

TD-106-1 Rev No. 5	Form No.		PROJECT ENGINEERING & SYSTEMS DIVISION BHEL RC PURAM, HYDERABAD -32		Doc.No: PY60062
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COPYRIGHT AND CONFIDENTIAL The information on this document is the property of BHARAT HEAVY ELECTRICALS LIMITED, It must not be used directly or indirectly in any way detrimental to the interest of the company. <u>TECHNICAL SPECIFICATION</u> <u>FOR SUPPLY OF</u> <u>MODULE MOUNTING STRUCTURE (MMS)</u> <u>SUPERSTURCTURE FOR O & M</u> <u>PROJECT</u> : <u>1X50 MWp SPV POWER PLANT,NTPC,MANDSAUR,MP</u> <u>CUSTOMER</u> : <u>NATIONAL THERMAL POWER CORPORATION LIMITED</u>					
Ref. Doc.	Prepared By: K SYAMALA RAO	Checked By : VENU GOPAL P	Approved By : ESHAN CHANDRA	Date : 07.03.19	

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COPYRIGHT AND CONFIDENTIAL The information on this document is the property of BHARAT HEAVY ELECTRICALS LIMITED . It must not be used directly or indirectly in any way detrimental to the interest of the company. A. INTRODUCTION National Thermal Power Corporation Ltd (NTPC), a premier Maharatna public sector undertaking in the field of power generation, having a 250 MWp solar PV power plant, primarily at two villages Runija & Gujerkhedi (Tehsil Suwasra), Mandasaur Dist., Madhya Pradesh state. The entire 250 MWp solar PV power plant comprises of five nos. blocks of capacity 50 MWp each. BHEL having a set up in P4 block of 50 MWp capacity. <table border="1" style="width: 100%;"> <tr> <td>Plant Location</td> <td>:</td> <td>Mandasaur District</td> </tr> <tr> <td>State</td> <td>:</td> <td>Madhya Pradesh</td> </tr> <tr> <td>Nearest Important Town</td> <td>:</td> <td>Suwasra (Tehsil)</td> </tr> <tr> <td>Nearest Railway Station</td> <td>:</td> <td>Suwasra</td> </tr> <tr> <td>Nearest Airport</td> <td>:</td> <td>Udaipur</td> </tr> <tr> <td>Nearest National Highway:</td> <td></td> <td>NH-14</td> </tr> </table> The PV modules shall be mounted on metallic structures called Module Mounting Structures (MMS). This document describes the technical specification for MMS spares for O & M. B. SCOPE This specification covers the supply of structural elements of MMS for O &M (refer annexure-1) as detailed below: <table border="1" style="width: 100%;"> <thead> <tr> <th>Variant No.</th> <th>Scope of Supply</th> <th>BHEL Material Code</th> <th>Remarks</th> </tr> </thead> <tbody> <tr> <td>01</td> <td> MMS-Super Structure for O&M -1Set comprise BR1 - 100Nos. , BR4 - 100Nos., BR7 - 229Nos., BR2 - 875Nos., BR5 - 1000Nos., BR8 - 800Nos., BR3A - 8Nos., BR3B - 8Nos., BR6A - 8Nos., BR6B - 8Nos., BR9A - 8Nos., BR9B - 9Nos. </td> <td>PY9760062011</td> <td>Bracings members with punctured holes.</td> </tr> </tbody> </table>					Plant Location	:	Mandasaur District	State	:	Madhya Pradesh	Nearest Important Town	:	Suwasra (Tehsil)	Nearest Railway Station	:	Suwasra	Nearest Airport	:	Udaipur	Nearest National Highway:		NH-14	Variant No.	Scope of Supply	BHEL Material Code	Remarks	01	MMS-Super Structure for O&M -1Set comprise BR1 - 100Nos. , BR4 - 100Nos., BR7 - 229Nos., BR2 - 875Nos., BR5 - 1000Nos., BR8 - 800Nos., BR3A - 8Nos., BR3B - 8Nos., BR6A - 8Nos., BR6B - 8Nos., BR9A - 8Nos., BR9B - 9Nos.	PY9760062011	Bracings members with punctured holes.
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COPYRIGHT AND CONFIDENTIAL The information on this document is the property of BHARAT HEAVY ELECTRICALS LIMITED. It must not be used directly or indirectly in any way detrimental to the interest of the company.		C. MATERIAL SPECIFICATION MMS bracings shall conform to Indian standards as mentioned in the list of code. Refer Annexure-1 for details of structural members. All cold formed sections shall be minimum yield stress 350MPa. IS: 2062 - Hot Rolled Medium and High Tensile Structural Steel IS: 811 - Cold Formed Light Gauge Structural Steel Sections The minimum thickness of MMS bracings shall be 2mm and 3mm without galvanization. All materials shall be fabricated in shop such that welding in field shall not be required. Activities like Welding, Galvanisation, Punching of holes etc., are not allowed at site. D. COATING FOR STRUCTURAL STEEL WORKS MMS bracings shall be of MS hot dip galvanized. Hot dip galvanization shall be as per IS: 4759 and the coating minimum thickness shall be maintained by 85 micron. IS: 4759 - Hot-dip zinc coatings on structural steel and other allied products E. SUB VENDOR FOR STRUCTURAL STEEL Vendor shall procure the raw materials (steel sheets/strips/plates etc as per BHEL drawing) from main steel producers like SAIL, TISCO, RINL, Essar Steel, Ispat Industries, JSW Steel, Lloyds Steel Industries, Jindal Steel & Power and Sunflag Steel & Iron Co., Bhandara [only for rounds (15-105mm), flats (45-120 mm width & 4.75-28 mm thick), hex rods (15.5-42 mm) and wire rods (5.5-38 mm)]. The bidder should furnish documentary evidence to prove above. F. INSPECTION BHEL shall provide dispatch clearance after inspection of material and verifying that the documents are in order. G. MANUFACTURING QUALITY PLAN (MQP) A typical sample of MQP for the MMS items is enclosed along with this tender. Vendor shall use this document as reference for preparation and submission of test reports. Refer Annexure-2.		
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COPYRIGHT AND CONFIDENTIAL The information on this document is the property of BHARAT HEAVY ELECTRICALS LIMITED . It must not be used directly or indirectly in any way detrimental to the interest of the company.			H. TESTING AND TEST REPORTS For every lot of dispatch, vendor shall submit MTC (Material Test Certificate) and other Factory Acceptance/Routine test reports as per MQP. BHEL/NTPC shall provide dispatch clearance after verifying that the documents are in order. In the absence of MTC of raw materials from the sub-vendor, certificate from NABL approved third party laboratory shall be furnished for one sample of each type of section per offered lot. BHEL/NTPC reserves the rights to carry out surveillance visits at the works of vendor/ galvanizer to check/ monitor the MMS structure manufacturing/ galvanizing processes as and when required. Random samples may also be selected from the works or from the site (after supply) for testing at NTPC approved third party laboratory. Testing charges shall be borne by the vendor.		
			I. MARKING INSTRUCTIONS All items shall have unique identification number. The identification number of each item shall be stencilled with red paint in bold letters on every part on 100% basis.		
			J. PACKING INSTRUCTIONS The MMS items shall be packed in bundles with steel straps. Necessary precautionary provisions (strips of plastic, fiber, rubber etc) shall be used to prevent the steel straps from damaging the galvanized surface. Adequate quantity of steel straps shall be provided depending upon the length of MMS items. Bundles shall be with appropriate lot quantity (50 Nos, 100 Nos etc per bundle) to facilitate ease of handling and accounting. Bundles shall be provided with name tags giving part number, quantity and month of manufacturing.		
			K. NOTES TO BIDDER a) Bidders are advised to contact BHEL for essential technical queries in writing during pre-bid stage. In case no such clarifications are sought during pre-bid stage, it will be assumed that bidder has no comments or observations on BHEL's specification and no deviations from the specifications are taken by the bidder. b) Offers with incomplete information will not be considered for evaluation, and are likely to be rejected outright without any further interaction with the Bidder. c) In the event of any conflict between these specifications, drawings, related standards, codes etc. the vendor shall refer the matter to the purchaser for clarifications during pre-bid stage. d) BHEL/NTPC reserves the rights to carry out surveillance visits at the works of vendor/ galvanizer to check/ monitor the MMS structure manufacturing/ galvanizing processes as and when required. e) PO/LOA date considered as manufacturing clearance date.		
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COPYRIGHT AND CONFIDENTIAL The information on this document is the property of BHARAT HEAVY ELECTRICALS LIMITED . It must not be used directly or indirectly in any way detrimental to the interest of the company. L. DELIVERY SCHEDULE The schedule for delivery of items at site shall be as follows: a) <u>For Supply of MMS super structure for O & M (BHEL Material Code: PY9760062011)</u> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Schedule of Delivery</th> <th>% Quantity</th> </tr> </thead> <tbody> <tr> <td>04 weeks from PO date</td> <td>100</td> </tr> </tbody> </table> M. LIST OF ANNEXURES Following input documents and specifications are enclosed to facilitate the bidder to furnish the offer: <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Annexure No.</th> <th>Document/ Drawing Title</th> <th>Doc. No.</th> <th>Rev</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>List of Items and drawings</td> <td>ANNEXURE-1</td> <td>00</td> </tr> <tr> <td>2</td> <td>QAP Guidelines and Format</td> <td>ANNEXURE-2</td> <td>00</td> </tr> <tr> <td>3</td> <td>Pre-Bid Queries format</td> <td>ANNEXURE-3</td> <td>00</td> </tr> <tr> <td>4</td> <td>No deviation format</td> <td>ANNEXURE-4</td> <td>00</td> </tr> <tr> <td>5</td> <td>Price bid format</td> <td>ANNEXURE-5</td> <td>00</td> </tr> </tbody> </table> Notes: Incase if bidder found any document/annexure no. listed in the technical specification and is missing from the attachment, it is bidder's responsibility to highlight the missing attachment.					Schedule of Delivery	% Quantity	04 weeks from PO date	100	Annexure No.	Document/ Drawing Title	Doc. No.	Rev	1	List of Items and drawings	ANNEXURE-1	00	2	QAP Guidelines and Format	ANNEXURE-2	00	3	Pre-Bid Queries format	ANNEXURE-3	00	4	No deviation format	ANNEXURE-4	00	5	Price bid format	ANNEXURE-5	00
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