



BHEL Tender Enquiry No. B/4011/2024/0192/V1 for the requirement of Boroscopic Video Image Kit for Mahan and Lara projects on GeM Portal

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**BHARAT HEAVY ELECTRICALS
LIMITED, HARIDWAR**
**STEAM TURBINE ENGINEERING
Department**

DOCUMENT NO.
STE/TE/PQR/MUK/4
Dt: 09/04/2021
Pg. No. 1 of 1

Pre-Qualification Requirement for Boroscopic Video Image Kit for Steam Turbine(BHEL)

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This system should consist of video-probe, light and power source as required, CCD camera, camera control unit function, handy LCD monitor, suitable USB video port with software for simultaneous view of inspection at personal computer and others essential accessories along with necessary software for viewing, recording as well as measuring of defects or discontinuity.

The following pre-qualification criteria is proposed for agency interested in supplying Boroscopic Video Image Kit:

1. Vendor should have the status of either as OEM or the authorized dealer of an OEM (Valid agency agreement with the OEM to be submitted by the authorized dealer) of Boroscopic Video Image Kit (i.e. Borescope Inspection Equipment).
2. Vendor must have the experience of supply of Boroscopic Video Image Kit and its commissioning at site during the last 07(seven) years from the date of enquiry.
In support of above, vendor to furnish following documents:
 - 2.1 Unpriced purchase order copy of supply
 - 2.2 Document regarding commissioning at site (signed protocol/MOM etc with end customer)
3. Vendor must have at least one full-fledged service centre in India for Boroscopic Video Image Kit. In support of this, vendor to furnish document from OEM providing details of service centres in India.
4. Vendor to confirm to comply to BHEL drawing requirements in totality.

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BUYERS SPECIFIC ADDITIONAL TERMS & CONDITIONS
ITEM NAME: BOROSCOPIC VIDEO IMAGE KIT
PROJECT- Mahan & Lara

1. SCOPE OF ENQUIRY:

E-bids on GeM portal are invited from bidders for the supply of **BOROSCOPIC VIDEO IMAGE KIT** for **PROJECT** as per requirement mentioned below:

Sl. No.	Material Code & Item Description	Total Quantity& project	LOT Quantity & Delivery schedule
1	W90312120010 DRG: 31212056000 REV: 02 BOROSCOPIC VIDEO IMAGE KIT AS PER DRG. NO. 31212056000 ItemId: BT125	Mahan-01 SET	03.11.2025
2	W90312120010 DRG: 31212056000 REV: 02 BOROSCOPIC VIDEO IMAGE KIT AS PER DRG. NO. 31212056000 ItemId: BT125	Lara-01 SET	02.03.2026

2. Project Detail:

Project Name	2X800 MW USCTPP MAHAN (PH-II), SINGRAULI, MP
Consignee Address	Mahan Energen Limited. 2x800 MW (Phase-II) Thermal Power Project Village: Bandhaura, Karsul Tehsil: Waidhan, District. Singrauli-486886 (Madhya Pradesh)
Project Name	2X660 MW NTPC TALCHER PROJECT
Consignee Address	NTPC LIMITED, LARA SUPER THERMAL POWER PROJECT STAGE - II (2X800 MW) Distt. Raigarh, State chhattisgarh

3.BUYERS SPECIFIC ADDITIONAL TERMS & CONDITIONS IN ADDITION TO GTC

Sl. No.	Terms	Description	Supplier confirmation
1.	Documents Checklist:	<p>Please submit signed and stamped copy of your offer on each page along with following documents;</p> <ul style="list-style-type: none"> • Buyer Specific T&C. • Technical PQR & its supportive document. • Technical drawing & purchase specification. • Certificate/self-certification for minimum local content as per PPP-MII order. • Replica of price bid schedule without prices with part-I offer. 	
2.	Compliance of	General Terms and Conditions on GeM 4.0 (Version 1.15) Dt. Dtd 13.06.2024 or it's	

	GTC on GeM	latest revision of GeM portal shall be applicable against this enquiry. Kindly confirm to compliance the same for this tender.	
3.	Pre-Qualification Requirements	The Pre-Qualification Requirements have been compiled. All the bidders should ensure submission of complete details and documents as called for in these requirements. The Offers submitted by the bidders would be scrutinized with respect to Pre-Qualification Requirements first. Techno-Commercial offer of only those bidders shall be evaluated who meet the Pre-Qualification Requirements.	
4.	Customer approval requirement	<p>End User approval is mandatory requirement for considering your offer in this tender for Mahan & Lara projects. Kindly submit your credentials with all supporting documents along with your offer for take up your approval with End User.</p> <p>Supplier to submit following credentials for arranging Customer approval:-</p> <ul style="list-style-type: none"> • Company Profile • List of Order Executed/ on hand for Power Sector/Gov. organization of same /similar items • Copy of Major Supply Orders • Performance Certificates for Satisfactory working of System/ Equipment from end users Item. <p>Price bid of the offer of only those bidders who will be approved by the End User will be considered for price bid opening.</p>	
5.	Make in India Clause	<p>“For this procurement, the local content to categorize a supplier as a Class-I Local Supplier / Class-II Local Supplier/ Non-Local Supplier and purchase preference to Class-I Local Supplier, is as defined in Public Procurement (Preference to Make in India), Order-2017 Ref. No. P-45021/2/2017-PP (BE-II) dtd. 04/06/2020 issued by DPIIT. In case of subsequent orders issued, by the nodal ministry, changing the definition of local content for the items of this NIT, but before opening of Part-II bids against this NIT</p> <p>As per Make in India Order, only Class-1 and Class-2 local supplies are eligible to bid in this tender enquiry.</p> <p>For this eligibility criteria, bidders are required to submit certificate of Minimum local content as specified in attached Make In India Declaration format.</p>	
6.	Compliance of Rule 144 (xi) of GFR 2017	Compliance of Restrictions under Rule 144 (xi) of GFR 2017 shall be as per GeM.	
7.	Bid validity/ Validity of offer	<p>Please note that validity of the offer shall be 180 days from the date opening of Techno-Commercial bid (Part-I bid) on GeM portal.</p> <p>Offer of bidder's having validity less than 180 days shall liable to reject. Please confirm.</p>	
		The required validity is considering that offer is complete & clear w.r.t. PQR and all techno-commercial conditions. Vendors need to extend their offer validity for the time taken by them in responding BHEL's comments/clarification sought during techno-commercial scrutiny of the offer. In case regret by any bidder for such validity extension, their offer shall liable to be reject. Please confirm.	
8.	Prices/Basis of Quotation	<p>Prices: The offered prices of the items shall remain firm and fixed at any point of time and shall be indicated in INR for each accounting unit.</p> <p>Ensure to quote your price inclusive of Freight & GST for Total quantity on GeM portal.</p> <p>Transit Insurance would be arranged by BHEL. Please quote your prices accordingly.</p>	

		The prices are to be quoted on Ex-Works with freight Pre-paid up to project destination basis. The goods must be dispatched through any Bank approved transporters having their branch at Haridwar. The names and addresses of transporters approved by IBA as well as BHEL are posted at our website www.bhelhwr.co.in . Please note that, if you dispatch the material by any BHEL un-approved transporter then you will necessarily be required to furnish the MRC (Material Receipt Certificate) from respective Project Site for processing of your invoice. No demurrage charges would be borne by BHEL.									
9.	Demonstration and Training of the Equipment	<p>Kindly note that Demonstration and Training of the Equipment is required at each project site, kindly confirm that lump sum charges for per man day & per visit for each project , have been quoted separately on GeM portal .</p> <p>Kindly note that supplier to send the competent representative within 15 days from the intimation from BHEL.</p> <p>Please confirm that the charges quoted for Demonstration and Training of the Equipment shall be inclusive of applicable GST .</p>									
10.	Special Instructions:	<p>a. Lara project ;</p> <ul style="list-style-type: none"> Before shipment of material, vendor has to obtain QR code from BHEL and these QR codes (properly laminated) shall be affixed on package/boxes/crates/bundles of material to be supplied. while packing the material following is to be ensured. <p>b. Mahan project;</p> <ul style="list-style-type: none"> Invoice, GR/LR, packing list, Test certificate are required in original for billing to end user. Loose items one marker board needs to be send for each bundle for fixing RFID tag at site. 									
11.	Evaluation criteria	Evaluation shall be done on project wise on total landed cost upto respective BHEL Project Site considering all material codes and services together.									
12.	Evaluation Currency	The evaluation currency for this tender shall be INR.									
13.	Payment terms:	<p>For Material portion :</p> <p>The payment term shall be done after issue of consignee receipt-cum acceptance certificate (CRAC) /confirmation of receipt of material at project site as per the below details:</p> <table border="1"> <thead> <tr> <th>Type of Bidder</th><th>Payment Terms (Number of Days)</th></tr> </thead> <tbody> <tr> <td>Micro & Small Enterprises (MSEs)</td><td>45 days</td></tr> <tr> <td>Medium Enterprises</td><td>60 days</td></tr> <tr> <td>Non MSME</td><td>90 days</td></tr> </tbody> </table> <p>Subject to submission of non-discrepant documents.</p> <p>For Demonstration and Training of the Equipment:</p> <p>Successfully demonstration Certificate/confirmation of Successfully demonstration the equipment at project site through site/commercial & invoice directly to BHEL.</p>	Type of Bidder	Payment Terms (Number of Days)	Micro & Small Enterprises (MSEs)	45 days	Medium Enterprises	60 days	Non MSME	90 days	
Type of Bidder	Payment Terms (Number of Days)										
Micro & Small Enterprises (MSEs)	45 days										
Medium Enterprises	60 days										
Non MSME	90 days										
14.	GeM charges	GeM charges if any shall be either side only i.e. buyer's GeM charges shall be in buyer's account and seller's GeM charges shall be on seller's account. Please confirm.									
15.	Contract execution	Bidder's are advised to read GeM related query & clarification carefully on GeM portal. Order shall be executed through GeM.									

16.	Reverse Auction (E-bidding)	BHEL shall be resorting to Reverse Auction (RA) on GEM portal as per GEM functionalities for this tender. RA shall be conducted among the technocommercially qualified bidders.	
17.	Quantity Variation	<p>BHEL reserves the right to cancel tender or reject any or all the quotations without assigning any reasons thereof.</p> <p>BHEL also reserves the right to Increase or decrease the tendered quantities or quantity of individual material code may be dropped as a whole also.</p> <p>Vendors should be prepared to accept order for reduced Quantity without any extra charges. Vendor should also be prepared for giving discount in case of Increase in Quantity.</p> <p>Vendor has to take manufacturing clearance from BHEL before starting manufacturing of material. In case ordered quantity is reduced at the time of manufacturing clearance, then payment shall be made accordingly as per decreased quantity. Kindly confirm.</p>	
18.	Delivery Period	Please quote your project wise delivery completion period in line with BHEL project site requirement as mentioned in para "1" of this ATC in number of weeks/months from the date of Purchase Order.	
19.	Technical Requirement	Drawings/Data sheets/document/Quality plan as called for in the specifications/Drawings/Documents shall be submitted for approval to BHEL for BHEL/customer approval within 30 days of purchase order. Any delay in delivery on account of late submission of drawings shall be to vendors account. BHEL will arrange the approval of the drawings/data sheets/ documents within 30 days of their receipt provided those are complete in all respect. Any delay in documents submission/approval shall be on either side.	
20.	SPECIAL INSTRUCTION	<p>Please note that as per BHEL's Policy, we cannot allow Price impact for the requirement / scope of supply, which is a part of specifications of our tender enquiry. Hence please read all specification / documents thoroughly and submit your offer as per specifications of tender enquiry.</p> <p>In case of any confusion / un-clarity on any of the clause / requirement of specification, please clarify the same from BHEL before submission of offer.</p> <p>No deviation & request regarding un-clarity / contradictory conditions / ambiguity of specifications would be entertained after opening of techno-commercial offers. Further no price impact would be allowed for the requirement which is already part of the specifications of the tender enquiry, after opening of techno-commercial offers.</p> <p>Please note and confirm.</p>	
21.	Liquidated Damages (LD) for late delivery	<p>Liquidated Damages for late delivery w.r.t to contractual delivery shall be applicable @ 0.5% of the "lot-wise total order value" per week of delay or part thereof subject to a maximum of 10% of the "lot-wise total order value". Kindly confirm.</p> <p>The date of LR/GR would be treated as the date of delivery for penalty purposes.</p>	
22.	MDCC clause	<p>Please note that, material shall be dispatched only after issue of Material dispatch clearance certificate (MDCC) end customer. For issue of MDCC, vendors are required to submit all test certificates (TC) and inspection report of third party (IR) to BHEL. After review & acceptance of the quality document, BHEL will forward the same to end customer for issuance of MDCC.</p> <p>After receipt of complete quality documents / TCs, minimum 7 days would be required by BHEL for issuance of MDCC. Material shall be dispatched within 7 days</p>	

		from the the date of issuance of MDCC.	
23.	Force Majeure	<p>Notwithstanding any other thing contained anywhere else in the contract or PO (Purchase Order), In case the discharge of obligation under the contract by either party is impeded or made unreasonably onerous, neither party shall be considered in breach of the contract to the extent that performance of their respective obligation is prevented by an event of Force Majeure that arises after the effective date (PO date).</p> <p>In the above clause, Force Majeure means an event beyond the control of the parties to the contract which prevents a party from complying with any obligation of the contract including but not limited to:</p> <ul style="list-style-type: none"> a) Act of God (Such as but not limited to earthquake, drought, tidal waves, floods etc.). b) War (whether war be declared or not), Hostilities Invasion, Act of foreign enemy etc. c) Rebellion, revolution, insurrection, civil war etc. d) Contamination of Radio Activity from any nuclear fuel or from any other nuclear waste or any other hazardous materials. e) Riots, commotions, strike unless restricted to the employees of supplier. f) Acts of terrorism. <p>Other unforeseeable circumstances beyond the control of the parties and which the affected party cannot avoid even by using its best efforts.</p> <ul style="list-style-type: none"> h) Cancellation of contract by customer. i) Change in law / government. Regulation making the performance impossible. j) Pandemic or Epidemic. <p>The party claiming to be affected by force majeure shall notify the other party in writing immediately without delay on the intervention and on the cessation of such circumstances.</p> <p>Irrespective of any extension of time, if an event of force majeure occurs and its effect continues for more than 180 days the affected party shall have right to cancel the contract.</p> <p>As soon as reasonably practicable following the date of commencement of a Force Majeure Event, and within a reasonable time following the date of termination of a Force Majeure Event, either Party invoking it shall submit to the other Party reasonable proof of the nature of the Force Majeure Event and of its effect upon the performance of the Party's obligations under this Agreement.</p> <p>The party shall, and shall ensure that its Subcontractors shall, at all times take all reasonable steps within their respective powers and consistent with Good Operating Practices (but without incurring unreasonable additional costs) to:</p> <ul style="list-style-type: none"> a) Prevent Force Majeure Events affecting the performance of the party's obligations under this Agreement. b) mitigate the effect of any Force Majeure Event and c) Comply with its obligations under this Agreement. <p>If the war like situation has developed in a country where a seller's works is located in this P.O. or there is political instability and Indian Embassy located in that country forbids or advises for not having any business dealing with the sellers located in such zone / region/ country, then BHEL reserves the right to cancel the order.</p>	
24.	Action against Bidders / vendor / supplier /	In order to protect the commercial interests of BHEL, BHEL shall take action against supplies / contractors by way of suspension of business dealings, who either fail to perform or are in default without any reasonable cause, cause loss of business/ money/ reputation, indulge in malpractices, cheating, bribery, fraud or any other	

	contractor in case of default:	misconduct or formation of cartels so as to influence the bidding process or influence the price etc. Suspension of Business Dealings could be in the form of "Hold" or "Banning" a supplier/ contractor or a bidder and shall be as per "Guidelines for Suspension of Business Dealings with Suppliers/ Contractors" available at BHEL's website <u>https://www.bhel.com/guidelines-suspension-business-dealings-supplierscontractors</u>	
25.	Breach of contract	In case bidder to fail to full-fil the contractual obligations as per contract, Performance Security/Performance Bank Guarantee available with BHEL against the contract value, the same be encashed by BHEL. Further, legal remedies be pursued, levy of liquidated damages, debarment, termination, de-scoping, short-closure, etc., shall be applied as per provisions/extant guidelines of BHEL. Please confirm.	
26.	Conflict of interest:	A bidder shall not have conflict of interest with other bidders. Such conflict of interest can lead to anti-competitive practices to the detriment of Procuring Entity's interests. The bidder found to have a conflict of interest shall be disqualified. A bidder may be considered to have a conflict of interest with one or more parties in this bidding process, if: a) they have controlling partner (s) in common; or b) they receive or have received any direct or indirect subsidy/financial stake from any of them; or c) they have the same legal representative/agent for purposes of this bid; or d) they have relationship with each other, directly or through common third parties, that puts them in a position to have access to information about or influence on the bid of another Bidder; or e) Bidder participates in more than one bid in this bidding process. Participation by a Bidder in more than one Bid will result in the disqualification of all bids in which the parties are involved. However, this does not limit the inclusion of the components/ sub-assembly/ Assemblies from. one bidding manufacturer in more than one bid; or f) In cases of agents quoting in offshore procurements, on behalf of their principal manufacturers, one agent cannot represent two manufacturers or quote on their behalf in a particular tender enquiry. One manufacturer can also authorize only one agent/dealer. There can be only one bid from the following: 1. The principal manufacturer directly or through one Indian agent on his behalf; and 2. Indian/foreign agent on behalf of only one principal- or g) A Bidder or any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the contract that is the subject of the Bid- or h) In case of a holding company having more than one independently manufacturing units, or more than one unit having common business ownership/management, only one unit should quote. Similar restrictions would apply to closely related sister companies. Bidders must proactively declare such sister/ common business/ management units in same/ similar line of business.	
27.	Guarantee/Warranty clause	Kindly confirm the following Guarantee/Warranty clause; <ul style="list-style-type: none">• The supplier shall guarantee trouble free operation of the equipment for a period of 18 months from the date of dispatch or 12 months from the date of Demonstration of the Equipment whichever is earlier.• In case of any failure or trouble reported from site, the supplier should depute their representative immediately to attend the problem and replace the defective component/part if required, without any additional cost to BHEL. BHEL reserve the rights to reject the offers having lesser guarantee period as mentioned above.	
28.	Order Acceptance :	Ink signed order acceptance shall be furnished within 15 days of order placement. In case, order acceptance do not received within 15 days of order placement, PO deemed to be accepted by you.	

29.	Beneficiary of PO	Kindly confirm on whom the PO will be placed in the event of ordering.	
30.	Additional Conditions for Assessment	BHEL reserves the right to consider / Not-consider the offers based on the evaluation of documents submitted for the Pre-Qualification Criteria (PQR).	
		BHEL also reserves the right to have on-site assessment of the facilities at supplier's works during the bid evaluation.	
31.	O&M Manuals	Kindly confirm that in the event of ordering O&M manuals will be provided in 03 copies of O&M manual (including diagnostic philosophy i.e. Run/repair/replace criteria) in soft copy as well as hard copy should be supplied along with equipment.	
32.	Quality Requirement	Kindly confirm that Testing & Certification shall be done as per ordering drawing and specifications for MDCC of each project	

SPECIAL NOTE FOR BIDDERS:

Following documents are an integral part of this Tender Enquiry and endorsed copies of these documents (duly signed and stamped on each page, as a token of acceptance) are to be submitted/uploaded along with offer on GeM portal against this bid.

1. Please submit replica of Price schedule (without prices) showing "quoted" in place of price along with techno-commercial bid (Part-I).
2. Please submit signed & Stamped copy (each page) of duly filled of confirmation column of "Buyers Specific Additional Terms & Conditions (ATC)" and its clause wise supporting documents where required.
3. Please submit signed & stamped copy (each page) of General Terms and Conditions of GeM.
4. Please submit signed & stamped copy (each page) of PQR documents with proper filled information and related supporting documents as mentioned in PQR.
5. Please submit signed & stamped copy of QP .
6. Updated MSE/UAM certificate (if any).
7. Certification of Local content as per PPP-MII Order-2017 as per enclosed format .

Format for Self Certification under preference to Make in India order

Certificate

In line with Government Public Procurement Order No. P-45021/2/2017-PP (BE-II) dated 04.06.2020, we hereby certify that we M/s _____ (supplier name) are local supplier. The percentage of local content in the items _____ offered by us against Enquiry No. _____ is _____% (percentage).

Details of location at which local value addition will be made is as follows:

We also understand, false declarations will be in breach of the Code of Integrity under Rule 175(1)(i)(h) of the General Financial Rules for which a bidder or its successors can be debarred for up to two years as per Rule 151 (iii) of the General Financial Rules along with such other actions as may be permissible under law.

Sign & Stamped of the supplier

DRAWING NO. 3-12120-56000

INDUSTRIAL VIDEOIMAGESCOPE SYSTEM ALONG WITH ACCESSORIES

THE SYSTEM SHOULD CONSIST OF VIDEO-PROBE (WITH CCD LOCATED AT THE TIP OF THE PROBE), LIGHT AND POWER SOURCE AS REQUIRED, CCD CAMERA, CAMERA CONTROL UNIT FUNCTION, HANDY LCD MONITOR (SIZE NOT LESS THAN 6.0" INCH), SUITABLE USB VIDEO PORT WITH SOFTWARE FOR SIMULTANEOUS VIEW OF INSPECTION AT PERSONAL COMPUTER AND OTHERS ESSENTIAL ACCESSORIES ALONG WITH NECESSARY SOFTWARE FOR VIEWING, RECORDING AS WELL AS MEASURING OF DEFECTS OR DISCONTINUITY. EQUIPMENT SHOULD COMPLY BELOW SPECIFICATION.

1.	INSERTION TUBE LENGTH & DIAMETER	3.5 METER & 6.0 MM
2.	LCD MONITOR	NOT LESS THAN 6.0" LCD DAY LIGHT MONITOR . THE LCD SCREEN SHOULD BE INTEGRATED WITH THE EQUIPMENT AND SHOULD NOT BE OFFERED AS A SEPARATE MONITOR.
3.	POWER SUPPLY & BATTERY POWER BACKUP	100-240VAC/50HZ SINGLE PHASE , 2 HRS
4.	PROBE TECHNOLOGY & PROBE CONSTRUCTION.	TUNGSTEN BRAID
5.	LIGHT SOURCE	LED HAVING ILLUMINATION AT THE TIP FOR ADEQUATE VISIBILITY OF THE COMPONENT BEING VIEWED EVEN IN DARK. EQUIPMENT SHOULD HAVE FEATURE FOR AUTOMATIC LIGHT ILLUMINATION CONTROL.
6.	WEIGHT OF EQUIPMENT	MAX. 4.5 KGS.
7.	UNIT PROTECTION (MIN.)	IP55 RATING
8.	ARTICULATION & CONTROL	MIN 130 DEGREE, 4 WAY, SCOPE TIP ARTICULATION WITH ELECTRONIC POWER-ASSISTED, MANUAL ARTICULATION, CONTROL IS BY JOY STICK ONLY
9.	EQUIPMENT PROTECTION	EQUIPMENT SHOULD PROTECTED AGAINST, VIBRATION (GENERAL VIBRATION TEST), SHOCK (TRANSIT DROP TEST), WATER RESISTANCE , HUMIDITY, SAND AND DUST, SALT FOG, ELECTROMAGNETIC INTERFERENCE. BIDDERS TO SUBMIT TEST CERTIFICATE FOR THE SAME ALONG WITH TECHNICAL BID.
10.	SOFTWARE & ARTICULATION CONTROL	DEDICATED JOY STICK FOR SOFTWARE CONTROL & ARTICULATION CONTROL
11.	HAND HELD CONTROLLER & OPERATIONAL KEYS	USER FRIENDLY HAND HELD CONTROLLER. ALL QUICK ACCESS BUTTON ON CONTROLLER FOR FREQUENTLY USED FUNCTIONS SUCH AS LIVE MODE, BRIGHTNESS, ZOOM, FREEZE IMAGE, RECORD STILL/VIDEO, ARTICULATION CONTROL, ARTICULATION LOCK, MENU ACCESS, SAVED RECORDING INDEX ACCESS, QUICK LAST IMAGE RECALL
12.	PDF VIEW	EQUIPMENT SHOULD HAVE FEATURE TO UPLOAD & VIEW PDF.
13.	MEASUREMENT & MEASUREMENT FUNCTION:	STEREO - MEASUREMENT ONLY.
A.	DISTANCE	DISTANCE BETWEEN TWO POINTS.
B.	POINT ON LINE	PERPENDICULAR DISTANCE BETWEEN A POINT AND A USER-DEFINED LINE
C.	DEPTH	ORTHOGONAL DEPTH/HEIGHT DISTANCE BETWEEN A POINT AND A USER-DEFINED PLANE.
D.	AREA	MULTIPLE POINT CIRCUMFERENCE AND AREA MEASUREMENT.
14.	TEMPERATURE SENSOR	EQUIPMENT SHOULD HAVE 2-STAGE INDICATOR FOR HIGH TEMPERATURE WARNING.
15.	IMAGE CONTROL	5X DIGITAL ZOOM
16.	IMAGE RESOLUTION	IMAGE RESOLUTION - H 768 X V 576 (PIXEL)
17.	STORAGE	USB FLASH MEMORY 1 GB MINIMUM.
18.	OPERATING TEMPERATURE	INSERTION TUBE -25°C TO 100°C IN AIR & SYSTEM -10°C TO 40°C IN AIR.

MATERIAL CODE : -W90312120010

GRADE OF UNTOL.DIM

M/CG.-Q/M/F AA0230208

WELDING-A/B/C/D AA0621104

GAS CUTTING-T3'AA0621101

GMS No./

C B O M

STATUS OF DRG

AGREED DEPT

NAME

SIGN

DATE

TYPE OF PRODUCT STEAM TURBINE

OR
NAME OF CUSTOMER/PROJECTBHARAT HEAVY ELECTRICALS LTD.
RANIPUR, HARDWAR

DRN	AFZAL KHAN	SD/-	05.02.14	NO. OF VAR
CHD	SUNNY	SD/-	07.02.14	
APPD	DKRAY	SD/-	10.02.14	
DEPT	STE	SCALE	WEIGHT (KG)	REF. TO ASSY. DRG.
CODE	4011	1:2	--	ITEM No.

73 74

REV 01

DATE 19.01.15

ALTERED

SUNNY

REV 02

DATE 16.05.19

ALTERED

ANOOP

CHECKED P.KANAUJIA

SCALE
1:2WEIGHT (KG)
--

REF. TO ASSY. DRG.

ITEM No.

75 77

DRAWING UPDATED.

SHEET NO.1 DRAWING SUPERSEDED

UNDER SAME NUMBER.

SHEET NO.2 ADDED

AS PER C/A NO. STE-16-F0012.

AS PER C/A NO. STE-15-F0064.

TITLE :

CARD

BORESOPIC VIDEO IMAGE KIT

CODE

DRAWING NO.

22 23 24

7-3-12120-56000

22 23 24

SHEET NO. 01

No. OF SHEETS 02

SIZE A3

DRAWING No. 3-12120-56000

THE EQUIPMENT SHOULD HAVE THE BELOW OPTICAL ADAPTORS:

A. VIEWING TIP – VIEWING TIP ADAPTORS (INTERCHANGEABLE) OF DIAMETER AS COMPATIBLE WITH THE PROBE AS REQUIRED :

a. FORWARD VIEW

FIELD OF VIEW	120°
PURPOSE	OPTICAL IMAGING
DIRECTION OF VIEW	FORWARD
DEPTH OF FIELD	19 MM TO INFINITY

b. SIDE VIEW

FIELD OF VIEW	120°
PURPOSE	OPTICAL IMAGING
DIRECTION OF VIEW	SIDE
DEPTH OF FIELD	4 MM TO 100 MM

B. STEREO MEASUREMENT TIP – STEREO TIP ADAPTORS (INTERCHANGEABLE) OF DIAMETER AS COMPATIBLE WITH THE PROBE AS REQUIRED.

a. FORWARD VIEW

FIELD OF VIEW	60D / 60D
PURPOSE	MEASUREMENT
DIRECTION OF VIEW	FORWARD
DEPTH OF FIELD	5 MM TO 80 MM

BILL OF MATERIAL FOR INDUSTRIAL VIDEO IMAGE SCOPE SYSTEM WITH ACCESSORIES

SL. NO.	BHEL REQUIREMENT	QTY.
1.	VIDEO IMAGE SCOPE WITH HANDSET SCREEN , CONTROL UNIT, LIGHT SOURCE (AS REQUIRED), INSERTION PROBE (AS PER SPECIFICATION) (6 MM & 3.5 METER) , WITH PRE LOADED SOFTWARE & ACCESSORIES FOR VIEWING, RECORDINGS WELL AS MEASURING OF DEFECTS OR DISCONTINUITY ALONG WITH CARRYING CASE.EQUIPMENT SHOULD COMPLY BELOW SPECIFICATION.	1 SET
2.	VIEWING TIP (FORWARD) (AS PER SPECIFICATION)	1 SET
3.	VIEWING TIP (SIDE) (AS PER SPECIFICATION)	1 SET
4.	STEREO MEASUREMENT TIP(FORWARD) (AS PER SPECIFICATION)	1 SET
5.	RECHARGEABLE BATTERY FOR SYSTEM	1 SET
6.	BATTERY CHARGER / AC ADAPTOR	1 SET
7.	FLEX & STAY GUIDE TUBE 1 METER FOR 6MM PROBE DIA.	1 SET

NOTES:

1. VENDOR HAS TO ARRANGE A DEMONSTRATION OF SUPPLIED EQUIPMENT AT SITE.
2. THREE COPIES OF OPERATION & MAINTENANCE MANUAL (INCLUDING DIAGNOSTIC PHILOSOPHY i.e. RUN/REPAIR/REPLACE CRITERIA) IN SOFT COPY AS WELL AS IN HARD COPY MUST BE SUPPLIED ALONG WITH THE EQUIPMENT.
3. GUARANTEE CERTIFICATE FOR 12 MONTHS FROM DATE OF COMMISSIONING OR 18 FROM DATE OF DESPATCH, WHICHEVER IS EARLIER TO BE PROVIDED.
4. SUPPLIER SHOULD HAVE FULL FLEDGE SERVICE CENTER FOR VIDEO SCOPE IN INDIA.

MATERIAL CODE :-W90312120010

Ref. Drawing No. >

Sign & Date

REV. No.

Inventory No.

GRADE OF UNTOL.DIM			
M/CG.-Q/M/F AA0230208			
WELDING-A/B/C/D AA0621104			
GAS CUTTING-T3'AA0621101			

REV 02	DATE 16.05.19	ALTERED CHECKED	ANOOP P.KANAUJIA
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REV 01	DATE 19.01.15	ALTERED CHECKED	SUNNY ALOK SINGH
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GMS No./ AGREED DEPT		C B O M NAME		STATUS OF DRG U	TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT		REF. TO ASSY. DRG. ITEM No.			NAME SIGN DATE			NO. OF VAR	