

TENDER SPECIFICATION

BHEL/PSSR/USTPP/SCT&P/SCT/093

for

Balance works of Erection, Testing and Commissioning of Power Cycle Piping and all associated Piping & Insulation works for Unit-1 of 2X660 MW Udangudi Supercritical Thermal Power Project, Tuticorin Dt, Tamilnadu

VOLUME –II
PRICE BID



BHARAT HEAVY ELECTRICALS LIMITED

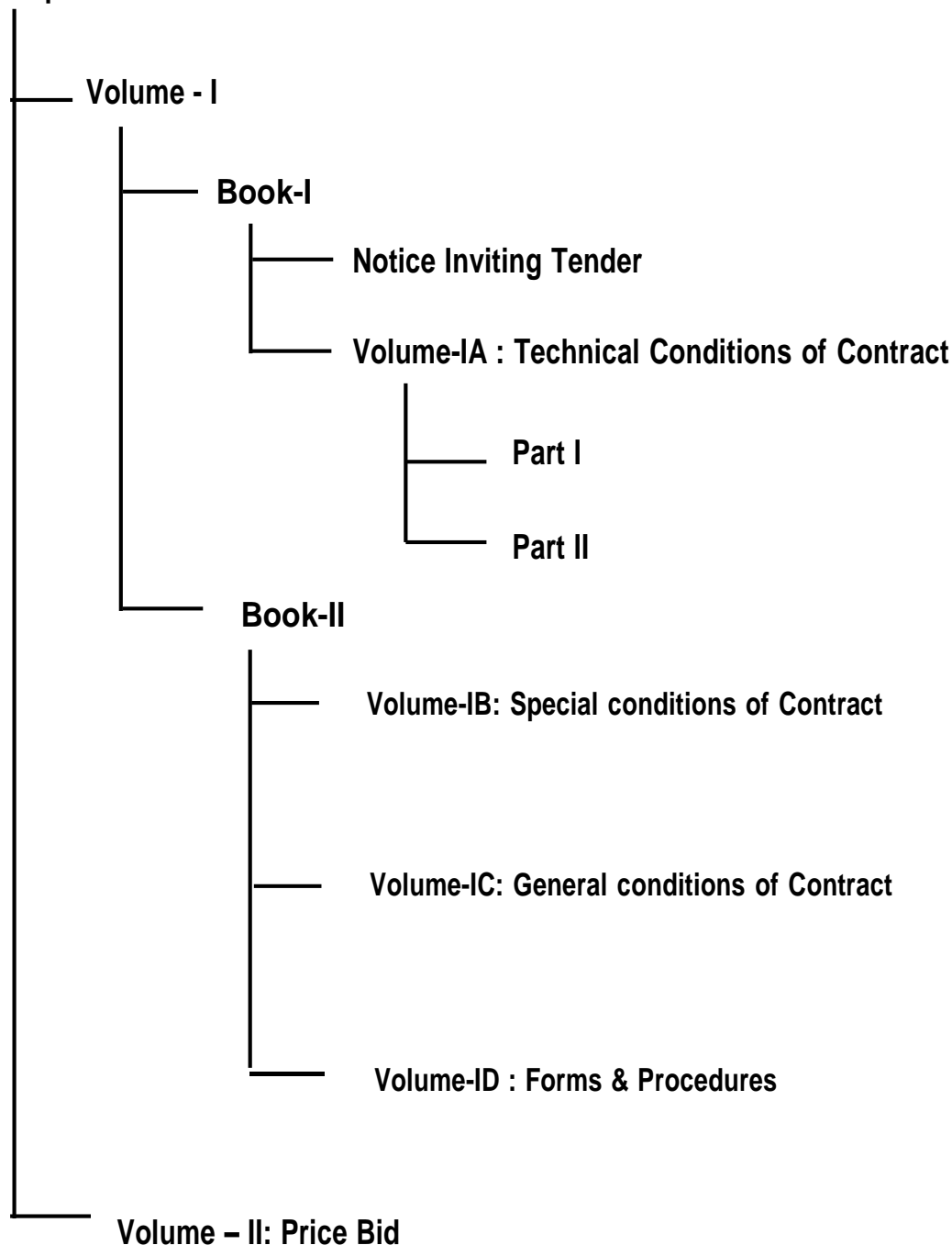
(A Government of India Undertaking)

Power Sector – Southern Region

BHEL site office, 2X660 MW Udangudi STPP,
Kallamozhi, Tiruchendur-628206

TENDER SPECIFICATION CONSISTS OF

Tender Specification



PRICE BID

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PART A

Instruction to Bidders:

1. The quantity indicated in the BOQ in Part C of Price Bid is approximate only and is liable for variation. Payment will be as per actual quantity executed and as certified by BHEL Engineer.
2. Tenderers are requested to affix their company seal and authorized signature in all pages.
3. Bidders shall quote 'Total Amount' in the format enclosed as a separate Excel File in BHEL NIC e-Procurement portal for the subject tender and upload the same under 'Packet details - > Tender covers -> Finance '(Cover Type Description – Price Bid)' and same shall be taken into account for evaluation and awarding and hence, shall be complete in all respect for the full scope of work defined in specification and in accordance with terms & conditions of the tender. Any other entry elsewhere in the price bid shall be treated as Null and Void. Quoting of rates in any other form/formats will not be entertained.
4. The above mentioned 'Total amount' is for the entire Bill of Quantity (BOQ) given in Part -C of the Price Bid.
5. BHEL has pre-fixed the weightages for the amount of individual items of Bill of Quantity with respect to the 'Total Amount' in Part C of Price Bid.
6. Based on the pre-fixed weightages, the amount for the individual items of the Bill of Quantity shall be arrived at. This amount shall be rounded off to the nearest rupee.
7. Based on the quantities of individual item and the amount arrived in Sl. No: 6 above, unit rate of individual items shall be derived. This unit rate shall be rounded off to four decimal places.
8. Bidders to note that this is an item rate contract. Payment shall be made for the actual quantities of work executed as certified by BHEL Engineer.

Part C : Bill of Quantities

Tender Specification BHEL/PSSR/USTPP/SCT&P/SCT/093 for Balance works of Erection, Testing and Commissioning of Power Cycle Piping and all associated Piping & Insulation works for Unit-1 of 2X660 MW Udangudi Supercritical Thermal Power Project, Tuticorin Dt, Tamilnadu

BOQ	Rate ID	Item Description	Rate %	QTY (in MT)	Weightage for amount of each item(Nearest to the 7 decimal points) w.r.t.to the total amount
P91 Piping					
1.7.2.1	1.1	Pre- Assembly	20%	255.190	0.1843958
1.7.2.2	1.1	Placement in Position	20%	287.507	
1.7.2.3	1.1	Alignment	10%	433.875	
1.7.2.4	1.1	Welding / Bolting / Fixing	15%	462.221	
1.7.2.5	1.1	Non Desctructive Examination & Stress Relieving / Heat Treatment	5%	605.539	
1.7.2.8	1.1	Hangers & Supports	10%	630.996	
1.7.2.9	1.1	Hydraulic Test or Pneumatic Test	3%	630.996	
1.7.2.10	1.1	Floating of lines, Final adjustment of supports for cold and hot valves (if not applicable this portion to be clubbed along with hydraulic test / pneumatic test)	2%	630.996	
1.7.3.1	1.1	Boiler Light Up	1%	630.996	
1.7.3.3	1.1	Steam Blowing	1%	630.996	
1.7.3.4	1.1	Safety Valve Floating	1%	630.996	
1.7.3.5	1.1	Rolling & Synchornization	1%	630.996	
1.7.3.7	1.1	Full load	1%	630.996	
1.7.3.8	1.1	Trail Operation of Unit	1%	630.996	
17.3.9	1.1	Completion of all drains and vents to respective locations and placement of instrument sensors after steam blowing	2%	630.996	
1.7.3.10	1.1	Painting	2%	630.996	

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BOQ	Rate ID	Item Description	Rate %	QTY (in MT)	Weightage for amount of each item(Nearest to the 7 decimal points) w.r.t.to the total amount
1.7.3.11	1.1	Area Cleaning, Temporary structures cutting / removal and return of scrap	1%	630.996	
1.7.3.12	1.1	Punch List points / Pending Points Liquidation	1%	630.996	
1.7.3.13	1.1	Submission of 'As built drawings'	1%	630.996	
1.7.3.14	1.1	Material Reconciliation	1%	630.996	
1.7.3.15	1.1	Completion of contractual Obligation	1%	630.996	
HP Piping					0.3800552
1.7.2.1	1.2	Pre- Assembly	20%	1134.254	
1.7.2.2	1.2	Placement in Position	20%	1240.192	
1.7.2.3	1.2	Alignment	10%	1283.971	
1.7.2.4	1.2	Welding / Bolting / Fixing	15%	1291.797	
1.7.2.5	1.2	Non Desctructive Examination & Stress Relieving / Heat Treatment	5%	1364.135	
1.7.2.8	1.2	Hangers & Supports	10%	1405.587	
1.7.2.9	1.2	Hydraulic Test or Pneumatic Test	3%	1405.587	
1.7.2.10	1.2	Floating of lines, Final adjustment of supports for cold and hot valves (if not applicable this portion to be clubbed along with hydraulic test / pneumatic test)	2%	1405.587	
1.7.3.1	1.2	Boiler Light Up	1%	1405.587	
1.7.3.3	1.2	Steam Blowing	1%	1405.587	

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BOQ	Rate ID	Item Description	Rate %	QTY (in MT)	Weightage for amount of each item(Nearest to the 7 decimal points) w.r.t.to the total amount
1.7.3.4	1.2	Safety Valve Floating	1%	1405.587	
1.7.3.5	1.2	Rolling & Synchornization	1%	1405.587	
1.7.3.7	1.2	Full load	1%	1405.587	
1.7.3.8	1.2	Trail Operation of Unit	1%	1405.587	
17.3.9	1.2	Completion of all drains and vents to respective locations and placement of instrument sensors after steam blowing	2%	1405.587	
1.7.3.10	1.2	Painting	2%	1405.587	
1.7.3.11	1.2	Area Cleaning, Temporary structures cutting / removal and return of scrap	1%	1405.587	
1.7.3.12	1.2	Punch List points / Pending Points Liquidation	1%	1405.587	
1.7.3.13	1.2	Submission of 'As built drawings'	1%	1405.587	
1.7.3.14	1.2	Material Reconciliation	1%	1405.587	
1.7.3.15	1.2	Completion of contractual Obligation	1%	1405.587	
LP Piping					
1.7.2.1	1.3	Pre- Assembly	20%	671.066	0.1692236
1.7.2.2	1.3	Placement in Position	20%	704.176	
1.7.2.3	1.3	Alignment	10%	710.371	
1.7.2.4	1.3	Welding / Bolting / Fixing	15%	710.371	
1.7.2.5	1.3	Non Desctructive Examination & Stress Relieving / Heat Treatment	5%	756.657	

Part C : Bill of Quantities

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BOQ	Rate ID	Item Description	Rate %	QTY (in MT)	Weightage for amount of each item(Nearest to the 7 decimal points) w.r.t.to the total amount
1.7.2.8	1.3	Hangers & Supports	10%	756.657	
1.7.2.9	1.3	Hydraulic Test or Pneumatic Test	3%	756.657	
1.7.2.10	1.3	Floating of lines, Final adjustment of supports for cold and hot valves (if not applicable this portion to be clubbed along with hydraulic test / pneumatic test)	2%	756.657	
1.7.3.1	1.3	Boiler Light Up	1%	756.657	
1.7.3.3	1.3	Steam Blowing	1%	756.657	
1.7.3.4	1.3	Safety Valve Floating	1%	756.657	
1.7.3.5	1.3	Rolling & Synchornization	1%	756.657	
1.7.3.7	1.3	Full load	1%	756.657	
1.7.3.8	1.3	Trail Operation of Unit	1%	756.657	
17.3.9	1.3	Completion of all drains and vents to respective locations and placement of instrument sensors after steam blowing	2%	756.657	
1.7.3.10	1.3	Painting	2%	756.657	
1.7.3.11	1.3	Area Cleaning, Temporary structures cutting / removal and return of scrap	1%	756.657	
1.7.3.12	1.3	Punch List points / Pending Points Liquidation	1%	756.657	
1.7.3.13	1.3	Submission of 'As built drawings'	1%	756.657	
1.7.3.14	1.3	Material Reconciliation	1%	756.657	

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BOQ	Rate ID	Item Description	Rate %	QTY (in MT)	Weightage for amount of each item(Nearest to the 7 decimal points) w.r.t.to the total amount
1.7.3.15	1.3	Completion of contractual Obligation	1%	756.657	
SS Piping					
1.7.2.1	1.4	Pre- Assembly	20%	20.639	0.0095461
1.7.2.2	1.4	Placement in Position	20%	20.639	
1.7.2.3	1.4	Alignment	10%	20.639	
1.7.2.4	1.4	Welding / Bolting / Fixing	15%	20.639	
1.7.2.5	1.4	Non Desctructive Examination & Stress Relieving / Heat Treatment	5%	20.639	
1.7.2.8	1.4	Hangers & Supports	10%	20.639	
1.7.2.9	1.4	Hydraulic Test or Pneumatic Test	3%	20.639	
1.7.2.10	1.4	Floating of lines, Final adjustment of supports for cold and hot valves (if not applicable this portion to be clubbed along with hydraulic test / pneumatic test)	2%	20.639	
1.7.3.1	1.4	Boiler Light Up	1%	20.639	
1.7.3.3	1.4	Steam Blowing	1%	20.639	
1.7.3.4	1.4	Safety Valve Floating	1%	20.639	
1.7.3.5	1.4	Rolling & Synchornization	1%	20.639	
1.7.3.7	1.4	Full load	1%	20.639	
1.7.3.8	1.4	Trail Operation of Unit	1%	20.639	

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Balance works of Erection, Testing and Commissioning of Power Cycle Piping and all associated Piping & Insulation works
for Unit-1 of 2X660 MW Udangudi Supercritical Thermal Power Project, Tuticorin Dt, Tamilnadu**

BOQ	Rate ID	Item Description	Rate %	QTY (in MT)	Weightage for amount of each item(Nearest to the 7 decimal points) w.r.t.to the total amount
17.3.9	1.4	Completion of all drains and vents to respective locations and placement of instrument sensors after steam blowing	2%	20.639	
1.7.3.10	1.4	Painting	2%	20.639	
1.7.3.11	1.4	Area Cleaning, Temporary structures cutting / removal and return of scrap	1%	20.639	
1.7.3.12	1.4	Punch List points / Pending Points Liquidation	1%	20.639	
1.7.3.13	1.4	Submission of 'As built drawings'	1%	20.639	
1.7.3.14	1.4	Material Reconciliation	1%	20.639	
1.7.3.15	1.4	Completion of contractual Obligation	1%	20.639	
Hangers and Supports including Tanks, Vessels, Pumps, etc					
1.7.2.1	1.5	Pre- Assembly	15%	831.596	0.1449752
1.7.2.2	1.5	Placement in Position	25%	831.596	
1.7.2.3	1.5	Alignment	15%	831.596	
1.7.2.4	1.5	Welding / Bolting / Fixing	30%	832.235	
1.7.3.1	1.5	Boiler Light Up	1%	877.140	
1.7.3.3	1.5	Steam Blowing	1%	877.140	
1.7.3.4	1.5	Safety Valve Floating	1%	877.140	
1.7.3.5	1.5	Rolling & Synchornization	1%	877.140	
1.7.3.6	1.5	Coal Firing	1%	877.140	
1.7.3.7	1.5	Full load	1%	877.140	

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BOQ	Rate ID	Item Description	Rate %	QTY (in MT)	Weightage for amount of each item(Nearest to the 7 decimal points) w.r.t.to the total amount
1.7.3.8	1.5	Trail Operation of Unit	1%	877.140	
1.7.3.10	1.5	Painting	2%	877.140	
1.7.3.11	1.5	Area Cleaning, Temporary structures cutting / removal and return of scrap	2%	877.140	
1.7.3.12	1.5	Punch List points / Pending Points Liquidation	1%	877.140	
1.7.3.13	1.5	Submission of 'As built drawings'	1%	877.140	
1.7.3.14	1.5	Material Reconciliation	1%	877.140	
1.7.3.15	1.5	Completion of contractual Obligation	1%	877.140	
Temporary Piping- Acid Cleaning					
1.7.2.6	1.6	Installation of Temporary piping	60%	124.000	0.0190683
1.7.2.7	1.6	Dismantling of Temp piping,Edge preparartion and return to BHEL Store,Areacleaning	25%	124.000	
1.7.3.14	1.6	Material Reconciliation	15%	124.000	
Temporary Piping- Steam Blowing					
1.7.2.6	1.7	Installation of Temporary piping	60%	118.000	0.0187736
1.7.2.7	1.7	Dismantling of Temp piping,Edge preparartion and return to BHEL Store,Areacleaning	25%	118.000	
1.7.3.14	1.7	Material Reconciliation	15%	118.000	
Mineral Wool					

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BOQ	Rate ID	Item Description	Rate %	QTY (in MT)	Weightage for amount of each item(Nearest to the 7 decimal points) w.r.t.to the total amount
1.7.2.2	1.8	Placement in Position	50%	400.000	0.0524840
1.7.2.3	1.8	Alignment	15%	400.000	
1.7.2.4	1.8	Welding / Bolting / Fixing	20%	400.000	
1.7.3.1	1.8	Boiler Light Up	1%	400.000	
1.7.3.3	1.8	Steam Blowing	1%	400.000	
1.7.3.4	1.8	Safety Valve Floating	1%	400.000	
1.7.3.5	1.8	Rolling & Synchronizaton	1%	400.000	
1.7.3.6	1.8	Coal Firing	1%	400.000	
1.7.3.7	1.8	Full load	1%	400.000	
1.7.3.8	1.8	Trail Operation of Unit	2%	400.000	
1.7.3.11	1.8	Area Cleaning, Temporary structures cutting / removal and return of scrap	3%	400.000	
1.7.3.12	1.8	Punch List points / Pending Points Liquidation	1%	400.000	
1.7.3.14	1.8	Material Reconciliation	2%	400.000	
1.7.3.15	1.8	Completion of contractual Obligation	1%	400.000	
Fixing Components					
1.7.2.2	1.9	Placement in Position	50%	37.825	0.0065080
1.7.2.3	1.9	Alignment	15%	37.825	
1.7.2.4	1.9	Welding / Bolting / Fixing	20%	37.825	
1.7.3.1	1.9	Boiler Light Up	1%	37.825	
1.7.3.3	1.9	Steam Blowing	1%	37.825	

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BOQ	Rate ID	Item Description	Rate %	QTY (in MT)	Weightage for amount of each item(Nearest to the 7 decimal points) w.r.t.to the total amount
1.7.3.4	1.9	Safety Valve Floating	1%	37.825	
1.7.3.5	1.9	Rolling & Synchronization	1%	37.825	
1.7.3.6	1.9	Coal Firing	1%	37.825	
1.7.3.7	1.9	Full load	1%	37.825	
1.7.3.8	1.9	Trail Operation of Unit	2%	37.825	
1.7.3.11	1.9	Area Cleaning, Temporary structures cutting / removal and return of scrap	3%	37.825	
1.7.3.12	1.9	Punch List points / Pending Points Liquidation	1%	37.825	
1.7.3.14	1.9	Material Reconciliation	2%	37.825	
1.7.3.15	1.9	Completion of contractual Obligation	1%	37.825	
Aluminium Sheets					
1.7.2.2	1.10	Placement in Position	50%	74.699	0.0149702
1.7.2.3	1.10	Alignment	15%	74.699	
1.7.2.4	1.10	Welding / Bolting / Fixing	20%	74.699	
1.7.3.1	1.10	Boiler Light Up	1%	74.699	
1.7.3.3	1.10	Steam Blowing	1%	74.699	
1.7.3.4	1.10	Safety Valve Floating	1%	74.699	
1.7.3.5	1.10	Rolling & Synchronization	1%	74.699	
1.7.3.6	1.10	Coal Firing	1%	74.699	
1.7.3.7	1.10	Full load	1%	74.699	
1.7.3.8	1.10	Trail Operation of Unit	2%	74.699	

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BOQ	Rate ID	Item Description	Rate %	QTY (in MT)	Weightage for amount of each item(Nearest to the 7 decimal points) w.r.t.to the total amount
1.7.3.11	1.10	Area Cleaning, Temporary structures cutting / removal and return of scrap	3%	74.699	
1.7.3.12	1.10	Punch List points / Pending Points Liquidation	1%	74.699	
1.7.3.14	1.10	Material Reconciliation	2%	74.699	
1.7.3.15	1.10	Completion of contractual Obligation	1%	74.699	

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Ref No.	Description	Normalisation Factor	Weightage	Quoted Lumpsum Value (in Rupees)	Rate/ MT (in Rupees)
A	B	C	D	E	F = (E x D)/ C
1.1	P91 Piping	440.8358	0.1843958		
1.2	HP Piping	1286.9385	0.3800552		
1.3	LP Piping	717.4711	0.1692236		
1.4	SS Piping	20.6394	0.0095461		
1.5	Hangers and Supports including Tanks, Vessels, Pumps, etc	838.6196	0.1449752		
1.6	Temporary Piping – Acid Cleaning	124.0000	0.0190683		
1.7	Temporary Piping – Steam Blowing	118.0000	0.0187736		
1.8	Mineral wool	400.0000	0.0524840		
1.9	Fixing components	37.8248	0.0065080		
1.10	Aluminium Sheets	74.6986	0.0149702		
			1.0		

Notes :

1) Since the current tender is for balance works of a partially completed contract, normalisation factor has been applied for the rates as each BOQ item has different quantities.

2) Normalisation Factor for each BOQ item is arrived based on sum product of columns - Rate % and Scope in MT for the corresponding BOQ Item in Part-C