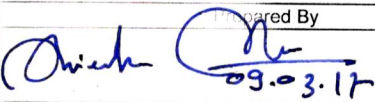
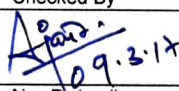
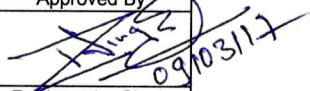


|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | PLANT PURCHASE SPECIFICATION                                                                                                                                             |                                                                                                                | No.                                                                                                              | BHEL/FP/TS/31 |        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|---------------|--------|
|                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | FABRICATION PLANT                                                                                                                                                        |                                                                                                                | Rev. No.                                                                                                         | 02            |        |
|                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | DEPARTMENT: PRODUCTION                                                                                                                                                   |                                                                                                                | Rev. Dt.                                                                                                         | 09.03.2017    |        |
|                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                          |                                                                                                                |                                                                                                                  |               |        |
| CSU & FP, Jagdishpur                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                          |                                                                                                                |                                                                                                                  |               |        |
| <b>Technical Specification for Neutural Fused Flux F7P2 - EM 12 K/EH14</b>                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                          |                                                                                                                |                                                                                                                  |               |        |
| Sr. No.                                                                                                                                                             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Requirement                                                                                                                                                              | Vednor to Furnish/Confirm                                                                                      | Offered                                                                                                          | Deviation     | Remark |
| 1                                                                                                                                                                   | <b>Technical Details:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                          |                                                                                                                |                                                                                                                  |               |        |
| 1.1                                                                                                                                                                 | F7P2 - EM 12 K/EH14                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | As per SFA 5.17 of ASME Sec IIC Ed 2013                                                                                                                                  |                                                                                                                |                                                                                                                  |               |        |
| 1.2                                                                                                                                                                 | Flux Type                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Neutral Fused Flux                                                                                                                                                       |                                                                                                                |                                                                                                                  |               |        |
| 1.3                                                                                                                                                                 | Particle Size                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 20 to 100 mesh                                                                                                                                                           |                                                                                                                |                                                                                                                  |               |        |
| 1.4                                                                                                                                                                 | Weight of packet                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 25 kgs to 50 kgs                                                                                                                                                         |                                                                                                                |                                                                                                                  |               |        |
| 1.5                                                                                                                                                                 | Flux Form and particle size                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | As per SFA 5.17 of Clause 17.1 ASME Sec IIC Ed 2013                                                                                                                      |                                                                                                                |                                                                                                                  |               |        |
| 1.6                                                                                                                                                                 | Usability                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | As per SFA 5.17 of Clause 17.2 ASME Sec IIC Ed 2013                                                                                                                      | Vendor to Confirm                                                                                              |                                                                                                                  |               |        |
| 1.7                                                                                                                                                                 | Packaging                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | As per SFA 5.17 of Clause 17.3 ASME Sec IIC Ed 2013                                                                                                                      |                                                                                                                |                                                                                                                  |               |        |
| 1.8                                                                                                                                                                 | Marking of packages                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | As per SFA 5.17 of Clause 17.4 ASME Sec IIC Ed 2013                                                                                                                      |                                                                                                                |                                                                                                                  |               |        |
| 1.9                                                                                                                                                                 | Storage and Drying condition                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | All details regarding storage, drying condition and shelf life.                                                                                                          | Vendor to sepecify                                                                                             |                                                                                                                  |               |        |
| 2                                                                                                                                                                   | <b>Tests Required for Flux</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                          |                                                                                                                |                                                                                                                  |               |        |
| 2.1                                                                                                                                                                 | * Tensile Test                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | As per SFA 5.17 of ASME Sec IIC Ed 2013                                                                                                                                  |                                                                                                                |                                                                                                                  |               |        |
| 2.2                                                                                                                                                                 | * Impact test (Charpy): 5 Samples at - 20 °F on 2 mm V - notch                                                                                                                                                                                                                                                                                                                                                                                                                                 | Average of three samples (Discarding Highest and lowest values): 27 J min.<br>Two of the values used for computing average shall $\geq$ 27 J<br>Single Value (Min) : 20J |                                                                                                                |                                                                                                                  |               |        |
| 2.3                                                                                                                                                                 | * The test mentioned at clause 2.1 and 2.2 to be done after carrying out PWHT as mentioned at clause 3                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                          | Vendor to Confirm                                                                                              |                                                                                                                  |               |        |
| 2.4                                                                                                                                                                 | A packet 25 Kgs to be submitted along with the offer for further technical evaluation, if required. Vendor to submit samples within 7 days after intimation by BHEL. We will check the following characteristic:<br>a) Finish and Uniformity of weld bead<br>b) Slag Removal<br>c) Porosity and undercut<br>d) No smoke<br>The parametrs for welding will be as follows:<br>Current: 350- 500 A<br>Voltage: 30 - 36 V<br>Electrode extension: 25 $\pm$ 6 mm<br>Travel speed: 250 - 450 mm /min |                                                                                                                                                                          | Vendor to Confirm                                                                                              |                                                                                                                  |               |        |
| <b>QUALIFYING CONDITIONS:</b>                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                          |                                                                                                                |                                                                                                                  |               |        |
| 3.1                                                                                                                                                                 | Only those makes and brand shall be quoted of which atleast 5 Ton is supplied to any heavy fabrication industries in the past 3 years and the flux has performed satisfactorily. The following information is to be submitted by the vendor about the companies where the quoted wire has been supplied.                                                                                                                                                                                       |                                                                                                                                                                          | Vendor to Confirm                                                                                              |                                                                                                                  |               |        |
| 3.2                                                                                                                                                                 | Name of the customer / company where flux has been supplied.                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                          | Vendor to specify                                                                                              |                                                                                                                  |               |        |
| 3.3                                                                                                                                                                 | Complete postal address of the customer.                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                          | Vendor to specify                                                                                              |                                                                                                                  |               |        |
| 3.4                                                                                                                                                                 | Year of supply.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                          | Vendor to specify                                                                                              |                                                                                                                  |               |        |
| 3.5                                                                                                                                                                 | Application for which the Flux is supplied with details.                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                          | Vendor to specify                                                                                              |                                                                                                                  |               |        |
| 3.6                                                                                                                                                                 | Name and designation of the contact person of the customer                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                          | Vendor to specify                                                                                              |                                                                                                                  |               |        |
| 3.7                                                                                                                                                                 | Phone, FAX no. and email address of the contact person of the customer.                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                          | Vendor to specify                                                                                              |                                                                                                                  |               |        |
| 3.8                                                                                                                                                                 | BHEL reserves the right to verify information provided by vendor. In case the information provided by vendor is found to be false / incorrect, the offer shall be rejected.                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                          | Vendor to specify                                                                                              |                                                                                                                  |               |        |
| Signature                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Prepared By<br><br>09.03.17                                                           | Checked By<br><br>09.3.17 | Approved By<br><br>09/03/17 |               |        |
| Name                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | SHIVANSHU SHARMA                                                                                                                                                         | Ajay Dwivedi                                                                                                   | Raghvendra Singh                                                                                                 |               |        |
| Designation                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Engineer                                                                                                                                                                 | Dy. Manager                                                                                                    | Sr. Manager                                                                                                      |               |        |
| Date of issue                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 09.03.2017                                                                                                                                                               |                                                                                                                |                                                                                                                  |               |        |