



भारत हेवी इलेक्ट्रिकल्स लिमिटेड

(भारत सरकार का उपक्रम)

**BHARAT HEAVY ELECTRICALS LIMITED**

(A Govt. of India Undertaking)

**TCN - 01**

Ref: PSER:SCT:DPL-B1198:TCN-01

Date: /05/2011

|     |   |   |
|-----|---|---|
| Sub | Tender change notice (TCN) - 01   |   |
| Job | Receipt from stores, transportation to work site, storage/ preservation as required, Erection, Testing, Commissioning, handing over etc. of Boiler & Aux., ESP, Rotating machines, ducting, critical piping, misc. piping, boiler integral piping, insulation, final painting etc. at 1x250 MW unit # 8 DPL, Durgapur, W.B. |   |
| Ref | 1.0   | Tender no PSER:SCT:DPL-B1198:11                                     |
|     | 2.0   | BHEL's NIT, vide ref no Ref: PSER:SCT:DPL-B1198:11 Dated 13/05/2011 |
|     | 3.0   | Other references (if any).  |

With reference to above, following points, relevant to tender, may please be noted and complied with while submitting offer.

- 1.0 Further to NIT, the details of queries raised by various bidders were discussed at thread bear at the pre-bid meeting on 24/05/2011 at BHEL office, Kolkata. Accordingly the details of bidders' queries and BHEL clarifications there off have been furnished in the enclosed **ANNEXURE-1**.
- 2.0 Revised 'No deviation certificate' is attached. Bidder to submit 'No deviation certificate' as per attached Format only.
- 3.0 All other terms & conditions shall remain unchanged.

Thanking you,

Yours faithfully,  
for BHARAT HEAVY ELECTRICALS LTD

**ENGR (SCT)**

Encl

- 1.0 BHEL's clarifications to bidder's query attached vide **Annexure-1** to TCN-01
- 2.0 Revised 'No deviation certificate' format.

पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय)

POWER SECTOR EASTERN REGION, DJ-9/1, SALT LAKE CITY, KOLKATA - 700 091

फैक्स/Fax : (033) 23211960 फोन/Phone : बोर्ड/EPABX : 23211798/ 1691

**FORMAT FOR NO DEVIATION CERTIFICATE**  
**(To be submitted in the bidder's letter head)**

BHARAT HEAVY ELECTRICALS LIMITED,  
Power Sector - Eastern Region,  
Plot no 9/1, DJ Block, Sector – II, Salt Lake City,  
Kolkata – 700 091

|     |   |   |
|-----|---|---|
| Sub | No Deviation Certificate.   |   |
| Job | Receipt from stores, transportation to work site, storage/ preservation as required, Erection, Testing, Commissioning, handing over etc. of Boiler & Aux., ESP, Rotating machines, ducting, critical piping, misc. piping, boiler integral piping, insulation, final painting etc. at 1x250 MW unit # 8 DPL, Durgapur, W.B. |   |
| Ref | 1.0   | Tender no PSER:SCT:DPL-B1198:11.  |
|     | 2.0   | BHEL's NIT, vide reference no Ref: PSER:SCT:DPL-B1198:11 Dated 13-05-2011     |
|     | 3.0   | BHEL's TCN-01, vide reference no PSER:SCT:DPL-B1198:TCN-01, dated 25-05-2011. |

Dear Sirs,

With reference to above, this is to confirm that as per tender conditions, we have visited site before submission of our offer and noted the job content & site conditions etc. We also confirm that we have not changed/ modified the tender documents as appeared in the website/ issued by you and in case of such observance at any stage, it shall be treated as null and void.

We hereby confirm that we have not taken any deviation from tender clauses together with other references as enumerated in the above referred NIT. We hereby confirm our unqualified acceptance to all terms & conditions, unqualified compliance to technical specification, Integrity Pact (If applicable) and acceptance to reverse auctioning process.

In the event of observance of any deviation in any part of our offer at a later date whether implicit or explicit, the deviations shall stand null & void.

We confirm to have submitted offer in accordance with tender instructions and as per aforesaid references.

Thanking you,

Yours faithfully,

(Signature, date & seal of authorized  
representative of the bidder)

| Sl. No.  | Reference Clause of Tender Document  | Description of existing provision of NIT                              | Bidders questionnaire for clarification sought / modification proposed towards existing provision of NIT.  | BHEL's Clarifications provided  |
|--|--------------------------------------|---|--|---|
| <b>Job</b> Receipt from stores, transportation to work site, storage/ preservation as required, Erection, Testing, Commissioning, handing over etc. of Boiler & Aux., ESP, Rotating machines, ducting, critical piping, misc. piping, boiler integral piping, insulation, final painting etc. at 1x250 MW unit # 8 DPL, Durgapur, W.B.<br><b>TENDER NO : PSER:SCT:DPL-C1153:10</b><br><b>PRE-BID CLARIFICATIONS (TCN-01)</b> |                                      |   |  |   |
| <b>Technical Conditions of Contract (TCC)</b>  |                                      |   |  |   |
| 1  | 2.111<br>(page 13 of 55)             | Tentative list of H.P Joints of main Boiler is given with the tender. | We could not find any such list/document along with the tender. Please provide list of HP Joints for Boiler Pressure Parts and Critical Piping.  | Tentative list is given as per enclosed TCN-01 for tender purpose only.       |
| 2  | 7.0<br>(page 19 of 55)               | Lining & Insulation Works   | Please arrange to confirm that shaped mattresses, suitable for various sizes of Boiler Pipes, shall be supplied from your end.   | This shall be as supplied by manufacturing unit generally as per requirement. |
| 3  | 33.0<br>(Page 32 of 55)              | Water   | Please arrange to confirm that Hydro-testing Water shall be provided by you on Free of Charges.  | Shall be provided on free of Charges.   |
| 4  | 41.0<br>(Page 36 of 55)              | Extra Work Rate for High Pressure Joints                              | As per Tender, unit rate of rectification / modification / re-work welding of high pressure joints have been furnished as (1) CS Pipe -> Rs. 200.00 and (2) AS Pipe -> Rs. 250.00 (joint size OD 63.5 mm x 6.3 mm thick).<br>We have found that above said unit rate is too less to operate at site.<br>Hence, we propose following rates (1) CS Pipe -> Rs. 625.00 and (2) AS Pipe -> Rs. 1000.00 (joint size OD 63.5 mm x 6.3 mm thick) for your kind consideration.<br>Please confirm the same. | Shall be as per Tender provision only.  |
| 5  | 04 of Annexure-II<br>(Page 53 of 55) | one no. "Passenger cum Goods elevator" to be provided by contractor   | Clause 4.2.2.17 of SCC mentions that the Lift/Elevator will be supplied by BHEL, only erection, maintenance and dismantling are the contractor's responsibility.-<br>Please clarify  | To be provided by the contractor as per tender.                               |

|                |  |   |  |  |
|----------------|--|---|--|--|
| <b>Job</b>     | <b>Receipt from stores, transportation to work site, storage/ preservation as required, Erection, Testing, Commissioning, handing over etc. of Boiler &amp; Aux., ESP, Rotating machines, ducting, critical piping, misc. piping, boiler integral piping, insulation, final painting etc. at 1x250 MW unit # 8 DPL, Durgapur, W.B.<br/>TENDER NO : PSER:SCT:DPL-C1153:10<br/>PRE-BID CLARIFICATIONS (TCN-01)</b> |   |  |  |
| <b>Sl. No.</b> | <b>Reference Clause of Tender Document</b>   | <b>Description of existing provision of NIT</b> | <b>Bidders questionnaire for clarification sought / modification proposed towards existing provision of NIT.</b>   | <b>BHEL's Clarifications provided</b>  |
|                | <b>Annexure-A</b>  |   |  |  |
| <b>6</b>       | Sl. No. 425 to 427<br>(Page 9 of 12)   | Piping (P-91)                                   | Involvement of P-91 piping material has been furnished as 81 MT in the Tender.<br>Kindly arrange to furnish the quantum of welding involvement of P-91 piping joints in Inch-Dia (ID) for deriving actual cost involvement.                            | Cannot be provided at this juncture. Bidder to quote based on their experience. No additional financial implication is applicable. |
| <b>7</b>       | Sl. No. 428 to 513<br>(Page 9 of 12)   | Piping  | Involvement of piping material (other than P-91) has been furnished as 693 MT in the Tender.<br>Kindly arrange to furnish the quantum of welding involvement of piping joints (other than P-91) in Inch-Dia (ID) for deriving actual cost involvement. | Cannot be provided at this juncture. Bidder to quote based on their experience. No additional financial implication is applicable. |



# SUMMARY LIST OF SITE ELECTRODES

PROJECT: 250MW

P:G: NO: 04 TO 07

P.G. NAME: DRUMS, HEADERS, WW PANELS & CIRCULATING SYSTEM COMPONENTS.

| SL. NO | TYPE OF ELECTRODE / WIRE | SIZE & QTY (Nos) |       |       |      | TIG WIRE WT (KG) | REMARKS |
|--------|--------------------------|------------------|-------|-------|------|------------------|---------|
|        |                          | Ø2.5             | Ø3.15 | Ø4.0  | Ø5.0 |                  |         |
| 01     | RT 1/2 MO                | -                | -     | -     | -    | 11233            | -       |
| 02     | E 7018-1                 | 61702            | 9860  |       | -    | -                | -       |
| 03     | E 7018-A1                | 2840             | 4645  | 12650 | -    | -                | -       |
|        |                          |                  |       |       |      |                  |         |
|        |                          |                  |       |       |      |                  |         |
|        |                          |                  |       |       |      |                  |         |
|        |                          |                  |       |       |      |                  |         |
|        |                          |                  |       |       |      |                  |         |
|        |                          |                  |       |       |      |                  |         |
|        |                          |                  |       |       |      |                  |         |
|        |                          |                  |       |       |      |                  |         |
|        |                          |                  |       |       |      |                  |         |

NOTES: -

1. RESERVE 25% ADDED.
2. QUANTITY GIVEN IS PER BOILER
3. THIS ERECTION WELDING SCHEDULE IS FOR REFERENCE PURPOSE ONLY.

ENCL : ERECTION WELDING SCHEDULE SHEETS

4-07-992-05033 & 4-07-992-05034

CC: 1. PROJECT CO-ORDINATOR/CONTRACTS:

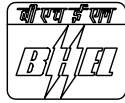
2. SR.MANAGER/WTC

3. WELDING SCHEDULE FILE

DATE : 22.04.10

|            |                  |               |                |
|------------|------------------|---------------|----------------|
| PREPARED   | CHECKED(DESIGNS) | APPROVED(WTC) | DRAWING NO.    |
| PARAMESH.E | R.T              | G.S           | 4-07-992-05032 |

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# ERECTION WELDING SCHEDULE

## PRESSURE PARTS

PROJECT: 250 MW

PG: 04 TO 07

PG NAME:

DRUMS, HEADERS, WW PANELS  
CIRCULATING SYSTEM COMPONENTS

| SL. NO.    | DESCRIPTION                | DESCRIPTION         | MATERIAL            | SIZE OF ITEM    | THICKNESS         | WELD Specn. | RECOMMENDED ELECTRODE/WIRE |         |                    | TOTAL NO. OFF WELD | ACTUAL QTY (NOS)     | PREHEAT °C | PWHT °C    | MIN RECOMMENDED NDE                   |
|------------|----------------------------|---------------------|---------------------|-----------------|-------------------|-------------|----------------------------|---------|--------------------|--------------------|----------------------|------------|------------|---------------------------------------|
|            |                            |                     |                     |                 |                   |             | SPECH                      | PROCESS | SIZE               |                    |                      |            |            |                                       |
| 01         | PPA-DOWN COMER ASSEMBLY    | DOWN COMER ASSEMBLY | SA106GrC + SA106GrC | ø457.2          | 40                | 37.95 ∩     | WIRE RT1/2Mo               | TIG     | 2.4                | 52                 | 7540                 | 100        | 620 TO 650 | 100% RT                               |
|            |                            |                     |                     |                 |                   |             | E 7018-A1                  | ARC     | 2.5<br>3.15<br>4.0 | 52                 | 1768<br>2912<br>8060 |            |            |                                       |
|            |                            |                     | SA106GrC            | ø406.4          | 40                | 37.40 ∩     | WIRE RT1/2Mo               | TIG     | 2.4                | 8                  | 1008                 | 100        | 620 TO 650 |                                       |
|            |                            |                     |                     |                 |                   |             | E 7018-A1                  | ARC     | 2.5<br>3.15<br>4.0 | 8                  | 240<br>400<br>1072   |            |            |                                       |
| 02         | PPA-DOWN COMER ASSEMBLY    | RING HEADERS        | SA106GrC + SA106GrC | ø406.4          | 55                | 50.70 ∩     | WIRE RT1/2Mo               | TIG     | 2.4                | 4                  | 460                  | 100        | 620 TO 650 |                                       |
|            |                            |                     |                     |                 |                   |             | E 7018-A1                  | ARC     | 2.5<br>3.15<br>4.0 | 4                  | 120<br>200<br>916    |            |            |                                       |
| 03         | PANEL ARRGT. I- PASS (PPA) | WW PANEL            | SA210GrC + SA210GrC | ø63.5           | 5.6<br>6.0<br>6.3 | 5.6 ∩       | WIRE RT1/2Mo               | TIG     | 2.4                | 3428               | 45250                | -          |            | 10% RT<br>MIN.1 WELD<br>PER<br>WELDER |
|            |                            |                     |                     |                 |                   |             | E 7018-1                   | ARC     | 2.5                | 3428               | 37708                |            |            |                                       |
| PREPARED   |                            | CHECKED (DESIGN)    |                     | CHECKED (W.T.C) |                   |             | DATE                       |         | DRAWING NO:        |                    |                      |            |            |                                       |
| PARAMESH.E |                            | R.T                 |                     | G.S             |                   |             | 22.04.10                   |         | 4-07-992-05033     |                    |                      |            |            |                                       |

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# ERECTION WELDING SCHEDULE

## PRESSURE PARTS

PROJECT: 250 MW

PG: 04 TO 07

PG NAME : DRUMS, HEADERS, WW PANELS  
CIRCULATING SYSTEM COMPONENTS

| SL. NO.    | DESCRIPTION   | DESCRIPTION                     | MATERIAL | SIZE OF ITEM | THICKNESS      | WELD Specn. | RECOMMENDED ELECTRODE/WIRE |          |                    | TOTAL NO. OFF WELD | ACTUAL QTY (NOS) | PREHEAT °C | PWHT °C    | MIN RECOMMENDED NDE<br>MIN 1 WELD |
|------------|---|---------------------------------|----------|--------------|----------------|-------------|----------------------------|----------|--------------------|--------------------|------------------|------------|------------|-----------------------------------|
|            |   |                                 |          |              |                |             | SPECH                      | PROCESS  | SIZE               |                    |                  |            |            |                                   |
| 04         | PPA-ASSY OF REAR ARCH SCREEN & HANGER TUBES   | REAR ARCH SCREENTUBE & HGR TUBE | SA210GrC | ø76.1        | 7.1            | 7.1 ∇       | WIRE RT1/2MO               | TIG      | 2.4                | 358                | 5406             | -          | -          | 10% RT MIN.1 WELD PER WELDER      |
|            |   |                                 | SA106GrC |              |                |             | E 7018-1                   | ARC      | 2.5                | 358                | 6086             |            |            |                                   |
| 05         | PPA-PLAN OVER HDRS, LINKS & RISERS SEC-AA&BB  | RISER PIPE ASSY.                | SA106GrC | ø127         | 11.5           | 11.5 ∇      | WIRE RT1/2MO               | TIG      | 2.4                | 464                | 12992            | -          | -          | 10% RT MIN.2 WELD PER WELDER      |
|            |   |                                 | SA106GrC |              |                |             | E 7018-1                   | ARC      | 2.5<br>3.15        | 464                | 5568<br>7888     |            |            |                                   |
| 06         | EXTD.SIDE WALL INLET HDR (RIGHT H11 & LEFT H10), SIDE WW INLET HDR (LEFT H3 & RIGHT H4) & WALL INLET HDR (FRONT H1 & REAR H2) | HAND HOLE PIPE ASSY.            | SA106GrC | ø127         | 20             | 18.15 ∇     | WIRE RT1/2MO               | TIG      | 2.4                | 12                 | 420              | -          | 620 TO 650 | 10% RT MIN.1 WELD PER WELDER      |
|            |   |                                 | SA234WPC |              |                |             | E 7018-A1                  | ARC      | 2.5<br>3.15<br>4.0 | 12                 | 144<br>204<br>72 |            |            |                                   |
| PREPARED   |   | CHECKED (DESIGN)                |          |              | CHECKED(W.T.C) |             |                            | DATE     | DRAWING NO:        |                    |                  |            |            |                                   |
| PARAMESH.E |   | R.T                             |          |              | G.S            |             |                            | 22.04.10 | 4-07-992-05034     |                    |                  |            |            |                                   |



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# ERECTION WELDING SCHEDULE

## PRESSURE PARTS

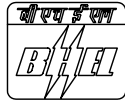
PROJECT: 250 MW.

PG(S): 17 PG NAME: REHEATER

| SL. NO. | DRAWING NO.<br>WPS NO.             | DESCRIPTION                                       | MATERIAL                      | SIZE   | THICKNESS | WELD<br>Specn. | NO.<br>OFF | TIG                     |           | ARC SPECN.(NOS) |       |  | PREHEAT<br>°C | PWHT<br>°C       | MIN<br>RECOMMENDED<br>NDE             |
|---------|------------------------------------|---|-------------------------------|--------|-----------|----------------|------------|-------------------------|-----------|-----------------|-------|--|---------------|------------------|---------------------------------------|
|         |                                    |   |                               |        |           |                |            | SPECN.                  | QTY<br>gm | Ø2.5            | Ø3.15 |  |               |                  |                                       |
| 01      | UPPER SEC.SIDE<br>ELE. 1-PASS(PPA) | RH.INLET<br>HDR.NIPPLES<br>+<br>RH.FRONT<br>COILS | SA 213 T11<br>+<br>SA 213 T11 | Ø63.5  | 4.5       | 4.5 √          | 65         | RT<br>1 1/4CR<br>1/2 MO | 910       | E 8018-B2       |       |  | 150           | -                | 10% RT<br>MIN 1 WELD<br>PER<br>WELDER |
|         |                                    |   |                               |        |           |                |            |                         |           | 520             |       |  |               |                  |                                       |
| 02      | UPPER SEC.SIDE<br>ELE. 1-PASS(PPA) | RH.INLET<br>HDR.NIPPLES<br>+<br>RH.FRONT<br>COILS | SA 213 T11<br>+<br>SA 213 T22 | Ø51.0  | 5.0       | 5 √            | 65         | RT<br>1 1/4CR<br>1/2 MO | 689       | E 8018-B2       |       |  | 150           | -                | 10% RT<br>MIN 1 WELD<br>PER<br>WELDER |
|         |                                    |   |                               |        |           |                |            |                         |           | 520             |       |  |               |                  |                                       |
| 03      | UPPER SEC.SIDE<br>ELE. 1-PASS(PPA) | RH.INLET<br>HDR.NIPPLES<br>+<br>RH.FRONT<br>COILS | SA 213 T11<br>+<br>SA 213 T22 | Ø47.63 | 4.0       | 4 √            | 260        | RT<br>1 1/4CR<br>1/2 MO | 12272     |                 |       |  | 150           | -                | 10% RT<br>MIN 1 WELD<br>PER<br>WELDER |
|         |                                    |   |                               |        |           |                |            |                         |           |                 |       |  |               |                  |                                       |
| 04      | UPPER SEC.SIDE<br>ELE. 1-PASS(PPA) | RH.FRONT<br>COILS<br>+<br>RH.REAR<br>COILS        | SA 213 T22<br>+<br>SA 213 T22 | Ø54.0  | 4.0       | 4 √            | 390        | RT<br>2 1/4CR<br>1/2 MO | 20943     |                 |       |  | 150           | -                | 10% RT<br>MIN 1 WELD<br>PER<br>WELDER |
|         |                                    |   |                               |        |           |                |            |                         |           |                 |       |  |               |                  |                                       |
| 05      | UPPER SEC.SIDE<br>ELE. 1-PASS(PPA) | RH.REAR<br>COILS<br>+<br>RH.OUTLET<br>HDR.NIPPLES | SA 213 T91<br>+<br>SA 213 T91 | Ø54.0  | 4.0       | 4 √            | 390        | ER90S-B9                | 20943     |                 |       |  | 220           | 750<br>TO<br>770 | 10% RT<br>MIN 1 WELD<br>PER<br>WELDER |
|         |                                    |   |                               |        |           |                |            |                         |           |                 |       |  |               |                  |                                       |

|            |                   |                  |          |                |
|------------|-------------------|------------------|----------|----------------|
| PREPARED   | CHECKED ( DESIGN) | CHECKED ( W.T.C) | DATE     | DRAWING NO:    |
| PARAMESH.E | R.T               | G.S              | 23.04.10 | 4-17-992-02637 |





# ERECTION WELDING SCHEDULE

## PRESSURE PARTS

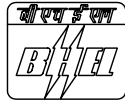
PROJECT: 250 MW.

PG:19

PG NAME: ECONOMISER

| SL. NO. | DESCRIPTION               | DESCRIPTION                                  | MATERIAL                            | SIZE   | THICKNESS | WELD Specn.        | NO. OFF | TIG       |        | ARC SPECN.(NOS) |       |      | PREHEAT °C | PWHT °C    | MIN RECOMMENDED NDE          |
|---------|---------------------------|--|-------------------------------------|--------|-----------|--------------------|---------|-----------|--------|-----------------|-------|------|------------|------------|------------------------------|
|         |                           |  |                                     |        |           |                    |         | SPECN.    | QTY gm | Ø2.5            | Ø3.15 | Ø4.0 |            |            |                              |
| 01      | ECO.FEED PIPE             | ECO FEED PIPE + REDUCER VALVE                | SA 106 GR.C + SA 234 WPC SA 216 WCB | Ø368   | 48        | 43.40 <sup>W</sup> | 2       | RT 1/2 MO | 216    | E 7018-A1       |       |      | 100        | 620 TO 650 | 100% RT                      |
|         |                           |  |                                     |        |           |                    |         |           |        | 56              | 90    | 344  |            |            |                              |
| 02      | ECO.FEED PIPE             | ECO FEED PIPE + ELBOW                        | SA 106 GR.C + SA 234 WPC            | Ø368   | 32        | 32 <sup>W</sup>    | 1       | RT 1/2 MO | 117    | E 7018-A1       |       |      | 100        | 620 TO 650 | 100% RT                      |
|         |                           |  |                                     |        |           |                    |         |           |        | 28              | 45    | 82   |            |            |                              |
| 03      | ECO.FEED PIPE             | REDUCER + ECO.INLET HEADER TEE               | SA 234 WPC + SA 234 WPC             | Ø323.9 | 40        | 32.5 <sup>W</sup>  | 1       | RT 1/2 MO | 95     | E 7018-A1       |       |      | 100        | 620 TO 650 | 100% RT                      |
|         |                           |  |                                     |        |           |                    |         |           |        | 24              | 39    | 105  |            |            |                              |
| 04      | PPA-SEC.SIDE ELE. II-PASS | ECO INLET HDR NIPPLE + ECO.COILS/ LOOSE TUBE | SA 210 GR.A1 + SA 210 GR.A1         | Ø44.5  | 4.5       | 4.5 <sup>V</sup>   | 195     | RT 1/2 MO | 1794   | E 7018-1        |       |      | -          | -          | 10% RT MIN 1 WELD PER WELDER |
|         |                           |  |                                     |        |           |                    |         |           |        | 1365            |       |      |            |            |                              |
| 05      | PPA-SEC.SIDE ELE. II-PASS | ECO.LOWER COILS + ECO.UPPER COILS            | SA 210 GR.A1 + SA 210 GR.A1         | Ø44.5  | 4.5       | 4.5 <sup>V</sup>   | 198     | RT 1/2 MO | 1822   | E 7018-1        |       |      | -          | -          | 10% RT MIN 1 WELD PER WELDER |
|         |                           |  |                                     |        |           |                    |         |           |        | 1386            |       |      |            |            |                              |

|            |                   |                  |          |                |
|------------|-------------------|------------------|----------|----------------|
| PREPARED   | CHECKED ( DESIGN) | CHECKED ( W.T.C) | DATE     | DRAWING NO:    |
| PARAMESH.E | R.T               | G.S              | 23.04.10 | 4-19-992-06123 |



# ERECTION WELDING SCHEDULE

## PRESSURE PARTS

PROJECT: 250 MW.

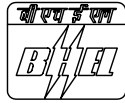
PG: 19

PG NAME: ECONOMISER

| SL. NO. | DESCRIPTION  | DESCRIPTION                                   | MATERIAL                    | SIZE  | THICKNESS | WELD Specn. | NO. OFF | TIG          |        | ARC SPECN.(NOS) |       |      | PREHEAT °C | PWHT °C    | MIN RECOMMENDED NDE             |
|---------|--|---|-----------------------------|-------|-----------|-------------|---------|--------------|--------|-----------------|-------|------|------------|------------|---------------------------------|
|         |  |   |                             |       |           |             |         | SPECN.       | QTY gm | Ø2.5            | Ø3.15 | Ø4.0 |            |            |                                 |
| 06      | PPA-SEC.SIDE ELE. II-PASS<br>ECO.INTERMEDIATE HDR (FRONT, CENTER & REAR) | ECO UPPER COIL + ECO INTERM HDRS/ LOOSE TUBES | SA 210 GR.A1 + SA 210 GR.A1 | Ø44.5 | 5.0       | 5 √         | 354     | RT<br>1/2 MO | 3186   | E 7018-1        |       |      | -          | -          | 10% RT<br>MIN 1 WELD PER WELDER |
|         |  |   |                             |       |           |             |         |              |        | 2478            |       |      |            |            |                                 |
| 07      | ECO.INTERMEDIATE HDR (FRONT, CENTER & REAR)                              | ECO INTERM HDR.HAND HOLE PIPE + DISHED END    | SA 106 GR.B + SA 234 WP.C   | Ø127  | 20        | 18.15W      | 6       | RT<br>1/2 MO | 210    | E 7018-1        |       |      | -          | 610<br>±15 | 10% RT<br>MIN 1 WELD PER WELDER |
|         |  |   |                             |       |           |             |         |              |        | 72              | 102   | 36   |            |            |                                 |
| 08      | PPA-SEC.SIDE ELE. II-PASS  | ECO INTERM HDR.NIPPLES + ECO HGR TUBES        | SA 210 GR.C + SA 210 GR.C   | Ø44.5 | 5.0       | 5 √         | 198     | RT<br>1/2 MO | 1782   | E 7018-1        |       |      | -          | -          | 10% RT<br>MIN 1 WELD PER WELDER |
|         |  |   |                             |       |           |             |         |              |        | 1386            |       |      |            |            |                                 |
| 09      | PPA-SEC.SIDE ELE. II-PASS  | ECO HGR TUBES + ECO.HGR TUBES                 | SA 210 GR.C + SA 210 GR.C   | Ø44.5 | 4.5       | 4.5 √       | 462     | RT<br>1/2 MO | 4252   | E 7018-1        |       |      | -          | -          | 10% RT<br>MIN 1 WELD PER WELDER |
|         |  |   |                             |       |           |             |         |              |        | 3234            |       |      |            |            |                                 |
| 10      | PPA-SEC.SIDE ELE. II-PASS  | ECO.HGR TUBES + ECO.OUTLET NIPPLES            | SA 210 GR.C + SA 210 GR.A1  | Ø44.5 | 4.5       | 4.5 √       | 198     | RT<br>1/2 MO | 1822   | E 7018-1        |       |      | -          | -          | 10% RT<br>MIN 1 WELD PER WELDER |
|         |  |   |                             |       |           |             |         |              |        | 1386            |       |      |            |            |                                 |

|            |                   |                  |          |                |
|------------|-------------------|------------------|----------|----------------|
| PREPARED   | CHECKED ( DESIGN) | CHECKED ( W.T.C) | DATE     | DRAWING NO:    |
| PARAMESH.E | R.T               | G.S              | 23.04.10 | 4-19-992-06124 |

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# ERECTION WELDING SCHEDULE

## PRESSURE PARTS

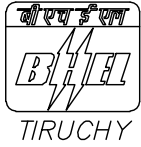
PROJECT: 250 MW.

PG: 19

PG NAME: ECONOMISER

| SL. NO. | DESCRIPTION       | DESCRIPTION                         | MATERIAL                          | SIZE   | THICKNESS | WELD Specn.        | NO. OFF | TIG          |        | ARC SPECN.(NOS) |       |      | PREHEAT °C | PWHT °C    | MIN RECOMMENDED NDE |
|---------|-------------------|-------------------------------------|-----------------------------------|--------|-----------|--------------------|---------|--------------|--------|-----------------|-------|------|------------|------------|---------------------|
|         |                   |                                     |                                   |        |           |                    |         | SPECN.       | QTY gm | Ø2.5            | Ø3.15 | Ø4.0 |            |            |                     |
| 11      | ECO.LINKS TO DRUM | ECO LINKS TO DRUM REDUCER + HDR TEE | SA 234 WPC + SA 234 WPC           | Ø323.9 | 36        | 31.45 <sup>W</sup> | 2       | RT<br>1/2 MO | 196    | E 7018-A1       |       |      | 100        | 620 TO 650 | 100% RT             |
|         |                   |                                     |                                   |        |           |                    |         |              |        | 48              | 78    | 140  |            |            |                     |
| 12      | ECO.LINKS TO DRUM | PIPE +PIPE/ ELBOW,DRUM NOZZLE       | SA 106 GR.C + SA 234 WPC + SA 105 | Ø273   | 32        | 29.25 <sup>W</sup> | 14      | RT<br>1/2 MO | 1204   | E 7018-A1       |       |      | 100        | 620 TO 650 | 100% RT             |
|         |                   |                                     |                                   |        |           |                    |         |              |        | 280             | 462   | 490  |            |            |                     |
| 13      | ECO.LINKS TO DRUM | RG.PLUG + PIPE                      | SA 105 + SA 106 GR.C              | Ø273   | 32        | 7                  | 32      | -            | -      | E 7018-1        |       |      | 100        | -          | 10% MPI OR LPI      |
|         |                   |                                     |                                   |        |           |                    |         |              |        | 32              |       |      |            |            |                     |

|            |                   |                  |          |                |
|------------|-------------------|------------------|----------|----------------|
| PREPARED   | CHECKED ( DESIGN) | CHECKED ( W.T.C) | DATE     | DRAWING NO:    |
| PARAMESH.E | R.T               | G.S              | 23.04.10 | 4-19-992-06125 |



# SUMMARY LIST OF SITE ELECTRODES

PROJECT: 250 MW.

P:G: NO: 12

P.G. NAME: SUPERHEATER

PRESSURE PARTS

| SL. NO | TYPE OF ELECTRODE / WIRE | SIZE & QTY (NOS) |       |      |      | TIG WIRE WT KG | REMARKS |
|--------|--------------------------|------------------|-------|------|------|----------------|---------|
|        |                          | Ø2.5             | Ø3.15 | Ø4.0 | Ø5.0 |                |         |
| 01     | RT<br>1/2 MO             |                  |       |      |      | 41             | ATTEST  |
| 02     | RT<br>1 1/4 CR 1/2 MO    |                  |       |      |      | 25             | ATTEST  |
| 03     | RT<br>2 1/4 CR 1 MO      |                  |       |      |      | 10.2           | ATTEST  |
| 04     | E 7018                   | 18               | 20    |      |      |                | CERTIFY |
| 05     | E 7018-1                 | 28700            | 1535  | 275  |      |                | ATTEST  |
| 06     | E 7018 A1                | 183              | 278   | 585  |      |                | ATTEST  |
| 07     | E 8018 B2                | 16671            | 1492  | 4810 |      |                | ATTEST  |
| 08     | E 9018 B3                | 14808            | 2125  |      |      |                | ATTEST  |
| 09     | E 309                    | 27               |       |      |      |                | ATTEST  |
|        |                          |                  |       |      |      |                |         |
|        |                          |                  |       |      |      |                |         |

NOTES: -

1. RESERVE 25% ADDED.
2. QUANTITY GIVEN IS PER BOILER
3. THIS ERECTION WELDING SCHEDULE IS FOR REFERENCE PURPOSE ONLY.

ENCL : ERECTION WELDING SCHEDULE SHEETS  
FROM :4-12-992-10909  
TO  
4-12-992-10922

- CC: 1. PROJECT CO-ORDINATOR/CONTRACTS:  
2. SR.MANAGER/WTC  
3. WELDING SCHEDULE FILE

DATE: 24.04.10

|          |                  |               |                |
|----------|------------------|---------------|----------------|
| PREPARED | CHECKED(DESIGNS) | APPROVED(WTC) | DRAWING NO.    |
| B.KORAH  | R.T              | G.S           | 4-12-992-10908 |

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# ERECTION WELDING SCHEDULE

## PRESSURE PARTS

PROJECT: 250 MW.

PG(S): 12

PG NAME: SUPERHEATER

| SL. NO. | DESCRIPTION   | DESCRIPTION  | MATERIAL    | SIZE   | THICKNESS | WELD Specn.    | NO. OFF | TIG    |        | ARC SPECN.(NOS) |       |      | PREHEAT °C | PWHT °C    | MIN RECOMMENDED NDE                   |
|---------|---|--|-------------|--------|-----------|----------------|---------|--------|--------|-----------------|-------|------|------------|------------|---------------------------------------|
|         |   |  |             |        |           |                |         | SPECN. | QTY gm | ø2.5            | ø3.15 | ø4.0 |            |            |                                       |
| 01      | SH.CONNECTING PIPES(SATURATED) ASSY.                                  | SH.CONN. PIPES (SATURATED)                             | SA 106 GR.C | ø127   | 11.5      | 11.5 $\hat{V}$ | 66      | RT     | 1848   | E 7018-1        |       |      | -          | -          | 10% RT<br>MIN 2 WELD<br>PER<br>WELDER |
|         |   |  | SA 106 GR.C |        |           |                |         | 792    |        | 792             |       |      |            |            |                                       |
| 02      | PPA-UPR SEC. SIDE ELE. I-PASS, PPA-PLAN OVER ROOF TUBES (SEC-CC&C1C1) | SH.ROOF INLET.HDR NIPPLES + SH.RADIANT ROOF TUBES      | SA 213 T11  | ø51.0  | 5.0       | 5 $\hat{V}$    | 132     | RT     | 1400   | E 8018-B2       |       |      | 150        | -          |                                       |
|         |   |  | SA 213 T11  |        |           |                |         | 1056   |        |                 |       |      |            |            |                                       |
| 03      | PPA-UPR SEC. SIDE ELE. I-PASS, PPA-PLAN OVER ROOF TUBES (SEC-CC&C1C1) | SH.RADIANT ROOF TUBES + SH.RADIANT ROOF TUBES          | SA 213 T11  | ø51.0  | 5.0       | 5 $\hat{V}$    | 132     | RT     | 1400   | E 8018-B2       |       |      | 150        | -          | 10% RT<br>MIN 1 WELD<br>PER<br>WELDER |
|         |   |  | SA 213 T11  |        |           |                |         | 1056   |        |                 |       |      |            |            |                                       |
| 04      | PPA-UPR SEC. SIDE ELE. I-PASS, PPA-PLAN OVER ROOF TUBES (SEC-CC&C1C1) | SH.RADIANT ROOF TUBES + SH.RAD.ROOF OUTLET.HDR NIPPLES | SA 213 T11  | ø51.0  | 5.0       | 5 $\hat{V}$    | 136     | RT     | 1442   | E 8018-B2       |       |      | 150        | -          |                                       |
|         |   |  | SA 213 T11  |        |           |                |         | 1088   |        |                 |       |      |            |            |                                       |
| 05      | PPA-SEC.SIDE ELE. II-PASS   | SH.RAD.ROOF OUTLET.HDR ELBOW + SH.SIDE WALL INLET HDR  | SA 106 GR.B | ø323.9 | 40        | 35 $\hat{W}$   | 2       | RT     | 190    | E 7018-1        |       |      | 100        | 610<br>±15 | 100% RT                               |
|         |   |  | SA 106 GR.B |        |           |                |         | 48     |        | 78              | 210   |      |            |            |                                       |

|          |                   |                  |          |                |
|----------|-------------------|------------------|----------|----------------|
| PREPARED | CHECKED ( DESIGN) | CHECKED ( W.T.C) | DATE     | DRAWING NO:    |
| B.KORAH  | R.T               | G.S              | 24.04.10 | 4-12-992-10909 |



# ERECTION WELDING SCHEDULE

## PRESSURE PARTS

PROJECT: 250 MW.

PG(S): 12 PG NAME: SUPERHEATER

| SL. NO.  | DESCRIPTION   | DESCRIPTION                      | MATERIAL    | SIZE  | THICKNESS        | WELD Specn. | NO. OFF | TIG      |                | ARC SPECN.(NOS) |       |      | PREHEAT °C | PWHT °C    | MIN RECOMMENDED NDE          |
|----------|---|----------------------------------|-------------|-------|------------------|-------------|---------|----------|----------------|-----------------|-------|------|------------|------------|------------------------------|
|          |   |                                  |             |       |                  |             |         | SPECN.   | QTY gm         | Ø2.5            | Ø3.15 | Ø4.0 |            |            |                              |
| 06       | PPA-PLAN OVER ROOF TUBES (SEC-CC&C1C1)                  | SH.SIDE WALL INLET.HDR           | SA 210 GR.C | Ø44.5 | 4.5              | 4.5 √       | 146     | RT       | 1343           | E 7018-1        |       |      | -          | -          | 10% RT MIN 1 WELD PER WELDER |
|          |   | + SH.SIDE WALL TUBES             | SA 210 GR.C |       |                  |             |         | 1022     |                |                 |       |      |            |            |                              |
| 07       | PPA-PANEL ARRGT. II-PASS                                | SH.SIDE WALL TUBES               | SA 210 GR.C | Ø44.5 | 4.5              | 4.5 √       | 140     | RT       | 1288           | E 7018-1        |       |      | -          | -          | 10% RT MIN 1 WELD PER WELDER |
|          |   | + SH.SIDE WALL TUBES             | SA 210 GR.C |       |                  |             |         | 980      |                |                 |       |      |            |            |                              |
| 08       | PPA-PANEL ARRGT. II-PASS                                | SH.SIDE WALL TUBES               | SA 210 GR.C | Ø44.5 | 4.5              | 4.5 √       | 140     | RT       | 1288           | E 7018-1        |       |      | -          | -          | 10% RT MIN 1 WELD PER WELDER |
|          |   | + SH.SIDE WALL OUTLET.HDR NIPPLE | SA 210 GR.C |       |                  |             |         | 980      |                |                 |       |      |            |            |                              |
| 09       | PPA-SEC.SIDE ELE. II-PASS, PPA-PLAN OVER B.PASS"U" HDRS | SH.SIDE WALL OUTLET.HDR ELBOW    | SA 106 GR.C | Ø273  | 40               | 29.25√      | 2       | RT       | 164            | E 7018-A1       |       |      | 150        | 620 TO 650 | 100% RT                      |
|          |   | + FRONT WALL INLET HDR           | SA 106 GR.C |       |                  |             |         | 40       |                | 66              | 114   |      |            |            |                              |
| 10       | PPA-SEC.SIDE ELE. II-PASS, PPA-PLAN OVER B.PASS"U" HDRS | SH.SIDE WALL OUTLET.HDR ELBOW    | SA 106 GR.C | Ø273  | 40               | 29.25√      | 2       | RT       | 164            | E 7018-A1       |       |      | 150        | 620 TO 650 | 100% RT                      |
|          |   | + SH.REAR WALL INLET HDR         | SA 106 GR.C |       |                  |             |         | 40       |                | 66              | 114   |      |            |            |                              |
| PREPARED |   | CHECKED ( DESIGN)                |             |       | CHECKED ( W.T.C) |             |         | DATE     | DRAWING NO:    |                 |       |      |            |            |                              |
| B.KORAH  |   | R.T                              |             |       | G.S              |             |         | 24.04.10 | 4-12-992-10910 |                 |       |      |            |            |                              |

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# ERECTION WELDING SCHEDULE

## PRESSURE PARTS

PROJECT: 250 MW.

PG(S): 12

PG NAME: SUPERHEATER

| SL. NO.  | DESCRIPTION               | DESCRIPTION                    | MATERIAL    | SIZE  | THICKNESS        | WELD Specn. | NO. OFF | TIG      |                | ARC SPECN.(NOS) |          |      | PREHEAT °C | PWHT °C | MIN RECOMMENDED NDE |                                       |                                       |
|----------|---------------------------|--------------------------------|-------------|-------|------------------|-------------|---------|----------|----------------|-----------------|----------|------|------------|---------|---------------------|---------------------------------------|---------------------------------------|
|          |                           |                                |             |       |                  |             |         | SPECN.   | QTY gm         | Ø2.5            | Ø3.15    | Ø4.0 |            |         |                     |                                       |                                       |
| 11       | PPA-PANEL ARRGT. II-PASS  | SH.REAR WALL INLET HDR.NIPPLE  | SA 210 GR.C | Ø44.5 | 5.0              | 5 √         | 108     | RT       | 1/2 MO         | 972             | E 7018-1 |      |            | -       | -                   | 10% RT<br>MIN 1 WELD<br>PER<br>WELDER |                                       |
|          |                           | SH.LOWER REAR WALL TUBE        | SA 210 GR.C |       |                  |             |         |          |                |                 | 756      |      |            |         |                     |                                       |                                       |
| 12       | PPA-PANEL ARRGT. II-PASS  | SH.REAR WALL LOWER PANEL       | SA 210 GR.C | Ø44.5 | 5.0              | 5 √         | 108     | RT       | 1/2 MO         | 972             | E 7018-1 |      |            | -       | -                   |                                       | 10% RT<br>MIN 1 WELD<br>PER<br>WELDER |
|          |                           | LTSH INLET HDR.NIPPLE          | SA 210 GR.C |       |                  |             |         |          |                |                 | 756      |      |            |         |                     |                                       |                                       |
| 13       | PPA-PANEL ARRGT. II-PASS  | SH.FRONT WALL INLET HDR.NIPPLE | SA 210 GR.C | Ø44.5 | 4.5              | 4.5 √       | 108     | RT       | 1/2 MO         | 994             | E 7018-1 |      |            | -       | -                   |                                       |                                       |
|          |                           | SH.FRONT WALL TUBES            | SA 210 GR.C |       |                  |             |         |          |                |                 | 756      |      |            |         |                     |                                       |                                       |
| 14       | PPA-PANEL ARRGT. II-PASS  | SH.FRONT WALL TUBE             | SA 210 GR.C | Ø44.5 | 4.5              | 4.5 √       | 108     | RT       | 1/2 MO         | 994             | E 7018-1 |      |            | -       | -                   | 10% RT<br>MIN 1 WELD<br>PER<br>WELDER |                                       |
|          |                           | SH.FRONT HANGER TUBE           | SA 210 GR.C |       |                  |             |         |          |                |                 | 756      |      |            |         |                     |                                       |                                       |
| 15       | PPA-SEC.SIDE ELE. II-PASS | SH.FRONT HANGER TUBE           | SA 210 GR.C | Ø44.5 | 4.5              | 4.5 √       | 108     | RT       | 1/2 MO         | 994             | E 7018-1 |      |            | -       | -                   |                                       | 10% RT<br>MIN 1 WELD<br>PER<br>WELDER |
|          |                           | SH.JUNCTION HDR.NIPPLE         | SA 210 GR.C |       |                  |             |         |          |                |                 | 756      |      |            |         |                     |                                       |                                       |
| PREPARED |                           | CHECKED ( DESIGN)              |             |       | CHECKED ( W.T.C) |             |         | DATE     | DRAWING NO:    |                 |          |      |            |         |                     |                                       |                                       |
| B.KORAH  |                           | R.T                            |             |       | G.S              |             |         | 24.04.10 | 4-12-992-10911 |                 |          |      |            |         |                     |                                       |                                       |

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# ERECTION WELDING SCHEDULE

## PRESSURE PARTS

PROJECT: 250 MW.

PG(S): 12

PG NAME: SUPERHEATER

| SL. NO.  | DESCRIPTION   | DESCRIPTION  | MATERIAL                  | SIZE  | THICKNESS        | WELD Specn.         | NO. OFF | TIG      |                | ARC SPECN.(NOS) |       |      | PREHEAT °C | PWHT °C    | MIN RECOMMENDED NDE          |
|----------|---|--|---------------------------|-------|------------------|---------------------|---------|----------|----------------|-----------------|-------|------|------------|------------|------------------------------|
|          |   |  |                           |       |                  |                     |         | SPECN.   | QTY gm         | Ø2.5            | Ø3.15 | Ø4.0 |            |            |                              |
| 16       | SH.REAR ROOF JUNC.HDR SHH-7   | SH.JUNCTION HDR.H.H PIPE + H.H DISHED END COVER                | SA 106 GR.B + SA 234 WPC  | Ø127  | 20               | 18.15 $\widehat{W}$ | 2       | RT       | 70             | E 7018-1        |       |      | -          | 595 TO 625 | 10% RT MIN 1 WELD PER WELDER |
|          |   |  |                           |       |                  |                     |         | 1/2 MO   |                | 24              | 34    | 10   |            |            |                              |
| 17       | PPA-PANEL ARRGT. II-PASS  | SH.JUNCTION HDR.NIPPLE + SH.REAR ROOF TUBES                    | SA 210 GR.C + SA 210 GR.C | Ø44.5 | 4.5              | 4.5 $\widehat{V}$   | 132     | RT       | 1215           | E 7018-1        |       |      | -          | -          | 10% RT MIN 1 WELD PER WELDER |
|          |   |  |                           |       |                  |                     |         | 1/2 MO   |                | 924             |       |      |            |            |                              |
| 18       | PPA-SEC.SIDE ELE. II-PASS & PPA-PANEL ARRGT. II-PASS                    | SH.REAR ROOF TUBES + SH.REAR WALL (UPPER)                      | SA 210 GR.C + SA 210 GR.C | Ø44.5 | 4.5              | 4.5 $\widehat{V}$   | 132     | RT       | 1215           | E 7018-1        |       |      | -          | -          | 10% RT MIN 1 WELD PER WELDER |
|          |   |  |                           |       |                  |                     |         | 1/2 MO   |                | 924             |       |      |            |            |                              |
| 19       | PPA-PANEL ARRGT. II-PASS  | SH.REAR WALL (UPPER) + LTSH INLET HDR.NIPPLE                   | SA 210 GR.C + SA 210 GR.C | Ø44.5 | 4.5              | 4.5 $\widehat{V}$   | 132     | RT       | 1215           | E 7018-1        |       |      | -          | -          | 10% RT MIN 1 WELD PER WELDER |
|          |   |  |                           |       |                  |                     |         | 1/2 MO   |                | 924             |       |      |            |            |                              |
| 20       | PPA-B.PASS EXT.D. SIDE SUPPLY TUBES & SH.BP EXT.D.SIDE WALL INLET PIPES | SH.FRONT WALL INLET HDR.NOZZLE + SH.EXTD.SIDE WALL SUPPLY PIPE | SA 106 GR.C + SA 106 GR.C | Ø127  | 11.5             | 10.5 $\widehat{V}$  | 4       | RT       | 112            | E 7018-1        |       |      | -          | -          | 10% RT MIN 2 WELD PER WELDER |
|          |   |  |                           |       |                  |                     |         | 1/2 MO   |                | 48              | 48    |      |            |            |                              |
| PREPARED |   | CHECKED ( DESIGN)  |                           |       | CHECKED ( W.T.C) |                     |         | DATE     | DRAWING NO:    |                 |       |      |            |            |                              |
| B.KORAH  |   | R.T  |                           |       | G.S              |                     |         | 24.04.10 | 4-12-992-10912 |                 |       |      |            |            |                              |

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# ERECTION WELDING SCHEDULE

## PRESSURE PARTS

PROJECT: 250 MW.

PG(S): 12

PG NAME: SUPERHEATER

| SL. NO.  | DESCRIPTION   | DESCRIPTION                                | MATERIAL      | SIZE  | THICKNESS        | WELD Specn. | NO. OFF | TIG      |                | ARC SPECN.(NOS) |       |      | PREHEAT °C | PWHT °C | MIN RECOMMENDED NDE          |
|----------|---|--|---------------|-------|------------------|-------------|---------|----------|----------------|-----------------|-------|------|------------|---------|------------------------------|
|          |   |  |               |       |                  |             |         | SPECN.   | QTY gm         | Ø2.5            | Ø3.15 | Ø4.0 |            |         |                              |
| 21       | SH.BP EXT.D.SIDE WALL INLET PIPES                             | SH.EXTD.SW SUPPLY PIPES +                  | SA 106 GR.C + | Ø127  | 11.5             | 10.5 √      | 7       | RT       | 196            | E 7018-1        |       |      | -          | -       | 10% RT MIN 2 WELD PER WELDER |
|          |   | SH.EXTD.SW SUPPLY PIPES                    | SA 106 GR.C   |       |                  |             |         | 84       |                | 84              |       |      |            |         |                              |
| 22       | PPA-SEC.SIDE ELE. II-PASS & SH.BP EXT.D.SIDE WALL INLET PIPES | SH.EXTD.SW SUPPLY PIPES +                  | SA 106 GR.C + | Ø127  | 11.5             | 10.5 √      | 4       | RT       | 112            | E 7018-1        |       |      | -          | -       | 10% RT MIN 2 WELD PER WELDER |
|          |   | SH.EXTD.SW INLET HDR NOZZLE                | SA 106 GR.C   |       |                  |             |         | 48       |                | 48              |       |      |            |         |                              |
| 23       | PPA-PANEL ARRGT. II-PASS                                      | SH.EXTD.SW INLET.HDR NIPPLE +              | SA 210 GR.C + | Ø44.5 | 4.5              | 4.5 √       | 40      | RT       | 368            | E 7018-1        |       |      | -          | -       | 10% RT MIN 1WELD PER WELDER  |
|          |   | SH.EXTD.SW BOTTOM PANEL                    | SA 210 GR.C   |       |                  |             |         | 280      |                |                 |       |      |            |         |                              |
| 24       | PPA-PANEL ARRGT. II-PASS                                      | SH.EXTD.SW BOTTOM PANEL +                  | SA 210 GR.C + | Ø44.5 | 4.5              | 4.5 √       | 80      | RT       | 736            | E 7018-1        |       |      | -          | -       | 10% RT MIN 1 WELD PER WELDER |
|          |   | SH.EXTD.SW BOTTOM PANEL, LOOSE TUBES/PANEL | SA 210 GR.C   |       |                  |             |         | 560      |                |                 |       |      |            |         |                              |
| 25       | PPA-PANEL ARRGT. II-PASS                                      | SH.EXTD.SIDE WALL PANEL +                  | SA 210 GR.C + | Ø44.5 | 4.5              | 4.5 √       | 42      | RT       | 387            | E 7018-1        |       |      | -          | -       | 10% RT MIN 1 WELD PER WELDER |
|          |   | SH.EXTD.SIDE WALL OUTLET HDR.NIPPLES       | SA 210 GR.C   |       |                  |             |         | 294      |                |                 |       |      |            |         |                              |
| PREPARED |   | CHECKED ( DESIGN)                          |               |       | CHECKED ( W.T.C) |             |         | DATE     | DRAWING NO:    |                 |       |      |            |         |                              |
| B.KORAH  |   | R.T  |               |       | G.S              |             |         | 24.04.10 | 4-12-992-10913 |                 |       |      |            |         |                              |

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# ERECTION WELDING SCHEDULE

## PRESSURE PARTS

PROJECT: 250 MW.

PG(S): 12

PG NAME: SUPERHEATER

| SL. NO.  | DESCRIPTION                                | DESCRIPTION  | MATERIAL                  | SIZE   | THICKNESS        | WELD Specn. | NO. OFF | TIG      |                | ARC SPECN.(NOS) |       |      | PREHEAT °C | PWHT °C | MIN RECOMMENDED NDE          |
|----------|--|--|---------------------------|--------|------------------|-------------|---------|----------|----------------|-----------------|-------|------|------------|---------|------------------------------|
|          |  |  |                           |        |                  |             |         | SPECN.   | QTY gm         | Ø2.5            | Ø3.15 | Ø4.0 |            |         |                              |
| 26       | REAR ROOF SH INLET PIPES FROM SHH3 TO SHH7 | SH.EXTD.SW OUT HDR.NIPPLE + SH.REAR ROOF INLET PIPES | SA 106 GR.C + SA 106 GR.C | Ø127   | 11.5             | 10.5 √      | 4       | RT       | 112            | E 7018-1        |       |      | -          | -       | 10% RT MIN 2 WELD PER WELDER |
|          |  | 1/2 MO   | 48                        |        |                  |             |         | 48       |                |                 |       |      |            |         |                              |
| 27       | REAR ROOF SH INLET PIPES FROM SHH3 TO SHH7 | SH.REAR ROOF INLET PIPES + SH.REAR ROOF INLET PIPES  | SA 106 GR.C + SA 106 GR.C | Ø127   | 11.5             | 10.5 √      | 4       | RT       | 112            | E 7018-1        |       |      | -          | -       | 10% RT MIN 2 WELD PER WELDER |
|          |  | 1/2 MO   | 48                        |        |                  |             |         | 48       |                |                 |       |      |            |         |                              |
| 28       | PPA-SEC.SIDE ELE. II-PASS                  | SH.REAR ROOF INLET PIPES + SH.REAR ROOF JUNCTION HDR | SA 106 GR.C + SA 106 GR.C | Ø127   | 11.5             | 10.5 √      | 4       | RT       | 112            | E 7018-1        |       |      | -          | -       | 10% RT MIN 2 WELD PER WELDER |
|          |  | 1/2 MO   | 48                        |        |                  |             |         | 48       |                |                 |       |      |            |         |                              |
| 29       | PPA-SEC.SIDE ELE. II-PASS                  | LTSH INLET HDR.NIPPLE + LOOSE TUBES                  | SA 210 GR.C + SA 210 GR.C | Ø47.63 | 5.0              | 5.0 √       | 528     | RT       | 4752           | E 7018-1        |       |      | -          | -       | 10% RT MIN 1 WELD PER WELDER |
|          |  | 1/2 MO   | 3696                      |        |                  |             |         |          |                |                 |       |      |            |         |                              |
| 30       | PPA-SEC.SIDE ELE. II-PASS                  | LOOSE TUBES + LTSH LOWER COILS                       | SA 210 GR.C + SA 210 GR.C | Ø47.63 | 5.0              | 5.0 √       | 528     | RT       | 4752           | E 7018-1        |       |      | -          | -       | 10% RT MIN 1 WELD PER WELDER |
|          |  | 1/2 MO   | 3696                      |        |                  |             |         |          |                |                 |       |      |            |         |                              |
| PREPARED |  | CHECKED ( DESIGN)                                    |                           |        | CHECKED ( W.T.C) |             |         | DATE     | DRAWING NO:    |                 |       |      |            |         |                              |
| B.KORAH  |  | R.T  |                           |        | G.S              |             |         | 24.04.10 | 4-12-992-10914 |                 |       |      |            |         |                              |

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# ERECTION WELDING SCHEDULE

## PRESSURE PARTS

PROJECT: 250 MW.

PG(S): 12 PG NAME: SUPERHEATER

| SL. NO.  | DESCRIPTION               | DESCRIPTION               | MATERIAL    | SIZE             | THICKNESS | WELD Specn. | NO. OFF | TIG      |         | ARC SPECN.(NOS) |           |      | PREHEAT °C | PWHT °C | MIN RECOMMENDED NDE |                                       |
|----------|---------------------------|---------------------------|-------------|------------------|-----------|-------------|---------|----------|---------|-----------------|-----------|------|------------|---------|---------------------|---------------------------------------|
|          |                           |                           |             |                  |           |             |         | SPECN.   | QTY gm  | ø2.5            | ø3.15     | ø4.0 |            |         |                     |                                       |
| 31       | PPA-SEC.SIDE ELE. II-PASS | LTSH LOWER COILS          | SA 210 GR.C | ø47.63           | 5.0       | 5.0 √       | 528     | RT       | 1/2 MO  | 5122            | E 7018-1  |      |            | 150     | -                   | 10% RT<br>MIN 1 WELD<br>PER<br>WELDER |
|          |                           | + LTSH UPPER COILS        | SA 213 T11  |                  |           |             |         |          |         |                 | 3696      |      |            |         |                     |                                       |
| 32       | PPA-SEC.SIDE ELE. II-PASS | LTSH UPPER COILS          | SA 213 T11  | ø47.63           | 5.0       | 5.0 √       | 528     | RT       | 1 1/4CR | 5122            | E 8018-B2 |      |            | 150     | -                   | 10% RT<br>MIN 1 WELD<br>PER<br>WELDER |
|          |                           | + LTSH TERMINAL TUBES     | SA 213 T11  |                  |           |             |         |          |         |                 | 3696      |      |            |         |                     |                                       |
| 33       | PPA-SEC.SIDE ELE. II-PASS | LTSH TERMINAL TUBES       | SA 213 T11  | ø47.63           | 5.0       | 5.0 √       | 528     | RT       | 1 1/4CR | 5122            | E 8018-B2 |      |            | 150     | -                   | 10% RT<br>MIN 1 WELD<br>PER<br>WELDER |
|          |                           | + LTSH OUTLET HDR.NIPPLES | SA 213 T11  |                  |           |             |         |          |         |                 | 3696      |      |            |         |                     |                                       |
| 34       | SH.DESH LINKS STAGE-1     | SH.DESH STAGE-I PIPE      | SA 335 P12  | ø368             | 40        | 35 W        | 2       | RT       | 1 1/4CR | 224             | E 8018-B2 |      |            | 150     | 680<br>TO<br>720    | 100% RT                               |
|          |                           | + T-PIECE                 | SA 335 P22  |                  |           |             |         |          |         |                 | 56        | 90   | 240        |         |                     |                                       |
| 35       | SH.DESH LINKS STAGE-1     | PIPE                      | SA 335 P12  | ø368             | 40        | 36 W        | 12      | RT       | 1 1/4CR | 1344            | E 8018-B2 |      |            | 150     | 640<br>TO<br>670    | 100% RT                               |
|          |                           | + ELBOW                   | SA 234 WP12 |                  |           |             |         |          |         |                 | 330       | 540  | 1440       |         |                     |                                       |
| PREPARED |                           | CHECKED ( DESIGN)         |             | CHECKED ( W.T.C) |           |             |         | DATE     |         | DRAWING NO:     |           |      |            |         |                     |                                       |
| B.KORAH  |                           | R.T                       |             | G.S              |           |             |         | 24.04.10 |         | 4-12-992-10915  |           |      |            |         |                     |                                       |

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# ERECTION WELDING SCHEDULE

## PRESSURE PARTS

PROJECT: 250 MW.

PG(S): 12

PG NAME: SUPERHEATER

| SL. NO. | DESCRIPTION                        | DESCRIPTION  | MATERIAL                             | SIZE   | THICKNESS | WELD Specn.         | NO. OFF | TIG                     |        | ARC SPECN.(NOS) |       |      | PREHEAT °C | PWHT °C          | MIN RECOMMENDED NDE                   |
|---------|------------------------------------|--|--------------------------------------|--------|-----------|---------------------|---------|-------------------------|--------|-----------------|-------|------|------------|------------------|---------------------------------------|
|         |                                    |  |                                      |        |           |                     |         | SPECN.                  | QTY gm | ø2.5            | ø3.15 | ø4.0 |            |                  |                                       |
| 36      | SH.DESH LINKS<br>STAGE-1           | PIPE<br>+<br>T-PIECE   | SA 335 P12<br>+<br>SA 234 WPC        | ø368   | 40        | 37.85 $\widehat{W}$ | 2       | RT<br>1/2 MO            | 224    | E 7018-A1       |       |      | 150        | 640<br>TO<br>670 | 100% RT                               |
|         |                                    |  |                                      |        |           |                     |         |                         |        | 56              | 90    | 240  |            |                  |                                       |
| 37      | SH.DESH LINKS<br>STAGE-1           | R.G PLUG<br>+<br>PIPE  | SA 182<br>F22 CL3<br>+<br>SA 335 P12 | ø368   | 40        | 7 $\nabla$          | 12      | -                       | -      | E 8018-B2       |       |      | 200        | -                | 10% MPI /<br>LPI                      |
|         |                                    |  |                                      |        |           |                     |         |                         |        | 30              |       |      |            |                  |                                       |
| 38      | PPA-UPPER SEC.<br>SIDE ELE. I-PASS | SH.PLATEN<br>INLET HDR<br>NIPPLES<br>+<br>SH.PLATEN<br>COILS<br>(CIRCUIT-01) | SA 213 T11<br>+<br>SA 213 T22        | ø47.63 | 10        | 10 $\widehat{V}$    | 32      | RT<br>1 1/4CR<br>1/2 MO | 227    | E 8018-B2       |       |      | -          | 680<br>TO<br>720 | 10% RT<br>MIN 1 WELD<br>PER<br>WELDER |
|         |                                    |  |                                      |        |           |                     |         |                         |        | 288             | 128   | -    |            |                  |                                       |

|          |                   |                  |          |                |
|----------|-------------------|------------------|----------|----------------|
| PREPARED | CHECKED ( DESIGN) | CHECKED ( W.T.C) | DATE     | DRAWING NO:    |
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 CAUTION:



# ERECTION WELDING SCHEDULE

## PRESSURE PARTS

PROJECT: 250 MW.

PG(S): 12

PG NAME: SUPERHEATER

| SL. NO.  | DESCRIPTION                     | DESCRIPTION  | MATERIAL                | SIZE   | THICKNESS        | WELD Specn. | NO. OFF | TIG                     |                | ARC SPECN.(NOS) |       |      | PREHEAT °C | PWHT °C    | MIN RECOMMENDED NDE          |
|----------|---------------------------------|--|-------------------------|--------|------------------|-------------|---------|-------------------------|----------------|-----------------|-------|------|------------|------------|------------------------------|
|          |                                 |  |                         |        |                  |             |         | SPECN.                  | QTY gm         | Ø2.5            | Ø3.15 | Ø4.0 |            |            |                              |
| 39       | PPA-UPPER SEC. SIDE ELE. I-PASS | SH.PLATEN INLET HDR NIPPLES + SH.PLATEN COILS (CIRCUIT-02-08)  | SA 213 T11 + SA 213 T22 | Ø47.63 | 5                | 5.0 √       | 224     | RT<br>1 1/4CR<br>1/2 MO | 2173           | E 8018-B2       |       |      | 150        | -          | 10% RT MIN 1 WELD PER WELDER |
| 40       | PPA-UPPER SEC. SIDE ELE. I-PASS | SH.PLATEN COILS (CIRCUIT-01) + SH.PLATEN OUTLET.HDR NIPPLES    | SA 213 T22 + SA 213 T22 | Ø47.63 | 10               | 10 √        | 32      | RT<br>2 1/4CR<br>1 MO   | 227            | E 9018-B3       |       |      | 150        | 680 TO 750 | 10% RT MIN 1 WELD PER WELDER |
| 41       | PPA-UPPER SEC. SIDE ELE. I-PASS | SH.PLATEN COILS (CIRCUIT-02-08) + SH.PLATEN OUTLET.HDR NIPPLES | SA 213 T22 + SA 213 T22 | Ø47.63 | 8.0              | 8.0 √       | 224     | RT<br>2 1/4CR<br>1 MO   | 1860           | E 9018-B3       |       |      | 150        | -          | 10% RT MIN 1 WELD PER WELDER |
| 42       | FINAL SH INLET LINKS            | FINAL SH. LINKS ELBOW + TEE PIECE/                             | SA234 WP12 + SA234WP12/ | Ø406.4 | 65               | 56.85 √     | 4       | RT<br>1 1/4CR<br>1/2 MO | 444            | E 8018-B2       |       |      | 150        | 640 TO 670 | 100% RT                      |
| PREPARED |                                 | CHECKED ( DESIGN)  |                         |        | CHECKED ( W.T.C) |             |         | DATE                    | DRAWING NO:    |                 |       |      |            |            |                              |
| B.KORAH  |                                 | R.T  |                         |        | G.S              |             |         | 24.04.10                | 4-12-992-10917 |                 |       |      |            |            |                              |

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# ERECTION WELDING SCHEDULE

## PRESSURE PARTS

PROJECT: 250 MW.

PG(S): 12

PG NAME: SUPERHEATER

| SL. NO.  | DESCRIPTION                            | DESCRIPTION                                 | MATERIAL                  | SIZE   | THICKNESS        | WELD Specn. | NO. OFF | TIG           |                | ARC SPECN.(NOS) |       |      | PREHEAT °C | PWHT °C    | MIN RECOMMENDED NDE             |
|----------|--|---|---------------------------|--------|------------------|-------------|---------|---------------|----------------|-----------------|-------|------|------------|------------|---------------------------------|
|          |  |   |                           |        |                  |             |         | SPECN.        | QTY gm         | ø2.5            | ø3.15 | ø4.0 |            |            |                                 |
| 43       | FINAL SH INLET LINKS                   | PIPE + ELBOW                                | SA 335 P12 + SA 234WP12   | ø406.4 | 65               | 61.75W      | 4       | RT<br>1 1/4CR | 444            | E 8018-B2       |       |      | 150        | 640 TO 670 | 100% RT                         |
| 44       | FINAL SH INLET LINKS                   | PIPE + RG-PLUG                              | SA 335 P12 + SA182F22CL3  | ø406.4 | 50               | 7           | 4       | -             | -              | E 8018-B2       |       |      | 150        | -          | 10% MPI/LPI                     |
| 45       | PPA-UPPER SEC. SIDE ELE. I-PASS        | FINAL SH INLET HDR NIPPLES + FINAL SH       | SA 213 T22 + SA 213 T22   | ø47.63 | 8.0              | 8.0         | 393     | RT<br>2 1/4CR | 3262           | E 9018-B3       |       |      | 150        | -          | 10% RT<br>MIN 1 WELD PER WELDER |
| 46       | PPA-UPPER SEC. SIDE ELE. I-PASS        | FINAL SH COIL + FINAL SH OUTLET HDR NIPPLES | SA 213 T22 + SA 213 T22   | ø47.63 | 10               | 10          | 393     | RT<br>2 1/4CR | 2791           | E 9018-B3       |       |      | 150        | 680 TO 750 | 10% RT<br>MIN 1 WELD PER WELDER |
| 47       | STEAM COOLED SPACER (FOR PLATEN ASSY.) | SH.STEAM COOLED SPACER TUBE + TUBE          | SA 210 GR.C + SA 210 GR.C | ø44.5  | 4.0              | 4.0         | 6       | RT<br>1/2 MO  | 265            |                 |       |      | -          | -          | 10% RT<br>MIN 1 WELD PER WELDER |
| PREPARED |  | CHECKED ( DESIGN)                           |                           |        | CHECKED ( W.T.C) |             |         | DATE          | DRAWING NO:    |                 |       |      |            |            |                                 |
| B.KORAH  |  | R.T   |                           |        | G.S              |             |         | 24.04.10      | 4-12-992-10918 |                 |       |      |            |            |                                 |

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# ERECTION WELDING SCHEDULE

## PRESSURE PARTS

PROJECT: 250 MW.

PG(S): 12

PG NAME: SUPERHEATER

| SL. NO.  | DESCRIPTION                               | DESCRIPTION                               | MATERIAL                       | SIZE             | THICKNESS    | WELD Specn.        | NO. OFF | TIG                     |        | ARC SPECN.(NOS) |       |      | PREHEAT °C | PWHT °C | MIN RECOMMENDED NDE             |
|----------|---|---|--------------------------------|------------------|--------------|--------------------|---------|-------------------------|--------|-----------------|-------|------|------------|---------|---------------------------------|
|          |   |   |                                |                  |              |                    |         | SPECN.                  | QTY gm | Ø2.5            | Ø3.15 | Ø4.0 |            |         |                                 |
| 48       | STEAM COOLED SPACER<br>(FOR PLATEN ASSY.) | SH.STEAM COOLED SPACER TUBE + TUBE        | SA 210 GR.C + SA 213 T11       | Ø44.5            | 5.0          | 5 √                | 2       | RT<br>1/2 MO            | 18     | E 7018-1        |       |      | 125        | -       | 10% RT<br>MIN 1 WELD PER WELDER |
| 49       | STEAM COOLED SPACER<br>(FOR PLATEN ASSY.) | SH.STEAM COOLED SPACER TUBE + TUBE        | SA 213 T11 + SA 213 T11        | Ø44.5            | 5.0          | 5 √                | 7       | RT<br>1 1/4CR<br>1 MO   | 63     | E 8018-B2       |       |      | 150        | -       | 10% RT<br>MIN 1 WELD PER WELDER |
| 50       | STEAM COOLED SPACER<br>(FOR PLATEN ASSY.) | SH.STEAM COOLED SPACER TUBE + COOLER TUBE | SA 213 T11 + SA 213 T11        | Ø51.0            | 5.6          | 5.6 √              | 1       | RT<br>1 1/4CR<br>1/2 MO | 11     | E 8018-B2       |       |      | 150        | -       | 10% RT<br>MIN 1 WELD PER WELDER |
| 51       | STEAM COOLED SPACER<br>(FOR PLATEN ASSY.) | TUBE + PLATE                              | SA 210 GR.C + SA 387 GR.22 CL2 | Ø63.5            | 5.5 + 10 THK | 5 1/2 K            | 0.208M  | -                       | -      | E 7018          |       |      | 150        | -       | 100% MPI / LPI                  |
| 52       | STEAM COOLED SPACER<br>(FOR PLATEN ASSY.) | TUBE + PLATE                              | SA 213 T11 + SA 387 GR.22 CL2  | Ø44.5            | 5.0 + 10 THK | 5 1/2 K (125 LONG) | 0.50M   | -                       | -      | E 8018-B2       |       |      | 150        | -       | 100% MPI / LPI                  |
| 53       | STEAM COOLED SPACER<br>(FOR PLATEN ASSY.) | TUBE + PLATE                              | SA 210 GR.C + IS2062 FE410WA   | Ø44.5            | 4.0 + 6 THK  | 3 ∇                | 0.20M   | -                       | -      | E 7018          |       |      | -          | -       | 10% MPI / LPI                   |
| PREPARED |   | CHECKED ( DESIGN)                         |                                | CHECKED ( W.T.C) |              |                    |         | DATE                    |        | DRAWING NO:     |       |      |            |         |                                 |
| B.KORAH  |   | R.T                                       |                                | G.S              |              |                    |         | 24.04.10                |        | 4-12-992-10919  |       |      |            |         |                                 |

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# ERECTION WELDING SCHEDULE

## PRESSURE PARTS

PROJECT: 250 MW.

PG(S): 12

PG NAME: SUPERHEATER

| SL. NO. | DESCRIPTION                               | DESCRIPTION   | MATERIAL               | SIZE   | THICKNESS | WELD Specn. | NO. OFF | TIG          |        | ARC SPECN.(NOS) |       |      | PREHEAT °C        | PWHT °C | MIN RECOMMENDED NDE                |
|---------|---|---|------------------------|--------|-----------|-------------|---------|--------------|--------|-----------------|-------|------|-------------------|---------|------------------------------------|
|         |   |   |                        |        |           |             |         | SPECN.       | QTY gm | ø2.5            | ø3.15 | ø4.0 |                   |         |                                    |
| 54      | STEAM COOLED SPACER<br>(FOR PLATEN ASSY.) | PLATE<br>+<br>PLATE                                     | IS2062<br>FE410WA      | -      | 6         | 3D          | 0.30M   | -            | -      | E 7018          |       |      | -                 | -       | -                                  |
|         |   |   | +<br>IS2062<br>FE410WA |        | 8         |             |         |              |        | 2               |       |      |                   |         |                                    |
| 55      | STEAM COOLED SPACER<br>(FOR PLATEN ASSY.) | TUBE<br>+<br>ROD  | SA 213 T11<br>+        | ø44.5  | 5.0       | 5 V         | 0.40M   | -            | -      | E 8018-B2       |       |      | 150               | -       | 100% MPI /<br>LPI                  |
|         |   |   | SA 182 F12<br>CL 2     |        | ø10       |             |         |              |        | 8               |       |      |                   |         |                                    |
| 56      | STEAM COOLED SPACER<br>(FOR PLATEN ASSY.) | TUBE<br>+<br>PLATE                                      | SA 213 T22<br>+        | ø47.63 | 6.1       | 6D          | 0.42M   | -            | -      | E 7018-A1       |       |      | P5<br>SIDE<br>150 | -       | 100% LPI                           |
|         |   |   | SA240T4P310            |        | 10 THK    |             |         |              |        | 10              |       |      |                   |         |                                    |
| 57      | STEAM COOLED SPACER<br>(FOR PLATEN ASSY.) | TUBE<br>+<br>FIN(PLATE)                                 | SA 213 T11<br>+        | ø44.5  | 5.0       | 5D          | 1M      | -            | -      | E 8018-B2       |       |      | 150               | -       | 100% MPI /<br>LPI                  |
|         |   |   | IS2062<br>FE410WA      |        | 6 THK     |             |         |              |        | 14              |       |      |                   |         |                                    |
| 58      | STEAM COOLED SPACER<br>(FOR RH ASSY.)     | (RH) STEAM COOLED SPACER<br>TUBE<br>+ TUBE              | SA 210 GR.C<br>+       | ø44.5  | 4.0       | 4.0 V       | 4       | RT<br>1/2 MO | 177    | E 7018-A1       |       |      | -                 | -       | 10% RT MIN<br>1 WELD PER<br>WELDER |
|         |   |   | SA 210 GR.C            |        |           |             |         |              |        |                 |       |      |                   |         |                                    |
| 59      | STEAM COOLED SPACER<br>(FOR RH ASSY.)     | TUBE + TUBE<br>(ITEM 13 + HDR NIPPLE)<br>(ITEM04 + 05 ) | SA 213 T11<br>+        | ø44.5  | 4.0       | 4.0 V       | 2       | RT<br>1/2 MO | 89     | E 7018-A1       |       |      | 150               | -       | 10% RT MIN<br>1 WELD PER<br>WELDER |
|         |   |   | SA 210 GR.C            |        |           |             |         |              |        |                 |       |      |                   |         |                                    |

|          |                   |                  |          |                |
|----------|-------------------|------------------|----------|----------------|
| PREPARED | CHECKED ( DESIGN) | CHECKED ( W.T.C) | DATE     | DRAWING NO:    |
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# ERECTION WELDING SCHEDULE

## PRESSURE PARTS

PROJECT: 250 MW.

PG(S): 12

PG NAME: SUPERHEATER

| SL. NO. | DESCRIPTION                               | DESCRIPTION   | MATERIAL               | SIZE   | THICKNESS | WELD Specn. | NO. OFF | TIG          |        | ARC SPECN.(NOS) |       |      | PREHEAT °C        | PWHT °C | MIN RECOMMENDED NDE                |
|---------|---|---|------------------------|--------|-----------|-------------|---------|--------------|--------|-----------------|-------|------|-------------------|---------|------------------------------------|
|         |   |   |                        |        |           |             |         | SPECN.       | QTY gm | ø2.5            | ø3.15 | ø4.0 |                   |         |                                    |
| 54      | STEAM COOLED SPACER<br>(FOR PLATEN ASSY.) | PLATE<br>+<br>PLATE                                     | IS2062<br>FE410WA      | -      | 6         | 3D          | 0.30M   | -            | -      | E 7018          |       |      | -                 | -       | -                                  |
|         |   |   | +<br>IS2062<br>FE410WA |        | 8         |             |         |              |        | 2               |       |      |                   |         |                                    |
| 55      | STEAM COOLED SPACER<br>(FOR PLATEN ASSY.) | TUBE<br>+<br>ROD  | SA 213 T11<br>+        | ø44.5  | 5.0       | 5 V         | 0.40M   | -            | -      | E 8018-B2       |       |      | 150               | -       | 100% MPI /<br>LPI                  |
|         |   |   | SA 182 F12<br>CL 2     |        | ø10       |             |         |              |        | 8               |       |      |                   |         |                                    |
| 56      | STEAM COOLED SPACER<br>(FOR PLATEN ASSY.) | TUBE<br>+<br>PLATE                                      | SA 213 T22<br>+        | ø47.63 | 6.1       | 6D          | 0.42M   | -            | -      | E 7018-A1       |       |      | P5<br>SIDE<br>150 | -       | 100% LPI                           |
|         |   |   | SA240T4P310            |        | 10 THK    |             |         |              |        | 10              |       |      |                   |         |                                    |
| 57      | STEAM COOLED SPACER<br>(FOR PLATEN ASSY.) | TUBE<br>+<br>FIN(PLATE)                                 | SA 213 T11<br>+        | ø44.5  | 5.0       | 5D          | 1M      | -            | -      | E 8018-B2       |       |      | 150               | -       | 100% MPI /<br>LPI                  |
|         |   |   | IS2062<br>FE410WA      |        | 6 THK     |             |         |              |        | 14              |       |      |                   |         |                                    |
| 58      | STEAM COOLED SPACER<br>(FOR RH ASSY.)     | (RH) STEAM COOLED SPACER<br>TUBE<br>+ TUBE              | SA 210 GR.C<br>+       | ø44.5  | 4.0       | 4.0 V       | 4       | RT<br>1/2 MO | 177    |                 |       |      | -                 | -       | 10% RT MIN<br>1 WELD PER<br>WELDER |
|         |   |   | SA 210 GR.C            |        |           |             |         |              |        |                 |       |      |                   |         |                                    |
| 59      | STEAM COOLED SPACER<br>(FOR RH ASSY.)     | TUBE + TUBE<br>(ITEM 13 + HDR NIPPLE)<br>(ITEM04 + 05 ) | SA 213 T11<br>+        | ø44.5  | 4.0       | 4.0 V       | 2       | RT<br>1/2 MO | 89     |                 |       |      | 150               | -       | 10% RT MIN<br>1 WELD PER<br>WELDER |
|         |   |   | SA 210 GR.C            |        |           |             |         |              |        |                 |       |      |                   |         |                                    |

|          |                   |                  |          |                |
|----------|-------------------|------------------|----------|----------------|
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# ERECTION WELDING SCHEDULE

## PRESSURE PARTS

PROJECT: 250 MW.

PG(S): 12

PG NAME: SUPERHEATER

| SL. NO.  | DESCRIPTION                           | DESCRIPTION       | MATERIAL                        | SIZE             | THICKNESS    | WELD Specn.        | NO. OFF | TIG                     |                | ARC SPECN.(NOS) |       |      | PREHEAT °C | PWHT °C | MIN RECOMMENDED NDE             |
|----------|---------------------------------------|-------------------|---------------------------------|------------------|--------------|--------------------|---------|-------------------------|----------------|-----------------|-------|------|------------|---------|---------------------------------|
|          |                                       |                   |                                 |                  |              |                    |         | SPECN.                  | QTY gm         | ø2.5            | ø3.15 | ø4.0 |            |         |                                 |
| 60       | STEAM COOLED SPACER<br>(FOR RH ASSY.) | TUBE + TUBE       | SA 213 T11 + SA 213 T11         | ø44.5            | 5.0          | 5.0 √              | 11      | RT<br>1 1/4CR<br>1/2 MO | 99             | E 8018-B2       |       |      | 150        | -       | 10% RT MIN<br>1 WELD PER WELDER |
| 61       | STEAM COOLED SPACER<br>(FOR RH ASSY.) | TUBE + TUBE       | SA 213 T11 + SA 213 T11         | ø51.0            | 5.6          | 5.6 √              | 2       | RT<br>1 1/4CR<br>1/2 MO | 21             | E 8018-B2       |       |      | 150        | -       | 10% RT MIN<br>1 WELD PER WELDER |
| 62       | STEAM COOLED SPACER<br>(FOR RH ASSY.) | TUBE + PLATE      | SA 210 GR.C + SA 387 GR.22 CL2  | ø63.5            | 5.5 + 10 THK | 5 1/2 R            | 0.456M  | -                       | -              | E 7018          |       |      | 150        | -       | 100% MPI / LPI                  |
| 63       | STEAM COOLED SPACER<br>(FOR RH ASSY.) | TUBE + PLATE      | SA 213 T11 + SA 387 GR.22 CL2   | ø44.5            | 5.0 + 10 THK | 5 1/2 R (125 LONG) | 1 M     | -                       | -              | E 8018-B2       |       |      | 150        | -       | 100% MPI / LPI                  |
| 64       | STEAM COOLED SPACER<br>(FOR RH ASSY.) | TUBE + PLATE      | SA 210 GR.C + IS2062 FE410WA    | ø44.5            | 4.0 + 6 THK  | 3 ∇                | 0.20M   | -                       | -              | E 7018          |       |      | -          | -       | 10% MPI / LPI                   |
| 65       | STEAM COOLED SPACER<br>(FOR RH ASSY.) | PLATE + PLATE     | IS2062 FE410WA + IS2062 FE410WA | -                | 6 + 8        | 3 ∇                | 0.30M   | -                       | -              | E 7018          |       |      | -          | -       | 10% MPI / LPI                   |
| PREPARED |                                       | CHECKED ( DESIGN) |                                 | CHECKED ( W.T.C) |              |                    |         | DATE                    | DRAWING NO:    |                 |       |      |            |         |                                 |
| B.KORAH  |                                       | R.T               |                                 | G.S              |              |                    |         | 24.04.10                | 4-12-992-10921 |                 |       |      |            |         |                                 |

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 CAUTION:



# ERECTION WELDING SCHEDULE

## PRESSURE PARTS

PROJECT: 250 MW.

PG(S): 12

PG NAME: SUPERHEATER

| SL. NO.  | DESCRIPTION                           | DESCRIPTION       | MATERIAL                             | SIZE             | THICKNESS          | WELD Specn.    | NO. OFF | TIG      |                | ARC SPECN.(NOS) |       |      | PREHEAT °C         | PWHT °C | MIN RECOMMENDED NDE |  |
|----------|---------------------------------------|-------------------|--------------------------------------|------------------|--------------------|----------------|---------|----------|----------------|-----------------|-------|------|--------------------|---------|---------------------|--|
|          |                                       |                   |                                      |                  |                    |                |         | SPECN.   | QTY gm         | ø2.5            | ø3.15 | ø4.0 |                    |         |                     |  |
| 68       | STEAM COOLED SPACER<br>(FOR RH ASSY.) | TUBE + ROD        | SA 213 T11 + SA 182 F12 CL 2         | ø44.5            | 5.0 + ø10          | 5 √ (100LONG)  | 0.40M   | -        | -              | E 8018-B2       |       |      | 150                | -       | 100% MPI / LPI      |  |
| 69       | STEAM COOLED SPACER<br>(FOR RH ASSY.) | TUBE + PLATE      | SA 213 T11/ SA 213 T22 + SA240T4P310 | ø54.0            | 3.6 + 4.0 + 10 THK | 6 ∇ (35 LONG)  | 0.84M   | -        | -              | E 309           |       |      | 150 ON T11/22 SIDE | -       | 100% LPI            |  |
| 70       | STEAM COOLED SPACER<br>(FOR RH ASSY.) | TUBE + FIN(PLATE) | SA 213 T11 + IS2062 FE410WA          | ø44.5            | 5.0 + 6 THK        | 5 ∇ (150 LONG) | 1 M     | -        | -              | E 8018-B2       |       |      | 150                | -       | 100% MPI / LPI      |  |
|          |                                       |                   |                                      |                  |                    |                |         |          |                |                 |       |      |                    |         |                     |  |
| PREPARED |                                       | CHECKED ( DESIGN) |                                      | CHECKED ( W.T.C) |                    |                |         | DATE     | DRAWING NO:    |                 |       |      |                    |         |                     |  |
| B.KORAH  |                                       | R.T               |                                      | G.S              |                    |                |         | 24.04.10 | 4-12-992-10922 |                 |       |      |                    |         |                     |  |

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# ERECTION WELDING SCHEDULE

## PRESSURE PARTS

PROJECT: 250 MW.

PG(S): 12

PG NAME: SUPERHEATER

| SL. NO.  | DESCRIPTION                           | DESCRIPTION       | MATERIAL                        | SIZE             | THICKNESS    | WELD Specn.           | NO. OFF | TIG                     |                | ARC SPECN.(NOS) |       |      | PREHEAT °C | PWHT °C | MIN RECOMMENDED NDE             |
|----------|---------------------------------------|-------------------|---------------------------------|------------------|--------------|-----------------------|---------|-------------------------|----------------|-----------------|-------|------|------------|---------|---------------------------------|
|          |                                       |                   |                                 |                  |              |                       |         | SPECN.                  | QTY gm         | ø2.5            | ø3.15 | ø4.0 |            |         |                                 |
| 60       | STEAM COOLED SPACER<br>(FOR RH ASSY.) | TUBE + TUBE       | SA 213 T11 + SA 213 T11         | ø44.5            | 5.0          | 5.0 √                 | 11      | RT<br>1 1/4CR<br>1/2 MO | 99             | E 8018-B2       |       |      | 150        | -       | 10% RT MIN<br>1 WELD PER WELDER |
| 61       | STEAM COOLED SPACER<br>(FOR RH ASSY.) | TUBE + TUBE       | SA 213 T11 + SA 213 T11         | ø51.0            | 5.6          | 5.6 √                 | 2       | RT<br>1 1/4CR<br>1/2 MO | 21             | E 8018-B2       |       |      | 150        | -       | 10% RT MIN<br>1 WELD PER WELDER |
| 62       | STEAM COOLED SPACER<br>(FOR RH ASSY.) | TUBE + PLATE      | SA 210 GR.C + SA 387 GR.22 CL2  | ø63.5            | 5.5 + 10 THK | 5 1/2 R               | 0.456M  | -                       | -              | E 7018          |       |      | 150        | -       | 100% MPI / LPI                  |
| 63       | STEAM COOLED SPACER<br>(FOR RH ASSY.) | TUBE + PLATE      | SA 213 T11 + SA 387 GR.22 CL2   | ø44.5            | 5.0 + 10 THK | 5 1/2 R<br>(125 LONG) | 1 M     | -                       | -              | E 8018-B2       |       |      | 150        | -       | 100% MPI / LPI                  |
| 64       | STEAM COOLED SPACER<br>(FOR RH ASSY.) | TUBE + PLATE      | SA 210 GR.C + IS2062 FE410WA    | ø44.5            | 4.0 + 6 THK  | 3 ∇                   | 0.20M   | -                       | -              | E 7018          |       |      | -          | -       | 10% MPI / LPI                   |
| 65       | STEAM COOLED SPACER<br>(FOR RH ASSY.) | PLATE + PLATE     | IS2062 FE410WA + IS2062 FE410WA | -                | 6 + 8        | 3 ∇                   | 0.30M   | -                       | -              | E 7018          |       |      | -          | -       | 10% MPI / LPI                   |
| PREPARED |                                       | CHECKED ( DESIGN) |                                 | CHECKED ( W.T.C) |              |                       |         | DATE                    | DRAWING NO:    |                 |       |      |            |         |                                 |
| B.KORAH  |                                       | R.T               |                                 | G.S              |              |                       |         | 24.04.10                | 4-12-992-10921 |                 |       |      |            |         |                                 |

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# ERECTION WELDING SCHEDULE

## PRESSURE PARTS

PROJECT: 250 MW.

PG(S): 12

PG NAME: SUPERHEATER

| SL. NO.  | DESCRIPTION                           | DESCRIPTION       | MATERIAL                             | SIZE             | THICKNESS          | WELD Specn.    | NO. OFF | TIG      |                | ARC SPECN.(NOS) |       |      | PREHEAT °C         | PWHT °C | MIN RECOMMENDED NDE |  |
|----------|---------------------------------------|-------------------|--------------------------------------|------------------|--------------------|----------------|---------|----------|----------------|-----------------|-------|------|--------------------|---------|---------------------|--|
|          |                                       |                   |                                      |                  |                    |                |         | SPECN.   | QTY gm         | ø2.5            | ø3.15 | ø4.0 |                    |         |                     |  |
| 68       | STEAM COOLED SPACER<br>(FOR RH ASSY.) | TUBE + ROD        | SA 213 T11 + SA 182 F12 CL 2         | ø44.5            | 5.0 + ø10          | 5 √ (100LONG)  | 0.40M   | -        | -              | E 8018-B2       |       |      | 150                | -       | 100% MPI / LPI      |  |
| 69       | STEAM COOLED SPACER<br>(FOR RH ASSY.) | TUBE + PLATE      | SA 213 T11/ SA 213 T22 + SA240T4P310 | ø54.0            | 3.6 + 4.0 + 10 THK | 6 ∇ (35 LONG)  | 0.84M   | -        | -              | E 309           |       |      | 150 ON T11/22 SIDE | -       | 100% LPI            |  |
| 70       | STEAM COOLED SPACER<br>(FOR RH ASSY.) | TUBE + FIN(PLATE) | SA 213 T11 + IS2062 FE410WA          | ø44.5            | 5.0 + 6 THK        | 5 ∇ (150 LONG) | 1 M     | -        | -              | E 8018-B2       |       |      | 150                | -       | 100% MPI / LPI      |  |
|          |                                       |                   |                                      |                  |                    |                |         |          |                |                 |       |      |                    |         |                     |  |
| PREPARED |                                       | CHECKED ( DESIGN) |                                      | CHECKED ( W.T.C) |                    |                |         | DATE     | DRAWING NO:    |                 |       |      |                    |         |                     |  |
| B.KORAH  |                                       | R.T               |                                      | G.S              |                    |                |         | 24.04.10 | 4-12-992-10922 |                 |       |      |                    |         |                     |  |