


ANNEXURE-I to CORRIGENDUM #1

|  Energising Quality | CONTRACTOR | | QUALITY ASSURANCE PLAN FOR SOLAR SYSTEM EQUIPMENT | | | | CLIENT: | | M/s IGGL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | ORDER NO. & DATE | | | | | | PROJECT: | | M/s Indradhanush Gas Grid Limited | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | SUB-CONTRACTOR | | | | | | PACKAGE NO. | | Section 10-11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | DOC. NO. & DATE:- | | | | | | C221052-SPS-EI-QAP-4001 | | PACKAGE NAME | | SOLAR POWER SYSTEM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| INSTRUCTIONS FOR FILLING UP : 1. QAP shall be submitted for each of the equipment separately with break up of assembly/sub-assembly & part/component or for group of equipment having same specification. 2. Use numerical codes as indicated for extent of inspection & tests and submission of test certificates & documents. Additional codes & description for extent of inspection & tests may be added as applicable for the plant and equipment 3. Separate identification number with quantity for equipment shall be indicated wherever equipment having same specifications belonging to different facilities are grouped together. 4. Weight in tonnes (T) must be indicated under column 5 for each item. Estimated weights may be indicated wherever actual weights are not available. | | | | | | CODES FOR EXTENT OF INSPECTION, TESTS, TEST CERTIFICATES & DOCUMENTS: <table border="0"> <tr> <td>Code</td> <td>Description</td> <td>Code</td> <td>Description</td> <td>Code</td> <td>Description</td> <td>DOCUMENTS:</td> </tr> <tr> <td>1.</td> <td>Visual</td> <td>12.</td> <td>Routine test as per relevant IS other standard</td> <td>23.</td> <td>Short time rating</td> <td>D1. Approved GA drawings</td> </tr> <tr> <td>2.</td> <td>Dimensional</td> <td>13.</td> <td>Type test as per relevant IS/ other standard</td> <td>24.</td> <td>Operational & functional check</td> <td>D2. Approved single line/ schematic diagram</td> </tr> <tr> <td>3.</td> <td>Fitment & Alignment</td> <td>14.</td> <td>Impulse Test</td> <td>25.</td> <td>Over Speed Test</td> <td>D3. Approved data sheet</td> </tr> <tr> <td>4.</td> <td>Physical Test (Sample)</td> <td>15.</td> <td>Partial Discharge Test</td> <td>26.</td> <td>Flame Proof Test</td> <td>D4. Approved bill of materials</td> </tr> <tr> <td>5.</td> <td>Chemical Test (Sample)</td> <td>16.</td> <td>Heat run test/temp rise.</td> <td>27.</td> <td>Clearance and Creepage Distance</td> <td>D5. Unpriced P.O. copy</td> </tr> <tr> <td>6.</td> <td>Ultrasonic Test</td> <td>17.</td> <td>Enclosure Protection Test</td> <td>28.</td> <td>Acceptance Test</td> <td>D6. Calibration Certificate of all measuring instruments and gauges</td> </tr> <tr> <td>7.</td> <td>Magnetic Particle Test (MPT)</td> <td>18.</td> <td>Calibration</td> <td>29.</td> <td>Harmonics measurement</td> <td></td> </tr> <tr> <td>8.</td> <td>Radiography Test</td> <td>19.</td> <td>Noise & Vibration</td> <td></td> <td></td> <td></td> </tr> <tr> <td>9.</td> <td>Dye Penetration Test</td> <td>20.</td> <td>Test certificates for bought out components</td> <td></td> <td></td> <td></td> </tr> <tr> <td>10.</td> <td>Measurement of IR Value a) Before HV Test b) After HV Test</td> <td>21.</td> <td>Tank Pressure Test</td> <td></td> <td></td> <td></td> </tr> <tr> <td>11.</td> <td>High Voltage test/Dielectric test</td> <td>22.</td> <td>Paint shade verification</td> <td></td> <td></td> <td></td> </tr> </table> | | | | | | Code | Description | Code | Description | Code | Description | DOCUMENTS: | 1. | Visual | 12. | Routine test as per relevant IS other standard | 23. | Short time rating | D1. Approved GA drawings | 2. | Dimensional | 13. | Type test as per relevant IS/ other standard | 24. | Operational & functional check | D2. Approved single line/ schematic diagram | 3. | Fitment & Alignment | 14. | Impulse Test | 25. | Over Speed Test | D3. Approved data sheet | 4. | Physical Test (Sample) | 15. | Partial Discharge Test | 26. | Flame Proof Test | D4. Approved bill of materials | 5. | Chemical Test (Sample) | 16. | Heat run test/temp rise. | 27. | Clearance and Creepage Distance | D5. Unpriced P.O. copy | 6. | Ultrasonic Test | 17. | Enclosure Protection Test | 28. | Acceptance Test | D6. Calibration Certificate of all measuring instruments and gauges | 7. | Magnetic Particle Test (MPT) | 18. | Calibration | 29. | Harmonics measurement | | 8. | Radiography Test | 19. | Noise & Vibration | | | | 9. | Dye Penetration Test | 20. | Test certificates for bought out components | | | | 10. | Measurement of IR Value a) Before HV Test b) After HV Test | 21. | Tank Pressure Test | | | | 11. | High Voltage test/Dielectric test | 22. | Paint shade verification | | | |
| Code | Description | Code | Description | Code | Description | DOCUMENTS: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. | Visual | 12. | Routine test as per relevant IS other standard | 23. | Short time rating | D1. Approved GA drawings | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. | Dimensional | 13. | Type test as per relevant IS/ other standard | 24. | Operational & functional check | D2. Approved single line/ schematic diagram | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. | Fitment & Alignment | 14. | Impulse Test | 25. | Over Speed Test | D3. Approved data sheet | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. | Physical Test (Sample) | 15. | Partial Discharge Test | 26. | Flame Proof Test | D4. Approved bill of materials | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. | Chemical Test (Sample) | 16. | Heat run test/temp rise. | 27. | Clearance and Creepage Distance | D5. Unpriced P.O. copy | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6. | Ultrasonic Test | 17. | Enclosure Protection Test | 28. | Acceptance Test | D6. Calibration Certificate of all measuring instruments and gauges | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7. | Magnetic Particle Test (MPT) | 18. | Calibration | 29. | Harmonics measurement | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8. | Radiography Test | 19. | Noise & Vibration | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9. | Dye Penetration Test | 20. | Test certificates for bought out components | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10. | Measurement of IR Value a) Before HV Test b) After HV Test | 21. | Tank Pressure Test | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11. | High Voltage test/Dielectric test | 22. | Paint shade verification | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ABBREVIATIONS USED : CONTR : CONTRACTOR MFR : MANUFACTURER | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EQUIPMENT DETAILS | | | | | | | INSPECTION AND TESTS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sl. No. | Description (With equipment heading, place of use, and Brief Specifications) | Identificatuin No. | Quantity | | Manufacturer's Name and Address | Expected schedule of Final Inspection | Raw Material and inprocess stage inspection | | | Final Inspection/Test by | | | Test Certificates & documents to be submitted to VCS / IGGL | Acceptance Criteria Standards /IS/ BS/ASME/ Norms and Documents | REMARKS / SAMPLING PLAN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | No/M | T | | | MFR | CONTR | VCS | MFR | CONTR/ TPI | VCS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.0 | LT Power and Control Cable | | Mtr | | | | - | - | - | 1,10,11, 12,13, 28 | 1,2,10,11, 12, 28 | - | 12,13,28 D3, D5, D6, | I.S., Data Sheet, Specifications & Test Certificate | 12, 13 Document to be reviewed by VCS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.0 | Solar Array/Module with complete hardware (JBs, Mounting Structure etc) | | Nos. | | | | 1,2,3,4, 24, 27 | - | - | 1,2,3,12, 13, 29 | 1,2,3,12, 28, 29 | - | D1, D2, D3, D4, D5, D6, 20, 12,13,17,29 | Tech. Specification, Approved Drawings, BIS 14286 & Applicable IS & IEC standards | 12, 13 Document to be reviewed by VCS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.0 | Solar charge controller, Grid Charger (FCBC), PCU, Inverter, DCDB & DC-DC Converter | | Set | | | | 1,2,3,4, 24, 27 | | | 1,2,3,12, 16, 22, 23,24,27 | 1,2,3,12, 16, 22, 23,24,27 | | D1, D2, D3, D4, D5, D6, 20, 12,13 | Tech. Specification, Approved Drawings & Data Sheets applicable IS & IEC standards | (*) 12 hour heat run test 12, 13 Document to be reviewed by VCS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4.0 | Battery Set-Solar system | | Set | | | | 1,2,3,4, 24,27 | - | - | 1,2,3,12, 13 | 1,2,28 | - | D1, D3, D4, D5, D6, 12,13,20 | Tech. Specification, Approved Drawings & Data Sheets Test certificates applicable IS & IEC standards | 12, 13 Document to be reviewed by VCS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5.0 | Solar Street light system | | Nos. | | | | 1,2,3,12, 24 | - | - | 1,2,3,12, 24 | 1,2,3,12, 24 | - | D1, D3, D4, D5, D6, 12,13,20 | Tech. Specification, Approved Drawings & Data Sheets Test certificates | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | Q.A.P. NO. C221052-SPS-EI-QAP-4001 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| For Manufacturer (Stamp & Signature) | | | For CONTR (Stamp & Signature) | | | For VCS (Stamp & Signature) | | | SHEET 1 OF 1 REV-0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Inspection will not be conducted by VCS, Dispatch clearance based on the TPI inspection report will be given.
 TPI appointed by manufacturer/Contractor shall be from the list of approved TPI attached with the Tender.