



TENDER DOCUMENT FOR SUPPLY OF ECO COILS TOP, MIDDLE & BOTTOM FOR POWER PLANT.

TENDER NO: BALCO/SUPPLY//20-21



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INSTRUCTION OF BIDDERS

Vedanta Resources plc (“Vedanta”) is a LSE listed FTSE 100 Company with a market cap including that of its listed subsidiaries of about \$ 50 billion. We operate across the following core business sectors: Zinc-Lead-Silver, Copper, Aluminum, Iron Ore and Energy, with operation located in geographies spanning India, Australia, UAE, Zambia, South Africa, Namibia and Ireland. Over the past 5 years the group has displayed exemplary appetite for organic and inorganic growth-with an industry leading organic growth program of \$ 20 billion nearing completion.

Bharat Aluminum Company Limited (BALCO) is a group company of Vedanta in Aluminum business, having its integrated Aluminum complex at Korba, Chattisgarh, comprising an Aluminum Smelter of 245000 TPA with two captive power plants of 270 MW and 540 MW. BALCO is also in process of putting up an additional power plant of 1200 MW and 650000 TPA Aluminum smelter.

What BALCO is looking forward with this Vendor:-

- High Level of Service quality.
- 100% adherence to all the deliverables.

- Zero accidents environment.
- 100% reporting of all the near miss incidents and corrective measures for all to ensure no accident due to the unsafe conditions.
- Increased availability of all the equipments and the total system to ensure better efficiency and higher levels of productivity.
- Ensuring higher productivity per man hour by introducing better Operating Procedures.
- Introduction of innovative ideas which can save in terms of time or money.

Information / Credential of Suppliers.....

The following information is Compulsory and should be furnished completed in all aspects along with your offer.

1. Brief history of organization, along with organization chart, mentioning the Name, Designation & Tel.Nos of the contact persons in your company holding all key positions.
2. Client list, with copies Contracts of your Top 5 clients.
3. Banker's name and your Company's annual audited report / Balance Sheet for last 2 years.
4. The details of Machinery and Equipment available with you which are in working condition are to be furnished.
5. If the space provided in the registration form is not sufficient, please attach separate Sheets and give Annexure reference number on the attached sheet.
6. Registration Details
 - a. Registration No. and date
(Kindly attach a photocopy of registration certificate)
 - b. Membership to any body
 - c. Any other Statutory Registration.
 - d. Registration details with taxation authorities:
 - i) Permanent Income Tax A/c No.
 - ii) Service tax Registration
 - iii) Tin Number
 - iv) Excise registration no.
 - v) LST & CST no.

ANNEXTURE I

BALCO'S GENRAL TERMS AND CONDITIONS TERMS:

1. **Price:**
Price quoted should be inclusive of Freight & Transit Insurance i.e. F.O.R. Balco Door Delivery basis.
2. **Taxes & Duties:**
Only GST Tax will be paid extra at actual,
3. **Delivery Period :**

Delivery period should be offered on the basis of actual manufacturing time and transit time required to deliver the material at our stores.

4. Payment Terms:

Payment will be released within 30 days after receipt & acceptance of material at our store site.

5. Acceptance of Offers:

BALCO is not bound to accept the lowest offer or to give any reasons for rejection of any offer and it shall be the sole discretion of the company to consider or reject any bid. A formal Purchase Order shall be issued by BALCO towards the successful bidder in the event of acceptance of the offer. Unless a formal Vendor has been concluded no offer shall be deemed as accepted. Balco reserves the right to award Order to more than one agency or split the order at its own discretion.

6. Modification & Agreement:

BALCO shall have the right to modify the ordered quantity in view of variation of requirement, price increase / decrease. Modification of Agreement may also take place in Vendor period as it may be shortened or extended in proposition to our supply pattern as we full depend on our Vendor's commitments.

7. Damage To Balco's Property:

Any loss / damage to Balco due to negligence or willful attitude of the supplier or his employees while execution of the supplier shall be recovered from the Vendor are pending bills.

8 Occupational Health & Safety:

The vender shall be responsible to take all precautions to ensure safety of the labors / workers at work. The vender will supply his labors / workers safety equipment as per rules. If you're bringing your own equipment to carryout of job inside the plant such equipment should be subject hazard identifications and risk assessment prior to commencing of work.

The persons engaged by you shall be given appropriate awareness on OH&S; those personal who will carry out jobs affecting OH&S shall be properly trained and made competent for the job performed by them. During emergency situation which may be faced in the plant your personal should move to the emergency shelters. They should not lighter around nor spread any rumor.

12 Indemnity:

The Vendor shall keep Balco indemnified from and against all actions, suits, proceedings, losses, costs, damage, claim and demands of every nature and descriptions due to any acts of the Vendor.

13 Insurance:

The will take workmen compensation insurance policy from the Insurance Company so as to enable him to discharge various liabilities under workmen compensation act and submit documents within seven days of its start of work. The Vendor shall be required to obtain Group Insurance Policy for the labors to be engaged in the work.

14 Illegal Gratification:

This Vendor can be terminated if any bribe, commission, gift or advantage given, promised or offered by the Vendor to any employee of Balco.

15 Liquidated Damage:

Delivery time is the essence of contract, delivery beyond the contractual delivery terms shall entall Liquidated Damage (LD) @ 0.5% per week of the Total Order value and maximum to an extent of 5% of the Total Order Value.

17 Force Majeure:

For failure of delivery of material due to war, restraint, imposed by government, earthquake, fire, explosion, riot, lockout, etc, beyond human control directly interfering with the work, Balco shall only allow such additional time as may be considered justified by the circumstances of the case. No claim whatsoever of compensation from the Vendor for loss etc. on this account shall be entertained. Direct or indirect loss, if any, to Balco due to negligence of the Vendor during this period, on this account can however be recovered from the Vendor.

18. Arbitration:

In case of any dispute or difference between the Parties the matter shall be decided by mutual negotiation & agreement. If any difference persists on a matter of law or interpretation of this document the decision of mutually appointed arbitrator would be final & binding. All disputes arising out of or in connection with the present Vendor shall be finally settled under the Rules of Arbitration of the International Chamber of Commerce by one Arbitrator appointed in accordance with the said Rules. The Contract shall be governed by, construed and interpreted in accordance with the laws in India. The venue of Arbitration shall be at Korba India only. The Arbitration shall be held in English language and the award of the Arbitration shall be final and binding to both the parties.

27. Jurisdiction:

This Vendor will be subject to Korba, Chhattisgarh Jurisdiction only for all legal matters.

Schedules of Quantity per Annum:-

Material Code	Description	Qty	Check BOQ file for detailed view
MAC401020020001	Economizer lower update with 14tube	130	
MEL391210100273	COIL,UPR,F/BLR,BAL/CPPII/BLR/HBC1350121	130	
MHW311628001199	ECNMSR COIL,BAL/CPPII/BLR/HBC 1350.121	130	

BOM:-

S. No	Drawing No	Name of Drawing	Tube Specification	Matl. Spec	Total Qty	Fully Shielded Coil Qty	Top 4 tubes in Each bank Coil Shielding Qty
1	BM1BLR00806	Bottom COIL DETAILS (REAR)	32 O/D * 4 Thk.	SA- 210 Grade C	2	2	0
2	BM1BLR00808	Bottom COIL DETAILS	32 O/D * 4 Thk.	SA- 210 Grade C	2	2	0
3	BM1BLR00809	Bottom COIL DETAILS	32 O/D * 4 Thk.	SA- 210 Grade C	63	8	55
4	BM1BLR00807	Bottom COIL DETAILS (REAR)	32 O/D * 4 Thk.	SA- 210 Grade C	63	8	55
5		Middle Coil Front	32 O/D * 6 Thk.	SA- 210 Grade C	65	10	55
6		Middle Coil Rear	32 O/D * 6Thk.	SA- 210 Grade C	65	10	55
7		Top Coil Main Front	32 O/D * 4 Thk.	SA- 210 Grade C	63	8	55
8		Top Coil Main Rear	32 O/D * 4 Thk.	SA- 210 Grade C	63	8	55
9		Top Coil Front	32 O/D * 4 Thk.	SA- 210 Grade C	2	2	0
10		Top Coil Rear	32 O/D * 4 Thk.	SA- 210 Grade C	2	2	0
11	Baffle Plate & Shield	Top bank	2 Thk	Alloy Steel (Grade 22)			
12	Baffle Plate &	Middle and Lower	2 Thk	Carbon Steel			

	Shield	Bank					
13	Middle band System	Middle band System	BOM Coil Support				
14	Middle Support System	Middle Support System	BOM Coil Support				
15	Top band Supports	Top band Supports	BOM Coil Support				
16	Top Support System	Top Support System	BOM Coil Support				

Scope Points :-

S.No	Vendor Scope Points
1	Raw Material(Pr Parts/ Non Pr Parts) Test Certificates
2	Eddy Current Test for All Raw material Tubes
3	Drawing Approvals prior to manufacturing from BALCO
4	QAP to be submit along with Quotation
5	Bends thinning must be as per IBR Rules
6	IBR Welders Certificates and Approval with IBR
7	100% Weld Joints Radiography Reports Submission
8	100% NDT / Heat Treatment Reports Submission
9	Third Party Inspection during Manufacturing of Coils and Report Submission (TPI Company Name will provide by) (Tata Projects/BVQI /TCE)
10	Hydro Test Witness at your shop by BALCO Representative (Test @ - 252 kg /cm2)
11	Delivery Period (2-3 months)
12	Packing (Wooden) and Transportation in Vendor Scope(Between two coild Wooden Packing should be there)
13	Assistance During Dismantling/Installation/Commissioning
14	IBR Certification Documents at your respective shop floor
15	Assistance during Ground Inspection at BALCO from CG IBR
16	Dismantling/Erection/Commissioning Activities Services
17	Gaurantee of the Supplied Coils (5 years)
18	KPI - PBG - 10 % for 5 years (For every tube leakage in betwwn these 5 lakh per tube leakage will be deducte)
19	NDT for attachment weldings
20	Overlap End cap should be ther with supply in each coils
21	Single Coat Primer in Each Coils & Along with Balco material code written on Coil

21 PBG for 4 years

22

KPI:

Zero Failures wrt Weld Joints

Zero failures wrt Alignment issues

No Material(Tube) Cracks are accepted during Running Condition. If any failure happened due to material crack, lot of manufactured Coils should be supply at free of Cost within 1 month from the date of failure. Failing which, Penalty amount will be released and compensated with PBG.

Penalty: For every tube leakage in during 4 years, 5 lakh Rupees per tube leakage will be deducted along with Restoration Cost

Scope of Work for Replacement of Economizer(Top, Middle n Lower Bank) Coils.

Economizer (Top, Middle n Lower Bank) Coils Replacement Regarding:

BALCO CPP2 consists of 540 MW (4X135MW).

Total 4 No's of Boilers Installed with Reg No's: CG-98, CG-99, CG-100 & CG-101.

In Economizer, Total No of Banks Installed: 3 No's (Top, Middle n Lower).

Top Bank Consists of 130 Coils (Each Coil consists of 8 Tubes)

Middle Bank Consists of 130 Coils (Each Coil Consists of 24 Tubes)

Lower Bank Consists of 130 Coils (Each Coil Consists of 14 Tubes).

MOC of the Tubes :

SA 210 Gr C.

Considering the Replacement of 130 Coils in each Bank of Economizer,

Work Consists of:

1. Preparing a complete plan includes:

Structure Modifications if required

Working Platform Erections for Removing and Installation of panels

Detailed Description wrt to Tools n Tackles (Certified by Competent Authority), Vehicles, and Manpower for Execution of the Activity.

2. Respective Area Insulation Removal/Installation for Execution of the Plan is in Vendor Scope.
3. Removal and Joining of the same of Extended Steam Cooled Wall Tubes (Work Execution base requirement of any Cutting/Welding Activities) in n around Economizer Zone.

4. Cutting of the Coils of Each bank and safely placing them in the 0 m in beds (Should be prepared by Vendor).
5. Locking of the Headers wrt to the Execution of the Job.
6. Shifting of Old Coils from 0 m to Respective location inside the Plant as per EIC.
7. Preparations for Erection of New Coils.
8. Shifting of New Coils from Respective area inside the Plant to Site as per EIC Instructions.
9. Steam Blowing of Coils, Cleaning with air in party scope.
10. Thickness Measurement, Visual Inspection and tube replacement in Cage Wall of Economizer Zone in vendor Scope. (Expected joints 100 nos. other than joints for making access). Platform for thickness measurement in Vendor scope as directed by EIC.
11. Safety net/sheeting to prevent fall of material from top and bottom of Economizer is in vendor scope.
12. All the IBR Permissions regarding the Execution of the Job should be taken care by Vendor as per IBR Regulations.
13. During Execution of the Job, All the Joints should be 100% Radiographed and rectification of the same as per report as per IBR rules.
14. During Execution of the Job, Miscellaneous Activities like Scaffolding, Temporary Approaches, Insulation Removal/Installation, site requirements is in Vendor Scope.
15. After completion of the Job, Hydro Test (210kg /cm²) of the boiler should be carried out by Vendor and if any leakage observed, should be rectified by vendor.
16. Commissioning Activities should be supported by Vendor.
17. IBR Certified Welders should be tested at site before Job performed and get it certified by BALCO EIC.
18. WPS should be Submitted before prior start of the JOB and get it certified by BALCO EIC.
19. Work Activities Execution regarding Maintenance Practices, Hiradec, JSA should be approved through BALCO as per BALCO SAFETY Norms.
20. Welding Electrodes/Fillers should be of **D&H Scheron, ESAB**, Make.
21. Detailed Schedule Plan and Progress to be circulated on daily progress regarding Job Execution and Detailed Report of the Work Execution should be submitted after Completion of the Job.
22. Persons Involving in the Execution should Undergone PME Test, Height Test, etc as per BALCO SAFETY Rules.
23. Any Violations during execution of the job will be penalized (Depending on the severity of Violation as per BALCO EIC/Safety) heavily in terms of Safety, Work Quality, etc.
24. All norms pertaining to BALCO are applicable to VENDOR.
25. Scrap removal and Shifting of the same to designated Scrapyard on Daily basis, failing which heavy penalty will be imposed without second thought.
26. Total Duration for Execution of the same will be 15 Days from the date of issue of permit.
27. PBG - 10 % for 4 years.
28. KPI- for 4 years

- a) Zero Failures wrt Weld Joints
- b) Zero failures wrt Alignment issues
- c) No lcks from fins Welding
- d) No dis-location of Shieldings and Cassette Baffles.

29. For every tube leakage in between these 5 lakh per tube leakage will be deducted and Restoration should be done by Vendor at free of Cost. If Restoration is performed by M/s. BALCO under any Circumstances, the happened restoration cost will be deducted from the PBG.

Skill Matrix for contract man power :-

Sr No	Category	Qualification	Total Experience	Age Limit	Mandatory skill
1	Site In charge	Diploma/B.E.	Minimum 15 Years	50 years	Hands –on Experience to manage the AOH of Subcritical thermal power plant.
2	Supervisor	Diploma/B.E.	Min 5 Years	50 Years	Should have experience in Sub critical thermal power Power plant pipe fitting AOH/ routine maintenance activities of boiler specific area wise supervision.
3	Pipe Fitter	ITI is desirable	Minimum 10 Years	50 Years	Should have experience in pipe and plant maintenance activity.

4	Pressure Parts Fitter	ITI is desirable/ Higher Secondary	Min 5 Years	50 Years	Should have experience in Equipment Fit-up & domain knowledge of skills in Sub critical thermal power plant AOH/maintenance with basic coil Alignment/tube replacement activities.
5	Rigger	ITI is desirable	Minimum 10 Years	50 years	Hands-on Experience on erection of Temporary/permanent platforms, scaffoldings, lifting of weights in safer way.
6	LP welder	ITI is desirable	Minimum 5 Years	40 years	Hands-on experience in welding and cutting in water & air pipe lines and Low Pressure Steam piping. Fabrication skills of platforms, ladders, handrails etc are mandatory
7	Gas cutter	ITI is desirable/Higher Secondary	Minimum 5 Years	40 years	Hands on experience in Fin cutting of Boiler tube panels without damaging the tubes & should be able to cut Skin plates etc without damaging tubes.
8	Grinder man	ITI is desirable/ Higher Secondary	Minimum 5 Years	45 years	Hands-on experience grinding of Pipe to desire included angle is mandatory. Should have experience in handling of FF2 grinding machine,AG4,GA5,AG7 grinding cum cutting machines, Buffing wheels etc.

9	Helper	NA	NA	40 years.	Should be work in coordination with fitters and riggers and follow their instructions. Hands on experience in equipment's cleaning with cloth, cotton waste, housekeeping, tools/material shifting and safe handling skills desirable.
10	Electrician	ITI is desirable/ Higher Secondary	Minimum 5 Years	45 years	Hands on experience of basic Electrical utilities, site requirement with domain knowledge in thermal power plant.
11	Safety supervisor	Diploma in safety	Minimum 5 Years	45 years	Knowledge about all safety standard during AOH of Subcritical thermal power plants with Minimum to hand on experience of 2 AOH.
13	IBR welder	ITI is desirable/ Higher Secondary	Minimum 5 Years	45 years	Knowledge about all HP joint on boiler having valid IBR certificate.

30.2 yrs. Guarantee for the workmanship from the date of lit-up.

31. Two Boiler Pr. Parts erection Engineer and two Quality Engineer should be present from Vendor side for quality inspection.

32. PPE's, ESI, EPF and other statutory of deployed workforce will be in Vendor scope

33. Gate pass approval is in vendor's scope and necessary support will be given by BALCO.

34. Lodging, boarding, food and travelling charges is in vendor scope

35. Manpower competency related documents. Medical examination and medical fitness of workers as per form-21 of the CG rules.

36. PPEs as per BALCO standard.

37. Compliance of all applicable HSE statutory and VSAP requirements.

38. Self-declaration of the vendors for acceptance of BALCO VSAP & HSE standards.

39. Standard Tools and equipment to be used. Only approved (as per BALCO's standard checklist) and tagged (fitness) equipment will allowed in the shop-floor.
40. The agency will ensure proper management of waste as per statutory and Vedanta rules.
41. Good housekeeping and green practices needs to be ensured
42. Necessary Gate Pass approval shall be in Vendors scope.

a. Electrical Installations:

The Contractor shall not interfere or disturb electric fuses, wiring and other electrical

Equipment belonging to the Employer or other contractors under any circumstances, whatsoever, unless expressly permitted in writing by the Engineer I/c to handle such fuses, wiring or electrical equipment. Before the Contractor connects any electrical appliances to any plug or socket belonging to the other contractor or the BALCO , he shall:

1. Ensure the inspection by the Engineer I/C that the appliance is in good working condition.
2. Inform the Engineer I/C of the maximum current rating, voltage and phases of the appliances
3. Obtain permission of the Engineer-in-Charge detailing the sockets to which the appliances may be connected.
4. The Engineer in-charge will not grant permission to connect until he is satisfied that:
 - I. The appliance is in good condition and is fitted with suitable plug; having earth connection with the body.
 - II. Wherever armored / metallic sheathed multi core cable is used, the same armored / sheathed should be connected to earth.
 - III. No repair work shall be carried out on any live equipment. The Engineer-in-Charge must declare the equipment safe and a permit to work shall be issued by the BALCO / contractor as the case may be to carry out any repair / maintenance work. While working on electric lines / equipment's whether live or dead, suitable type and sufficient quantity of tools will have to be provided by the contractor to electricians / workmen / Officers.

i. **Right to stop Work.**

- a. The Engineer I/C shall have the right at his sole discretion to stop the work, if in his opinion the work is being carried out in such a-way that it may cause accidents and endanger the safety of the persons and / or property, and / or equipment. In such cases, the contractor shall be informed in writing about the nature of hazards and possible injury / accident and he shall comply to remove shortcomings promptly.
- b. The Contractor shall not be entitled for any damages / compensation for stoppage of work due to safety reasons.

Note: The detailed safety clauses along with relevant penalty details shall be as per **BALCO** safety department circulars.

Safety Clearance:

- m. Agency has to obtain clearance from BALCO Safety Department by submitting duly filled Safety Formats A (Safety Checklist) & B (Safety Induction) prior to start of work.
1. Shifting activity to be completed at least four days prior to unit outage.

2. Erection drawing of scaffolding to be provided at site by agency prior to unit outage. However, prefabrication works indicated / instructed by E-I-C, to be completed before unit outage.
3. A working plan with details of works to be carried out and details of the resources available has to be submitted by the agency at E-I-C. progress report to be submit on daily basis.
4. The Contractor to use the electrical points available within the boiler area provided by BALCO . But the working lighting material will have to be arranged by the contractors at their own cost.
5. The manpower mentioned above is only indicative. However, in case depending upon the site requirement, additional manpower if required is to be deployed as per the instructions of E-I-C.

	CHARACTERISTICS/ITEM	TYPE OF CHECK	INST RUMENT	CL AS S	QUANTUM/FREQ UENCY OF CHECK	REFERENCE DOCUMENT/ACCE PTANCE STANDARD	FORMAT OF RECORD	REMA RKS
1	Prior to Shutdown							
a	Check for healthiness & operation (wherever needed/possible) of tools & tackles (welding machines, grinders, lifting tools, oven, D-meters, Testing Equipment's etc.)	Physical		B	100%	O&M Manual & other relevant standards	Site register	
2	On Shut down							
a	ECO washing & cleaning	Physical	Vis ual	B	100%		Inspection Report	
b	Boiler tube thickness survey as per scope of work and instruction of EIC	Measure ment	D- met ers	A	100%	O&M Manual/Drawings	Thickness survey report	
c	Welding procedure/welder qualification prior to start of any pressure part welding/ issue of identification card	Testing		B	100%	IBR/ ASME Sec. 9	Certificate	
d	Use of welding consumable & backing of electrodes	Visual		B	100%	As per specification/IBR		
e	Check of the joint fit up, cleanliness of tube	Physical		B	5% random	As per drawings/WPS		
f	NDT-DP testing test as per scope of work& requirement	Testing		A	As per work plan/BOQ	O&M Manual	Protocol	

	CHARACTERISTICS/ITEM	TYPE OF CHECK	INST RU ME NT	CL AS S	QUANTUM/FREQ UENCY OF CHECK	REFERENCE DOCUMENT/ACCE PTANCE STANDARD	FORMAT OF RECORD	REMA RKS
i	Check physical condition of buck stays, pin fasteners & tightness etc.	Physical		B	100%			
j	Hydro test as per IBR/O&M manual	Testing		B	100%	O&M Manual	Job Report	
K	Check of refractory/insulation as per scope of work	Physical		B	100%	O&M Manual	Job Report	
m	Alignment of Coils	Physical		B	100%	Drawings	Protocol	
n	Shielding and CAVT Screens Positions	Physical		B	100%	As per CAVT Report for Screens and Shielding's are as per Erosion Protection	Job Report	
r	PAUT or RT of END joints. RT films has to be submit to IBR	Measure ment		A	100%	As per IBR	Protocol	
v	Headers Internal inspection	Physical		A	As per Requirement	Drawing	Protocol	
w	Headers Stub Joints Inspection/ DP Test	Testing		B	As per Work Plan	Drawing	Job Report	

5. MINIMUM T&P AND CONSUMABLES ARE TO BE ARRANGED BY THE AGENCY:

SL.NO.	DESCRIPTION	Min Qty
01	Welding Generator / Inverter type rectifier with MCB all accessories (ELCB will be must)	10 Nos
02	Gas Cutting Sets	8 Nos
03	Grinding Machine (FF-2, AG-4,AG-5, AG-7)	5 Nos Each
04	Pistol Grinders	1 Nos
05	Tube Cutting M/C	1 Nos
06	Chain Pulley Blocks(3T, 5T) (1T,2T)	10 Nos. Each for (3T & 5T) (Motorised 1T, 2T, - 2 nos. Each)
07	Winch 5T	03Nos

08	Hook Chuck (Pulling & Lifting M/C) -5T, 3T	3 nos.
09	Slings, D-shackles (3T, 5T, & 10 T)	12 each
10	General tools & spanners size up to 32 mm	One set for each job
11	Slogging spanners up to 80mm	One set for each job
12	TIG torches	10 Sets
13	Tungsten rods for TIG	Adequate Nos
14	Grinding wheel, Cut off wheel, Buffing wheel	200 each (as per site requirement quantity will be more)
15	Milling Cutters	20 nos
16	Pipe wrenches, Hacksaw frame, files etc.	10 each
17	Gunny bag for ash disposal	10000 nos (arrange as per site requirement)
19	Conventional cleaning tools	50 nos
20	Hand lamps with bulbs & wire	100 nos
21	Hacksaw blade, Emery paper, Manila ropes, coir rope	100 nos
22	Air Hose	200 mt
23	Wire brush, Painting Brush	50 nos
24	Stress Relieving Equipment	3 Sets
25	Canvas pipe	20 Nos
26	DPT KIT	30 set
27	HALOGEN LAMPS WITH CABLE & PLUG TOP	50 Nos
28	Ultrasonic Thickness Gauges (UTG)	08 Nos
29	Switch board with MCB	50 nos
30	Truck/Trailer with driver	1 Each
31	Hydra /JCB	1 Each
32	Fire Blanket Size (2mtr*4 mtr) , (2mtr x1mtr)	20 Nos , 10 nos
33	Tool Kit Set – Tool Box of plastic made (size up to M46, ring hammer spanner, DE hammer spanner 46 -4 for SCC)- Standard manufacturer IS quality	
34	Allen Key Set – Appropriate Size	10 set
35	hammer– 2 KG and 8 KG	20 nos
36	Box Spanner Set – Appropriate Set	2 set
37	Hydraulic Jack (50 T)	2 nos
38	Hand Drill Machine	2 nos
39	Pipe Wrench 12”	2nos
40	Pipe Wrench 16”	2 nos
41	Chain Wrench 24”	2 nos

42	Vernier Caliper (inside & outside) (Each)	2 nos.
43	Micro meter	2 nos
47	Safety net (Size2500x4000mm)	6 nos.
48	Spanners special (Like 38, 50, 55mm)	5
54	Extension board with cable roller	100 nos.
58	Scaffolding (cup lock) for misslenious platform	1000 M3
59	Clamps	15000No
60	Mother over	02 Nos
61	Portable Oven	20 Nos
62	Hydraulic Tube Bending Machine	03 nos.

6. REQUIRED CONSUMABLES

List of indicative consumables required for overhauling jobs to be maintained by vendor as per requirement.

SL No	Description	Make
1	Welding Electrode	D&H Scheron / ESAB
2	Welding Electrode	D&H Scheron / ESAB
3	Thinner	
4	Paint brush 1", 2", 3" & 4"	Local
5	PVC Tape	Miracle, Steel grip, Scotch, Nitto
6	Teflon Tape 1/2" roll	Sptimaan, Champion,Star gold, Eagle
7	Medical Tape	Johnson & Johnson
8	Baniyan white color cloth	Local
9	Line Dori	Local
10	Tarpaulin cover 10x10feet	Local
11	Oil stone	Carborundam, Whetstone,Grit, Knife
12	Buffing wheel	bosch,Ratha, Geuous, SGS
13	Emery paper 200 grade	Carborundam, Anchor, Abrasive , AJS
14	Emery paper 400 grade	Carborundam, Anchor, Abrasive , AJS
15	Wire brush	
16	WD 40 spray	Exclusive India
17	Cleaner	oriental chemical pvt. Ltd.,Spotcheck, Chekmate, Orion
18	Developer	oriental chemical pvt. Ltd.,Spotcheck, Chekmate, Orion

19	Penetrant	oriental chemical pvt. Ltd.,Spotcheck, Chekmate, Orion
20	Molykote-1000	Dow Corning
21	Hylomar - 100 GM pack	Dow Corning
22	Silastic RTV-732 sealant 100ML	Dow Corning
23	Stag-B compound	Jayntilal
24	M-seal	Fixed builds
25	Seal Injecting Gun	
26	Blue color tube	camel,Dykem, Piddlite, Cobra
27	Petrol	Local
28	Diesel	Local
29	Graphite powder	Carborundam, Whetstone,Grit, Knife
30	Graphite Tape	Carborundam, Whetstone,Grit, Knife
31	Lapping compound - Coarse, medium & fine	Carborundam, CAM,Perametrey, wheeler
32	Ear plugs	Karam, Frontier, Saflone
33	Transparent goggles	Karam, Frontier, Saflone
34	Welding goggle	Karam, Frontier, Saflone
35	Lead wire 0.5mm, 1mm & 2mm	silver touch, Oatey, Silver gleme
46	Grit Emery wheels A200	Carborundam, Anchor, Abrasive , AJS
47	Grit Emery wheels A500	Carborundam, Anchor, Abrasive , AJS
48	Stone Emery smooth	Carborundam, Anchor, Abrasive , AJS
49	Stone Emery rough	Carborundam, Anchor, Abrasive , AJS
50	FF2 machines Buffing wheels	bosch,Ratha, Geuous, SGS
51	FF2 machines Emery wheels	bosch,Ratha, Geuous, SGS
52	FF2 machines rotary cutters	adisan, Offa, Driffy, ARK
53	Oxygen Cylinders	Local
54	DA cylinders	Local
55	Argon Cylinders	Local
56	Thread lock compound Loctite 243	
57	Flange sealant	Loctite
58	Anabond 610	
59	Loctite- 406 20ml	
60	Hacksaw blade	Mirinda,Eclipse, Bipico, Diablo
61	Air hose	Local

NOTE: The consumables list given is indicative only & any other consumables required for completion of job shall be arranged by contractor on free of cost.

NOTE:

Above list of T&P and consumables are indicative only. If any other T&P items and more quantities of above T&P are required for execution of jobs in specified time schedule and as per scope of work, the same shall be arranged by the contractor without cost implication to BALCO. Additional T&P mobilization shall be arranged by agency in case of requirement for completion of job within overhaul schedule.