



**TITLE: 2X660 MW MOUDA STPP, STAGE-II
MOUDA**

PROJECT INFORMATION

SPECIFICATION NO. PE-TS-385-600-C001

VOLUME – IIB

SECTION “B”

REV. 00

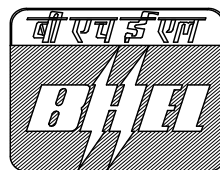
SHEET 1 OF 3

**NTPC
MOUDA, SUPER THERMAL POWER PROJECT
2X660 MW, STAGE-II**

**VOLUME: II B
SECTION - B**

PROJECT INFORMATION

SPECIFICATION NO. PE-TS-385-600-C001



Bharat Heavy Electricals Limited
Project Engineering Management
Power Sector, PPEI Building
Noida – 201 301

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INTRODUCTION

2X660 MW MOUDA STPP, STAGE-II is being setting up by NATIONAL THERMAL POWER CORPORATION LIMITED (NTPC) near the existing 2X500 MW Thermal Power Plant under implementation at MOUDA in the state of MAHARASTRA. The plant will have an ultimate capacity of 2320MW.

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SPECIFIC PROJECT INFORMATION



SUB-SECTION - II

PROJECT INFORMATION

**MOUDA SUPER THERMAL POWER PROJECT
STAGE-II (2x660 MW)
STEAM GENERATOR PACKAGE**

**TECHNICAL SPECIFICATION
SECTION-VI
BID DOCUMENT NO. : CS-9575/9571/0370/0360/9586-102(R)-2**

CLAUSE NO.	PROJECT INFORMATION			
1.00.00	BACKGROUND Mouda STPP Stage-I comprising of two units of 500 MW each is presently under implementation. Now in view the huge power generation capacity requirement and future capacity addition plans, it is proposed to enhanced capacity of Mouda STPP. The present proposal is to install additional two units of 660 MW in Stage-II this making the ultimate capacity of the project to 2320 MW.			
1.01.00	LOCATION AND APPROACH The plant site is located in Mouda Tehsil, district Nagpur of Maharashtra Stage, having latitude and longitude of 20° 10'50" N and 79° 23'52" E respectively. The site is bounded by villages Kumbhari on North, Lapka & Mouda on South, Koradi on East & Rahli on West and is at a distance of about 4 Kms. From Mouda town and approachable from NH-6. Nearest railway station is Chacker 8 Kms away from site on Nagpur – Kolkata Broad Gauge (BG) section of South Eastern Railway (main line). The nearest commercial airport is at Nagpur located at a distance of approximately 42 Kms form the project site. Vicinity Plan is enclosed as Annexure – I For further information apart from given in this sub-section and Bidders are also advised to visit the project site and collect data regarding local site conditions.			
1.02.00	LAND For Stage-I of Mouda project, about 1580 acres of land required for the project is acquired/under acquisition. About 125 acres of additional land for plant and 50 acres for Township required. The same has been identified contiguous to existing plant and township areas. The township is to be located in North West of the plant area and on Mouda – Ramtek road, 6 kms away from Mouda town. No major problem anticipated in acquisition as per site visit and discussions with State Govt. officials. About 550 acres of land is required for ash disposal. Alternatives suggested by Mouda site visited on 09.07.09 and the land near Kimapur & Kpra villages have been finalized. In principle land availability for Mouda Stage-II has been obtained from Office of the Collector, Nagpur vide letter ref. No. Desk-17/Resettlement/T-1/w.s. 323/09 dated 27.08.09.			
1.03.00	WATER Make up water requirement for Stage-II of this project would be about 4800 m³/hr. Water requirement for the project will be met from pondage created on river Wain Ganga/ Kanhan by construction of dam near Gosikhurd by Govt. of Maharashtra. Make-up water shall be drawn from above mentioned source and shall be pumped to the raw water reservoir located about 24 Kms from intake well. Maharashtra Government has approved the reservation of 100 MCM water including the evaporation losses for NTPC in Goshikhurd Project for the ultimate stage of the project (Stage-I 2x500 MW) + Stage-II (2x660 MW). Ministry of Industries, Energy and Labour Department, Government of Maharashtra vide letter dated 10.12.2002 has given in principle consent for making available the required water for the Mouda project.			
MOUDA SUPER THERMAL POWER PROJECT STAGE-II (2X660 MW) STEAM GENERATOR PACKAGE		TECHNICAL SPECIFICATION SECTION-VI BID DOC. NO.: CS-9575/9571/0370/ 0360/9586-102(R)-2	PART-A SUB SECTION-II PROJECT INFORMATION	PAGE 1 OF 17

CLAUSE NO.	PROJECT INFORMATION			
1.04.00	Railway Siding Employer intends to construct the railway siding to project site from the nearest existing railway line. However the same may not be available to the bidder for his use to transport equipment and material. Bidder may visit the site and acquaint themselves with the facilities available.			
1.05.00	COAL AVAILABILITY AND TRANSPORTATION Coal Availability Raw coal is proposed as fuel. The annual coal requirement would be about of 7.5 MTPA for 2X660 MW of Mouda STPP Stage-II. Likely coal source for the expansion project is similar to Mouda TPP Stage-I. The matter has been taken up with Ministry of Coal, Govt. of India for Long Term Coal Linkage. Coal Transportation Coal is proposed to be transported through Indian Railways network.			
1.06.00	Coal Quality Parameters / Fuel Oil Characteristics The coal quality parameters and Fuel oil Characteristics are attached at SUB-SECTION-V, PART-A.			
1.07.00	Capacity Stage-I : 2x500 MW Under Construction / Implementation Stage-II : 2x660 MW Present proposal			
1.08.00	Construction Power The requirements of the construction power supply for the project would be met from the existing 11 kV Miscellaneous Switchgear located near 132 KV switchyard. Necessary 11 kV ring main/LT sub-stations shall be provided for the required power plant area.			
1.09.00	Metrological Data The metrological data from nearest observatory is placed at Annexure-II.			
1.10.00	Plant Water Scheme The Plant water scheme is described below.			
1.10.01	Condenser Cooling (CW) Water System It is proposed to provide recirculating type CW system with induced draft type cooling towers. For the recirculating type CW system it is proposed to supply clarified water as make up. Raw water from the make-up water pump house shall be pumped to a Water Pretreatment Plant (PT - CW system). The treated clarified water shall be led to the cold water channel of CW system. CW system shall be operated at a C.O.C of about 4 . Chemical treatment programme (using acid dosing and scale cum corrosion inhibitors dosing) may be employed in addition to blow down of CW water to control the CW system chemistry in case CW system is required to be operated beyond 4COC. The expected circulating water analysis is			
MOUDA SUPER THERMAL POWER PROJECT STAGE-II (2X660 MW) STEAM GENERATOR PACKAGE		TECHNICAL SPECIFICATION SECTION-VI BID DOC. NO.: CS-9575/9571/0370/ 0360/9586-102(R)-2	PART-A SUB SECTION-II PROJECT INFORMATION	PAGE 2 OF 17

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	given in this sub-section Annexure-III . CW blow down shall be drawn from the discharge of CW pumps and the same shall be led to a Service water Tank. For carrying circulating water from CW pump house to TG-area and from TG area to cooling tower, steel lined concrete encased duct would be provided. For interconnecting CW duct with CW pump, condenser and cooling towers, steel pipes would be used. Cooled water from cooling tower will be led to CW pump house through the cold water channel by gravity.			
1.10.02	Equipment Cooling Water (ECW) System (Unit Auxiliaries) The plant auxiliaries of Steam Generator and Turbine Generator shall be cooled by Demineralized (DM) water in a closed circuit. The primary circuit DM water shall be cooled through plate type heat exchangers by Circulating Water tapped from CW system in a closed secondary circuit. The hot secondary circuit cooling water shall be cooled in the cooling towers and shall be returned back to the system. It is proposed to provide independent primary cooling water circuit for Steam Generator & auxiliaries and TG & its auxiliaries.			
1.10.03	Station Auxiliaries Cooling Water System The station auxiliaries such as Air compressors, Compressors of ash handling plant, Cooling water circuit of Air Conditioning system, compressor of mill reject system etc. shall be cooled by separate cooling water System using separate set of pumps and cooling towers.			
1.10.04	Ash Water System Gland sealing are provided in necessary LP & HP water pumps, flushing water pumps & seal water pumps for slurry disposal pump .			
1.10.05	Other Miscellaneous Water Systems a) CW system blow down water shall be used for the plant service water requirement, dust suppression system of coal handling plant, ash slurry pumps sealing, sealing of Vacuum pumps (if applicable) of Ash Handling plant, make-up to fire water storage tanks and cooling water requirement of hydrogen generation plant. The service (wash water) water collected from various areas shall be treated using oil water separators, tube settlers, coal settling pits etc. as per requirement and treated water from liquid effluent treatment plant shall be recycled back to the service water system for re-use. The excess service water shall be led to central monitoring basin for disposal. b) Separate water Pre-treatment plants are proposed for Circulating Water (PT-CW) system, Demineralization Plant (PT-DM) plant. c) The drinking water requirement of the plant and colony shall be provided from the above mentioned Water (PT- CW) pretreatment plant. d) Steam Cycle make-up water, makeup to the primary circuit of ECW (unit auxiliaries) system, boiler fill water and makeup to the hydrogen generation plant shall be provided from Dematerializing plant. e) The quality of cooling water & DM water is given in this sub-section as Annexure-III & IV respectively.			
1.11.00	Criteria for Earthquake Resistant Design of Structures and Equipment All power plant structures and equipment, including plant auxiliary structures and equipment shall be designed for seismic forces as given in this sub-section as Annexure-V .			
MOUDA SUPER THERMAL POWER PROJECT STAGE-II (2X660 MW) STEAM GENERATOR PACKAGE		TECHNICAL SPECIFICATION SECTION-VI BID DOC. NO.: CS-9575/9571/0370/ 0360/9586-102(R)-2	PART-A SUB SECTION-II PROJECT INFORMATION	PAGE 3 OF 17

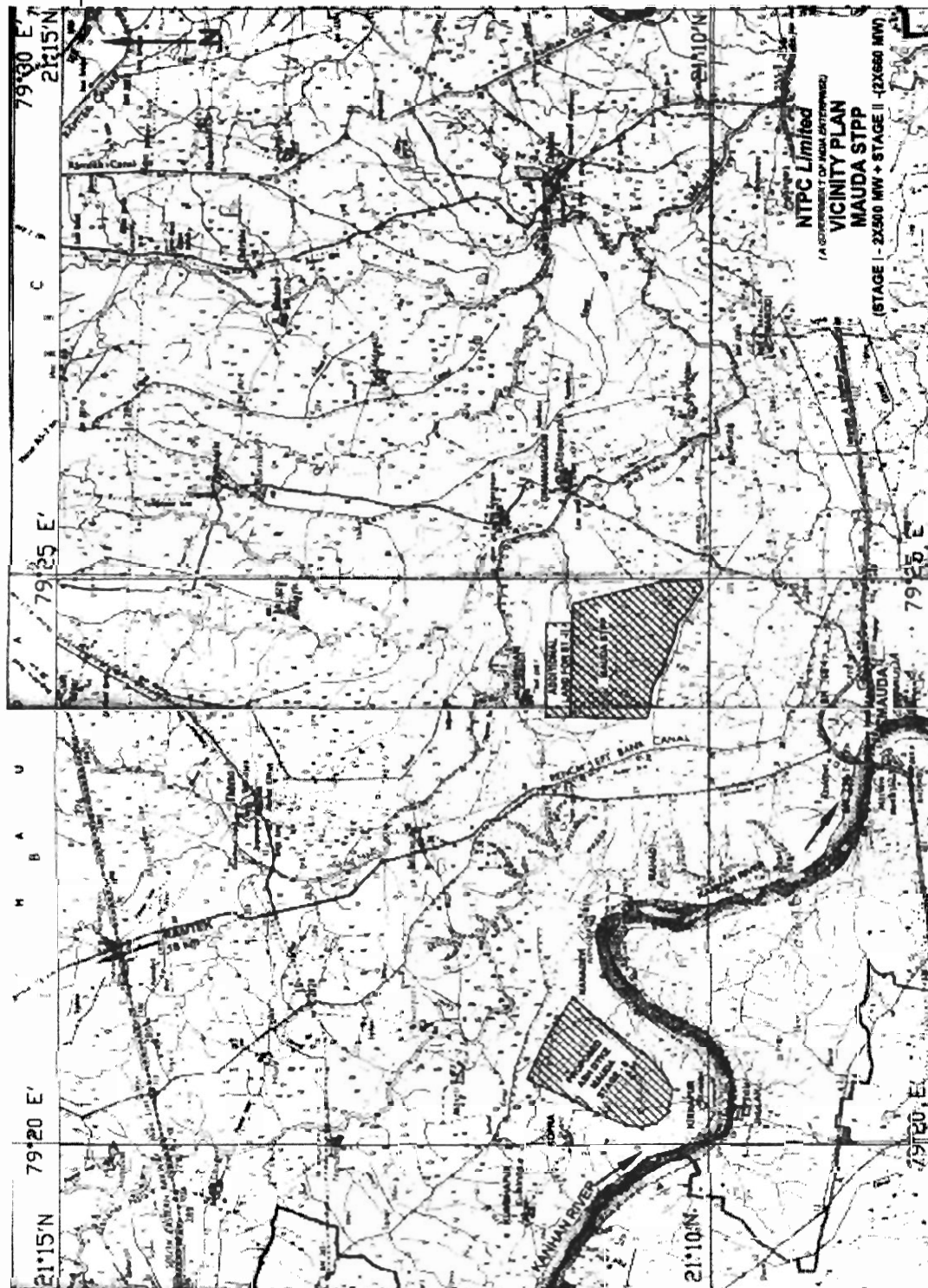
CLAUSE NO.	PROJECT INFORMATION			
1.12.00	Criteria for Wind Resistant Design of Structures and Equipment All structures and equipment of the power plant, including plant auxiliary structures and equipment, shall be designed for wind forces as given as given in this sub-section as Annexure-VI.			
MOUDA SUPER THERMAL POWER PROJECT STAGE-II (2X660 MW) STEAM GENERATOR PACKAGE	TECHNICAL SPECIFICATION SECTION-VI BID DOC. NO.: CS-9575/9571/0370/ 0360/9586-102(R)-2	PART-A SUB SECTION-II PROJECT INFORMATION	PAGE 4 OF 17	

CLAUSE NO.

PROJECT INFORMATION



ANNEXURE-I



MOUDA SUPER THERMAL POWER PROJECT
STAGE-II (2X660 MW)
STEAM GENERATOR PACKAGE

TECHNICAL SPECIFICATION
SECTION-VI
BID DOC. NO.: CS-9575/9571/0370/
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PART-A
SUB SECTION-II
ANNEXURE-I

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Annexure-II

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जलवायवी सारणी
CLIMATOLOGICAL TABLE

STATION (संकेत)
LAT 21°06' N LONG 77°09' E
STATION (संकेत)
LAT 21°06' N LONG 77°09' E
STATION (संकेत)
LAT 21°06' N LONG 77°09' E

1951 से 1960 तक के डेटा पर आधारित
BASED ON OBSERVATIONS FROM 1951 TO 1960

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CLAUSE NO.	PROJECT INFORMATION																																										
	Annexure – III COOLING WATER ANALYSIS <table><thead><tr><th>Constituent</th><th>as</th><th>mg per litre</th></tr></thead><tbody><tr><td>Calcium</td><td>CaCO₃</td><td>407</td></tr><tr><td>Magnesium</td><td>CaCO₃</td><td>250</td></tr><tr><td>Sodium & Potassium</td><td>CaCO₃</td><td>175</td></tr><tr><td>Cations</td><td>CaCo3</td><td>832</td></tr><tr><td>Bicarbonates</td><td>CaCO₃</td><td>516</td></tr><tr><td>Chloride</td><td>CaCO₃</td><td>162</td></tr><tr><td>Sulphate</td><td>CaCO₃</td><td>154</td></tr><tr><td>Anions</td><td>CaCO₃</td><td>832</td></tr><tr><td>Silica</td><td>SiO2</td><td>50</td></tr><tr><td>Iron</td><td>Fe</td><td>< 0.8</td></tr><tr><td>pH Value</td><td>-</td><td>8.4</td></tr><tr><td>TSS</td><td>mg/l</td><td>< 25</td></tr></tbody></table> Note : The C.W system is expected to operate at about 3.0 Cycles of Concentration.				Constituent	as	mg per litre	Calcium	CaCO ₃	407	Magnesium	CaCO ₃	250	Sodium & Potassium	CaCO ₃	175	Cations	CaCo3	832	Bicarbonates	CaCO ₃	516	Chloride	CaCO ₃	162	Sulphate	CaCO ₃	154	Anions	CaCO ₃	832	Silica	SiO2	50	Iron	Fe	< 0.8	pH Value	-	8.4	TSS	mg/l	< 25
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CLAUSE NO.	PROJECT INFORMATION																											
	Annexure – IV ANALYSIS OF DM WATER TO BE USED FOR MAKE-UP WATER TO CONDENSER <table><tr><th>S.No.</th><th>Characteristics</th><th></th><th>Value</th></tr><tr><td>i)</td><td>Silica (Max.)</td><td>-</td><td>0.02 ppm as SiO2</td></tr><tr><td>ii)</td><td>Iron as Fe</td><td>-</td><td>Nil</td></tr><tr><td>iii)</td><td>Total hardness</td><td>-</td><td>Nil</td></tr><tr><td>iv)</td><td>pH value</td><td>-</td><td>6.8 to 7.2</td></tr><tr><td>v)</td><td>Conductivity</td><td>-</td><td>Not more than 0.1 excluding the effects of free CO₂</td></tr></table>				S.No.	Characteristics		Value	i)	Silica (Max.)	-	0.02 ppm as SiO2	ii)	Iron as Fe	-	Nil	iii)	Total hardness	-	Nil	iv)	pH value	-	6.8 to 7.2	v)	Conductivity	-	Not more than 0.1 excluding the effects of free CO ₂
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iv)	pH value	-	6.8 to 7.2																									
v)	Conductivity	-	Not more than 0.1 excluding the effects of free CO ₂																									
MOUDA SUPER THERMAL POWER PROJECT STAGE-II (2X660 MW) STEAM GENERATOR PACKAGE		TECHNICAL SPECIFICATION SECTION-VI BID DOC. NO.: CS-9575/9571/0370/ 0360/9586-102(R)-2	PART-A SUB SECTION-II ANNEXURE-IV	PAGE 9 OF 17																								