

Tender No. 06.16.5102  
NSR No. 0734890001 dt. 28.04.16.

### 3.2 DESCRIPTION:

#### 3.2.1 PURPOSE FOR WHICH REQUIRED AND CAPABILITY

- 3.2.1.1 The specification covers the requirements for design, manufacturing, supply & delivery including commissioning into service of Manual Air Plasma Cutting Equipment to be used primarily for cutting of Stainless Steel Sheets in railway workshops and various body sections of Railway coaches/ Wagons / Locomotive sections & road vehicles involved in accidents. These are fabricated out of mild steel / corten steel / stainless steel sheets
- 3.2.1.2 The equipment shall be capable to perform manual cutting of stainless steel sheets in railway workshops, cutting of coach body, cutting of various sections of coach and bogie components efficiently and quickly with ease. These are fabricated out of mild steel/ corten steel / stainless steel sheet.
- 3.2.1.3 The equipment shall be capable of performing efficiently under dusty as well as smoke filled atmosphere having variation of ambient temperature from 0°C to 55°C with 100% relative humidity and at an altitude of 1200 m above mean sea level.

### 3.3 QUANTITY & CONSIGNEE

#### 3.4 SCOPE OF SUPPLY.

- 3.4.1 The scope of supply shall include design, manufacture, supply, installation, testing, commissioning and proving of equipment. It includes all the accessories/ equipments as detailed in para 3.4.2 below and other concomitant accessories/ equipment, which the manufacturer considers essential to make the machine fully operational, when installed and commissioned. It shall also include installation and commissioning of related equipment, training of personnel in operation and maintenance of machine and supply of technical documentation. The requirement of any utility etc. should be clearly indicated by the tenderer in the offer.
- 3.4.1.1 The equipment should be of a well proven design and equipment of such design should have been in use for cutting operations. Bidders should quote per set price of the equipment as detailed in para 3.4.2 below. Cost shall also be quoted individually for every item.
- 3.4.1.2 The Manual Air Plasma Cutting equipment shall conform to parameters as per schedule-I. The bidder shall provide information on technical parameters of the offered equipment against Schedule-II. The equipment shall have basic design features & specific characteristics as per clause 1.1 & 1.2 of section-V respectively.

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3.4.2

One set of Manual Air Plasma Cutting equipment shall normally consist of the following, unless otherwise specified for any consignment.

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(i)	One hand held plasma cutting torch with adequate safety features and manual ignition facility by triggering switch	- 1no.
(ii)	Portable Plasma Power Source along with the controls	- 1no.
(iii)	Portable Air Compressor Along with Air filter, flow meter, regulator and hose 10 meters long for air supply to Plasma power source	- 1no.
(iv)	Two identical coupled Portable Diesel/Petrol electric start Generating Set for operation of both Plasma cutting Equipment and air compressor along with Trolley for generating set	1 Set consisting of two identical coupled units.
(v)	Earth Cable 20 meters	- 1 no.
(vi)	Power cable and hose to connect torch with power source 10 meters long (min.)	- 1 no.
(vii)	Power cables with extension board having provision to connect plasma power pack and air compressor with Generating Set 50 meters	- 2 nos
(viii)	Storage case for torch and cables at (vi)	- 1 no
(ix)	Maintenance tools	- 1 set
(x)	Air shield	- 5 nos
(xi)	Torch head	- 1 no
(xii)	goggles (Black glasses suitable for Plasma cutting conforming to 4 DIN)	- 2 nos
(xiii)	Electrodes	- 20 nos
(xiv)	Nozzles	- 20 nos

### 3.4.3 CONCOMITANT ACCESSORIES:

3.4.3.1 Any other accessory/ equipment, which the manufacturer considers essential to make the machine fully operational, when installed and commissioned connected to power source and to give the specified output/productivity.

### 3.4.4 OPTIONAL ACCESSORIES:

3.4.4.1 The following optional accessories should be quoted for separately, however these items may or may not be ordered. The cost of these items shall not be taken for the purpose of commercial evaluation of the offer.

- (i) Nitrogen gas cylinder of adequate capacity for cutting operation for a period of minimum 15 minutes - 2 nos
- (ii) Nitrogen gas regulator, flow meter and hose minimum 10 meters long - 1 set

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3.4.4.2 Bidders are required to quote on yearly basis for a Comprehensive Annual Maintenance Contract for five years as per clause IV of section-V. AMC shall be operated, managed and paid by consignee.

3.4.4.3 Any other accessory/ equipment which in the opinion of the tenderer can contribute to better performance/rescue operation shall be clearly indicated and quoted separately as optional accessory. The advantages should be clearly explained.

### 3.5 EVALUATION CRITERIA

Total value of the offer will be calculated based on

- The cost of equipment as per clause 3.4.2 of section-IV.
- Cost of any other accessory treated as concomitant accessory.
- Cost of Installation & commissioning of equipment.
- Applicable duties, taxes, insurance, freight, packing charges etc.

### 3.5 DELIVERY SCHEDULE CHART:

In the event of acceptance of the offer, the machine(s) shall be supplied as per the following Milestone Chart:

Name of machine : Manual Air Plasma Cutting Equipment

Specification No. : COFMOW/IR/APCE/2014

Time Schedule Chart

S. No.	Activity	Activity Code	Outer limit of Time Schedule expected by COFMOW	Time Schedule offered by Bidder	Remarks (if any)
1	Issue of LOA by COFMOW	D1	--	--	
2	Submission of PBG by the successful Bidder	D2	D1 + 30 days	D1 + 30 days	Clause 0700 of section-II to bid document part-I
3	Issue of AT by COFMOW (after verification of PBG)	D3	D2 + 30 days	D2 + 30 days	
4	Delivery of equipment at site (for indigenous suppliers)	D4	D3 + 180 days	D3 + ___ days	
5	Prove out and commissioning of equipment by supplier	D5	D4 + 60 days	D4 + ___ days	
6	Issue of PTC by consignee	D6	D5 + 30 days	D5 + ___ days	
7	Warranty by supplier	D7	D5 + 2 years	D5+ 2 years	

Signature of the Bidder

NOTE: Notwithstanding the delivery period indicated elsewhere in the tender document, the delivery period indicated in this schedule shall be taken as overriding and final.

TECHNICAL SPECIFICATION

By CME (Pg &amp; WS)

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ABBREVIATIONS

A-1, A-2, A-3, A-4	Standard paper sizes
AC	Alternating Current
AMC	Annual Maintenance Contract
AT	Acceptance of Tender
BG	Bank Guarantee
CME	Chief Mechanical Engineer
CME/PCM	Chief Mechanical Engineer/Post Contract Management
CNC	Computer Numeric Control
COFMOW	Central Organisation for Modernisation of Workshops
COS	Controller of Stores
Db	Decibel
DC	Direct Current
FA&CAO	Financial Advisor & Chief Accounts Officer
GA (Drawing)	General Arrangement (Drawing)
HRC	Hardness Rockwell 'C' Scale (value)
Hz	Hertz
IEC-Pub	International Electro technical Commission - Publication
JCN	Joint Commissioning Note
JRI	Joint Receipt Inspection
KW	Kilo Watt
LC	Letter of Credit
LD	Liquidated Damages
LOA	Letter of Acceptance
NC	Numeric Control
NIT	Notice Inviting Tenders
PBG	Performance Bank Guarantee
PDF	Portable Document Format
PLC	Programmable Logic Controller
PTC	Proving Test Certificate
PU	Production Unit (Any of the six Railway Production Units e.g. RCF, ICF etc.)
RDSO	Research Design & Standards Organisation
SS	Stainless Steel
WBG	Warranty Bank Guarantee
IGBT	Insulated Gate Bipolar Transistor
V	Voltage
A	Ampere
CPCB	Central Pollution Control Board

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1.1 BASIC DESIGN FEATURES

- 1.1.1 The equipment shall be of robust design and construction and shall be easily portable. It shall be able to withstand manual handling while moving it from one place to another on rough terrain. It should have a very high degree of reliability so that its satisfactory performance during the course of operation at workshop or accident site is ensured.
- 1.1.2 The equipment shall be of lightweight construction and ergonomically designed for ease of handling & operation by single man.
- 1.1.3 The plasma source shall be capable to cut continuously without interruption. The torch shall be designed to withstand frequent starts, stops as demanded and capable to perform cutting operation efficiently in environmental condition as specified in Clause 3.2.1.3 of section-IV. The equipment should not transmit any jerk/ vibration to the operator.
- 1.1.4 The equipment should be as per latest Indian or International standards.

1.2 SPECIFIC CHARACTERISTICS OF EQUIPMENT :  
(The details as per schedule-II shall also be provided with the offer).

1.2.1 PLASMA POWER PACK AND TORCH

- 1.2.1.1 The Plasma power pack shall be portable type and designed for operation with air as well as Nitrogen. Complete design details, working parameters like power consumption, cutting speed etc. Should be described in the offer for cutting Stainless steel, mild steel, and other non-ferrous metals. The bidder shall provide information on makes of various items of the equipment offered.
- 1.2.1.2 Power source shall be single phase, IGBT inverter based to meet the current output requirements specified in schedule-I. It shall have input supply correction feature. The equipment shall also be suitable for operation from generator power. The cooling arrangement of power source shall be explained in the bid.
- 1.2.1.3 The power pack shall be provided with suitable handles to enable one person to carry it easily over undulating/rough terrain.
- 1.2.1.4 Life of nozzles, electrodes and other consumables shall be indicated in schedule-II.
- 1.2.1.5 The equipment offered should have arrangement for filtering and cleaning of pneumatic air. Arrangement for controlling the pressure of air and pressure indicator should also be provided.
- 1.2.1.6 Cutting Torch should be light weight and made from non breakable material.

1.2.1.7 The cutting torch shall be provided with quick assembly/dismounting at end. It should be possible to drag the torch on the work piece at full output without damaging consumable and nozzle from molten metal spray.

1.2.1.8 The torch shall be provided with post flow feature for reducing the torch stresses. The torch should be provided with manually operated trigger for ignition.

1.2.1.9 The power cable and hose to connect torch with power source and other cables shall be shielded against accidental damage.

## 1.2.2 AIR COMPRESSOR

1.2.2.1 A portable electrically driven compressor of sufficient capacity as specified in schedule-I with accessories is required for the equipment. It should meet the uninterrupted air supply requirement for continuous cutting operation. It should be suitable to work on generator power. The air compressor should be light weight and shall be provided with suitable handles to enable one/two persons to carry it from one place to another. The details of air pressure, air flow rate, reservoir capacity and weight etc shall be submitted in the offer at schedule-I. The acceptable makes will be Ingersol Rand / Elgi / Koymo / Aircare / Airtek.

## 1.2.3 GENERATING SET

1.2.3.1 Two identical coupled diesel/Petrol electric start generating set of sufficient capacity with accessories is required for the operation of complete equipment including compressor. The generating set when fully installed shall be completely functional and able to deliver continuously 100% rated output for continuous operation of the equipment. The out put should be single phase 230 V 50 Hz. The acceptable makes will be Birla, Mahindra, Kirloskar, Cummins, Honda, Generac, Dewalt, Briggs & Stratton, Pelican and Stamford.

1.2.3.2 The fuel tank capacity shall be sufficient for minimum 4 hours continuous running of Generating set.

1.2.3.3 The Generating set shall be provided with acoustic enclosure conforming to latest CPCB Norms.

1.2.3.4 A suitable trolley (with wheels) shall be provided with generating set for easy movement. The trolley shall also be provided with suitable preferably fold down handles for lifting manually and to carry the generating set from one place to another.

1.2.3.5 The safety features of Generating set shall be explained in the bid.

1.2.3.6 The generating set shall conform to CPCB-II or latest norms and ISO 8528 (latest) standards for DG sets. Valid certificate from the original manufacturer of Generating set must be supplied with the offer.

1.2.3.7 Provision of fuel efficiency mode with the help of which engine speed change automatically as per load requirements.

1.2.3.8 Engine control panel display should be equipped with I-Monitor which displays current via RPM

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### 1.3 SAFETY FEATURES

- 1.3.1 Safety features shall be provided to protect the torch and operator from electric shock. Safety features available shall be explained in the offer.

### 1.4 MARKING

- 1.4.1 The equipment shall be provided with a suitable identification plate inscribing the following :-

- Manufacturers' name
- Type and Serial Number
- Date of Manufacture
- Rating

### 1.5 TOOL BOX

One set of tools required for day to day maintenance/ operation of complete Air Plasma Cutting Equipment including Air Compressor and Generating set shall be supplied in a box with each set. The list of tools offered shall be furnished in the bid.

### 1.6 PACKING:

All the equipments shall be suitably packed to avoid damage during transit.

### 2. GENERAL ELECTRIC SPECIFICATION: (Not applicable)

### 3. GENERAL CHARACTERISTIC: (Not Applicable)

### 4.0 TECHNICAL LITERATURE:

- 4.1 One copy of the printed illustrative catalogue showing features of the machine and its elements must be enclosed with each copy of the bid.
- 4.2 The technical literature shall be provided for the complete machine, including imported and indigenously purchased components / sub- assemblies. The successful tenderer will have to furnish 4 (four) copies each of the following manuals directly to the consignee along with the machine. Out of these 04 sets, the bidder shall be required to submit one set of all documents in best available condition one month prior to the training for the machine. One set of technical literature should cover the following details:
- Operational & Maintenance manual of the equipment.
  - Diagnostic & Trouble shooting Guide of the equipment.
  - Spare part manual including part lists no. of each component with exploded views wherever possible and assembly drawing, hard copies in A-4 size as well as in PDF format.

Note: All manual and literature should be in English/Hindi.

### 5.0 SPARES

- 5.1 Two lists of recommended perishable and non-perishable spares required for normal maintenance to cover complete range of mechanical, hydraulic and electrical equipments including air compressor, generating set and controls on double shift

working basis should be furnished and quoted separately. The quantities should relate to, in case of non-perishable spares, to two years normal life span. And in case of perishable spares to the duration of its shelf life or two years whichever is less. Shelf life should be indicated with the quotation for spares. S.E.C.R. Bilaspur

5.2 The manufacturer shall be responsible for the subsequent availability of spares to ensure continued trouble free service for entire life of the equipment.

5.3 Spares shall be supplied along with the machine if ordered.

## 6.0 CONSUMABLES

6.1 The consumable spares (if any) shall be specifically quoted along with their unit rates.

6.2 The consumables shall be supplied along with the equipment or as per agreed time table, if ordered

## 7.0 SPECIAL FEATURES:

7.1 Special features incorporated in the machine, if any, shall be indicated separately in the bid clearly indicating the advantages of these special features.

## 8.0 DEVIATIONS:

8.1 The tenderer shall certify that the offered machine fully meets the specification. Various design features incorporated in the machine to fulfill different technical performance requirements shall be fully explained in the offer. However, minor deviations from these specifications which do not affect or in any way interfere with the stipulated performance standards or would result in improved safety/ reliability or would reduce recurring maintenance/operating cost of the machine, can be considered for acceptance. The tenderer in such eventuality shall clearly indicate the details of these deviations and their implications.

8.2 All Deviations shall be clearly indicated in the deviation statement as per the format of submission of technical bid Annexure-A.

## 9.0 INSPECTION AND TESTING AT MANUFACTURER'S WORKS:

9.1 The required capacity/ capability of each equipment shall be checked at manufacturer's premises by the Inspecting agency nominated by the purchaser as per the accepted parameters. Manufacturer has to submit a conformity certificate that the equipment is tested as per the test procedures / norms laid down in International standards applicable for such equipments. For this purpose, necessary testing schemes for each equipment, based on the respective classifications under above standard as mentioned in Schedule-I(A&B) shall be submitted by the tenderer with the offer.

9.2 Manufacturers must have suitable facilities at their works for carrying out various performance tests on the sub-assembly/assembly/machine. The tenderer shall clearly confirm that all facilities exist and shall be made available to the inspecting authority.

9.3 A Sample Inspection Chart for inspecting the equipment shall be supplied along with the bid. The inspection chart should indicate all the tests that are carried out during the machine manufacture and also the tests to be offered to inspecting agency. The standard to which this inspection chart conforms should be clearly indicated. Against each test, acceptable limit/ range of values shall be indicated.

9.4 The tenderer shall submit Quality Assurance Plan being followed at the manufacturer's works for ensuring quality of the products offered. In case, the



firm is ISO certified, a copy of valid certificate may also be enclosed with the offer.

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9.5

**Dimensional Check :**

Physical dimension check of each equipment shall be made as per the specification.

**10. TRAINING:**

10.1

Technical experts from the manufacturer will fully and adequately provide free training in operation and maintenance of the machine to operators and maintenance staff nominated by the consignee at the time of commissioning of the machine. The training to be imparted shall cover operation, troubleshooting and repair of all mechanical, hydraulic, electrical & electronic systems.

Note: All training should be imparted in English/Hindi only.

**11. FOUNDATION & RELATED DRAWINGS: (Not applicable)****12.0 INSTALLATION, COMMISSIONING AND PROVING TESTS:**

12.1

**Joint Check** – The contractor or his agent would be required to carry out a joint check at consignee's end, along with the consignee, before unpacking is done, to avoid subsequent complaints regarding short shipment/transit damages. It is necessary that this joint receipt inspection be done immediately on receipt of the machine by consignee & bidder's representative to avoid commissioning delays due to shortages/transit damages. After receipt of the machine as above a Joint Receipt Inspection note (JRI) as per Annexure-C of Section-VI shall be prepared by the consignee and the firms representative indicating the tentative time schedule for various activities of installation and commissioning. For Indian manufacturers, JRI note shall accompany the bill for 80% payment.

**12.2 RESPONSIBILITIES OF CONSIGNEE AND BIDDER****12.2.1 The consignee shall be responsible for-**

- Clear covered space for storage of material/equipment required for working installation/commissioning of the machine etc.
- The consignee shall arrange the utilities for prove out at their end within 15 days of the dry run of the machine (installation, power connection, auxiliary connection like air, water connection wherever required).
- Unloading of the equipment on receipt and its movement to the site of installation.

**12.2.2 The bidder shall be responsible for-**

- Provision of all tools and equipment, technical and unskilled manpower, accessories/ equipment and material for installation and commissioning.
- 12.2.3** The supplier shall demonstrate machine performance and prove out the claimed capability for successful commissioning at the consignee's works as per clause 3.3 of Section-IV. The M&P shall be deemed to be "commissioned" at consignee premises on the date when it is tested and meets with the specified capabilities/functions according to the technical specifications.

A Joint Commissioning Note (JCN) to this effect shall be made as per the format at Annexure-D of Section-VI. After issue of JCN the performance shall be watched for a period of one month, after which the PTC shall be issued. The issue of PTC can not be delayed by more than 60 days from the issue of JCN. If some minor breakdowns are noticed after the issue of JCN, these shall be attended as per warranty obligations and suitable extension of the warranty

period, under intimation to COFMOW. If no intimation is given to COFMOW and the PTC is not issued till the expiry of 60 days from the date of UCN, then the issue will be discussed in a meeting between CME (POM & WS) and the consignee. Based on this, decision to issue PTC will be taken. By CME/POC, the concerned technical officer and CME.

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12.2.4 If an assembly/sub-assembly requires to be taken back to the manufacturer's premises for repair/replacement either before commissioning or during warranty, the manufacturer or his agent would be required to submit BG of suitable amount. In case the entire machine has to be taken back, a Bank Guarantee for the cost of the machine would have to be submitted. The bank guarantee should be of adequate value so as to cover the cost of the assembly/sub-assembly/paid up cost of the machine.

12.2.5 The performance appraisal report as per the Annexure-E of the AT immediately on completion of warranty period should be prepared by the consignee and given to the firm. Copies of this performance appraisal report should also be sent to CME, COS & FA&CAO/COFMOW. On getting the performance appraisal report, the firm will request COS/COFMOW for release of WBG. If this report is not received within the validity of WBG, the WBG should either be extended for one year or encashed as the case may be.

### 13.0 SERVICE FACILITY IN INDIA AND TECHNICAL SUPPORT

13.1 The tenderer will clearly spell out in the offer the facilities available with him or his agent for providing adequate after-sales service in India during warranty period in the appropriate section of Annexure 'A' of Bid Document Part-II. The complete details such as organization for after sales service, availability of technically competent engineers and warehousing facilities for spares should be clearly indicated. Bidders not offering complete servicing/repair facilities in India to ensure quick response to maintenance/ servicing calls are not likely to be considered.

13.2 After the warranty period and AMC period, if any, the manufacturer or his agent shall agree to provide service supports for trouble shooting and obtaining spare parts. The manufacturer shall be obliged to provide spare parts required by the Purchasers for a period of 13 years from the date of delivery of the machine at the ultimate destination to safeguard against obsolescence.

13.3 Tenderer who are OEM, shall undertake to supply spare parts for a period of expected life of machine. Other tenderers shall submit undertaking from OEM for supply of spare parts for a period of expected life of the machine.

13.4 Tenderers shall indicate the list of spares required for maintenance of the machine beyond warranty/AMC period. Current cost of such spares and current service charges for the items of work of repair of machine shall also be indicated.

13.5 During warranty period, the supplier or his authorized agent shall attend for break down as soon as possible, but in no case later than 72 hours of receipt of intimation of the breakdown.

### 14.0 BOUGHT OUT ITEMS

14.1 The bidder shall furnish along with the offer a list of all critical items/ sub-assemblies specially generating set and air compressor which are bought out by the bidder and proposed to be used, along with the manufacturer's name, brand model etc. The successful bidder may be required to produce invoices to ensure genuineness of such products / verification by the Inspecting agency.

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- 15.0 **COLOUR:** The machine and its accessories shall be painted in Apple Green Colour No.281 to IS:5-1978, (if any specific colour code standardised by BIS is available, the same be given). The machine can also be painted in equivalent RAL/DIN/other International Standards. If there is a standard color scheme of the manufacturer, the same can also be considered and may be specified.

- 16.0 **WARRANTY OBLIGATION** -The following conditions regarding Maintenance and reliability shall also apply:-

- 16.1 The machine shall be designed for a life of 15 years with regular maintenance and all the structural members of the machine shall be guaranteed for 7 years against cracks breakages etc. during the course of normal operations. Tenderer would submit suitable undertaking.
- 16.2 The machine shall at all times give contractual out-put and accuracy. Any deficiency or break down for a total of 01 hr. or more for a day would be treated as failure for the day, for the purpose of extending warranty period in terms of clause 3405 of Bid Documents Part-I.
- 16.3 The tenderer shall ensure that in case a failure is reported by a consignee qualified service engineers shall visit the site within two days from the date of complaint on calendar day's basis. The period of two days after the failure report shall be treated as grace period, which will not count towards breakdown time for up to one failure per month and a maximum of 3 failures per quarter. In case the number of failure exceeds one failure per month or three during any quarter of warranty, grace period of only 1 day will be permissible for such additional failure. Complaints shall be lodged by consignee by fax phone, e-mail or per bearer at address given by the tenderer.
- 16.4 Maximum permissible down time till it is restored back to the contractual output and accuracy levels, in any quarter of the year during the warranty period, shall be 150 hrs. in case the total break down period in any one of year during warranty period, exceeds 500 hrs. the purchaser would be entitled to encash Bank guarantee towards warranty. To ensure this a record of breakdown in hours on quarterly basis should be maintained by the consignee. At the end of first and second year of warranty, these details of breakdown hours during warranty period should be advised to COFMOW and firm as per performance appraisal report given in Annexure - E of section -VI. A copy of these should be sent to CME, COS & FA&OAG COFMOW. The firm will then request COFMOW for release of WBG annexing the performance appraisal report as per Annexure-E of Section-VI and the breakdown details mentioned above. If these details are not received in time, penal action for encashment of WBG as per the reliability clause should be initiated by Stores. Besides, forfeiture of warranty guarantee, the adverse performance of the supplier would be noted for deciding future tenders.
- 17.0 **ANNUAL MAINTENANCE CONTRACT : (Optional)**
- 17.1 Tenderers are required to quote for a comprehensive Annual Maintenance Contract for the machine supplied against this specification for a period of five years after completion of warranty period on yearly basis giving the rates for each year i.e. first year, second year..so on., which will be inclusive of all spares, material and labour costs. The duties and taxes as applicable should be indicated separately. All consumables spares and materials shall form a part of the scope of comprehensive AMC except as follows.
- a. Diesel/Fuel, lubricating oils or coolant

b. Major machines elements/structural members which are under guarantee of seven years vide clause 16.1 as stipulated in the 'Warranty Obligations' requirement.

17.2 AMC shall be operated, managed and paid by the consignee as indicated under clause 3.3 of Section IV. The consignee shall indicate the bill payment authority & custodian of the AMC BG.

17.3 AMC is not part of scope of supply, and not included in commercial evaluation criteria vide clause 3.5 of section-IV. The option to award AMC shall remain with the consignee after completion of warranty period.

The detailed terms and conditions of AMC shall be as given in following clauses.

17.3.1 The duration of AMC shall be 5 years from the date of expiry of warranty. Rates for AMC shall be quoted by the tenderer on yearly basis, which will remain applicable during the duration of AMC and not subject to any variation except any statutory changes in taxes and duties as compared to quoted rates.

17.3.2 The tenderer must provide AMC services at the consignee location without any precondition. The AMC should include complete responsibility for the bought out sub assemblies and components like CNC system, diesel engine, AC unit etc.

17.3.3. The details of preventive maintenance services including cleaning of machine to be provided under AMC shall be provided by the tenderer in the following format.

S.No.	TYPE OF PREVENTIVE SCHEDULE	PERIODICITY	ITEMS TO BE CHECKED	ITEMS OF REPLACEMENT	EXPECTED PLANT DOWN TIME
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17.3.4 Preventive maintenance shall preferably be conducted on weekends through mutual agreement with the consignee. Each preventive maintenance schedule normally shall not exceed one day. The total shutdown time for preventive maintenance should be kept as low as possible but not more than 60 hours/month (averaged over the quarter) including time for cleaning, weekly, fortnightly, monthly, quarterly schedules etc. The preventive maintenance regime offered must be aimed at achieving minimum 90% uptime of the plant excluding the plant down time for preventive maintenance schedules.

17.3.5 The tenderer shall ensure that in case a failure is reported by a consignee, qualified service engineers visit the site within 3 days from the date of complaint on calendar days' basis. This period of 3 days after the failure report shall be treated as grace period, which will not count towards plant down time for upto one failure per quarter and a maximum of 4 failures per annum. In case, the number of failures exceed one during any quarter or four during any year of AMC, grace period of only 2 days will be permissible for such additional failures. Complaints shall be lodged by consignee by fax, e-mail or per bearer at address given by the tenderer. The responsibility to keep the failure reporting address details current will rest with the tenderer.

17.3.6 In case preventive maintenance is carried out alongwith breakdown maintenance schedule; preventive maintenance time will be deducted from breakdown time of the plant.

17.3.7 **Penalty Clause:** Penalty shall be levied on the tenderer for maintaining plant up time below the limit of 90% calculated on working days basis, after discounting for grace period and preventive maintenance period. Penalty shall be calculated

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as %age of quarterly payment and will be deducted from the respective quarterly payments. Penalty calculation will be done over quarterly payment.

S.No.	Availability Slab	Applicable Penalty
1.	90% to 80%	0.5% for every 1% (or part there of) reduction in availability of plant below 90%.
2.	Below 80%	1% for every 1% (or part there of) reduction in availability of plant below 80%.

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17.3.8. A Bank Guarantee equal to  $\frac{1}{4}$  of annual value (highest of the annual values if the rates offered for various years are different) of AMC subject to a minimum value of 1.25% of the quoted cost of machine including concomitant accessory (in case the annual AMC rate quoted is less than 0.5% of the cost of machine), will be submitted by the tenderer to the consignee 90 days before the expiry of warranty. AMC will have the validity of 5 years 6 months. The bidder can submit multiple BG for lesser duration to cover the period of 5 year 6 months ensuring the uninterrupted validity of the AMC BG for 5 year 6 months. The confirmation for the submission of this BG will be returned on completion of AMC period. Incase, the tenderer fails to provide AMC services successfully, the AMC BG will be forfeited. This will be in addition to penalty as per clause 17.3.7 above. This provision would not be applicable where the advance payment is made.

17.3.9 Plant up time of less than 60% for two consecutive quarters will constitute complete failure of tenderer to provide the AMC services successfully and will result in forfeiture of AMC BG. This will be in addition to penalty clause 17.3.7 above for the period of actual performance.

17.3.10 Where AMC is part of evaluation of offer, it is the sole responsibility of bidders to stock all spares and materials as required for smoother execution of AMC in order to achieve response time in compliance to machine availability as per stipulated requirements.

17.3.10.1 In all cases of plant failure except as mentioned in clause 17.3.10.2, any other spare part or material necessary to restore the plant to proper working order will be arranged by the tenderer as a part of AMC.

17.3.10.2. In case of damage to the machine on account of any external factor, viz., floods, earthquake, fire, arson or sabotage, entire cost of spare parts and material necessary for repair of the plant shall be borne by the railways. However, the tenderer shall provide services of their engineers free of cost as a part of AMC to restore the plant to working order.

17.3.10.3. In case of damage to the plant as mentioned in para 17.3.10.2, any spare parts and material necessary to restore the plant to proper working order shall be arranged by the tenderer and charged on actual basis duly certified by authorized railway official in the next quarterly bills. The rates charged for such spare parts shall be based upon the spare part rate list provided by tenderer in compliance of clause 5.2 or any other valid document. The tenderer shall furnish documents to support the rates charged for spares used for repair under para 17.3.11(a).

17.3.11. Normally quarterly payment (@  $\frac{1}{4}$ th of the annual quoted rates) under AMC will be made to the tenderer within 30 days from the end of that quarter subject to submission of the following documents by the tenderer to the paying authority assigned by the consignee:

NSR No. 0734890001 dt. 28-04-2014

- a. Consignee's certificate for work done as per Annexure-G of Section-VI with calculation of down time and penalty applicable ~~to~~ मुख्य या. इंजी. (यो. व का.)
- b. A certificate by consignee that no spare part is due with the tenderer as per clause 17.3.10 above. Dy. CME (P/R & WS)  
S.E.C.R. Bilaspur
- c. Bills submitted by the tenderer & accepted by consignee.
- d. Attested photocopy of the AMC BG.

17.3.12 The AMC contract can be terminated in following ways:

- (i) Consignee may terminate the AMC in the event of failure of tenderer to provide AMC services of the AMC agreement in addition to encashing of AMC BG as per clause 17.3.8.

17.3.13 Other general conditions shall be governed by Bid Document Part-I (Section-I, II and III) as applicable to respective COFMOW A/T.

17.3.14 If the AMC is not part of the scope of supply, the cost of AMC will not be added for evaluation.

NSR No. 0734890001 dt. 28-04-2016

**SCHEDULE-I**

The equipment offered shall conform to following parameters

उप मुख्य या. इंजी. (यो. व का.)  
Dy. CME (Plg & WS)  
द. पू. म. रे. बिलासपुर  
S.E.C.R. Bilaspur

<u>S. No.</u>	<u>Item Description</u>	<u>Specification</u> COFMOW/IR/APCE/2014
1.	Plasma Power Source	Inverter IGBT Based
1.1	Type of power supply	220 – 230 V Single phase AC 50 Hz
1.2	Input power supply	45 Amp.
1.3	Current output	12 mm thick (clean cut) Stainless
1.4	Cutting Capacity	steel sheets
1.5	Cutting Speed (minimum)	300 mm / minute
1.6	Gas Supply	Oil free Air or Nitrogen
1.7	Weight	20 Kg
2	Torch	Hand Held
2.1	Type	
3	Portable Air Compressor	
3.1	Tank Capacity (minimum)	24 Liter
3.2	Motor Power	2 HP Single Phase
3.3	Pressure (minimum)	5.5 bar
3.4	Air Flow rate (minimum)	7 C.F.M
3.5	Type	Reciprocating
3.6	Weight	25 Kg
4	Diesel / Petrol Generating Set	
4.1	Wattage (minimum)	2x5.5 KVA (Coupled)
4.2	Output Power rating	230 V / 50 Hz, Single Phase
4.3	Engine Type	Air Cooled
4.4	Fuel tank capacity	16.5 Liters
4.5	Dry Weight	120 Kg each unit
4.6	Low oil Alert System	Yes
4.7	AC Circuit Breaker	Yes
4.8	Pilot Lamp	Yes

Note:- The weight of individual equipment, as specified in Schedule-I may exceed by a maximum of 10%. There is, however, no limit on the lower side.

NSR No. 0734890001 dt. 28.04.2016

SCHEDULE - II

DETAILS OF DESIGN PARAMETERS TO BE SUBMITTED BY BIDDER

उप मुख्य या. इंजी. (यो. व का.)  
 द. पू. म. रे. बिलासपुर  
 S.E.C.R. Bilaspur

*The tenderer shall also furnish the following information regarding the equipments offered.*

**1. PLASMA POWER SOURCE**

- 1.1 Make and type.
- 1.2 Input Voltage, Current & power
- 1.3 Out put Current.
- 1.4 Out put Voltage
- 1.5 Cutting Capacity
  - 1.5.1 Clean cut capacity on stainless steel and Mild Steel
  - 1.5.2 Severance cut capacity on stainless steel and mild Steel
- 1.6 Air flow rate
- 1.7 Air flow pressure
- 1.8 Overall dimensions: LxBxH
- 1.11 Weight with frame
- 1.12 Duty Cycle
- 1.13 Type of cooling

**2. CUTTING TORCH (MANUAL)**

- 2.1 Working pressure
- 2.2 Air flow rate
- 2.3 Current range
- 2.4 Piercing capacity
- 2.5 Length of power cable & hose
- 2.6 Life of Electrodes, Nozzle and other consumable (in meters of cutting length)
  - 2.6.1 For stainless steel
  - 2.6.2 For Mild Steel
- 2.7 Cutting speed (manual) for stainless steel (meters/Minute)

**3. AIR COMPRESSOR**

- 3.1 Make and Type
- 3.2 Power requirement
- 3.3 Working pressure
- 3.4 Air flow rate



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3.5 Reservoir capacity

3.6 Weight

3.7 Overall dimensions

4. **GENERATING SET**

4.1 Make and Type

4.2 Output voltage and frequency

4.3 Out put

4.3.1 Rated

4.3.2 Surge

4.4 Rated current output (Amps)

4.5 No. of AC out put terminals

4.6 Type of fuel, material and capacity of fuel tank

4.7 Fuel Consumption at rated out put.

4.8 Dry Weight

4.8.1 Without trolley

4.8.2 With Trolley

4.9 Overall dimensions (length x width x height)

4.10 Engine starting system

4.11 Engine RPM

4.12 Decibel rating

4.13 Run time @ 50% load

4.14 CPCB compliance

उप मुख्य यां. इंजी. (यो. व का.)  
Dy. CME (Plg & WS)  
द. पू. म. रे. विलासपुर  
S.E.C.R. Bilaspur

7 6 8  
23 8

## SECTION VI

## ANNEXURE-A

FORMAT FOR SUBMISSION OF TECHNICAL BID

1. We, M/s.----- offer our ----- machine, model no. ----- as per the description given in Schedule of Requirements. We further state that, except for the following, for which clause wise brief description and justification for deviation has been indicated, our machine fully complies with all the clauses as given in main features and description of tender requirements in section – IV & technical specification Section-V and we also confirm all the schedules given in the Delivery Schedule at para 3.6 of **Section-IV.** :

S.No.	Clause/Item	Brief description of Deviation	Justification for deviation

**Note1:** In case there is a contradiction in any information provided (some parametric values given in the other clauses of Annexure-A and those given in the brochure or some other document enclosed by the us), unless specifically mentioned in the deviation cum confirmation statement under Annexure A of Section VI, the values as given in other clauses of Annexure-A shall be taken as confirmed by us (tenderer).

**Note2:** In case tenderer offers internationally accepted alternative specifications as per clause 3.1.8, complete details of alternative specification apart from filling above deviation statement, may be enclosed (if applicable)

2. We further certify that we are meeting the reference clause as;

(A) We are the regular manufacturer of this type of machine.

(B) We have made the following past supplies of similar machines as per clause 1.2 of special conditions during last 5 years:-

S No.	Name of purchaser with postal address	Name of contact person with designation	Phone/ fax /e-mail nos. of contact person	Year and date of commissioning of the machine

(C) We are submitting following performance certificate from past users as per clause 1.3 of Special Conditions :-

S.N.	User Name	Date Supplied	Date of issue of certificate	Application / Use	Performance

3. We are having following facilities available with us or our agent for providing adequate after-sales service in India during warranty period. Complete details of after sales service availability of technically competent engineers and warehousing facilities for spares is indicated below:

After sales service centers:

Availability of technically competent engineers;

Warehousing facilities for spares:

4. We have quoted for the following optional accessories as indicated under clause 3.4.3 of section IV

Sr No.	Description of the optional accessory	Quantity (in Nos.)	Rate (in Rest.)	Indigenous	Shelf Life (in Months)

5. We have quoted for the spares as specified in schedule-III.

Sr No.	Description of the spares	Part no.	Quantity (In Nos.)	Rate (In Rest.)	Shelf Life (if applicable)

6. \*We hereby confirm that we are the OEM and undertake to supply spare parts for a period of expected life of machine.

OR

\*We hereby confirm that we are not the OEM, but are submitting undertaking from OEM for supply of spare parts for a period of expected life of the machine to provide maintenance spares (as and when ordered) after the expiry of the Warranty/AMC including the maintenance spares required for the bought out sub-assemblies and parts.

(\*Strike out which ever is not applicable)

7. We have quoted consumables required as per clause 6.1 of Section V of Bid document Pt-II. in the format give below

Sr No.	Description of the consumable spares	Qty	Unit	Rate

8. It is certified that we are having suitable facilities at our works for carrying out various performance tests on the sub-assembly/assembly/machine and these shall be made available to the inspecting authority.

9. **BOUGHT OUT ITEMS:** We hereby furnish a list of all critical items/ sub-assemblies which are bought out by us and proposed to be used, along with the manufacturer's name, brand model etc.

Sr No.	Description	Item no. 1	Item no. 2	Item no. 3
1.	Brief description of item			
2.	Model no.			
3.	Make			
4.	Quantity/machine			
5.	Manufacturer's name and complete address			
6.	Whether imported or indigenous			
7.	Country of origin			

10. We have quoted for Preventive Maintenance during warranty and Comprehensive Annual Maintenance Contract as per clause 16.3 & 17 of section-V respectively. Details of preventive maintenance service including cleaning of machine to be provided under P.M.C during warranty and AMC is given in the following format.

S. No.	Type Preventive Schedule	Of	Periodicity	Items To Be Checked	Items Replacement	Of	Expected Equipment Down Time

11. We further submit the following information about the offered machine as per the technical specification section VI and Important Features of the tender section IV. We understand that any omission of any of the below mentioned information will render our offer incomplete to that extent.

S.N.	Information required	As per Clause No.	Value /Write up/ Brochure
1.	Information against each item of schedule –I	Schedule-I	Details
2.	Information against each item of Schedule-II	Schedule-II	Details
3.	Operating & Maintenance Tools <ul style="list-style-type: none"><li>• Make</li><li>• Description</li><li>• Quantity</li></ul>	Clause 1.5 of section-V	Details
4.	Details of Safety features to protect the torch & operator from shock.	Clause 1.3 of section-V	Write up
5.	Details of cooling arrangement	Clause 1.2.1.2 of section-V	Write up
6.	Details of safety features of Generating set	Clause 1.2.3.5 & 1.2.4.5 of section-V	Write up
7.	Certificate from generating set manufacturer	Clause 1.2.3.6 of section-V	-

Following (Nos. to be mentioned) annexures are enclosed as per above table:

Signature of the  
authorized representative of the bidder  
with company stamp

# FORMAT FOR INDEMNITY BOND

This deed of Indemnity executed by M/s. ----- hereinafter referred to as Indemnifier' which expression shall, unless repugnant to the context or meaning thereof, include its successors, administrators, representative and assignees in favour of Central Organisation for Modernisation of Workshops, Railway offices Complex, Tilak Bridge, New Delhi – 110 002, India, hereinafter referred to as the 'Indemnified' which expression shall unless repugnant to the context or meaning thereof, include its successors and assignees witnesses as to.

Whereas the Indemnifier herein had participated in a global tender for the supply of ----- (machine name) which is opened on ----- (date) on terms and conditions set out interalia in the Tender Document.

And whereas, clause of the above mentioned tender document described that the machine shall be designed for a life of 15 years with regular maintenance and all the structural members of the machine should be guaranteed for 7 years against cracks, breakages etc. during the course of normal operations from the date of commissioning whichever is earlier of the stores supplied by the Indemnifier to the indemnified.

The indemnifier hereby irrevocably agrees to indemnify the indemnified that in the event of the said machine not achieving the life guarantee, the indemnifier shall as may be deemed necessary repair the defective machine at site, free of cost, within a reasonable time specified by the indemnified or reimburse the pro-rata cost of the machine to the extent a life not achieved as per the guarantee, or supply a spare stores for the defective portion only free of cost at site.

Bidder's authorized signatory  
With seal

Station:

Date:

Witness: 1. -----

(Signature with Name, Designation & Address)

2. -----

(Signature with Name, Designation & Address)

JOINT RECEIPT INSPECTION NOTE

Date.....

Sub: Receipt of consignment for machine.....

Ref: COFMOW Contract No.....

1.	Name of consignee/Railway	
2.	Machine name	
3.	Quantity	
4.	Name of supplier	
5.	Consignment of the machine received on	

It is certified that the consignment of the machine has been received complete and in good condition as per specification shown in the contract.

Tentative plan for installation and commissioning of the machine is as under:

1.	Date of clear site provided	
2.	Contract	Turnkey/Non-turnkey
3.	<b>Status of readiness of foundation:</b>	
3(a)	Already constructed on	
3(b)	Under construction & likely date of its completion	
3(c)	Construction yet to be started from ..... and & likely date of its completion	
4.	Status of availability of electrical power, water and compressed air etc.	Available/Not-available
5.	Number of components to be proved out on the machine	
6.	Likely date for start of erection	
7.	Likely date for switch-on the machine	
8.	Likely date of completion of commissioning of the machine	

Representative of firm  
Designation

Representative of consignee  
Designation  
(Minimum Gazetted level)

(40)

006586

ANNEXURE -D

(4)

JOINT COMMISSIONING NOTE

Date:.....

**Sub:** Commissioning of (name of machine).....

**Ref:** COFMOW AT No.....

1.	Name of consignee/Railway	
2.	Machine name	
3.	Quantity	
4.	Name of supplier	
5.	Machine received on	

6. All the parameters of the machine are found okay. The proving test on the machine was conducted from ..... to ..... and machine is working satisfactorily.
7. Machine has finally been commissioned on..... The machine has been handed over for regular use and kept under one month observation to watch its performance.
8. Following minor deficiencies (if any) found during joint observation trials are to be attended/rectified by the firm during one month observation and before issuing the PTC for the machine:
- a.
  - b.
  - c.

Representative of firm  
Designation

Representative of consignee  
Designation  
(Minimum Gazetted level)

**PERFORMANCE APPRAISAL FORM****APPRAISAL ON COMPLETION OF WARRANTY PERIOD**

Dated:.....

To, M/s. ....

1.	COFMOW AT No.	
2.	Consignee/Railway	
3.	Name of supplier	
4.	Machine Name	
5.	Machine received on	
6.	Machine commissioned on	
7.	PTC issued on	
8.	Warranty period expired on	
9.	<b>Performance during warranty period:</b>	
9(a)	Total number of breakdowns	
9(b)	Total downtime in number of days	
10(a)	Any warranty complaint pending on date	Yes/No
10(b)	If yes, then the date and nature of defect(s)	

11. In case, Reliability clause No.16 of the machine during warranty period is also given in Bid Document Pt.II, then following details of breakdown hours for preceding eight quarters may also be furnished.

Quarter	Period From -----To-----	Breakdown hours
1		
to		
8		

Signature-----  
Name-----

Designation:DY.CME/Sr.DME/Dy.CEE/Sr.DEE  
Office Stamp

COS/COFMOW/Railway Offices Complex, Tilak Bridge, New Delhi-110 002  
CME(PCM)/COFMOW/Railway Offices Complex, Tilak Bridge, New Delhi-110 002  
FA&CAO/COFMOW

Note:

- i.) This appraisal may please be sent immediately on completion of warranty period. If any extension of warranty period required, may please also be mentioned with details.
- ii) Sr.Scale Officer having independent charge is also authorised to sign.



ANNEXURE-F

LIST OF COMPONENTS TO BE LOADED ON THE MACHINE

S.No.	Component	Drawing No.	Part/PL. No.	Machining Operations to be carried out
		NOT APPLICABLE		

Consignee's Certificate for Quarterly Work Done Under AMC

Name of Plant:

Consignee

COFMOW AT No.

Name of Contractor

Quarterly charges for AMC(Standard): Rs. \_\_\_\_\_

As per COFMOW AT no. \_\_\_\_\_ dt. \_\_\_\_\_

Quarter for which bills are preferred: \_\_\_\_\_

From: \_\_\_\_\_ To: \_\_\_\_\_

No. of Breakdowns during the quarter:

**Calculation of Penalty and Net AMC charges payable to Contractor for the quarter:**

Total Plant Down-Time (in days):

Standard down days for preventive maintenance (in days/quarter):

Total grace period for break down:

Net down time for the plant [= (i)-{(ii)+(iii)}]:

100% Availability for the quarter (in days):

Actual availability [= (v)-(iv)]:

Actual availability in %age [= {(vi) / (v)} x 100]:

Calculation of penalty:

%age availability below 90% to 80%:

%age availability below 80%:

Penalty[= {(vii a) x (5) x 0.005 + (vii b) x (5) x 0.01}]:

Net amount payable as AMC charges to [= (5)-(vii c)]

It is certified that all spares borrowed by the contractor for the previous quarter have been returned in good condition.

Signature of authorized representative of consignee

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C

3

## SPECIAL CONDITIONS OF TENDER

### REFERENCE CLAUSE:

- 1.1 The tenderer should provide satisfactory evidence acceptable to the purchaser, to show that he is a manufacturer having adequate plant & manufacturing capacity and has a "Quality Assurance Programme". Tenderer should furnish a list of Air Plasma Cutting equipments supplied by him in the last five years along with purchaser's name and addresses, order no., date and quantity supplied and their performances and whether supplies were made within the delivery period.
- 1.2 The bidder must have supplied at least 20 nos single phase manual Air Plasma Cutting Equipments to Central/State Government/Railways/PSUs/Disaster Management organizations or private firms during last five years out of which five equipments should be working satisfactorily for last one year. Performance certificate of such equipments must be enclosed with clear signature and address where these are working. The performance certificate should not be older than one year from the date of opening of tender.

In the absence of above information, the tender is liable to be rejected.