



# REQUEST FOR QUOTATION

	<b>BHARAT HEAVY ELECTRICALS LIMITED</b> Electronics Division PB No. 2606, Mysore Road Bangalore - 560026 INDIA	RFQ NUMBER: SPNM900012  RFQ DATE : 16.05.2015	Due Date/Day: 10.06.2015 WED Time : 13:00 HRS Tender Box : Reception Area Opening Venue: NEW ENGG. BLDG
MMI:PU:RF:003	(address for communication) :		(for all correspondence)
		Purchase Executive : SUDHA PARIMALA N Phone : 26998850 Fax : 00918026989227 E-mail: sudhaparimala@bheledn.co.in	

Sl No.	Description	Qty	Unit	Delivery qty	Delivery Date
1	CC0695014129 E & C Support Charges for BMS. Test Certificate E & C (Erection and Commissioning)Support Charges for Beetle Monitoring System as per Test Procedure approved by NPCIL.QAP as per BHEL Purchase Spec: PS/2.1.2/471/052 Rev01.Four copies of Test Certificates and Test Procedures to be provided to BHEL for NPCIL approval. NPCIL PO No for KAPP-3&4 is CMM/EIC/23-60-3-3089/PO/6108 dated 07/09/2012. E & C (Erection and Commissioning)Support Charges for Beetle Monitoring System as per Test Procedure approved by NPCIL.QAP as per BHEL Purchase Spec: PS/2.1.2/471/052 Rev01.Four copies of Test Certificates and Test Procedures to be provided to BHEL for NPCIL approval. NPCIL PO No for KAPP-3&4 is CMM/EIC/23-60-3-3089/PO/6108 dated 07/09/2012.	4	NO	4	20.07.2015
2	CC0695014137 Climatic Test Charges for BMS. Test Certificate Climatic Test Charges for Beetle Monitoring System as per Test Procedure approved by NPCIL.QAP as per BHEL Purchase Spec: PS/2.1.2/471/052 Rev01.Four copies of Test Certificates and Test Procedures to be provided to BHEL for NPCIL approval. NPCIL PO No for KAPP-3&4 is CMM/EIC/23-60-3-3089/PO/6108 dated 07/09/2012. Climatic Test Charges for Beetle Monitoring System as per Test Procedure approved by NPCIL.QAP as per BHEL Purchase Spec: PS/2.1.2/471/052	1	NO	1	20.07.2015

TWO PART BID	
NOTES : 1.This RFQ is Governed by : a)INSTRUCTIONS TO BIDDERS/SELLERS(Doc No :BHEL:EDN:ITB-SHOP) available at <a href="http://www.bheledn.com">www.bheledn.com</a> (RFQ-PO Terms & Conditions) b)GENERAL CONDITIONS OF CONTRACT FOR PURCHASE(Doc no :BHEL:EDN:GCC-SHOP) available at <a href="http://www.bheledn.com">www.bheledn.com</a> (RFQ-PO Terms & Conditions) c)Any other specific Terms and Conditions mentioned. 2. Bidders / Representatives who would like to be present during opening of offers are required to furnish authorization letter for the same.	For and On behalf of BHEL.  SUDHA PARIMALA N Control Equipment  1 OF 8


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	Rev01.Four copies of Test Certificates and Test Procedures to be provided to BHEL for NPCIL approval. NPCIL PO No for KAPP-3&4 is CMM/EIC/23-60-3-3089/PO/6108 dated 07/09/2012.				
3	CC0695014145 EMI/EMC Charges for BMS. Test Certificate EMI/EMC test charges for Beetle Monitoring System as per Test Procedure approved by NPCIL.QAP as per BHEL Purchase Spec: PS/2.1.2/471/052 Rev01.Four copies of Test Certificates and Test Procedures to be provided to BHEL for NPCIL approval. NPCIL PO No for KAPP-3&4 is CMM/EIC/23-60-3-3089/PO/6108 dated 07/09/2012. EMI/EMC test charges for Beetle Monitoring System as per Test Procedure approved by NPCIL.QAP as per BHEL Purchase Spec: PS/2.1.2/471/052 Rev01.Four copies of Test Certificates and Test Procedures to be provided to BHEL for NPCIL approval. NPCIL PO No for KAPP-3&4 is CMM/EIC/23-60-3-3089/PO/6108 dated 07/09/2012.	1	NO	1	20.07.2015
4	CC0695014153 Beetle Sensing Module for BMS. Test Certificate Beetle Sensing Module as part of mandatory spare for Beetle Monitoring System.Four copies of Test Certificates and Test Procedures to be provided to BHEL for NPCIL approval. NPCIL PO No for KAPP-3&4 is CMM/EIC/23-60-3-3089/PO/6108 dated 07/09/2012. Beetle Sensing Module as part of mandatory spare for Beetle Monitoring System.Four copies of Test Certificates and Test	10	NO	10	20.07.2015

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Sl No.	Description	Qty	Unit	Delivery qty	Delivery Date
	Procedures to be provided to BHEL for NPCIL approval. NPCIL PO No for KAPP-3&4 is CMM/EIC/23-60-3-3089/PO/6108 dated 07/09/2012.				
5	CC0695014161 FMU used in BMS Test Certificate Field Multiplexer Unit (FMU) used in Beetle Monitoring System. Detailed Specifications of FMU as per BHEL Purchase Spec PS / 2.1.2 / 471/ 052 Rev01, NPCIL Specs PC-E-444 Rev01, KAPP-3&4/63811/2011/ISS , KAPP-3&4/63811/5001/ISS, PC-E-443, PP-E-1443 AND PP-E-2061.QAP as per BHEL Purchase Spec: PS/2.1.2/471/052 Rev01 .Four copies of Test Certificates and Test Procedures to be provided to BHEL for NPCIL approval. NPCIL PO No for KAPP-3&4 is CMM/EIC/23-60-3-3089/PO/6108 dated 07/09/2012. Field Multiplexer Unit (FMU) used in Beetle Monitoring System. Detailed Specifications of FMU as per BHEL Purchase Spec PS / 2.1.2 / 471/ 052 Rev01, NPCIL Specs PC-E-444 Rev01, KAPP-3&4/63811/2011/ISS , KAPP-3&4/63811/5001/ISS, PC-E-443, PP-E-1443 AND PP-E-2061.QAP as per BHEL Purchase Spec: PS/2.1.2/471/052 Rev01 .Four copies of Test Certificates and Test Procedures to be provided to BHEL for NPCIL approval. NPCIL PO No for KAPP-3&4 is CMM/EIC/23-60-3-3089/PO/6108 dated 07/09/2012.	116	NO	116	20.07.2015
6	CC0695014170 FMME used in BMS Test Certificate Floor Mounted Moisture Element (FMME) used in	972	NO	972	20.07.2015

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		(for all correspondence)	
		Purchase Executive : SUDHA PARIMALA N Phone : 26998850 Fax : 00918026989227 E-mail: sudhaparimala@bheledn.co.in	

Sl No.	Description	Qty	Unit	Delivery qty	Delivery Date
	Beetle Monitoring System to detect the leakage of heavy water. The drawing as per revised FMME Drawing of NPCIL. Detailed Specifications of FMME as per BHEL Purchase Spec PS / 2.1.2 / 471/ 052 Rev01, NPCIL Specs PC-E-444 Rev01,KAPP-3&4/63811/2011/ISS , KAPP-3&4/63811/5001/ISS,PC-E-443,PP-E-1443 AND PP-E-2061.QAP as per BHEL Purchase Spec: PS/2.1.2/471/052 Rev01 .Four copies of Test Certificates and Test Procedures to be provided to BHEL for NPCIL approval. NPCIL PO No for KAPP-3&4 is CMM/EIC/23-60-3-3089/PO/6108 dated 07/09/2012. Floor Mounted Moisture Element (FMME) used in Beetle Monitoring System to detect the leakage of heavy water. The drawing as per revised FMME Drawing of NPCIL. Detailed Specifications of FMME as per BHEL Purchase Spec PS / 2.1.2 / 471/ 052 Rev01, NPCIL Specs PC-E-444 Rev01,KAPP-3&4/63811/2011/ISS , KAPP-3&4/63811/5001/ISS,PC-E-443,PP-E-1443 AND PP-E-2061.QAP as per BHEL Purchase Spec: PS/2.1.2/471/052 Rev01 .Four copies of Test Certificates and Test Procedures to be provided to BHEL for NPCIL approval. NPCIL PO No for KAPP-3&4 is CMM/EIC/23-60-3-3089/PO/6108 dated 07/09/2012.				
7	CC0695014188 LMME(Type-II) in BMS Test Certificate	216	NO	216	20.07.2015

### TWO PART BID

#### NOTES :


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SUDHA PARIMALA N  
Control Equipment

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		Purchase Executive : SUDHA PARIMALA N Phone : 26998850 Fax : 00918026989227 E-mail: sudhaparimala@bheledn.co.in	

Sl No.	Description	Qty	Unit	Delivery qty	Delivery Date
	Line Mounted Moisture Element (LMME)-Type-II used in Beetle Monitoring System to detect the leakage of heavy water. The drawing as per revised LMME Drawing of NPCIL. Detailed Specifications of LMME as per BHEL Purchase Spec PS / 2.1.2 / 471/ 052 Rev01 , NPCIL Specs PC-E-444 Rev01, KAPP-3&4/63811/2011/ISS , KAPP-3&4/63811/5001/ISS, PC-E-443, PP-E-1443 AND PP-E-2061. QAP as per BHEL Purchase Spec: PS/2.1.2/471/052 Rev01 .Four copies of Test Certificates and Test Procedures to be provided to BHEL for NPCIL approval. NPCIL PO No for KAPP-3&4 is CMM/EIC/23-60-3-3089/PO/6108 dated 07/09/2012.  Line Mounted Moisture Element (LMME)-Type-II used in Beetle Monitoring System to detect the leakage of heavy water. The drawing as per revised LMME Drawing of NPCIL. Detailed Specifications of LMME as per BHEL Purchase Spec PS / 2.1.2 / 471/ 052 Rev01 , NPCIL Specs PC-E-444 Rev01, KAPP-3&4/63811/2011/ISS , KAPP-3&4/63811/5001/ISS, PC-E-443, PP-E-1443 AND PP-E-2061. QAP as per BHEL Purchase Spec: PS/2.1.2/471/052 Rev01 .Four copies of Test Certificates and Test Procedures to be provided to BHEL for NPCIL approval. NPCIL PO No for KAPP-3&4 is CMM/EIC/23-60-3-3089/PO/6108 dated 07/09/2012.				
8	CC0695014196 Microcontroller Module for BMS. Test Certificate Microcontroller Module as part of mandatory spare for	10	NO	10	20.07.2015

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	Beetle Monitoring System.Four copies of Test Certificates and Test Procedures to be provided to BHEL for NPCIL approval. NPCIL PO No for KAPP-3&4 is CMM/EIC/23-60-3-3089/PO/6108 dated 07/09/2012. Microcontroller Module as part of mandatory spare for Beetle Monitoring System.Four copies of Test Certificates and Test Procedures to be provided to BHEL for NPCIL approval. NPCIL PO No for KAPP-3&4 is CMM/EIC/23-60-3-3089/PO/6108 dated 07/09/2012.				
9	CC0695014204 Power Supply Module for BMS. Test Certificate Power Supply Module as part of mandatory spare for Beetle Monitoring System.Four copies of Test Certificates and Test Procedures to be provided to BHEL for NPCIL approval. NPCIL PO No for KAPP-3&4 is CMM/EIC/23-60-3-3089/PO/6108 dated 07/09/2012. Power Supply Module as part of mandatory spare for Beetle Monitoring System.Four copies of Test Certificates and Test Procedures to be provided to BHEL for NPCIL approval. NPCIL PO No for KAPP-3&4 is CMM/EIC/23-60-3-3089/PO/6108 dated 07/09/2012.	10	NO	10	20.07.2015
10	CC0695014212 LMME(Type-I) in BMS Test Certificate Line Mounted Moisture Element (LMME)-Type-I used in Beetle Monitoring System to detect the leakage of heavy water. The drawing as per revised LMME Drawing of NPCIL. Detailed Specifications of LMME as per BHEL	24	NO	24	20.07.2015

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Sl No.	Description	Qty	Unit	Delivery qty	Delivery Date
	Purchase Spec PS / 2.1.2 / 471/ 052 Rev01 , NPCIL Specs PC-E-444 Rev01,KAPP-3&4/63811/2011/ISS , KAPP-3&4/63811/5001/ISS,PC-E-443,PP-E-1443 AND PP-E-2061.QAP as per BHEL Purchase Spec: PS/2.1.2/471/052 Rev01 .Four copies of Test Certificates and Test Procedures to be provided to BHEL for NPCIL approval. NPCIL PO No for KAPP-3&4 is CMM/EIC/23-60-3-3089/PO/6108 dated 07/09/2012. Line Mounted Moisture Element (LMME)-Type-I used in Beetle Monitoring System to detect the leakage of heavy water. The drawing as per revised LMME Drawing of NPCIL. Detailed Specifications of LMME as per BHEL Purchase Spec PS / 2.1.2 / 471/ 052 Rev01 , NPCIL Specs PC-E-444 Rev01,KAPP-3&4/63811/2011/ISS , KAPP-3&4/63811/5001/ISS,PC-E-443,PP-E-1443 AND PP-E-2061.QAP as per BHEL Purchase Spec: PS/2.1.2/471/052 Rev01 .Four copies of Test Certificates and Test Procedures to be provided to BHEL for NPCIL approval. NPCIL PO No for KAPP-3&4 is CMM/EIC/23-60-3-3089/PO/6108 dated 07/09/2012.				
11	CC0695014220 Customer Training at NPCIL site for BMS Test Certificate Customer Training at NPCIL site for Beetle Monitoring System.NPCIL PO No for KAPP-3&4 is CMM/EIC/23-60-3-3089/PO/6108 dated 07/09/2012. Customer Training at NPCIL site for Beetle Monitoring System.NPCIL PO No for KAPP-3&4 is CMM/EIC/23-60-3-3089/PO/6108 dated	1	NO	1	20.07.2015

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Sl No.	Description	Qty	Unit	Delivery qty	Delivery Date
	07/09/2012.				

Total Number of Items - 11

1.  
2.

### TWO PART BID

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For and On behalf of BHEL.

SUDHA PARIMALA N  
Control Equipment

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**COVER AND REVISION HISTORY SHEET  
FOR  
BEETLE MONITORING SYSTEM**

Ref:CCIP/471/BMS/PQR

REV.00

Page 1 of 2

**Cover Sheet for**  
**\* BMS with Technical and Quality Requirements**  
**\* Pre- Qualification Requirements**  
**\* Technical and Price Bids**

REVISION : 00

APPROVED BY  
*S.K Ranganath*  
S K RANGANATH (AGM)

*Venkata Ramana D V*  
PREPARED  
Venkata Ramana D V

ISSUED  
ENGG

DATE  
04-05-2015



COVER AND REVISION HISTORY SHEET  
FOR  
BEETLE MONITORING SYSTEM

Ref:CCIP/471/BMS/PQR

REV.00

Page 2 of 2

REVISION HISTORY SHEET

Rev No.	DATE	Nature of change	REASON	PREPARED BY	APPROVED BY
00	04-05-2015	First Issue	Open Tender	DVVR	SKR

REVISION : 00

APPROVED BY

S. K Ranganath  
S K RANGANATH (AGM)

PREPARED

Venkata Ramana D V

ISSUED

ENGG

DATE

04-05-2015



**Purchase Specification for  
Beetle Monitoring System(BMS)**

REF.:CCIP/471/BMS/PQR  
REV. NO. : 00  
PAGE: 1 of 16

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## **INTRODUCTION TO BMS(BEETLE MONITORING SYSTEM):**

1.0 Nuclear Power Corporation of India Limited (a Govt. of India Enterprises) is setting up a 2x700MWe Power Project at Kakrapar in Gujarat and 2x700MWe Power Project at Rawatbhata in Rajasthan. BHEL-EDn is executing the Control Centre Instrumentation Package (CCIP) of KAPP-3 &4 and RAPP-7&8 projects. Beetle monitoring system (BMS) ensures safety of nuclear power plant by detecting heavy water leakage in reactor, thus becomes one of the important system for nuclear power plants.

### **1.1 ROLE OF THE SYSTEM**

The role of the BMS is to detect leakage of heavy water inside the reactor by help of Beetles and send data to Radiation Data Acquisition System (RADAS). It will also monitor the status of its own various parts which affects its functioning.

### **2.0 INTENT OF PURCHASE SPECIFICATION**

This specification is intended to cover the design, manufacture, testing, inspection, packing and dispatch of BMS (Only Beetles and FMUs are in Vendor's scope of supply) at manufacturer's works, used in for KAPP and RAPP projects. The performance, reliability and Quality Assurance requirement of the BMS is detailed in subsequent pages.

### **2.1 BEETLES OR MOISTURE ELEMENTS**

Beetles, also called Moisture Elements (ME), are two electrode conductivity probes (or devices) used for detecting the presence of water in floors, pipes, tanks and vessels. The change in the resistance of the Beetle is measured to indicate the presence of water. There are two types of Beetles depending on the type of mounting. They are Line Mounted Moisture Elements and Floor Mounted Moisture Elements.

Beetles are located in the field where D<sub>2</sub>O spillage/leakage is likely to occur and are connected to the FMUs located in that area.

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### 2.1.1 APPLICABLE DOCUMENTS

S/N	DOCUMENT	DESCRIPTION
1	PC-E-443	Engineering Specification on Line Mounted Beetles and Floor Mounted Beetles
2	PC-E-444	System Requirements on Beetle Monitoring System (BMS)
3	PP-E-1443	PCB Specification
4	PP-E-2061	Requirements of Components for Instrumentation Items
5	KAPP-3&4/63811/2011/ISS	Instrument Specification sheet for Moisture Elements (Beetles)
6	KAPP-3&4/63811/5001/ISS	Instrument Specification sheet for Moisture Elements (Beetles)
7	KAPP-3&4/63811/2002/GA	Heavy Water Leak Detection System Monitoring Details of Line/Tank Mounted Moisture Elements

#### 2.1.1.1 APPLICABLE STANDARDS, SPECIFICATIONS AND DRAWINGS

- Standard Specification for Stainless Steel Bars and Shapes: ASTM-A-276/A.
- Standard Specification for Heat Resisting Chromium and Chromium Nickel Stainless Steel Plate, Sheet, Strips for Pressure Vessels: ASTM-A-240/A.
- Standard Specification for Seamless and Welded Austenitic Stainless Steel Pipes: ASTM-A-312/A.
- Qualification Standard for Welding and Brazing Procedures, Welders and Brazing Operators: ASME Section-IX.

#### 2.1.2 REQUIREMENT FOR BEETLES

Contd., in the next page...

### 2.1.2.1 SPECIFIC REQUIREMENTS

S/N	Attributes	Detail
1	Application	The beetles are used in Beetle Monitoring System to detect the leakage of heavy water.
2	Material	SS-304 L and SS-316 (as per ASTM-A-276/A, ASTM-A-312/A and ASTM-A-240/A)
3	Dimensional Details	Refer Fig. 1 and 2 on page 80 and 81 of KAPP-3&4/63811/2011/ISS respectively.
4	Type	Line Mounted (Type-I & Type-II) and Floor Mounted Beetles.
5	Duty	Continuous operation.
6	End Connection	Suitable for welding 1 inch Weldolet for Line Mounted Beetles (Type-II).
7	Maximum temperature	170 <sup>0</sup> C.
8	Relative Humidity	50% to 100% (Non condensing).
9	Maximum Pressure	17 Kg/cm <sup>2</sup> (g) for Line Mounted Beetles.
10	Range/ Status	DRY, WET, OPEN
11	Installation Requirement	Suitable terminals/lugs shall be provided for connecting EPR insulated, LHLS cables.
12	Beetle Resistance	Beetles resistance 'R' shall be as detailed below with 100 K $\Omega$ $\pm$ 2% ½ watt resistor connected across the electrode DRY: 50 K $\Omega$ <R< 102K $\Omega$ WET: 0 $\Omega$ <R< 50K $\Omega$ OPEN: R> 102K $\Omega$ (including tolerance of resistance)
13	Tag Numbers	Refer Table-1 of KAPP-3&4/63811/2011/ISS, 63811/5001/ISS

### **2.1.2.2 TEST REQUIREMENTS**

- Raw material test as per ASTM-A-276/A, ASTM-A-312/A and ASTM-A-240/A.
- Visual and Dimensional check.
- Insulation Resistance Test.
- Functional Test as per approved test procedure.
- Hydraulic Pressure Test: Hydraulic Pressure Test at a pressure 17kg/cm<sup>2</sup> (g) shall be carried out on all the Line Mounted Beetles for checking leak tightness at ambient temperature. There shall be no leakage.
- Temperature Test: 5 Nos. each type of beetles shall be filled with water at temperature of 170<sup>0</sup>C for 1 minute. It should pass functional tests.

#### **NOTE:**

- The fabrication of beetles shall begin only after obtaining approval of Quality Assurance Plan (QAP), raw materials, fabrication drawings, welding procedure and inspection/test procedure.
- All dimensions shown in Fig. 1 and Fig. 2 of Spec PC-E-443 are in mm, unless stated otherwise.
- Dimensional tolerances shall be  $\pm 1$  mm, unless noted otherwise.
- Welding procedure, welding equipment and welder shall be qualified as per ASME section IX.
- Details of tests are given in specification PC-E-443.

### **2.1.2.3 DOCUMENTATION**

- Detailed dimensional drawings (fabrication drawings with bill of material).
  - Quality assurance plan, indicating inspection of raw material, in-process inspection and final inspection (a sample QAP is enclosed as **Annexure-1** to this specification for reference).
  - Detailed procedures for each inspection and tests to be carried out.
  - Material test certificates/reports.
  - Reports on tests/inspection carried out on the beetles.
  - Shipping release issued by NPCIL'S QA engineer.
  - Operation and Maintenance Manual
-



## 2.2 FIELD MULTIPLEXER UNITS (FMU)

The system shall monitor about 240 Beetles, arranged into 24 groups. Each group shall have a FMU.

Each FMU shall have sixteen isolated input points for connecting Beetles. Two numbers of input points (15th and 16th Beetle) on each FMU shall be for Diagnostic purpose. A 50 K $\Omega$  resistor shall be Connected to one of these two points to simulate a 'wet' Beetle and the second shall be left open to simulate an 'Open' Beetle ('Open' state indicates Beetle is disconnected). Failure of FMU to detect the simulated status of any one of these shall indicate FMU failure.

Remaining fourteen input points shall be for connecting fourteen field Beetles. The 24 FMUs shall be installed at various locations in the plant area. These FMUs and I/O Node shall be connected with two redundant RS-485 serial links for communication. I/O Node is located in Control Equipment Room (CER).

### 2.2.1 APPLICABLE DOCUMENTS

S/N	DOCUMENT	DESCRIPTION
1	PC-E-188	Engineering Specification for Switch Mode Power Supplies
2	PC-E-444	System Requirements on Beetle Monitoring System (BMS)
3	PC-E-793	Guidelines for De-rating of Electronic Components
4	PP-E-1443	PCB Specification
5	PP-E-2061	Requirements of Components for Instrumentation Items
6	PC-E-709	Engineering Specification for Instrumentation and Control System Grounding
7	PC-E-710	Engineering Specification for Electromagnetic Compatibility Qualification of C&I Equipment
8	PC-E-730	Engineering Specification for Local Control Panels/Racks

### 2.2.1.2 APPLICABLE STANDARDS, SPECIFICATIONS AND DRAWINGS

S/N	STANDARD	DESCRIPTION
1	IS-2147 (Part-I)	Degree of protection for enclosure
2	IS 9000 PART III (1977)	Basic Environmental Testing Procedure for Electronic and Electrical Items. (Dry Heat Test)
3	IS 9000 PART V (1981)	Basic Environmental Testing Procedure for Electronic and Electrical Items. (Damp Heat Cyclic Test)
4	IS -5	Colour for Ready mixed paints and Enamels



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## 2.2.2 REQUIREMENTS FOR FMUS

### 2.2.2.1 SPECIFIC REQUIREMENTS

S/N	Attributes	Detail	
1	Application	FMU scans the status of the Beetles connected to it and keeps this data ready for transmitting to I/O Node whenever a request comes for the same.	
2	Enclosure	As per NPCIL Specification PC-E-730	
3	Dimensional Details (Enclosure)	380 mm (L) x 600 mm (H) x 350 mm (D) (approx.)	
4	Protection clause for Enclosure	IP-54 or IS-2147	
5	Enclosure color	RAL-1015 (Light Ivory)	KAPP-3,RAPP-7
		RAL-7035 (Light Grey)	KAPP-4, RAPP-8
6	Duty	Continuous operation.	
7	Environmental	section 3.2.8 of PC-E-444	
8	Electronic circuitry	modular design with plug-in-card type	
9	Range/ Status	DRY, WET, OPEN	
10	Power Supply	PC-E-188 (220VDC $\pm$ 10% shall be provided as Input Power)	
11	Security requirements	Key-lock shall be provided for FMUs.	
12	Beetle sensing circuits	generate digital signals corresponding to 'wet', 'open' or 'dry' states of Beetles	
13	Operating Voltage	12V AC (For beetle resistance sensing)	
14	Communication With Beetles	Two-core 1.5 sq. mm cable, Designed distance between FMU & Beetles: 500 Mtr	
15	Communication with I/O Node	Dual serial RS-485 multi-drop communication link. Designed distance between FMU & I/O Nodes: 1.5 KM Communication cables for Main as well as for Stand-by will be of 1.5 sq. mm, twisted pair cable.	
16	Self-Diagnostics	Self-diagnostic shall be done for FMUs/Beetles, communication links etc. In case of any fault or disturbance, there shall be 2 Nos. of NO contacts which shall close.	
17	Indication	Section 3.2.1 of PC-E-444	
18	Maintainability	Section 3.2.5 of PC-E-444	
19	Installation	Section 3.2.9 of PC-E-444	
20	Grounding	As per PC-E-709	
21	Resistance Setting using Trimpot	Wet value: 1K $\Omega$ to 50K $\Omega$ Dry value: 80K $\Omega$ to 110K $\Omega$	

### 2.2.2.2 ACCEPTANCE/ TEST REQUIREMENTS

S/N	Attributes	Detail
1	Test plan	Section 3.2.10.1 of PC-E-444
2	Inspection	Section 3.2.10.2 of PC-E-444
3	Tests requirements	Section 3.2.10.3 of PC-E-444
4	Tests at Factory	Section 3.2.10.4 of PC-E-444
4.1	Insulation Resistance Test	Section 3.2.10.4.1 of PC-E-444
4.2	Dielectric Strength Test	Section 3.2.10.4.2 of PC-E-444
4.3	Functional Test	Section 3.2.10.4.3 of PC-E-444
4.4	Burn-in Test	Section 3.2.10.4.4 of PC-E-444
4.5	Noise Immunity Test	Section 3.2.10.4.5 of PC-E-444
4.6	Climatic Tests	Section 3.2.10.4.6 of PC-E-444
4.7	Enclosure Test	Section 3.2.10.4.7 of PC-E-444
5	Tests at Site	Section 3.2.10.5 of PC-E-444
6	Test Report Requirements	Section 3.2.10.6 of PC-E-444
7	QA Requirements	Section 3.2.10.7 of PC-E-444
8	IV&V Requirements	Vendor shall provide necessary assistance/ documentation pertains to Beetles and FMUs to facilitate IV&V Test as per “ED-PROC-662”

### 2.2.2.3 DOCUMENTATION

- One set of all the approved documents including Operating and Maintenance manual must be submitted to BHEL along with equipment supply.
- Operating and Maintenance manual shall as a minimum include the followings:
  - Technical details of FMU
  - One set of Drawings (including all the electrical and mechanical drawings.)
  - Operating & Maintenance Instructions.
- Manufacturer's catalogues for the equipment/components procured from other sources.
- 10 copies of operating and maintenance manuals shall be submitted to BHEL after completion of supply by the vendor.

The supplier shall submit one set of reproducible of the “As Built” drawings to NPCIL. Also one set of CD containing drawings/test procedure/test reports/system software shall be supplied. The supplier shall submit the History Docket for the system to NPCIL before dispatch of the consignment. Supplier shall provide documentation for IV&V of FMU as per “ED-PROC-62”



### 2.3 ALARM EVENTS FOR BEETLES AND FMUs

VARIOUS BEETLE EVENTS		
S/N	Beetle Status	Condition
1	Change from Dry to Wet	Alarm
2	Change from Wet to Dry	Normal
3	Change from Dry to Open	Alarm
4	Change from Open to Dry	Normal
5	Change from Wet to Open	Alarm
6	Change from Open to Wet	Alarm
VARIOUS FMU EVENTS		
S/N	FMU Status	Condition
1	Change from Normal to Faulty (Power supply Failure, Self diagnostics failure, Card failure, loss of communication with I/O Node due to cable cut, cable short or failure of serial port)	Alarm
2	Change from Faulty to Normal	Normal
3	Change of Main Serial link from Normal to Faulty	Alarm
4	Change of Main Serial link from Faulty to Normal	Normal
5	Change of Stand-by Serial link from Normal to Faulty	Alarm
6	Change of Stand-by Serial link from Faulty to Normal	Normal

### 2.4 ERECTION & COMMISSIONING SUPPORT

As per Section 3.2.11 of PC-E-444. Per unit price for erection & commissioning support of 700 MW NPS shall be quoted separately on lump sum basis.

### 2.5 TRAINING REQUIREMENTS

Supplier shall arrange familiarization training to NPCIL engineers on all the aspects of the system/sub-systems at NPCIL site. Price for training shall be quoted separately on lump sum basis if any.



## **2.6 Defect Liability:**

Equipment supplied as per this SR(Specification Requirement) shall be guaranteed for a trouble free operation of minimum **30** months from the date of supply and vendor shall replace/rectify defective items which have gone defective during this period free of cost.

## **3.0 VENDOR SCOPE OF WORK**

The scope of work shall include but not necessarily be limited to:

- Engineering, Manufacture and Supply of Beetles and FMUs.
- Testing and inspection of the items at manufacturer's work.
- Supply of the material to site.

A detailed scope and other technical parameters are listed in the technical requirement attached with this document, same to be referred in conjunction with this document.

## **4.0 DESIGN CODES AND STANDARDS**

Item shall comply with the requirements the latest edition specification prior to the date of purchaser's enquiry of relevant standards and suitable for the area where the equipment will be installed.

The standards shall be followed, as per the attached applicable Specification indicated elsewhere in the document. Other applicable Indian/International standards for any component part , even if not covered in the listed standards shall be followed.

## **5.0 QA/QC REQUIREMENTS**

The QA/QC requirements shall be as per the ISS "KAPP-3&4/63811/2011/ISS" and ISS "KAPP-3&4/63811/5001/ISS for Beetles.

The QA/QC requirements shall be as per the NPCIL Spec "PC-E-444" for FMUs.

The QA/QC requirements shall be as per the NPCIL Spec "PC-E-730" for FMU Enclosure.

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PART-A

PRE QUALIFICATION CRITERIA

1. The vendor shall be an Original Equipment Manufacturer (OEM).
  2. If the vendor is a foreign OEM, the foreign OEM shall have authorized dealers/ representatives in India for installation, commissioning and after sales service.
  3. Offer shall be submitted by the OEM or their authorized dealers/ representative in India.
  4. If the offer is from an authorized dealer/ representative, the dealer/ representative in India should give the confirmation that after sales service support shall be provided by the dealer/ representative.
  5. The vendor should have already supplied and installed BMS(Beetle Monitoring System) in any PHWR(Pressurised Heavy Water Reactor) of rating 200Mwe and above in India. The vendor shall give documentary evidence like purchase orders commissioning certificates end user certificates indicating satisfactory operation.  
In case the vendor has not supplied BMS to PHWRs, then vendor shall make two nos. of prototype sensors and the FMU(Field Multiplexer Unit) with power supply as per technical specification. The vendor shall conduct all tests and meet the QAP requirements as indicated in the Tender. Vendor shall test the prototype equipment in an NABL accredited laboratory and need to be approved by BHEL/NPCIL. The vendor shall demonstrate to BHEL/NPCIL by giving reference/product list that vendor is an established sensor, Transmitter OEM with experience in similar application. The vendor shall arrange for demonstration of the equipment within three months from the date of issue of this tender, failing which the offer will not be considered for further processing.  
Vendor shall be qualified if the offered equipment satisfactorily meets all the technical and quality requirements.
  6. The vendor or their authorized service representatives shall have trained technical people/ engineers in India for installation and commissioning of the offered equipment. A declaration to the above effect to be furnished.
  7. The equipment supplied shall be guaranteed for a trouble free operation of minimum **30** months from the date of supply and vendor shall replace defective items which have gone defective during this period.
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8. The vendor shall be in a position to undertake AMC (if required by BHEL/NPCIL) or provide service support for the equipment supplied, after the expiry of the warranty/ guarantee period either directly or through an authorized service representative.

**NOTE:**

Pre-qualification will be carried out based on the details furnished by the vendor/ feedback from their customers/ inspection jointly by BHEL/NPCIL of the company/ product if required by BHEL and at its sole discretion.

The Pre-qualification criteria are mandatory requirements and the technical bids will be evaluated only when the Pre-Qualification criteria are met.

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**PART-B TECHNICAL BID:**

**1.0 DOCUMENTS ALONG WITH THE TECHNICAL BID:**

**1.1.1** Vendor shall provide the following information along with their offer:

- BOQ unpriced.
- Compliance to terms and conditions
- QAP
- Sub Vendor List
- Technical Data sheets and documents as specified in the check list.
- List of deviations, if any, from purchaser's specification clause number-wise with reasons thereof, wherever applicable should be clearly brought out.

**1.1.2** Bids without detailed and point wise compliance statement will be rejected.

**1.1.3** Drawing and data Matrix:

S/N	PARTICULARS	HARD COPIES	SOFT COPIES (CD)	REMARKS
1	Drawings for information	4sets	2 No's	
2	Drawings for approval	4sets	2No's	One hardcopy shall be returned to vendor with approval or comments
3	Approved drawings	4sets	2No's	
4	As-built document	4sets	2No's	
5	Inspection History Docket	4sets	2No's	
6	Commissioning and O&M Manuals(Approved)	4sets	2No's	

**1.1.4** The vendor shall provide additional drawings as found necessary to check conformity with the standards mentioned in the specification. Vendor shall examine this list and include all particulars as found necessary.



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**2.0 ADDENDUM/CORRIGENDUM:**

- 2.1 Changes, modifications in specifications from that of NPCIL spec to be clearly brought out by the vendor and deviations from NPCIL Spec to be given in the tabular form. Spec sl no. to be prominently mentioned.**

Spec Sl no	Specification	Rev No	Date of Issue	Description	No of Sheets	Remarks
1	-	-	--	-	-	-

**3.0 BILL OF QUANTITIES**

S/N	Item Description	Quantity Unit#3 & Unit#7	Quantity Unit#4 & Unit#8	SPARE	Total Quantity	Remarks
1	LMME (Type-I)	4+4 Nos	4+4Nos	4+4 Nos	24 Nos	
2	LMME (Type-II)	44+44 Nos	44+44 Nos	20+20 Nos	216 Nos	
3	FMME	194+194 Nos	194+194 Nos	98 + 98Nos	972 Nos	
4	FMUs	29+29 Nos	29+29 Nos		116 Nos	
5	EMC & Climatic Test				1 Nos	
6	E&C Support	1 +1Nos	1+1 Nos	-	4 Nos	
7	Customer Training at NPCIL site				1 Nos	
Mandatory Spares for BMS (Common for both Units)						
8	Beetle Sensing Module				10 Nos	
9	Micro controller Module				10 Nos	
10	Power supply module				10 Nos	

Note: Quantities shown above may vary at the time of placement of PO.



- 4.0** After evaluation of technical bid , the qualified bidders will be referred to end user NPCIL for approval.  
Price Bids of bidders who are approved by NPCIL only shall be opened.

**5.0 AFTER AWARD OF CONTRACT**

Vendor shall submit following drawings/documents to purchaser within two weeks of placement of Purchase Order for approval in Hardcopies (4 sets) & Soft Copy (2 set):

- Item Data Sheet.
- QAP
- Test procedure wherever applicable.
- Any other data, document not specifically mentioned, but required for the satisfactory completion.
- Detailed technical manuals.

Vendor shall furnish all documents in A4 size (210mm x 297mm) paper or folded in A4 size unless otherwise specified. All drawings and sketches shall be in multiples of A4 size like A3 (297mm x 420mm) or A2 (420mm x 594mm) etc. But folded to A4 size. Final Documentation shall be submitted in bound volumes. All documentation should be done in English language only.

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**PART-C PRICE BID:**

**1.0 Price Bid:**

1.1 Vendor shall submit separate sealed price bid in line with BOQ (SI No) conforming to all technical and quality requirement.

**2.0 BILL OF QUANTITIES: (format)**

S/N	Item Description	Quantity Unit#3 & Unit#7	Quantity Unit#4 & Unit#8	SPARE	Total Quantity	Unit Price	Total Price
1	LMME (Type-I)	4+4 Nos	4+4Nos	4+4 Nos	24 Nos		
2	LMME (Type-II)	44+44 Nos	44+44 Nos	20+20 Nos	216 Nos		
3	FMME	194+194 Nos	194+194 Nos	98 + 98Nos	972 Nos		
4	FMUs	29+29 Nos	29+29 Nos		116 Nos		
5	EMC & Climatic Test				1 Nos		
6	E&C Support	1+1 Nos	1+1 Nos	-	4 Nos		
7	Customer Training at NPCIL site				1 Nos		
8	Beetle Sensing Module (Mandatory Spares)				10 Nos		
9	Micro controller Module (Mandatory Spares)				10 Nos		
10	Power supply module (Mandatory Spares)				10 Nos		

Note: Quantities shown above may vary at the time of placement of PO.

\*\*\*\*\*The End\*\*\*\*\*

Scope and Purpose:

This document indicates the requirements expected from the EPC contractor/manufacturer of the equipment's. Subsequent to the placement of purchase order contractor/manufacturer shall submit for purchaser's approval, a quality assurance plan in line with this document incorporating specific document numbers for "format of records", "acceptance norms" and "reference documents".

Abbreviations:

P:	Perform.	W:	Witness	V:	Verification of records.		
1:	NPCIL	2:	EPC Contractor-BHEL	3	Prime Supplier / Manufacturer.	4:	NPCIL approved Test Laboratory.
TC:	Test Certificate.	TR:	Test Report.	AD:	NPCIL Approved Document such as Tender Document, Purchase order, Datasheets, Drawings & Test procedures.		
IS:	Indian Standards	IEC:	International Electro technical commission standards	IEEE:	Institute of Electronics and Electrical Engineers standards		
TP	Test Procedure	DWG	Drawing				
CHP:	Customer Hold Point (Customer is NPCIL)						
Critical:	The characteristic of a component, Process or Operation failure of which will surely cause operating failure of intermittent troubles which is difficult to rectify at site or render the unit unfit for use or cause safety hazards.						
Major:	The characteristic of a component, Process or Operation whose failure may cause operation failure which cannot be readily corrected at site or cause substandard performance. Increased in erection and maintenance cost, reduced life or seriously affect the aesthetics.						
Minor:	The characteristics of a component. Process or Operation whose failure neither materially reduce the usability of the product in operation nor does it affect the aesthetics aspects.						
Sampling Plan :	Wherever quantum of check is indicated as sampling, it should be done generally in accordance with double sampling plan of IS:2500. Part-1, AQL: 1% normal level of inspection. If 100% witness of test is carried out by prime supplier, purchaser may witness on sample basis or if 100% "witness" of test is carried out by "sub-vendor", 'prime supplier' may witness on sample basis. Any deviation to this has to be specifically mentioned in the remarks column of QAP.						

General Notes:

- (i) Chemical and Mechanical tests on the material shall be performed in laboratories approved by NPCIL.
- (ii) Calibrated instruments shall be used during inspection, examination and testing.
- (iii) NPCIL approved chemicals for liquid penetrant examination shall be used.
- (iv) Non-destructive examination shall be carried out by personnel qualified to Level-II of ISNT or ASNT.
- (v) Electrodes shall be of brand approved by NPCIL. Batch testing of electrodes is required, if specified in the applicable specification.

**Quality Assurance Plan (Beetle-Moisture Elements)**

Sl. No	COMPONENTS/ OPERATION	CHARACTERISTICS	CATEGORY	METHOD OF CHECK	EXTENT OF CHECK			REFERENCE DOCUMENT	ACCEPTANCE NORMS/VALUE	FORMAT OF REPORT	AGENCY			REMARKS	SCOPE
					3	2	1				P	W	V		
1	Raw Material														
	a) SS Material	Composition	Major	Chemical	Sample	-	-	ASTM	ASTM	Analysis Report	3	-	1,2		Vendor
	b) Insulator	Electrical	Major	IR	Sample			Specification of insulator	>100M ohms at 500V DC.	Test Report	3	-	1,2		Vendor
2	In process														
	Beetle Element	Dimensional accuracy	Major	Visual and Physical	100%	-	-	Approved Drawings	Approved Drawings	Inspection Report	3	-	1*,2	* 10% random sample check by NPCIL.	Vendor
		Surface finish	Major	Visual	100%	-	-	Approved Drawings	Approved Drawings	Inspection Report	3	-	1,2		Vendor
	Thread check / Dimensional gauging	Dimension	Major	Measurement / Gauging	100%	-	-	Approved Drawings	Approved Drawings	Inspection Report	3	-	1*,2		Vendor
3	Finished Product	Physical	Major	Visual / Dimensional check	100%	-	-	approved DWGs & TP	approved DWGs & TP	Inspection Report	3	-	1,2	10% random check by NPCIL for All Characteristics	Vendor
		Mechanical	Major	Pressure test for LMME	100%	-	-	approved DWGs & TP	approved DWGs & TP	Inspection Report	3	-	1,2		Vendor
		Electrical	Critical	IR test	100%	-	-	approved TP	approved TP	Test Report	3	-	1,2		Vendor
		Functional Tests	Critical	As per approved Test Procedure	100%	-	-	approved TP	approved TP	Test Report	3	-	1,2		Vendor
4	Packaging	Tagging	Minor	Visual	100%	-	-	-	-	Inspection Report	3	-	1,2	10% random check by NPCIL	Vendor

**Quality Assurance Plan (FMU-Field Multiplexer Units)**

Sl. No	COMPONENTS / OPERATION	CHARACTERISTICS	CATEGORY	METHOD OF CHECK	EXTENT OF CHECK			REFERENCE DOCUMENT	ACCEPTANCE NORMS/ VALUE	FORMAT OF REPORT	AGENCY			REMARKS	SCOPE
					3	2	1				P	W	V		
1	FMU	Visual	Major	Manufacturing defects	100%	-	-	-	Defect free	Inspection Report	3	-	1,2		Vendor
		Mechanical	Major	Dimensional checks	100%	-	-	Approved Drawings	Approved Drawings	Inspection Report	3	-	1,2		Vendor
		Electrical	Critical	IR Test and Dielectric Strength Test	100%	-	-	approved TP	approved TP	Test Report	3	-	1,2		Vendor
		Functional Tests	Critical	approved TP	100%	-	-	approved TP	approved TP	Test Report	3	-	1,2		Vendor
		Burn in Test	Critical	approved TP	100%	-	-	approved TP	approved TP	Test Report	3	-	1,2		Vendor
		EMI/EMC test	Critical	approved TP	100%	-	-	approved TP	approved TP	Test Report	3	-	1,2		Vendor
		Climatic test	Critical	approved TP	100%	-	-	approved TP	approved TP	Test Report	3	-	1,2		Vendor
		Enclosure test	Critical	approved TP	100%	-	-	approved TP	approved TP	Test Report	3	-	1,2		Vendor
2	Packaging	Tagging	Major	Visual	100%	-	-	-	-	Inspection Report	3	-	1,2		Vendor

**P** - Performed by  
**W** - Witnessed by  
**V** - Verified by

**1. NPCIL**  
**2. BHEL-EDN**  
**3. Prime Supplier (Vendor)**

**4. External Lab.**

## **INSTRUCTIONS TO BIDDERS / SELLERS**

### **A. Scope & Applicability :-**

These Instructions along with all the details, terms & conditions in the RFQ and General Conditions of Contract (Document No: BHEL: EDN: SHOP: GCC: Rev00) shall apply for this REQUEST FOR QUOTATION (RFQ) and any resulting Order(s) / Agreement(s).

### **B. Definitions :-**

Throughout the documents referred to in A above the following terms shall have the meanings assigned to them, unless the subject matter or the context requires otherwise.

- **The Purchaser** means Bharat Heavy Electricals Limited (a Central Public Sector Enterprise) incorporated under the Companies Act, 1956 having its registered office at BHEL House, Siri Fort, New Delhi-110049, India acting through its Electronics Division / Electronics Systems Division at Bangalore and shall be deemed to include its successors and assigns. It may also be referred to as BHEL.
- **The Bidder** means the person, firm, company or organization to whom the RFQ is addressed / submits an offer against such RFQ and shall be deemed to include its successors, representative heirs, executors and administrator as the case may be. It may also be referred to as Seller, Contractor, Supplier or Vendor.

### **C. General :-**

1. All correspondence / clarifications shall be addressed to the contact person given in the RFQ / Purchase Order/Agreement.
2. In case of non-participation in the tender, regret letter with reason shall be sent by the vendor to the purchaser. If a vendor fails to respond against three consecutive tenders for the same item, he will be liable for removal as a registered vendor of BHEL for the item.
3. All timings are Indian Standard Time (IST).
4. Bidders shall not engage the services of the firms banned by BHEL. List of such banned firms is available at website [www.bhel.com](http://www.bhel.com). Offers of the bidders who are on the banned list/who engage the services of banned firms shall be rejected.
5. Any consultant or consultant firm including any of its affiliates or associates shall not be eligible to participate in tender / s for the related goods or works or services for the same project, for which they were engaged for the consultancy services by BHEL.

### **6. Agents / Representatives of OEMs / Principals :-**

- a. BHEL prefers to deal directly with Original Equipment Manufacturers (OEMs) / Principal for all its purchases. However, if the OEM / Principal insist on engaging the services of an Agent/Representative, such Agent / Representative will be allowed to represent only one OEM / Principal in the same tender. Either the Agent / Representative could bid on behalf of the OEM / Principal or the OEM / Principal could bid directly but not both. In case bids are received from both the OEM / Principal and the Agent/ Representative, the bid received from the Agent/Representative will be ignored.
- b. Agent/Representative authorized by the OEM/Principal in turn cannot further sub authorize any other firm for submitting the offer or for placement of order.
- c. Valid Authorization letter from the OEM / Principal to quote and negotiate on behalf of OEM / Principal to be submitted by the respective Agent/Representative.

### **7. The Purchaser Reserves the Right to :-**

- a. Cancel / retender the RFQ at any time before placement of Purchase Order / Agreement, without assigning any reason.
- b. Change the quantity to be ordered and the delivery schedule before placement of PO with mutual agreement with the seller.
- c. Adopt any method(s) of bidding including Reverse Auction (RA) instead of opening the sealed envelope price bid, submitted by the bidder. This will be decided after techno-commercial evaluation. All bidders to give their acceptance for participation in RA. Non-acceptance to participate in RA may result in non-consideration of their bids, in case BHEL decides to go for RA.
- d. Split the quantity in the RFQ among bidders for ordering.
- e. Accept / not accept whole / part of any offer(s).
- f. Accept / Reject any of the counter terms / deviations offered by bidder.
- g. Seek information / clarifications / confirmations relevant to the RFQ from the bidder(s) and fix deadlines for furnishing of the same by the bidder(s) and not to consider the offer(s) of such bidder(s) for further processing who fail to provide such information / clarifications / confirmations within the deadline fixed.
- h. Negotiate with the L1 bidder.
- i. Take necessary action as per prevalent BHEL Policy, with regard to the bidder(s) / vendor(s) who is/are :-
  - (i) Non-responsive.
  - (ii) Found to have been involved in unfair practices / actions contrary to business ethics /actions restricting competition.
  - (iii) Withdrawing offers after opening of Part I bid / s.

**D. Guidelines for Making the Offer :-**

1. Separate offer in English language addressed to the Purchase Executive shall be made for each RFQ in Single part/two parts/three parts as indicated in the RFQ.
2. a) **Single Part Bid:** Complete offer i.e., techno commercial bid and price bid to be made in single part. Offer shall be placed in a sealed envelope superscribed with RFQ No & Due Date.  
b) **Two Part Bid :** Offer shall be made in two parts as detailed below:  
"Techno-commercial Bid (Part I Bid) placed in a sealed envelope super scribed with RFQ No , Due date & "Techno Commercial Bid (Part I Bid)" & "Price Bid (Part II Bid)" placed in a separate sealed envelope superscribed with RFQ No, Due Date & "Price Bid (Part II Bid)". Both the sealed envelopes shall be placed in another sealed envelope superscribed with RFQ No & Due date  
c) **Three Part Bid:** Offer shall be made in three parts as detailed below:  
"Pre-Qualification Bid (Part I Bid)" in a sealed cover superscribed with RFQ No, Due Date and "Pre-Qualification Bid (Part I Bid)" , "Techno-commercial Bid (Part II Bid)" placed in a separate sealed envelope super scribed with RFQ No , Due date & "Techno commercial Bid (Part II Bid)" & "Price Bid (Part III Bid)" in another separate sealed envelope superscribed with RFQ No, Due date and "Price Bid (Part III Bid)". All the three sealed envelopes shall be placed in another sealed envelope superscribed with RFQ No & Due date.
3. Offers for RFQs on EPS (E-Procurement System) shall be made only on the template on EPS portal. All documents as required shall be uploaded on the portal.
4. Offer shall be in accordance with and complete in all respects with regard to the requirements of the RFQ.
5. Offers of Vendors who already have a valid Technical/Commercial MOU with BHEL-EDN for the items of the RFQ shall mention the relevant MOU reference No and give only such other details not covered in the MOU.
6. Corrections / overwriting shall be avoided. Corrections if any shall be respectively incorporated in all the bids (part-I / II / III i.e, Prequalification Bid / Techno-commercial Bid/ Price Bid) as applicable and shall be duly authenticated at each instance of correction by the authorized signatory with name and designation.
7. Offer shall have a minimum validity period of 90 days from the due date of the RFQ.
8. Please refer Clauses E and F below for Standard Commercial Terms and commercial deviations and loading of offers.
9. Bidders to be considered as Micro and Small Enterprises (MSEs) are required to submit the documents as per **Annexure I**.
10. **Non acceptance/deviations if any to the terms and conditions of the RFQ shall be clearly and explicitly mentioned in the offer, otherwise it will be treated that all the terms and conditions of the RFQ are accepted by the bidder in total.**
11. **Pre-Qualification Bid:** Shall have all details required as per RFQ along with documents as applicable.
12. **Techno Commercial Bid:**
  - a. Shall include BHEL material code and description as per RFQ and details of the item offered including make/model/part no along with relevant documents like drawings/data sheets/catalogs/BOMs etc. as applicable.
  - b. Commercial terms such as delivery period, delivery terms, payment terms, taxes and duties as applicable. Delivery quoted shall be earliest firm in terms of no of days/weeks/months from the date of PO/Drawing Approval/Manufacturing clearance as applicable. It is recommended to avoid delivery terms such as 'ex-stock', 'subject to prior sale' or 'delivery at the earliest', 'subject to release of PO within ----- period' and 'delivery range eg X-Y weeks'. **(Please Refer Clause 15 of General Conditions of Contract (Document No: BHEL: EDN: SHOP: GCC: Rev00) is applicable for delayed deliveries)**
  - c. In case the bidder quotes for imported material to be supplied directly to BHEL / Destination, the minimum amount of CVD that will be passed on to BHEL for availing CENVAT credit to be indicated.
13. **Price Bid:**
  - a. Most competitive price(s) to be quoted.
  - b. Shall include Price details such as currency ,item unit price, total price, discounts if any, packing forwarding charges ,freight, insurance , taxes and duties indicating the nature(eg ED, Cess, VAT ) as applicable.
  - c. **Quoted price(s) shall be FIRM and valid till the complete execution of Purchase Order / Agreement, except where price variation is specifically included in RFQ terms in which case the price(s) quoted shall be in accordance with the price variation formula given in the RFQ.**
  - d. Prices in both figures and words to be indicated.
  - e. Applicable documents shall be submitted to the purchaser at the time of supply for availing CENVAT/VAT credits.
  - f. The price quoted against each item shall be for units stated in the RFQ. Where quotation is in terms of a unit other than that in the RFQ, relationship between the two units shall be clearly brought out.
  - g. Registration details of the bidder such as TIN number, ECC number, KVAT / CST / GST / Service Tax Number as applicable shall be mentioned (applicable for bidders within India).

**E. Purchaser’s Standard Commercial Terms :-**

1. Unless specified otherwise in the RFQ , following are the Purchaser’s standard commercial terms:-

SI No	Description	For Purchase within India	For Foreign Purchase(Direct Imports)
i	Delivery Terms	<p><b><u>For High Sea Sales(HSS) :-</u></b> CIF Destination Airport (Name of Airport as given in the RFQ)</p> <p><b><u>For other than HSS :-</u></b> Door Delivery to BHEL Stores ,Bangalore with Freight and Insurance paid</p>	FCA International Gateway Airport (For shipment by air, Refer <b>Annexure II</b> for details) <b>OR</b> FOB Sea Port (for shipment by sea)
ii	Payment Terms	<p><b><u>100% direct payment with 45 days credit from the date of :</u></b> a) Receipt of material for Door delivery BHEL stores b)Receipt of complete set of documents for High Sea Sales c)Invoice for Ex-works delivery</p>	100% against sight draft with 45 days credit on negotiation of complete set of documents
iii	Reckoning of Delivery Date	<p><b><u>For Door Delivery at BHEL Stores:-</u></b> Date of receipt of material at BHEL Stores.</p> <p><b><u>For High Sea Sales(HSS) :-</u></b> Date of receipt of complete set of High Sea Sales documents</p> <p><b><u>For Delivery Terms of Ex-works /Negotiation of Documents Through Bank:-</u></b> Date of invoice</p> <p><b><u>Where Pre Shipment Inspection at seller’s works is applicable :-</u></b> Inspection call for the date on which material is ready for inspection supported with documents such as TC’s/ COC’s as applicable.</p>	<p><b><u>For Delivery Terms of Ex-works :-</u></b> Date of invoice</p> <p><b><u>For Delivery Terms of CIF/CIP/ FCA / FOB</u></b> Date of House Airway Bill(HAWB) / Bill of Lading / Date of receipt by BHEL’s Freight Forwarder whichever is earlier</p>
iv.	Penalty for Delayed Delivery	As per clause 15 of General Conditions of Contract (DOC .NO.BHEL :EDN:GCC-SHOP:REV:00)	
v	Cancellation/ Termination of Contract & Risk Purchase	As per Clause 24 of General Conditions of Contract ( DOC.NO.BHEL:EDN:GCC – SHOP :REV:00)	

2. When Bank Guaranty (BG) is applicable as per RFQ terms, the same shall be from any one of the BHEL Consortium of Banks (Refer **Annexure III**) in the prescribed format as per **Annexure IV**. The bank Guarantee shall be sent directly to BHEL by the issuing bank.

**F. Commercial Deviations / Offered Terms & Loading of Offers :-**

Unless specified otherwise in the RFQ and if the Purchaser decides to accept offers with deviations in respect of the standard commercial terms given at Clause No. E1 above, such offers will be subjected to loading on the **quoted basic material value** as detailed below:-

SI No	Deviation on	Nature of Deviation / Offered Terms	Loading %
i	Delivery Terms	<b>For purchase within India :-</b> Other than SI No.1 (i) of clause E above.	10
ii.	Payment Terms	<b>For purchase within India :-</b> 1) Payment against delivery/Proforma payment against receipt of material	15
		2) Payment against documents through bank – Delivery of material on production of consignee copy of LR	15*
		3) Credit period less than 45 days, but not less than 15 days.	10
		4) Payment against documents through bank with consignment door delivered to BHEL stores (without consignee copy of LR) and 45 days credit period.	2*
		<b>For foreign purchase :-</b> 1) Payment through At Sight Letter of Credit	10
		2) Payment through Letter of Credit with usance credit of 45 days	5
iii	Penalty for Delayed Delivery	3) Sight Draft with credit period less than 45 days	5
		1) Non – Acceptance	10
		2) Partial Acceptance ( X% )	(10 – X)

\* All bank charges shall be to seller's account. If bank charges of BHEL banker are to BHEL's account then **additional loading of 2% on the quoted basic value** is applicable.

**NOTE: Offer/ s with payment terms other than the standard payment terms indicated at E1(ii) or Deviated Payment Terms with loading indicated at F(ii) above are liable for rejection.**

**G. Submission of Offers:**

Offers shall be submitted as indicated below **within the due date and time** indicated in the RFQ/Any subsequent change intimated by Purchaser.

SI No.	Offer For	Mode of Submission
i	RFQs on EPS	Shall be made on the EPS (e-Procurement System) portal in line with the instructions given therein. <b>Notes :</b> a) To quote for the RFQs published through EPS vendors should have class III, 2048 Bit digital signature certificate (DSC) for both encryption and signing obtained from Certifying Authority (CA) authorized by Govt. of India through their Licensed Registering Authority (LRA). b) All required documents shall be uploaded before due date and time. Availability of power, internet connectivity, etc. is the sole responsibility of the bidder. Assistance required if any, may be availed from the Seller's Manual available on EPS portal of BHEL/ help line numbers of BHEL's Service Provider
ii	Other RFQs	Shall be dropped in the appropriate tender box as per details given in the RFQ OR May be Sent through post/courier/Fax/Email/EDI to the Purchase Executive/Fax No/Email ID indicated in the RFQ * * Bidders may adopt this mode at their own risk. The Purchaser does not own any responsibility / liability for delays in receipt / loss of secrecy of such offers. Such offers shall be received well in advance to enable them to be dropped in the tender box in time.

**NOTE :**

**OFFERS RECEIVED BEYOND DUE DATE AND TIME WILL NOT BE CONSIDERED**

**H. Processing of Offers Received:**

1. Only offers received in the mode and within the due date and time indicated in RFQ will be considered for processing.
2. The following offers may not be considered for processing
  - a) Incomplete
  - b) Conditional
  - c) With deviations other than listed in clause F above
3. If non acceptance to any of the terms & conditions of the RFQ or deviations if any are not clearly mentioned in the offer, it will be treated that all the terms & conditions of the RFQ are accepted by the bidder in total.
4. If offer is revised within the due date and time of the RFQ on e-Procurement System, latest will be available for processing. In other cases the latest offer will be considered for processing only when there is a clear indication of the same, otherwise BHEL reserves the right to consider/not consider any of the offers received.
5. **For offers on EPS, in case of any contradictions/inconsistency between the offered details on the bid template and those in the attachments, the offered details on the bid template only will be considered.**
6. If a range is given for delivery, longest duration in the given range will be considered as the quoted delivery. If any drawing / sample / technical datasheets/Quality Assurance Plan approval or Manufacturing Clearance by Purchaser is involved the quoted delivery will be considered from the date of such Approval / Clearance by the Purchaser. Bidder to clearly indicate the time (in terms of no of days / weeks from the date of PO) for submission of such Drawings /Data Sheets/ Samples/QAP to the Purchaser.
7. Changes in offer (Impact Bid)/Discounts or revised offers given after opening of Part-I bid will not be considered unless the same is sought by the Purchaser due to any change(s) in technical scope and / or specifications and / or commercial terms & conditions. In case of withdrawal of any Technical/Commercial deviation(s) by the bidder before opening of price bids, revision of price/impact bid will not be considered.
8. Any discount on the already submitted offer by the bidder on its own will be considered provided it is received on or before the due date and time of offer submission and clearly mentions "Discount offer to be considered along with the original offer "(on the envelope also). The discount will be applied on pro-rata basis to all the items unless mentioned otherwise by the bidder.
9. In case of two / three part bids, price bids of the techno-commercially accepted offers, only will be opened on a subsequent date, with prior intimation.
10. Offers considered with commercial deviations will be subject to loading as per clause F above.
11. In case BHEL decides to go for Reverse Auction Guidelines as **per Annexure V** are applicable. Only those bidders who have given their acceptance to participate in RA will be allowed to participate in the Reverse Auction. Those bidders who have given their acceptance to participate in Reverse Auction will have to necessarily submit "**online sealed bid**" in the Reverse Auction. Non submission of "**online sealed bid**" by the bidder will be considered as tampering of the tender process and will invite action by BHEL as per extant guidelines in vogue. In case BHEL decides **NOT to adopt Reverse Auction** method of bidding, the sealed price bids and price impacts if any, of all the techno commercially qualified bidders already submitted and available with BHEL shall be opened as per BHEL's standard practice.
12. Evaluation of Price bids will be done on the basis of "**Total Cost to Purchaser** "taking into consideration:
  - d) Basic material value, taxes and duties, packing and forwarding charges, freight and insurance, any other costs and loading for deviations if any, as applicable.
  - e) CENVAT/MODVAT/VAT credit benefits available to BHEL.
  - f) Calculated costs of freight, insurance and clearance charges as applicable, for foreign purchases.
  - g) RFQ item wise prices unless specified otherwise in the RFQ terms.
  - h) The offered quantity if offered quantity is more than the RFQ quantity
  - i) For offers in foreign currency, the exchange rate (TT selling rate of State Bank Of India (SBI)) will be taken as under :-

**Single Part Bids: -** Date of tender opening

**Two / Three part bids / Reverse Auction: -** Date of Part-1 bid opening

If the relevant day happens to be a bank holiday then the FOREX rate (TT selling rate) as on the previous bank (SBI) working day will be taken.

13. Any typographical error, totaling mistakes, currency mistake, multiplication mistake, summing mistakes etc. observed in the price bids will be evaluated as per Clause 11.2.3 "Non-conformities between the figures and words of the quoted prices" of "Manual on Policies & Procedures for purchase of goods" issued by Ministry of Finance / Government of India.(Refer **Annexure VI**). BHEL's decision will be final in this regard.
14. Ranking (L-1, L-2 etc.) will be done only for the techno-commercially accepted offers.
15. Purchase Preference for MSE Vendors will be considered as per **Annexure VII**.

**I. Despatch, Invoicing and Documentation :-**

1. All goods shall be consigned to the Consignee details as given in the Purchase Order.
2. Quantity of goods in invoice / delivery challan shall tally with the goods delivered.
3. For delivery terms Ex-Works, the Seller shall intimate the readiness of goods to BHEL/BHEL's authorized freight forwarder/BHEL's authorized transporter and the goods shall be handed over to the BHEL's authorized freight forwarder/BHEL authorized transporter / agency assigned by BHEL. Goods can also be despatched as mutually agreed between BHEL and Seller.
4. Packing shall be road / rail / air / sea worthy as applicable for adequate protection against transit damages.
5. **Delivery timings at BHEL stores(On all working days) :-**  
09.00 AM to 03.00 PM (Monday to Friday)  
09.00 AM to 11.00 AM (Saturday)  
Deliveries other than the timings indicated shall be done with prior permission from the purchase executive.
6. The invoice shall be in accordance with the PO duly supported with documents as called in the PO and shall contain the following details :-  
BHEL PO No and PO Item no., BHEL material code and description, Quantity, Vendor's name, Address.
7. The rates shall be as per applicable PO rates. Indicate the basic rate, duties & taxes as applicable along with Vendor TIN number (applicable for dispatches from within India).
8. For issue of "C" Forms duly filled up format as per **Annexure VIII** shall be sent to email id: **cform@bheledn.co.in**.
9. **Documents :-**  
Seller shall arrange to send the documents as applicable as per **Annexure IX** to the Purchaser, along with dispatch of goods. Any addition / exclusion to such documents shall be as specified in the Purchase Order.

**J. Information on Processing of Payment :-**

1. All direct payments will be made through Electronic Fund transfer (EFT). Vendor shall furnish e-payment particulars duly authenticated by their respective Bankers as per BHEL standard format (Refer **Annexure X**), if not registered with the purchaser earlier.
2. In case of High Sea Sales and Foreign Purchases, customs clearance of the consignment landed on Indian Sea / Air ports will be done by BHEL based on the original documents provided by Seller. All warehousing charges due to delay in submission of complete and or correct documents to BHEL may be charged to Seller's account.
3. Statutory deductions, if any, will be made and the deduction certificate shall be issued. In case Seller does not provide PAN details, the TDS deduction shall be at the maximum percentage stipulated as per the provisions of Income Tax Act.
4. Bills/Invoices will be processed for payment only if they are complete in all respects, correct and supported with relevant documents as applicable. Any delays in this regard will result in consequent delays in payment.

## GENERAL CONDITIONS OF CONTRACT FOR PURCHASE

### 1. Applicable Conditions :-

These General Conditions of Contract for Purchase (GCP) apply to all enquiries, tenders, requests for quotations, orders and agreements concerning the supply of goods and the rendering of related services (hereinafter referred to as "deliveries") to Bharat Heavy Electricals Limited, Electronics Division / Electronics Systems Division (hereinafter referred to as "BHEL" or the Purchaser) or its projects / customers. Any deviations from or additions to these 'General Conditions of Contract for Purchase' require Purchaser's express written consent. The general terms of business or sale of the Seller shall not apply to the Contract. Acceptance or receipt of shipments or services or effecting payment shall not mean that the general terms of business or sale of the Seller have been accepted by the Purchaser. Purchase orders, Orders, agreements and amendments thereto shall be binding if made or confirmed by the Purchaser in writing.

### 2. Definitions :-

Throughout these conditions and in the specifications, the following terms shall have the meanings as assigned hereunder, unless the subject matter or the context requires otherwise.

- a. **'Purchaser'** means Bharat Heavy Electricals Limited (a Central Public Sector Enterprise) incorporated under the Companies Act, 1956 having its registered office at BHEL House, Siri Fort, New Delhi-110049, India acting through its Unit Electronics Division / Electronics Systems Division at Bangalore and shall be deemed to include its successors and assigns. It may also be referred to as BHEL.
- b. **'Seller'** means the person, firm, company or organization on whom the Purchase Order is placed and shall be deemed to include the seller's successors, permitted assigns, representatives, heirs, executors and administrators, as the case may be. It may also be referred to as Contractor, Supplier or Vendor.
- c. **'Contract'** shall mean and include the Purchase Order (also referred to as the "Order" or 'PO'), letter of intent (LOI) / letter of acceptance or award (LOA) along with tender / offer / bid submitted by the Seller, the General Conditions of Contract and Special Conditions of Contract for Purchase, Specifications, Inspection / Quality Plan, Schedule of Prices and Quantities, Drawings, if any enclosed or to be provided and the samples or patterns if any to be provided under the provisions of the Contract, by the Purchaser or his representative. Any conditions or terms stipulated by the tenderer / bidder in the tender / offer / bid or subsequent letters shall not form part of the Contract unless specifically accepted in writing by the Purchaser.
- d. **'Parties to the Contract'** shall mean the Seller and the Purchaser and Party shall mean either the Seller or the Purchaser.

### 3. Order of Precedence:-

In case of any inconsistency or contradiction between any of the documents, the order of precedence shall be Purchase Order, LOI / LOA, specific agreement, Special Conditions of Contract and General Conditions of Contract for commercial conditions; and specific agreement on technical conditions, Special Technical Conditions and General Technical conditions, RFQ / Offer.

### 4. Interpretation :-

In the contract, except where the context requires otherwise:-

- a. words indicating one gender include all genders;
- b. words indicating the singular also include the plural and words indicating the plural also include the singular;
- c. provisions including the word "agree", "agreed" or "agreement" require the agreement to be recorded in writing, and
- d. "Written" or "in writing" means hand-written, type-written, printed or electronically made, and resulting in a permanent record.

### 5. Ordering and Confirmation of Order :-

The Seller shall send the acceptance of the LOI / Purchase Order within two weeks or such other period as specified/agreed by BHEL from the date of LOI / Purchase Order. Purchaser reserves the right to revoke the order placed if the order acceptance differs from the original order placed. Purchaser shall only be bound after it has agreed explicitly in writing to be in agreement with the deviations. The acceptance of deliveries or supplies by Purchaser as well as payments made in this regard shall not imply acceptance of any deviations. The Purchase order will be deemed to have been accepted by the Seller, if no communication to the contrary is received within two weeks (or the time limit as specified / agreed by the Purchaser) of the receipt of the order.

### 6. Execution :-

The Seller shall execute the whole contract in the most approved, substantial and workman like manner as per the contracted terms. The Seller shall comply with all laws, ordinances, rules, and regulations bearing upon the performance of its obligations under the terms of the Contract.

### 7. Progress Reports and Documentation :-

After receipt of Purchase Order, seller should submit required documents like drawings, bill of materials, datasheets, catalogues, quality plan, test procedure, type test report, O & M Manuals and / or any other relevant documents as per Specification / Purchase Order, as indicated in the Purchase order. At any stage within the contract period, the seller shall notify of any error, fault or other defect found in BHEL's documents / specifications or any other items for reference. If and to the extent that (taking account of cost and time) any seller exercising due care would have discovered the error, fault or other defect when examining the documents / specifications before submitting the tender, the time for completion shall not

be extended. However if errors, omissions, ambiguities, inconsistencies, inadequacies or other defects are found in the seller's documents, they shall be corrected at his cost, notwithstanding any consent or approval. The Seller shall submit periodic reports as to the progress in execution of the contract and in such form as may be called for by the Purchaser. The submission and acceptance of such reports shall not prejudice the rights of the Purchaser in any manner.

**8. Product Information, Drawings and Documents :-**

The Seller shall, as per agreed date / s but not later than the date of delivery, provide information and drawings which are necessary to permit the Purchaser to use, erect, commission, operate and maintain the product. Such information and drawings shall be supplied in the number of copies agreed upon.

**9. Non-disclosure and Information Obligations :-**

The Seller shall provide Purchaser with all information pertaining to the delivery in so far as it could be of importance to Purchaser. The Seller shall not reveal any confidential information (including price) in relation to the contract in general and those which it may acquire from the purchaser during the course of execution of the contract in particular, to its own employees not involved with the tender / Contract & its execution and delivery or to third parties, or make use of such information pertaining to any data, designs, drawings, specifications and other information furnished to it by the Purchaser, unless Seller seeks a permission to do so from the Purchaser and the Purchaser has agreed to this in writing beforehand. The Seller shall not be entitled to use the Purchaser's name in advertisements and other commercial publications without prior written permission from Purchaser.

**10. Intellectual Property Rights; Licenses :-**

If any patent design, trade mark, copyright, trade secret or any other intellectual property rights apply to the products / goods supplied, or delivery or accompanying documentation, Purchaser or its Customer shall be entitled to the legal use thereof free of charges by means of a non-exclusive, assignable, transferrable, sub-licensable, worldwide, perpetual license as duly granted by the owner or licensor of such right. All intellectual property rights that arise or developed during or due to the execution of the contract or delivery of the goods by the Seller and by its employees or third parties involved by the Seller for performance of the Contract belong to Purchaser. The Seller is obliged under the contract to do everything necessary to obtain or establish the above mentioned rights in favor of Purchaser. The Seller guarantees that the execution of the contract including goods and its delivery does not infringe any of the intellectual property rights of third parties. The Seller shall do everything necessary to obtain or establish the alternate acceptable arrangement pending resolution of such (alleged) claims by third parties, if any. The Seller agrees to indemnify, defend, and hold harmless Purchaser, its officers, employees, agents, representatives, successors, assigns, or any of the Purchaser's customers buying or using the goods or services, against any actual or alleged infringement of such intellectual property interests or claims by third parties in this regard and shall reimburse Purchaser for any liabilities, damages, penalties, injuries, claims, demands, actions, costs and expenses (including, without limitation, reasonable legal and other professional fees and expenses) suffered as a result thereof.

**11. Inspection and Testing :-**

Prior written notice of at least 10 days shall be given along with internal test certificates / COC and applicable test certificates. Materials will be inspected by BHEL-EDN-QS/CQS or BHEL nominated Third Party Inspection Agency (TPIA) or BHEL authorized Inspection Agency or Customer / Consultant or jointly by BHEL & Customer / consultant. All tests have to be conducted as applicable in line with approved Quality plan or QA Checklist or Purchase specification and original reports shall be furnished to BHEL for verification / acceptance for issue of dispatch clearance. All costs related to inspections & re-inspections shall be borne by vendor. Whether the Contract provides for tests on the premises of the vendor or any of his Sub-contractor/s, vendor shall be responsible to provide such assistance, labour, materials, electricity, fuels, stores, apparatus, instruments as may be required and as may be reasonably demanded to carry out such tests efficiently. Cost of any type test or such other special tests shall be borne by BHEL only if specifically agreed to in the purchase order.

**12. Quality and Condition of the Delivery :-**

The Seller shall guarantee that the delivery:-

- a. Is of good quality and free from defects and in the case of services rendered that they are performed by skilled personnel and that new materials are used;
- b. corresponds exactly with the provisions of the Contract, the reasonable expectations of Purchaser regarding the characteristics, quality and reliability of the delivery;
- c. is suitable for the purpose for which it is intended by its very nature or which is evident from the specifications or the Contract;
- d. Complies with legal requirements applicable in India and other (international) Government regulations, as applicable.
- e. Complies with the customary norms and standards in the relevant branch of trade or industry.

The Seller shall be responsible for compliance with applicable technical, safety, quality, environmental requirements and other regulations in relation to its products, packaging, and raw and ancillary materials.

**13. Packaging and Dispatch :-**

The seller shall package the deliverables safely and carefully and pack them suitably in all respects considering the peculiarity of the material for normal safe transport by Sea / Air / Rail / Road to its destination suitably protected against loss, damage, corrosion in transit and the effect of tropical salt laden atmosphere. The packages shall be provided with fixtures / hooks and sling marks as may be required for easy and safe handling by mechanical means. Each package must be marked with consignee name, P.O Number, BHEL material code, Package No., Gross weight & Net weight, Dimensions

(LxBxH) and seller's name. The packing shall allow for easy removal and checking of goods on receipt and comply with carrier's conditions of packing or established trade practices. **Packing list of goods inside each package with P.O item no. & Quantity must also be fixed securely outside the box to indicate the contents. If any consignment needs special handling instruction, the same shall be clearly marked with standard symbols / instructions. Hazardous material should be notified as such and their packing, transportation and other protection must conform to relevant regulations.**

**14. Delivery :-**

Delivery shall be as per Purchase Order delivery terms. Trade terms such as DDL, FOR, EXW, FOB, CFR etc., if stipulated in the order shall be construed in accordance with the version of the INCOTERMS applicable at the time of ordering, without prejudice to the provisions contained in these conditions. The delivery date(s) or delivery period(s) as stipulated in the Contract shall be firm and binding and shall apply to the entire delivery for each PO item. Partial shipments may, however, be permitted by the purchaser.

**15. Penalty :-**

The time or period of delivery as stipulated in the schedule of delivery shall be deemed to be the essence of the contract. Should circumstances arise whereby the deadline for an agreed delivery date(s) or period(s) is expected to be exceeded, the seller shall inform purchaser hereof without delay. If delay in delivery is caused by any of the circumstances mentioned in clause 25 (Force Majeure) or which are caused exclusively by the acts of purchaser, the purchaser shall extend the time for delivery by a period which is reasonable having regard to all the circumstances in the case.

a. **For delay in documentation :-**

In the event of delay in submission of complete set of documents (like drawings, bill of materials, datasheets, catalogues, quality plan etc. as called in tender specifications including soft copies wherever applicable) in required sets beyond three weeks (or as agreed / indicated in the Purchase Order) from the date of Purchase Order, penalty at 0.5% (half percent) per week or part thereof, limited to a maximum of 5% (five percent) of the basic material value of the Purchase Order will be applicable.

b. **For delay in delivery :-**

In the event of delay in agreed contractual delivery as per Purchase Order, penalty @ 0.5% (half percent) per week or part thereof but limited to a max of 10% (ten percent) value of delayed portion (basic material cost) will be applicable. Delivery will commence from the date of document approval by customer / BHEL or date of issue of manufacturing clearance, whichever is later in cases where such approval/manufacturing clearance is applicable as per PO. Where pre shipment inspection is applicable, the date for which Inspection call is issued by vendor along with test certificates / test reports / Certificate of Conformance / calibration reports, as proof of completion of manufacturing will be treated as date of deemed delivery for penalty calculation. In the absence of furnishing such document indicated above as proof of completion of manufacturing along with inspection call, actual date of inspection will be considered as date of deemed delivery and BHEL will not be responsible for delay in actual date of inspection.

Penalty for delayed documentation/delayed delivery, if applicable, shall be deducted at the time of first payment. If penalty is applicable for duration of less than a week, penalty @ 0.5% (half percent) of the basic material value will be deducted.

Imposition, recovery or settlement of this penalty shall not affect any rights of the purchaser to claim enforcement of specific performance of the contract, compensation and/or to terminate the contract.

**16. Assignment of Rights & Obligations; Subcontracting:**

Vendor is not permitted to subcontract the delivery or any part thereof to third party or to assign the rights and obligations resulting from this agreement in whole or in part to third parties without prior written permission from BHEL. Any permission or approval given by BHEL shall, however, not absolve the vendor of the responsibility of his obligations under the Contract.

**17. Transfer of Ownership, title and Risk :-**

The risk for the delivery remains with the Seller until the goods are delivered at the agreed place and acknowledged by the Purchaser/his authorized representative.

**18. Price, Invoicing and Payment :-**

The agreed prices are fixed prices in the currency as specified in the Purchase Order. They shall include packing, forwarding, loading and carriage to the place specified by the Purchaser and are inclusive of all applicable taxes, duties etc. except for those specifically agreed between the Seller and Purchaser. Further, Seller shall indemnify and hold harmless Purchaser from all claims and liabilities, damages, penalties, injuries, claims, demands, actions, costs and expenses (including, without limitation, reasonable legal and other professional fees and expenses) arising from Seller's failure to report or pay any taxes, tariffs or duties for which Seller is responsible. The method of invoicing shall be without prejudice to the parties' agreement as to the place of performance. Indian Agent's commission if payable and so specified in the Purchase Order shall be paid in Indian Rupees, considering the SBI TT selling exchange rate prevailing on the date of Purchase Order, after successful completion of the contract. If so stipulated in the order, the Seller shall furnish, on receipt of the Purchase Order or along with order acknowledgement, the Billing break-up of prices (BBU) for approval by the Purchaser in respect of the major items / components going into the equipment. This BBU is required by the Purchaser for admitting the claims of the Seller if part shipments are contemplated and also to facilitate custom clearance after payment of applicable duties in case of imports. Purchaser shall be entitled to suspend payment for as long as required supporting documents / details remain outstanding and any consequential demurrage / wharfage shall be to the account of the Seller. Payment does not imply in

any respect whatsoever a waiver of Purchaser's right to performance of the Contract. Purchaser is entitled to set off claimable debts against claimable liabilities with the Seller by means of a set off note.

**19. Contract Variations; Increase or Decrease in the Scope of Supply :-**

The purchaser may vary the contracted quantities during execution, due to exigencies of project requirements with mutual consent of the seller.

**20. Guarantee / Warranty :-**

Wherever required, and so provided in the specifications / Purchaser Order, the Seller shall guarantee that the goods supplied shall comply with the specifications laid down, for materials, workmanship and performance. If within the guarantee period, the delivery is found to be non-compliant including those with the stipulations in Clause 12 (Quality and Condition of Delivery) of these Conditions, the Seller shall, for its own account, replace, repair, or re-execute the delivery at Purchaser's discretion when first requested to do so within two weeks or mutually agreed period, without prejudice to Purchaser's other legal rights. If the Seller continues to default on its obligations, Purchaser has the right to proceed to replace, repair or re-execute the order at the Seller's expense, with or without help from third parties. Purchaser shall notify the Seller of the exercise of this right in advance where possible. Unless otherwise specified, guarantee period shall be minimum 12 months from the date of commissioning or 18 months from the date of supply whichever is earlier. The guarantee period shall be extended by the period during which the goods are not in compliance with the stipulations in Clause 12 (Quality and Condition of Delivery). A guarantee period as described above shall apply afresh to replaced, repaired or re executed parts of a delivery. The decision of the Purchaser in regard to the Seller's liability under this clause shall be conclusive. This clause shall survive termination / completion of contract.

**21. Shortages / Replacements :-**

In the event of shortage on receipt of goods and / or on opening of packages at BHEL, all such shortages shall be made good within a reasonable time that BHEL may allow from such intimation and free of cost.

**22. Transit Damages :-**

In the event of receipt of goods in damaged condition or having found them so upon opening of packages at BHEL Supplier shall make good of all such damages within a reasonable time from such intimation by BHEL. In case BHEL raises an insurance claim, the cost of material limited to insurance settled amount less handling charges will be reimbursed.

**23. Rejection / Replacement :-**

The Seller shall arrange replacement / repair under its obligation under the contract within two weeks from the date of intimation or mutually agreed period. The rejected goods shall be taken away by the Seller and replaced on DDP (Delivered duty Paid)/ FOR - BHEL Stores / designated destination basis within such period. In the event of the Seller's failure to comply, Purchaser may take appropriate action including disposal of rejections and replacements, at the cost and risk of the Seller. In case defects attributable to Seller are detected during processing of the goods at purchaser's / his subcontractor works, the Seller shall be responsible for replacement / repair of the goods as required by the Purchaser at Seller's cost. In such cases expiry of guarantee/warranty will not be applicable.

**24. Cancellation / Termination of Contract and Risk Purchase :-**

- a. Purchaser shall have the right to completely or partially terminate the Contract by means of written notice to that effect without prejudicing its other rights and remedies, in an event of default by the Seller :-

**Events of default :-**

- (i) The Seller fails to perform within the time specified in the Contract or any extension thereof;
- (ii) The Seller defaults on one or more of the obligations or program of work as contained in the Contract.
- (iii) The Seller is declared bankrupt or insolvent or is ordered to be wound up, its business has been shut down or liquidated, a substantial part of its assets have been attached, or the business has been transferred to a third party. In case of partnership firm any dissolution of partnership shall be also considered as an event of default.
- (iv) Any misrepresentation or hiding of material fact if detected at a later stage
- (v) The delivery is rejected after inspection or re-inspection.
- (vi) Export license not granted to Seller by the concerned Government.
- (vii) Incapacity of seller for any other reason to deliver or perform the contract.

BHEL shall have the right to cancel / foreclose the Order / Contract, wholly or in part, in case it is constrained to do so, on account of any decline, diminution, curtailment or stoppage of the business. In the event of termination, the risk and liability attached to the items already delivered but not of use to Purchaser, as determined by Purchaser, remains with the Seller. Such items shall then be at the Seller's disposal and they are to be collected or removed by the Seller. The Seller shall immediately refund any payments in respect of such items if already made by the Purchaser before the termination, and in any case not later than 30 days.

- b. In the event of termination due to reasons or defaults by the Seller, the Purchaser may at his option procure from any source, on such terms and in such manner as he deems appropriate, goods not delivered or others of similar description where goods exactly complying are not readily procurable, in the opinion of the Purchaser, which opinion shall be final, at the risk and cost of the Seller and the Seller shall be liable to the Purchaser for any risks and excess cost. The cost of purchases made by the Purchaser at the risk and cost of the Seller shall be worked out after loading 10% overhead / handling charges on the cost of materials and related services procured from alternate source / s. Provided, however, that the Seller shall continue the performance of the Contract to the extent not cancelled or terminated under the provisions of this clause. The Seller shall on no account be entitled to any gain on such re-

purchases by the Purchaser.

- c. Termination of the Contract, from whatever cause arising, shall be without prejudice to the rights of the parties accrued under the Contract up to the time of termination.

**25. Force Majeure :-**

Notwithstanding anything contained in the purchase order or any other document relevant thereto, neither party shall be liable for any failure or delay in performance to the extent said failures or delays are caused by the "Act of God" and occurring without its fault or negligence, provided that, force majeure will apply only if the failure to perform could not be avoided by the exercise of due care and vendor doing everything reasonably possible to resume its performance. A party affected by an event of force majeure shall give the other party written notice, with full details as soon as possible and in any event not later than three (3) calendar days of the occurrence of the cause relied upon. If force majeure applies, dates by which performance obligations are scheduled to be met will be extended for a period of time equal to the time lost due to any delay so caused.. Notwithstanding above provisions, Purchaser shall reserve the right to cancel the order / Contract, wholly or partly, in order to meet the overall project schedule and make alternative arrangements for completion of deliveries and other schedules. Purchaser may takeover partly processed material at a mutually agreed price.

**26. Indemnification :-**

Vendor is fully responsible for ensuring that all legal compliances and safety guidelines are followed in course of the contract. Notwithstanding any other clause herein to the contrary, the Seller shall indemnify, hold and save harmless, and defend, at its own expense, the Purchaser, its officials, agents, servants and employees from and against all suits, claims, demands, and liability of any nature or kind, including their costs and expenses, arising out of acts or omissions of the Seller, or the Seller's employees, officers, agents or sub-contractors, in the performance of this Contract. This provision shall extend, inter alia, to claims and liability in the nature of employee's compensation and products liability. The obligations under this clause do not lapse upon termination of this Contract.

**27. Non-waiver of Defaults :-**

If any individual provision of the Contract is invalid, the other provisions shall not be affected.

The failure of Purchaser,

- a. To enforce any of the terms and conditions of the Contract.

Or

- b. To exercise any right or privilege granted to Purchaser.

Under the Contract or under law shall not release the Seller from any of the warranties or obligations under the Contract and shall not be construed as a waiver thereof and the same shall continue in full force and effect.

**28. Limitation of Liability :-**

Vendor's liability towards this contract is limited to a maximum of 100% of the contract value and consequential damages are excluded. However the limits of liability will have no effect in cases of criminal negligence or willful misconduct. The total liability of Vendor for all claims arising out of or relating to the performance or breach of the Contract or use of any Products or Services or any order shall not exceed the total Contract price.

**29. Settlement of Disputes :-**

Except as otherwise specifically provided in the Purchase Order, decision of BHEL shall be binding on the vendor with respect to all questions relating to the interpretation or meaning of the terms and conditions and instructions herein before mentioned and as to the completion of supplies / work / services, other questions, claim, right, matter or things whatsoever in any way arising out of or relating to the contract, instructions, orders or these conditions or otherwise concerning the supply or the execution or failure to execute the order, whether arising during the schedule of supply / work or after the completion or abandonment thereof. Any disputes or differences among the parties shall to the extent possible be settled amicably between the parties thereto, failing which the disputed issues shall be settled through arbitration. Vendor shall continue to perform the contract, pending settlement of dispute(s).

**30. Arbitration Clause :-**

In case amicable settlement is not reached in the event of any dispute or difference arising out of the execution of the Contract or the respective rights and liabilities of the parties or in relation to interpretation of any provision in any manner touching upon the Contract, such dispute or difference shall (except as to any matters, the decision of which is specifically provided for therein) be referred by either party to the sole arbitration of an Arbitrator appointed by the Unit head of Electronics division of BHEL. Vendor shall have no objection even if the Arbitrator so appointed is an employee of BHEL or has ever dealt / had to deal with any matter relating to this Contract. Subject as aforesaid the provisions of the Arbitration and Conciliation Act, 1996 of India or any statutory modification or re-enactment thereof and the rules made there under and for the time being in force shall apply to the arbitration proceedings under this clause. It is a term of contract that the party initiating arbitration shall specify the dispute or disputes to be referred to arbitration under this clause together with the amount or amounts claimed in respect of each such dispute. The venue for the arbitration shall be Bangalore, India. The award of the arbitrator shall be a speaking award and shall be final, conclusive and binding on all parties to this contract.

- a. The cost of Arbitration shall be borne equally by the parties.

- b. Notwithstanding the existence of any dispute or difference or any reference for the arbitration, the Seller shall proceed with and continue without hindrance the performance of the work under the Contract with due diligence and expedition in a professional manner.

**31. Applicable Laws and Jurisdiction of Courts :-**

The Contract shall be governed by the substantive laws of India. This contract shall be construed and interpreted in accordance with the laws of India and shall have exclusive jurisdiction of courts in Bangalore, Karnataka State, India.

**32. General Terms:**

That any non-exercise, forbearance or omission of any of the powers conferred on BHEL and /or any of its authorities will not in any manner constitute waiver of the conditions hereto contained in these presents. That the headings used in this agreement are for convenience of reference only. That all notices etc., to be given under the Purchase order shall be in writing, type script or printed and if sent by registered post or by courier service to the address given in this document shall be deemed to have been served on the date when in the ordinary course, they would have been delivered to the addressee.



## **ANNEXURE – I**

### **BENEFITS FOR MSE SUPPLIERS AS PER MSMED ACT 2006 AND PUBLIC PROCUREMENT POLICY 2012**

MSE suppliers can avail the intended benefits only if they submit along with the offer, attested copies of either EM II certificate having deemed validity (five years from the date of issue of acknowledgement in EM II) or valid NSIC certificate or EM II certificate along with attested copy of CA certificate (Format enclosed at page 2 where deemed validity of EM II certificate of five years has expired) applicable for the relevant financial year (latest audited). Date to be reckoned for determining the deemed validity will be the date of bid opening (Part 1 in case of two part bid). Non submission of such documents will lead to consideration of their bid at par with other bidders. No benefit shall be applicable for this enquiry if any deficiency in the above required documents are not submitted before price bid opening. If the tender is to be submitted through e-procurement portal, then the above required documents are to be uploaded on the portal. Documents should be notarized or attested by a Gazetted officer.



**Certificate by Chartered Accountant on Letter Head**

This is to certify that M/s .....  
.....(Hereinafter referred to as 'Company') having its  
registered office at ..... is registered under MSMED Act 2006, (Entrepreneur  
Memorandum No ((Part-II) ..... dtd ..... Category: .....  
(Micro/Small). (Copy enclosed).

Further verified from the Books of Accounts that the investment of the company as per the  
latest audited financial year ..... **as per MSMED Act 2006 is as follows:**

- 1. **For Manufacturing Enterprises:** Investment in plant and machinery ( i.e., original cost excluding land and building and the items specified by the Ministry of Small Industries vide its notification No.S.O.1722 (E) dated October 5, 2006:  
Rs. ....Lacs.
- 2. **For Service Enterprises:** Investment in equipment (original cost excluding land and building and furniture, fittings and other items not directly related to the service rendered or as may be notified under the MSMED Act, 2006:  
Rs. ....Lacs.

The above investment of Rs. .... Lacs in within permissible limit of  
Rs..... Lacs for.....Micro / Small (Strike off which is not applicable)  
Category under MSMED Act 2006.

(or)

The company has been graduated from its original category (Micro/Small) (Strike off which is not applicable) and the date of graduation of such enterprise from its original category is .....(dd/mm/yy) which is within the period of 3 years from the date of graduation of such enterprise from its original category as notified vide S.O.No.3322(E) dated 01.11.2013 published in the gazette notification dated 04.11.2013 by Ministry of MSME.

Date:

(Signature)

Name -

Membership Number -

Seal of Chartered Accountant

**ANNEXURE-II**

**LIST OF INTERNATIONAL GATEWAY AIRPORTS**

SCHEDULE NO	COUNTRY	CURRENCY CODE	AIRPORT
D01	UK	GBP	LONDON (HEATHROW)
D02	UK	GBP	NEW CASTLE
D03	UK	GBP	OXFORD. CHETLAM
D04	UK	GBP	BRISTOL. WELLINGBOROUGH
D05	UK	GBP	BIRMINGHAM
D06	UK	GBP	EAST MIDLANDS
D07	UK	GBP	MANCHESTER
D08	UK	GBP	LEEDS
D09	UK	GBP	GLASGOW
D10	FRANCE	EURO	PARIS (ROISSY) & LYON
D11	SWEDEN	EURO	STOCKHOLM
D12	SWEDEN	EURO	GOTHENBERG & MALMO
D13	ITALY	EURO	ROMA, MILAN
D14	ITALY	EURO	TURIN, BOLOGNA, FLORENCE
D15	NETHERLANDS	EURO	AMSTERDAM, ROTTERDAM
D16	AUSTRIA	EURO	VIENNA, LINZ, GRAZ
D17	BELGIUM	EURO	ANTWERP, BRUSSELS
D18	DENMARK	DKK	COPENHAGEN
D19	JAPAN	JPY	TOKYO, OSAKA
D20	SINGAPORE	SGD	SINGAPORE
D21	CANADA	CAD	TORONTO
D22	CANADA	CAD	MONTREAL
D23	USA	USD	NEW YORK, BOSTON
D24	USA	USD	CHICAGO
D25	USA	USD	SAN FRANCISCO, LOS ANGELES
D26	USA	USD	ALANTA, HOUSTON
D27	GERMANY	EURO	MUNICH, KOLN, DUSSELDORF, HANNOVER, HAMBURG, STUTTGART, DAMSTADT, MANIHIEM, NURUMBERG
D28	GERMANY	EURO	FRANKFURT
D29	GERMANY	EURO	BERLIN
D30	SWITZERLAND	SFR	BASLE, ZURICH, GENEVA
D31	SPAIN	EURO	BARCELONA
D32	AUSTRALIA	AUD	SYDNEY
D33	AUSTRALIA	AUD	MELBOURNE
D34	AUSTRALIA	AUD	PERTH
D35	CZECH	EURO	PRAGUE
D36	HONG KONG	HKD	HONG KONG



D37	NEW ZELAND	NZD	AUCKLAND
D38	RUSSIA	USD	MOSCOW
D39	SOUTH KOREA	USD	KIMPO INTERNATIONAL, INCHEON
D40	FINLAND	EURO	HELSINKI
D41	ROMANIA	EURO	BUCHAREST
D42	NORWAY	EURO	OSLO
D43	IRELAND	EURO	DUBLIN
D44	ISRAEL	USD	TEL AVIV
D45	UAE	USD	DUBAI
D46	OMAN	USD	MUSCAT
D47	EGYPT	USD	CAIRO
D48	TAIWAN	USD	TAIPEI
D49	UKRAINE	USD	KIEV
D50	CHINA	USD	SHANGHAI, SHENZHEN
D51	PHILIPINES	USD	MANILA
D52	MALAYSIA	USD	KUALALUMPUR, PE NANG
D53	CYPRUS	USD	LARNACA
D54	SOUTH AFRICA	USD	JOHANNESBERG, DURBAN
D55	SLOVAKIA	EURO	BARTISLOVA
D56	SAUDI ARABIA	SAR	RIYADH
D57	TURKEY	EURO	ISTANBUL
D58	THAILAND	USD	BANGKOK
D59	BRAZIL	USD	SAO PAULO, RIO DE JANEIRO

**ANNEXURE-III****LIST OF CONSORTIUM BANKS****BANK GUARANTEE (BG) SHALL BE ISSUED FROM THE FOLLOWING BANKS ONLY:**

	<b>Nationalized Banks</b>		<b>Nationalized Banks</b>
1	Allahabad Bank	19	Vijaya Bank
2	Andhra Bank		<b>Public Sector Banks</b>
3	Bank of Baroda	20	IDBI
4	Canara Bank		<b>Foreign Banks</b>
5	Corporation Bank	21	CITI Bank N.A
6	Central Bank	22	Deutsche Bank AG
7	Indian Bank	23	The Hong Kong and Shanghai Banking Corporation Ltd. (HSBC)
8	Indian Overseas Bank	24	Standard Chartered Bank
9	Oriental Bank of Commerce	25	The Royal Bank of Scotland N.V.
10	Punjab National Bank	26	J P Morgan
11	Punjab & Sindh Bank		<b>Private Banks</b>
12	State Bank of India	27	Axis Bank
13	State Bank of Hyderabad	28	The Federal Bank Limited
14	Syndicate Bank	29	HDFC Bank
15	State Bank of Travancore	30	Kotak Mahindra Bank Ltd
16	UCO Bank	31	ICICI Bank
17	Union Bank of India	32	IndusInd Bank
18	United Bank of India	33	Yes Bank

**Note:**

- BG should be directly sent to BHEL by the issuing Bank along with covering letter.
- All BGs must be issued from BHEL consortium banks listed above.
- BHEL may accept BG from other Public Sector Banks also which are not listed above.
- BG will not be accepted from Scheduled Banks and Co-operative Banks.
- In case BG is issued from a bank located outside Indian Territory and is issued in foreign currency, the BG must be routed through and confirmed by any one of the above mentioned consortium banks.
- This list is subject to changes. Hence vendors are requested to check this list every time before issuing BGs.



**ANNEXURE IV**

**BANK GUARANTEE FOR SECURITY DEPOSIT (PROFORMA)**

In consideration of the Bharat Heavy Electricals Limited, having its registered office at BHEL House, Siri Fort, New Delhi – 110 049 the concerned division being (indicate name of the concerned division of BHEL) (hereinafter called BHEL).

having agreed to exempt ..... (hereinafter called “the said Contractor(s)” from the demand, under terms and conditions of agreement dated ..... made between BHEL and ..... for..... (hereinafter called “the said Agreement) of security deposit for the due fulfillment by said contractors of the terms and condition contained in the said agreement, on production of bank guarantee for Rs. ....

(Rupees ..... only)

We ..... (hereinafter referred to as “the Bank”) at the request of (indicate the name of Bank)

contractor(s) do hereby undertake to pay to BHEL an amount not exceeding Rs..... against any loss or damage caused to or suffered or would be caused to or suffered by BHEL, by reason of any breach by the said contractor(s) of any of the terms or conditions contained in the said Agreement.

2. We ..... do hereby undertake to pay the (indicate the name of Bank)

amounts due and payable under this guarantee without any demur, merely on a demand from BHEL stating that the amount claimed is due by way of loss or damage caused to or would to or suffered by BHEL by reason of breach by the said contractor(s) of any of the terms and conditions contained in the said Agreement or by reason of the contractor(s) failure to perform the said Agreement. Any such demand made on the bank shall be conclusive as regards the amount due and payable by the Bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs.....

3. We .....undertake to pay to BHEL any money so demanded notwithstanding (indicate the name of Bank)

any dispute or disputes raised by contractor (s) supplier(s) in any suit or processing pending before any court or tribunal relating thereto our liability under these presents being absolute and unequivocal. The payment so made by under this bond shall be valid discharge of our liability for payment thereunder and the contractor(s) shall have no claim against us for making such payment.

4. .... further agree that the guarantee herein (indicate the name of Bank) contained shall remain in full force and effect during the period that would be taken for the performance of the said Agreement and the it shall continue to be enforceable till all the dues of BHEL under or by virtue of the said Agreement have been fully paid and its Agreement have been fully and properly carried out by the said contractor(s) and accordingly discharge this guarantee unless a demand or claim under this guarantee is made on us in writing on or before ..... we shall be discharged form all liability under this guarantee thereafter.



i. We .....further agree with BHEL that BHEL shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder, to vary any of the terms and conditions of the said Agreement or to extend tim of performance by the said contractor(s) from time to time or to postpone any time or from time to time any of the powers exercisable by the BHEL against the said Contractor(s) and to forbear or enforce any of the terms and conditions relating to the said Agreement and we shall not be relieved from our liability by reasons of any such variation, of extension being granted to the said Contractor(s) or for any forbearance, act, or commission on the part of BHEL or any indulgence BHEL to the said Conference(s) or by any such matter or thing whatsoever which under the law relating to sureties would but for its provisions, have effect of so relieving us.

ii. This guarantee will not be discharged due to the change in the constitution of the Bank or the Contractor(s) / Supplier(s)

iii. We ..... lastly undertake not to revoke this  
(Indicate the name of Bank)

guarantee during its currency except with the previous consent of BHEL in writing.

iv. The address of BHEL of services, correspondence in respect of matters relating to this guarantee shall be :

ADDRESS OF THE CONCERNED DIVISION OF BHEL.

Address of the Bank in full

Dated the ..... Day of .....

Pin Code :

Telegraphic Code :

For

(Indicate the name of the Bank)

Telex No:

Fax No.:

Witness:

1.

2.

## **ANNEXURE- V**

### **GUIDELINES FOR REVERSE AUCTION PROCEDURE**

Against this enquiry for the subject item/ system with detailed scope of supply as per enquiry specifications, BHEL may resort to "REVERSE AUCTION PROCEDURE" i.e., ON LINE BIDDING (THROUGH A SERVICE PROVIDER). The philosophy followed for reverse auction shall be English Reverse (No ties).

1. For the proposed reverse auction, technically and commercially acceptable bidders only shall be eligible to participate.
2. Those bidders who have given their acceptance for Reverse Auction (quoted against this tender enquiry) will have to necessarily submit "online sealed bid" in the Reverse Auction. Non-submission of "online sealed bid" by the bidder for any of the eligible items for which techno-commercially qualified, will be considered as tampering of the tender process and will invite action by BHEL as per extant guidelines in vogue.
3. BHEL will engage the services of a service provider who will provide all necessary training and assistance before commencement of on line bidding on internet.
4. In case of reverse auction, BHEL will inform the bidders the details of Service Provider to enable them to contact & get trained.
5. Business rules like event date, time, bid decrement, extension etc. also will be communicated through service provider for compliance.
6. Bidders have to fax the Compliance form before start of Reverse auction. Without this, the bidder will not be eligible to participate in the event.
7. In line with the NIT terms, BHEL will provide the calculation sheet (e.g., EXCEL sheet) which will help to arrive at "Total Cost to BHEL" like Packing & forwarding charges, Taxes and Duties, Freight charges, Insurance, Service Tax for Services and loading factors (for non-compliance to BHEL standard Commercial terms & conditions) for each of the bidder to enable them to fill-in the price and keep it ready for keying in during the Auction.
8. Reverse auction will be conducted on scheduled date & time.
9. At the end of Reverse Auction event, the lowest bidder value will be known on auction portal.
10. The lowest bidder has to fax/e-mail the duly signed and filled-in prescribed format for price breakup including that of line items, if required, as provided on case-to-case basis to Service provider within two working days of Auction without fail.
11. In case BHEL decides not to go for Reverse Auction procedure for this tender enquiry, the Price bids and price impacts, if any, already submitted and available with BHEL shall be opened as per BHEL's standard practice.
12. Bidders shall be required to read the "Terms and Conditions" section of the auctions site of Service provider, using the Login IDs and passwords given to them by the service provider before reverse auction event. Bidders should acquaint themselves of the "Business Rules of Reverse Auction", which will be communicated before the Reverse Auction.
13. If the Bidder or any of his representatives are found to be involved in Price manipulation/ cartel formation of any kind, directly or indirectly by communicating with other bidders, action *as per* extant BHEL guidelines, shall be initiated by BHEL and the results of the RA scrapped/ aborted.
14. The Bidder shall not divulge either his Bids or any other exclusive details of BHEL to any other party.
15. In case BHEL decides to go for reverse auction, the H1 bidder (whose quote is highest in online sealed bid) may not be allowed to participate in further RA process.

## **Business Rules for Reverse Auction**

This has reference to tender no **{tender number....date...}**. BHEL shall finalize the Rates for the supply of **{item name}** through Reverse Auction mode. BHEL has made arrangement with M/s. **{Service provider}**, who shall be BHEL's authorized service provider for the same. Bidders should please go through the guidelines given below and submit acceptance of the same.

The technical & commercial terms are as per (a) BHEL Tender Enq. No. {...} dated {...}, (b) Bidders' technical & commercial bid (in case of two part bid) and (c) subsequent correspondences between BHEL and the bidders, if any.

**1. Schedule for reverse auction:** The Reverse Auction is tentatively scheduled on **{date}**:

- **Online Sealed Bid:-**

☐ **{Start Time:**

☐ **Close Time: }**

- **Online Reverse Auction:-**

☐ **{Start Time:**

☐ **Close Time:}**

**2. Auction extension time:** If a bidder places a bid in the last {...} minutes of closing of the Reverse Auction and if that bid gets accepted, then the auction's duration shall get extended automatically for another {...} minutes, for the entire auction (i.e. for all the items in the auction), from the time that bid comes in. Please note that the auto-extension will take place only if a bid comes in those last {...} minutes and if that bid gets accepted as the lowest bid. If the bid does not get accepted as the lowest bid, the auto-extension will not take place even if that bid might have come in the last {...} minutes. In case, there is no bid in the last {...} minutes of closing of Reverse Auction, the auction shall get closed automatically without any extension. However, bidders are advised not to wait till the last minute or last few seconds to enter their bid during the auto-extension period to avoid complications related with internet connectivity, network problems, system crash down, power failure, etc.

The above process will continue till completion of Reverse Auction.

Complaints/ Grievances, if any, regarding denial of service or any related issue should be given in writing thru e-mail/ fax to M/s. **{Service provider}** with a copy to BHEL within 15 minutes from the initial closing time of Online Reverse Auction.

**3. Bid price:** The Bidder has to quote the F.O.R. destination Price inclusive of Packing & Forwarding charges, all the routine & type tests as per tender scope, ED + cess, CST against C-form, Freight (bidder to provide original Freight paid receipt), insurance charges, etc. including loading (if indicated by BHEL due to deviations in commercial terms) for the Items specified. Details are as shown in Excel Sheet for calculation of Landed cost.

Note: For the consideration of L1 bidder, the bid value shall be reduced by loading amount, if applicable.

**4. Bidding currency and unit of measurement:** Bidding will be conducted in **{Indian Rupees per Unit}** of the material as per the specifications {...}

In case of foreign currency bids, exchange rate (TT selling rate of State Bank of India) as on scheduled date of tender opening (Part-I bid in case of two part bid) shall be considered for conversion in Indian Rupees.

**5. Validity of bids:** Price shall be valid for **{... days}** from the date of reverse auction. These shall not be subjected to any change whatsoever.

**6. Lowest bid of a bidder:** In case the bidder submits more than one bid, the lowest bid at the end of Online Reverse Auction will be considered as the bidder's final offer to execute the work.

**7. Post auction procedure:** BHEL will proceed with the Lowest Bid in the Reverse Auction for further processing.

## 8. Procedure of Reverse Auctioning :

i. **Online Sealed Bid:** This duration of online sealed bid will be {...} minutes. All bidders to submit their online sealed bids during this period.

ii. **Online Reverse Auction:** The „opening price“ i.e. start price for RA and „bid decrement“ will be decided by BHEL.

iii. If BHEL decides the lowest online sealed bid as the starting price, then the lowest bidder in online sealed bid shall be shown as current L1 automatically by the system and no acceptance of that price is required. System shall have the provision to indicate this bid as current L1.

iv. Bidders by offering a minimum bid decrement or the multiples thereof can displace a standing lowest bid and become “L1” and this continues as an iterative process.

v. After the completion of the online reverse auction, the Closing Price (CP) shall be available for further processing.

9. If no bid is received in the auction system/ website within the specified time duration of the online RA, then BHEL will scrap the online reverse auction process and proceed with the conventional mode of tendering (opening of the envelope sealed bids earlier submitted by the bidders).

In cases where no bidder accepts the start price, the RA may be treated as failed and sealed envelope price bids of all the techno-commercially qualified bidders shall be opened and the tender processed accordingly. Wherever the techno-commercially acceptable bidder(s) had agreed to participate in the RA and had failed to submit the online sealed bid, the envelope sealed bids of such bidder(s) shall not be entertained.

Wherever, the evaluation is done for individual items of the package, and no bid is received for some of the item(s), RA will be considered as failed for these item(s), re-reverse auction/ retendering will be conducted for these items.

10. Only those bidders who have submitted the „online sealed bid“ within the scheduled time shall be eligible to participate further in RA process. However, the H1 bidder (whose quote is highest in online sealed bid) may not be allowed to participate in further RA process.

11. Any commercial/ technical loading shall be intimated to bidders prior to RA. The excel sheet provided in this regard shall cover all these aspects. Commercial/ technical loading if any, shall be added by the respective bidder in its price during online sealed bid & Online Reverse Auction. Modalities of loading & de-loading shall be separately intimated to the bidders.

12. Computerized reverse auction shall be conducted by BHEL (through M/s {Service Provider}), on pre-specified date, while the bidders shall be quoting from their own offices/ place of their choice. Internet connectivity shall have to be ensured by bidders themselves.

During the RA if a bidder is not able to bid and requests for extension of time by fax/ e-mail/ phone then time extension of additional 15 minutes will be given by the service provider provided such requests come before 5 minutes of auction closing time. However, only one such request per bidder can be entertained.

Despite this extension if bidder fails to upload his prices due to extreme case of failure of Internet connectivity, (due to any reason whatsoever may be) it is the bidders“ responsibility/ decision to send fax communication immediately to M/s. {Service provider}, furnishing the price the bidder wants to bid online with a request to the service provider to upload the faxed price on line so that the service provider will up load that price on line on behalf of the Bidder. It shall be noted clearly that the concerned bidder communicating this price to service provider has to solely ensure that the fax message is received by the service provider in a readable/ legible form and also the Bidder should simultaneously check up with service provider about the clear receipt of the price faxed. It shall also be clearly understood that the bidder shall be at liberty to send such fax communications of prices to be up loaded by the service provider only within the closure of Bid time and under no circumstance it shall be allowed beyond the closure of Bid time /reverse auction. It shall also be noted that the service provider should be given a reasonable required time by the bidders, to upload such prices online and if such required time is not available at the disposal of the Service provider at the time of receipt of the fax message from the bidders, the service provider will not be uploading the prices and either BHEL or the service provider are not responsible for this unforeseen circumstances. In order to ward-off such contingent situation bidders are requested to make all the necessary arrangements/ alternatives whatever required so that they are able to circumvent such situation and still be able to participate in

the reverse auction successfully. Failure of power or loss of connectivity at the premises of bidders during the Reverse auction cannot be the cause for not participating in the reverse auction. On account of this, the time for the auction cannot be extended and neither BHEL nor M/s. {Service provider} is responsible for such eventualities.

**13. Proxy bids:** Proxy bidding feature is a pro-bidder feature to safe guard the bidder's interest of any internet failure or to avoid last minute rush. The proxy feature allows bidders to place an automated bid in the system directly in an auction and bid without having to enter a new amount each time a competing bidder submits a new offer. The bid amount that a bidder enters is the minimum that the bidder is willing to offer. Here the software bids on behalf of the bidder. This obviates the need for the bidder participating in the bidding process until the proxy bid amount is decrementally reached by other bidders. When proxy bid amount is reached, the bidder (who has submitted the proxy bid) has an option to start participating in the bidding process. The proxy amount is the minimum amount that the bidder is willing to offer. During the course of bidding, the bidder cannot delete or change the amount of a proxy bid.

Bids are submitted in decrements (decreasing bid amounts). The application automates proxy bidding by processing proxy bids automatically, according to the decrement that the auction originator originally established when creating the auction, submitting offers to the next bid decrement each time a competing bidder bids, regardless of the fact whether the competing bids are submitted as proxy or standard bids. However, it may please be noted that if a manual bid and proxy bid are submitted at the same instant manual bid will be recognized as the L1 at that instant. In case of more than one proxy bid, the system shall bid till it crosses the threshold value of „each lowest proxy bid“ and thereafter allow the competition to decide the final L1 price.

Proxy bids are fed into the system directly by the respective bidders. As such this information is privy only to the respective bidder(s).

**14.** Bidders are advised to get fully trained and clear all their doubts such as refreshing of Screen, quantity being auctioned, tender value being auctioned etc.

**15.** M/s. {Service provider}, shall arrange to demonstrate/ train the bidder or bidder's nominated person(s), without any cost to bidders. M/s. {Service provider}, shall also explain the bidders, all the rules related to the Reverse Auction/ Business Rules Document to be adopted along with bid manual. Bidders are required to give their compliance on it before start of bid process.

**16.** Successful bidder shall be required to submit the final prices, quoted during the Online Reverse Auction in Annexure - VII after the completion of auction to M/s. Service provider besides BHEL, duly signed and stamped as token of acceptance without any new condition other than those already agreed to before start of auction.

**17.** Any variation between the final bid value and that in the confirmatory signed price breakup document will be considered as tampering the tender process and will invite action by BHEL as per extant guidelines in vogue.

**18.** Bidders' bid will be taken as an offer to execute the work/ supplies the item as per enquiry no. {...} dt. {...}. Bids once made by the bidder, cannot be cancelled/ withdrawn and bidder shall be bound to execute the work as mentioned above at bidder's final bid price. Should bidder back out and not execute the contract as per the rates quoted, BHEL shall take action as per extant guidelines in vogue.

**19.** Bidders shall be assigned a **Unique User Name & Password** by BHEL or M/s. {Service provider}. Bidders are advised to change the Password and edit the information in the Registration Page after the receipt of initial Password from BHEL/ M/s. {Service provider} to ensure confidentiality. All bids made from the Login ID given to the bidders will be deemed to have been made by the bidders/ bidders' company.

**20.** Bidders shall be able to view the following on their screen along with the necessary fields during Online Reverse Auction:

a. Leading (Running Lowest) Bid in the Auction (only total price of package)



- b. Bid Placed by the bidder
- c. Start Price
- d. Decrement value

**21.** After receipt of the system report from the Service Provider after completion of the Online Reverse Auction, BHEL will decide upon the winner. BHEL's decision on award of contract shall be final and binding on all the Bidders.

**22.** BHEL reserves the right to cancel the Reverse Auction process/ tender at any time, before ordering, without assigning any reason.

**23.** BHEL shall not have any liability to bidders for any interruption or delay in access to the site irrespective of the cause. In such cases, the decision of BHEL shall be binding on the bidders.

**24.** Other terms and conditions shall be as per bidder's techno-commercial offers and other correspondences, if any, till date.

**25.** Bidders are required to submit their acceptance to the terms/ conditions/ modalities before participating in the Reverse Auction in the process compliance Form as per *Pg.6 of Annexure V*

**26.** BHEL can decide to extend, reschedule or cancel any Auction with prior intimation to all bidders.

**27.** If there is any clash between this business document and the FAQ available, if any, in the web site of M/s. {*Service provider*} the terms& conditions given in this business document will supercede the information contained in the FAQs. Any changes made by BHEL/ service provider (due to unforeseen contingencies) after the first posting shall be deemed to have been accepted if the bidder continues to access the portal after that time.



**Process Compliance Form**

**(The bidders are required to print this on their company's letterhead and sign, stamp before faxing)**

To

- M/s. {Service provider

- Postal address}

**Sub: Agreement to the Process related Terms and Conditions**

Dear Sir,

This has reference to the Terms & Conditions for the Reverse Auction mentioned in the RFQ document for {Items} against BHEL enquiry/ RFQ no.{.....} dt. {.....}

This letter is to confirm that:

- 1) The undersigned is authorized official/ representative of the company to participate in RA and to sign the related documents.
- 2) We have studied the Reverse Auction Terms & Conditions and the Business rules governing the Reverse Auction as mentioned in your letter and confirm our agreement to them.
- 3) We also confirm that we have taken the training on the auction tool and have understood the functionality of the same thoroughly.
- 4) We also confirm that, in case we become L1 bidder, we will email/ fax the price confirmation & break up of our quoted price (including that of line items) as per *pg.7 of Annexure- V* within **two** working days (of BHEL) after completion of RA event, besides sending the same by registered post/ courier both to M/s. BHEL and M/s. {Service provider.}

We, hereby confirm that we will honor the Bids placed by us during the auction process.

With regards

Signature with company seal

Name –

Company / Organization

Designation within Company / Organization

Address of Company / Organization

- Sign this document and Fax it to M/s {Service provider} at {.....} prior to start of the Event.

- Attach a signed copy of the RFQ document along with the Agreement Form/ Process Compliance form and d/s{Service provider}



**RA price confirmation and breakup**

**To**

- **M/s.** Service provider
- Postal address

CC: M/s BHEL

{Unit-  
Address-}

Sub: **Final price quoted during Reverse Auction and price breakup**

Dear Sir,

We confirm that we have quoted.

**Rs. {\_\_\_\_\_} for item covered under tender enquiry No. {...} dt. {...}**

Total price of the items covered under above cited enquiries is inclusive of {Packing & forwarding, E.D., C.S.T., freight and insurance charges upto {.....} District, {.....} State and Type Test Charges etc., (exclusive of service tax), other as per NIT} as our final landed prices as quoted during the Reverse Auction conducted today {date} which will be valid for a period of {\_\_\_\_\_} days.

The price break-up including that of line items is as given below.

Total - Rs.

Thanking you and looking forward to the valuable order from BHEL.

Yours sincerely,

For \_\_\_\_\_

**Name:**

**Company:**

**Date:**

**Seal:**

## **ANNEXURE- VI**

### **EXTRACT FROM “MANUAL ON POLICIES & PROCEDURES FOR PURCHASE OF GOODS”**

#### **11.2.3. Non-conformities between the figures and words of the quoted prices:**

Sometimes, non-conformities/errors are also observed between the quoted prices in figures and that in words. The same is to be taken care of as indicated below:

(a) If, in the price structure quoted for the required goods, there is discrepancy between the unit price and the total price (which is obtained by multiplying the unit price by the quantity), the unit price shall prevail and the total price corrected accordingly, unless in the opinion of the purchaser there is an obvious misplacement of the decimal point in the unit price, in which case the total price as quoted shall govern and the unit price corrected accordingly.

(b) If there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and

(c) If there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject to (a) and (b) above.

If there is such discrepancy in an offer, the same is to be conveyed to the tenderer with target date on the above lines and if the tenderer does not agree to the observation of the purchaser, the tender is liable to be ignored.

## **ANNEXURE – VII**

### **PURCHASE PREFERENCE FOR MSE VENDORS:**

MSE vendors quoting within a price band of L1 + 15% shall be allowed to supply up to 20% of the requirement against this tender provided

1. The MSE vendor matches the L1 price
2. L1 price is from a non MSE vendor
3. L1 price will be offered to the nearest vendor nearest to L1 in terms of price ranking (L2 - nearest to L1). In case of non-acceptance by the MSE vendor (L2) next ranking vendor will be offered who is within the L1 + 15% band (if L3 is also within 15% band).
4. 20% of the 20% (i.e. 4% of the total enquired quantity) will be earmarked for SC/ST owned MSE firms provided conditions as mentioned in (1) and (2) are fulfilled.



**ANNEXURE – VIII**  
**REQUEST FOR C FORM**

NAME OF VENDOR :-										
VENDOR CODE ALLOTTED BY BHEL :-										
BHEL PONO	INVOICE NO	INVOICE DATE	INVOICE AMOUNT	SUPPLY FROM - STATE	SUPPLY TO - STATE	CST TIN NUMBER FOR THE SUPPLY	INVOICE AMOUNT BAISC+ED+CST ONLY	C FORM QTR	YEAR	SUPPLY TO BHEL EDN / SITE

**ANNEXURE – IX**

**LIST OF DOCUMENTS TO BE SUBMITTED DURING DESPATCH OF GOODS :-**

Seller shall arrange to send the following documents to the Purchaser, immediately on dispatch of goods: Any addition / exclusion to such documents shall be as specified in the Purchase Order.

**For despatches from within India :-**

To be sent with the material			To be sent to purchase executive		
1	Delivery challan	(1 copy)	1	Commercial invoice	(1 original +1 extra copy)
2	Excise gate pass (if excise duty is applicable) duplicate for transporter	(1 copy)	2	Excise gate pass (if excise duty is applicable) original for buyer	(1 copy)
3	Transporters docket if received through transporter	(1 copy)	3	Inspection report / Test report Test certificate (if called for in the PO )	(1 copy)
4	Inspection report / Test report Test certificate (if called for in the PO )	(1 copy)	4	Warranty certificate(if called for in the PO )	(1 copy)

**For despatches from outside India :-**

To be given to BHEL Freight Forwarder	To be submitted to bank
Invoice & Packing list	Set of documents as per PO / LC

**For high sea sales (HSS) :-**

01	Original Invoice in Indian Rupees : three copies
02	Original High sea sales agreement on Rs. 200/- stamp paper (notorised) with two Xerox copies
03	Original Cargo Arrival Notice : with two copies
04	Original Invoice in Foreign Currency : with two copies
05	Original packing list : two copies
06	Original AWB copy (duly endorsed) : two copies
07	Original letter to Customs Officer - either Mumbai or Bangalore ( depending on the airport of destination ) : with one copy
08	Original Letter to OCTROI Officer : with one copy
09	Original Delivery Order copy from the freight forwarder : with one copy



**ANNEXURE – X**

**Electronic Funds Transfer (EFT) OR Paylink Direct Credit Form**

Please Fill up the form in **CAPITAL LETTERS** only.

TYPE OF REQUEST(Tick one): \_\_\_\_\_ CREATE \_\_\_\_\_ CHANGE

BHEL Vendor / Supplier Code:	<input type="text"/>
Company Name :	<input type="text"/>
Permanent Account Number(PAN):	<input type="text"/>
Address	<input type="text"/>
	<input type="text"/>

City: <input type="text"/>	PINCODE <input type="text"/>	STATE <input type="text"/>
----------------------------	------------------------------	----------------------------

Contact Person(s)	<input type="text"/>
Telephone No:	<input type="text"/>
Fax No:	<input type="text"/>
e-mail id:	<input type="text"/>

1 Bank Name:	<input type="text"/>
2 Bank Address:	<input type="text"/>
	<input type="text"/>
3 Bank Telephone No:	<input type="text"/>
4 Bank Account No:	<input type="text"/>
5 Account Type: Savings/Cash Credit	<input type="text"/>
6 9 Digit Code Number of Bank and branch appearing on MICR cheque issued by Bank	<input type="text"/>
7 Bank swift Code(applicable for EFT only)	<input type="text"/>
8 Bank IFSC code(applicable for RTGS)	<input type="text"/>
9 Bank IFSC code(applicable for NEFT)	<input type="text"/>

- A I hereby certify that the particulars given above are true, correct and complete and that I, as a representative for the above named Company, hereby authorise BHEL, EDN, Bangalore to electronically deposit payments to the designated bank account.
- B If the transaction is delayed or not effected at all for reasons of incomplete or incorrect information, I would not hold BHEL / transferring Bank responsible.
- C This authority remains in full force until BHEL, EDN,Bangalore receives written notification requesting a change or cancellation.
- D I have read the contents of the covering letter and agree to discharge the responsibility expected of me as a participant under ECS / EFT.

Date:

Authorised Signatory:

Designation:

Telephone NO. with STD Code

Company Seal



**Bank Certificate**

We certify that \_\_\_\_\_ has an Account No \_\_\_\_\_ with us and we confirm that the bank details given above are correct as per our records.

Date: \_\_\_\_\_ (.....)  
Place: \_\_\_\_\_ Signature

Please return completed form along with a blank cancelled cheque or photocopy thereof to:

Bharath Heavy Electricals Ltd,

Attn:

Electronics Division, Mysore Road,

BANGALORE - 560 026

In case of any Query, please call : concerned Purchase Executive