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
16	10HAH41CT016	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
17	10HAH41CT017	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
18	10HAH41CT018	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
19	10HAH41CT019	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	

SL	TAG	DESCRIPTION	RANGE	UNI	SENSOR	SENSOR	Rev	Rev Remarks
20	10HAH41CT020	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
21	10HAH41CT021	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
22	10HAH41CT022	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
23	10HAH41CT023	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
24	10HAH41CT024	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
25	10HAH41CT025	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
26	10HAH41CT026	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
27	10HAH41CT027	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
28	10HAH41CT028	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
29	10HAH41CT029	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
30	10HAH41CT030	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
31	10HAH41CT031	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
32	10HAH41CT032	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
33	10HAH41CT033	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
34	10HAH41CT034	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
35	10HAH41CT035	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
36	10HAH41CT036	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
37	10HAH41CT037	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
38	10HAH41CT038	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
39	10HAH41CT039	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
40	10HAH41CT040	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
41	10HAH41CT041	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
42	10HAH41CT042	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
43	10HAH41CT043	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
44	10HAH41CT044	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
45	10HAH41CT045	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
46	10HAH41CT046	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
47	10HAH41CT047	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
48	10HAH41CT048	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
49	10HAH41CT049	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
50	10HAH41CT050	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
51	10HAH41CT051	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
52	10HAH41CT052	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
53	10HAH41CT053	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
54	10HAH41CT054	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
55	10HAH41CT055	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
56	10HAH41CT056	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
57	10HAH41CT057	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
58	10HAH41CT058	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
59	10HAH41CT059	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
60	10HAH41CT060	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
61	10HAH41CT061	SH FINISHING TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
62	10HAH41CT132	SH FINISHING TUBE INSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
63	10HAH41CT133	SH FINISHING TUBE INSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
64	10HAH41CT134	SH FINISHING TUBE INSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
65	10HAH41CT135	SH FINISHING TUBE INSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
66	10HAH41CT136	SH FINISHING TUBE INSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
67	10HAH41CT137	SH FINISHING TUBE INSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
68	10HAH41CT138	SH FINISHING TUBE INSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
69	10HAH41CT139	SH FINISHING TUBE INSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
70	10HAH41CT140	SH FINISHING TUBE INSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
71	10HAH41CT141	SH FINISHING TUBE INSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
72	10HAH41CT142	SH FINISHING TUBE INSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
73	10HAJ07CT001	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
74	10HAJ07CT002	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
75	10HAJ07CT003	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
76	10HAJ07CT004	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
77	10HAJ07CT005	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
78	10HAJ07CT006	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
79	10HAJ07CT007	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
80	10HAJ07CT008	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
81	10HAJ07CT009	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
82	10HAJ07CT010	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
83	10HAJ07CT011	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	

SL	TAG	DESCRIPTION	RANGE	UNI	SENSOR	SENSOR	Rev	Rev Remarks
84	10HAJ07CT012	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
85	10HAJ07CT013	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
86	10HAJ07CT014	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
87	10HAJ07CT015	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
88	10HAJ07CT016	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
89	10HAJ07CT017	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
90	10HAJ07CT018	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
91	10HAJ07CT019	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
92	10HAJ07CT020	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
93	10HAJ07CT021	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
94	10HAJ07CT022	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
95	10HAJ07CT023	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
96	10HAJ07CT024	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
97	10HAJ07CT025	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
98	10HAJ07CT026	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
99	10HAJ07CT027	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
100	10HAJ07CT028	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
101	10HAJ07CT029	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
102	10HAJ07CT030	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
103	10HAJ07CT031	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
104	10HAJ07CT032	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
105	10HAJ07CT033	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
106	10HAJ07CT034	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
107	10HAJ07CT035	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
108	10HAJ07CT036	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
109	10HAJ07CT037	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
110	10HAJ07CT038	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
111	10HAJ07CT039	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
112	10HAJ07CT040	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
113	10HAJ07CT041	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
114	10HAJ07CT042	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
115	10HAJ07CT043	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
116	10HAJ07CT044	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
117	10HAJ07CT045	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
118	10HAJ07CT046	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
119	10HAJ07CT047	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
120	10HAJ07CT048	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
121	10HAJ07CT049	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
122	10HAJ07CT050	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
123	10HAJ07CT051	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
124	10HAJ07CT052	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
125	10HAJ07CT053	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
126	10HAJ07CT054	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
127	10HAJ07CT055	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
128	10HAJ07CT056	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
129	10HAJ07CT057	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
130	10HAJ07CT058	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
131	10HAJ07CT059	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
132	10HAJ07CT060	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
133	10HAJ07CT061	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
134	10HAJ07CT062	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
135	10HAJ07CT063	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
136	10HAJ07CT064	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
137	10HAJ07CT065	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
138	10HAJ07CT066	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
139	10HAJ07CT067	LTRH TUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
140	10HAJ07CT134	LTRH TUBE INSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
141	10HAJ07CT135	LTRH TUBE INSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
142	10HAJ07CT136	LTRH TUBE INSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
143	10HAJ07CT137	LTRH TUBE INSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
144	10HAJ07CT138	LTRH TUBE INSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
145	10HAJ07CT139	LTRH TUBE INSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
146	10HAJ07CT140	LTRH TUBE INSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
147	10HAJ07CT141	LTRH TUBE INSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	

SL	TAG	DESCRIPTION	RANGE	UNI	SENSOR	SENSOR	Rev	Rev Remarks
148	10HAJ07CT142	LTRH TUBE INSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
149	10HAD30CT031	REAR VERT WALL SCREEN TUBE	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
150	10HAD30CT032	REAR VERT WALL SCREEN TUBE	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
151	10HAD30CT033	REAR VERT WALL SCREEN TUBE	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
152	10HAD30CT034	REAR VERT WALL SCREEN TUBE	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
153	10HAD30CT035	REAR VERT WALL SCREEN TUBE	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
154	10HAD30CT036	REAR VERT WALL SCREEN TUBE	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
155	10HAD30CT037	REAR VERT WALL SCREEN TUBE	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
156	10HAD30CT038	REAR VERT WALL SCREEN TUBE	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
157	10HAD30CT039	REAR VERT WALL SCREEN TUBE	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
158	10HAD30CT040	REAR VERT WALL SCREEN TUBE	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	

SL	TAG	DESCRIPTION	RANGE	UNI	SENSOR	SENSOR	Rev	Rev Remarks
PANEL/LOCATION-4								
SEGMENT-4 (AT PLAT. 97500 BETWEEN S11R AND S12R)								
SL NO	TAG	DESCRIPTION	RANGE	UNIT	SENSOR	SENSOR TYPE	Revision	Rev Remarks
1	10HAH41CT062	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
2	10HAH41CT063	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
3	10HAH41CT064	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
4	10HAH41CT065	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
5	10HAH41CT066	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
6	10HAH41CT067	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
7	10HAH41CT068	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
8	10HAH41CT069	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
9	10HAH41CT070	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
10	10HAH41CT071	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
11	10HAH41CT072	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
12	10HAH41CT073	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
13	10HAH41CT074	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
14	10HAH41CT075	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
15	10HAH41CT076	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
16	10HAH41CT077	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
17	10HAH41CT078	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
18	10HAH41CT079	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
19	10HAH41CT080	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
20	10HAH41CT081	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
21	10HAH41CT082	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
22	10HAH41CT083	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
23	10HAH41CT084	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
24	10HAH41CT085	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
25	10HAH41CT086	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
26	10HAH41CT087	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
27	10HAH41CT088	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
28	10HAH41CT089	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
29	10HAH41CT090	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
30	10HAH41CT091	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
31	10HAH41CT092	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
32	10HAH41CT093	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
33	10HAH41CT094	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
34	10HAH41CT095	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
35	10HAH41CT096	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
36	10HAH41CT097	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
37	10HAH41CT098	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
38	10HAH41CT099	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
39	10HAH41CT100	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
40	10HAH41CT101	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
41	10HAH41CT102	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
42	10HAH41CT103	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
43	10HAH41CT104	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
44	10HAH41CT105	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
45	10HAH41CT106	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
46	10HAH41CT107	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
47	10HAH41CT108	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
48	10HAH41CT109	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
49	10HAH41CT110	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
50	10HAH41CT111	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
51	10HAH41CT112	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
52	10HAH41CT113	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
53	10HAH41CT114	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
54	10HAH41CT115	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
55	10HAH41CT116	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
56	10HAH41CT117	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
57	10HAH41CT118	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
58	10HAH41CT119	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	
59	10HAH41CT120	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	°C	THERMOCOUPLE	TYPE K TC	0	

SL	TAG	DESCRIPTION	RANGE	UNI	SENSOR	SENSOR	Rev	Rev Remarks
60	10HAH41CT121	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	ºC	THERMOCOUPLE	TYPE K TC	0	
61	10HAH41CT122	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	ºC	THERMOCOUPLE	TYPE K TC	0	
62	10HAH41CT123	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	ºC	THERMOCOUPLE	TYPE K TC	0	
63	10HAH41CT124	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	ºC	THERMOCOUPLE	TYPE K TC	0	
64	10HAH41CT125	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	ºC	THERMOCOUPLE	TYPE K TC	0	
65	10HAH41CT126	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	ºC	THERMOCOUPLE	TYPE K TC	0	
66	10HAH41CT127	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	ºC	THERMOCOUPLE	TYPE K TC	0	
67	10HAH41CT128	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	ºC	THERMOCOUPLE	TYPE K TC	0	
68	10HAH41CT129	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	ºC	THERMOCOUPLE	TYPE K TC	0	
69	10HAH41CT130	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	ºC	THERMOCOUPLE	TYPE K TC	0	
70	10HAH41CT131	SH FINISHINGTUBE OUTSIDE GAS PASS	0.00 - 650.00	ºC	THERMOCOUPLE	TYPE K TC	0	
71	10HAH41CT143	SH FINISHING TUBE INSIDE GAS PASS	0.00 - 650.00	ºC	THERMOCOUPLE	TYPE K TC	0	
72	10HAH41CT144	SH FINISHING TUBE INSIDE GAS PASS	0.00 - 650.00	ºC	THERMOCOUPLE	TYPE K TC	0	
73	10HAH41CT145	SH FINISHING TUBE INSIDE GAS PASS	0.00 - 650.00	ºC	THERMOCOUPLE	TYPE K TC	0	
74	10HAH41CT146	SH FINISHING TUBE INSIDE GAS PASS	0.00 - 650.00	ºC	THERMOCOUPLE	TYPE K TC	0	
75	10HAH41CT147	SH FINISHING TUBE INSIDE GAS PASS	0.00 - 650.00	ºC	THERMOCOUPLE	TYPE K TC	0	
76	10HAH41CT148	SH FINISHING TUBE INSIDE GAS PASS	0.00 - 650.00	ºC	THERMOCOUPLE	TYPE K TC	0	
77	10HAH41CT149	SH FINISHING TUBE INSIDE GAS PASS	0.00 - 650.00	ºC	THERMOCOUPLE	TYPE K TC	0	
78	10HAH41CT150	SH FINISHING TUBE INSIDE GAS PASS	0.00 - 650.00	ºC	THERMOCOUPLE	TYPE K TC	0	
79	10HAH41CT151	SH FINISHING TUBE INSIDE GAS PASS	0.00 - 650.00	ºC	THERMOCOUPLE	TYPE K TC	0	
80	10HAH41CT152	SH FINISHING TUBE INSIDE GAS PASS	0.00 - 650.00	ºC	THERMOCOUPLE	TYPE K TC	0	
81	10HAH41CT153	SH FINISHING TUBE INSIDE GAS PASS	0.00 - 650.00	ºC	THERMOCOUPLE	TYPE K TC	0	
82	10HAJ07CT068	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	ºC	THERMOCOUPLE	TYPE K TC	0	
83	10HAJ07CT069	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	ºC	THERMOCOUPLE	TYPE K TC	0	
84	10HAJ07CT070	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	ºC	THERMOCOUPLE	TYPE K TC	0	
85	10HAJ07CT071	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	ºC	THERMOCOUPLE	TYPE K TC	0	
86	10HAJ07CT072	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	ºC	THERMOCOUPLE	TYPE K TC	0	
87	10HAJ07CT073	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	ºC	THERMOCOUPLE	TYPE K TC	0	
88	10HAJ07CT074	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	ºC	THERMOCOUPLE	TYPE K TC	0	
89	10HAJ07CT075	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	ºC	THERMOCOUPLE	TYPE K TC	0	
90	10HAJ07CT076	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	ºC	THERMOCOUPLE	TYPE K TC	0	
91	10HAJ07CT077	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	ºC	THERMOCOUPLE	TYPE K TC	0	
92	10HAJ07CT078	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	ºC	THERMOCOUPLE	TYPE K TC	0	
93	10HAJ07CT079	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	ºC	THERMOCOUPLE	TYPE K TC	0	
94	10HAJ07CT080	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	ºC	THERMOCOUPLE	TYPE K TC	0	
95	10HAJ07CT081	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	ºC	THERMOCOUPLE	TYPE K TC	0	
96	10HAJ07CT082	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	ºC	THERMOCOUPLE	TYPE K TC	0	
97	10HAJ07CT083	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	ºC	THERMOCOUPLE	TYPE K TC	0	
98	10HAJ07CT084	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	ºC	THERMOCOUPLE	TYPE K TC	0	
99	10HAJ07CT085	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	ºC	THERMOCOUPLE	TYPE K TC	0	
100	10HAJ07CT086	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	ºC	THERMOCOUPLE	TYPE K TC	0	
101	10HAJ07CT087	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	ºC	THERMOCOUPLE	TYPE K TC	0	
102	10HAJ07CT088	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	ºC	THERMOCOUPLE	TYPE K TC	0	
103	10HAJ07CT089	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	ºC	THERMOCOUPLE	TYPE K TC	0	
104	10HAJ07CT090	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	ºC	THERMOCOUPLE	TYPE K TC	0	
105	10HAJ07CT091	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	ºC	THERMOCOUPLE	TYPE K TC	0	
106	10HAJ07CT092	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	ºC	THERMOCOUPLE	TYPE K TC	0	
107	10HAJ07CT093	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	ºC	THERMOCOUPLE	TYPE K TC	0	
108	10HAJ07CT094	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	ºC	THERMOCOUPLE	TYPE K TC	0	
109	10HAJ07CT095	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	ºC	THERMOCOUPLE	TYPE K TC	0	
110	10HAJ07CT096	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	ºC	THERMOCOUPLE	TYPE K TC	0	
111	10HAJ07CT097	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	ºC	THERMOCOUPLE	TYPE K TC	0	
112	10HAJ07CT098	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	ºC	THERMOCOUPLE	TYPE K TC	0	
113	10HAJ07CT099	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	ºC	THERMOCOUPLE	TYPE K TC	0	
114	10HAJ07CT100	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	ºC	THERMOCOUPLE	TYPE K TC	0	
115	10HAJ07CT101	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	ºC	THERMOCOUPLE	TYPE K TC	0	
116	10HAJ07CT102	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	ºC	THERMOCOUPLE	TYPE K TC	0	
117	10HAJ07CT103	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	ºC	THERMOCOUPLE	TYPE K TC	0	
118	10HAJ07CT104	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	ºC	THERMOCOUPLE	TYPE K TC	0	
119	10HAJ07CT105	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	ºC	THERMOCOUPLE	TYPE K TC	0	
120	10HAJ07CT106	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	ºC	THERMOCOUPLE	TYPE K TC	0	
121	10HAJ07CT107	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	ºC	THERMOCOUPLE	TYPE K TC	0	
122	10HAJ07CT108	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	ºC	THERMOCOUPLE	TYPE K TC	0	
123	10HAJ07CT109	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	ºC	THERMOCOUPLE	TYPE K TC	0	

SL	TAG	DESCRIPTION	RANGE	UNI	SENSOR	SENSOR	Rev	Rev Remarks
124	10HAJ07CT110	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
125	10HAJ07CT111	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
126	10HAJ07CT112	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
127	10HAJ07CT113	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
128	10HAJ07CT114	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
129	10HAJ07CT115	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
130	10HAJ07CT116	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
131	10HAJ07CT117	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
132	10HAJ07CT118	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
133	10HAJ07CT119	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
134	10HAJ07CT120	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
135	10HAJ07CT121	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
136	10HAJ07CT122	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
137	10HAJ07CT123	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
138	10HAJ07CT124	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
139	10HAJ07CT125	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
140	10HAJ07CT126	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
141	10HAJ07CT127	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
142	10HAJ07CT128	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
143	10HAJ07CT129	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
144	10HAJ07CT130	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
145	10HAJ07CT131	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
146	10HAJ07CT132	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
147	10HAJ07CT133	LTRH TUBE OUTSIDE GAS PASS	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
148	10HAJ07CT143	LTRH TUBE INSIDE GAS PASS	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
149	10HAJ07CT144	LTRH TUBE INSIDE GAS PASS	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
150	10HAJ07CT145	LTRH TUBE INSIDE GAS PASS	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
151	10HAJ07CT146	LTRH TUBE INSIDE GAS PASS	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
152	10HAJ07CT147	LTRH TUBE INSIDE GAS PASS	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
153	10HAJ07CT148	LTRH TUBE INSIDE GAS PASS	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
154	10HAJ07CT149	LTRH TUBE INSIDE GAS PASS	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
155	10HAJ07CT150	LTRH TUBE INSIDE GAS PASS	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
156	10HAJ07CT151	LTRH TUBE INSIDE GAS PASS	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
157	10HAD30CT041	REAR VERT WALL HANGER TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
158	10HAD30CT042	REAR VERT WALL HANGER TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
159	10HAD30CT043	REAR VERT WALL HANGER TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
160	10HAD30CT044	REAR VERT WALL HANGER TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
161	10HAD30CT045	REAR VERT WALL HANGER TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
162	10HAD30CT046	REAR VERT WALL HANGER TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
163	10HAD30CT047	REAR VERT WALL HANGER TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
164	10HAD30CT048	REAR VERT WALL HANGER TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
165	10HAD30CT049	REAR VERT WALL HANGER TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
166	10HAD30CT050	REAR VERT WALL HANGER TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	
167	10HAD30CT051	REAR VERT WALL HANGER TUBE	0.00 - 600.00	°C	THERMOCOUPLE	TYPE K TC	0	