01.02.00 SITE INFORMATION

A. Location & Land Availability:

The proposed unit of 1x250 MW will be installed on the western side of existing 2x60 MW units within the boundary of Rourkela Steel Plant in Sundergarh district of Orissa.
Approximately 80 acres of land is available for construction main plant and accessories. For ash dyke about 70 acres of land is available at a distance of approx 6 KM from plant towards southwest. Presently most of land is filled with blast furnace slag. The main power house building of proposed unit of 1x250 MW will be located on western side of existing 2x60 MW switchyard. The indicative latitude & longitude of the proposed site is as follows:

- Latitude : 22°13'19" N
- Longitude : 84°53'51" E

B. Availability of Infrastructure Facilities

Road

The site is connected by road of NH-23 through a link road from a road junction at Panposh located approx. 10 KM from proposed site.

Railway siding

The nearest railway station Rourkela is situated about one km from the proposed plant site. A new railway siding will be developed for receiving coal from the source.

Airport/Air strip

The nearest airport is at Ranchi which is about 170 KM by rail and 225 KM by road from the proposed site.

Seaport

The nearest seaport is at Paradip (Orissa) which is around 400 Kms from the proposed site.

C. Climatological Data

The following meteorological data shall be taken into account for design of plant and equipment. Site conditions shall be assumed to be as follows for tender purpose.

1.	Average elevation above mean sea level	: 194m
2.	Barometric pressure	: 983 mb
3.	Ambient temperature	
	a. Absolute maximum	: 48 ^{0}C
	b. Absolute minimum	: 6 ^{0}C
4.	Relative humidity (Maximum)	: 65 %
5.	Annual Average Rainfall	: 2656.6 mm
6.	Heaviest in 24 Hrs.	: 257.8 mm
7.	Seismic Zone	: Zone-II (As per latest Revision of IS 1893 /2002) Part-I

D. Fuel

a. Primary Fuel, Coal

Coal will be supplied from Ramnagar coal mines which is owned by SAIL. Analysis of Coal and Ash is annexed with this TS. The analysis is indicative. Detail analysis is under process and will be furnished later.

b. Secondary liquid fuel

Light diesel oil (LDO) shall be used for start-up, coal flame stabilization and low load operation of the steam generator. LDO shall be used for cold start up of the steam generator. Source will be from nearest depot of IOC/BPCL.

E. Water System

Brahmani river - Water is proposed to be drawn from an appropriate intake water pumping station at Tarkera near the left bank of the river Brahmani which is about 8 km from the proposed site.
Chemical analysis of Raw Water shall be furnished soon.

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considered @125Kg/m(minimum) on each of the longitudinal girder. Roof-truss members are to be checked for supporting fire fighting pipes/ Service water pipes. Tentative locations and diameter for pipes are shown in the tender drawings

I) Road Culverts/Bridges and its allied structures including RCC Pipe Crossings and Road Crossing of Trenches. Design for class 'AA' loading (wheeled and tracked both) and checked for class 'A' loading as per IRC Standard.

J) Underground Structures/Trenches/pits

Minimum surcharge shall be 20 kN/Sq.m. For structures in vicinity of roads and heavy vehicular movement surcharge shall be considered as applicable as per loading specified elsewhere in this specification. In Boiler area and other outdoor areas within Power Block, the minimum surcharge shall be 20 kN/Sqm.

Covers for Trenches / Channels

Self-weight of top slab and a uniformly distributed load of 4.0 kN/Sqm on each panel or one 0.75 kN central point load, whichever is critical, shall considered. At road crossings, the covers shall be designed for vehicular movements as per IRC standards

K) **Wind Loading**

Wind loading shall be in accordance with Indian Standard Code IS:875 (Part 3) for a basic wind speed of 39 m/sec.

Design wind pressure and forces shall be as per the provisions of IS : 875. Consideration for off shore wind velocity arising out of cyclonic storm shall also be taken into account while designing the structure. Stresses induced due to dynamic effect of wind shall be considered in design. Design for tall structures shall take into consideration the forces induced by wind excited oscillations. Aerodynamic stability of such structures shall be established. Stresses induced due to dynamic effect of wind shall be considered in design as per relevant IS codes.

L) **Seismic Loading**

For design of all structures, the site specific seismic spectrum as attached in Annexure – EQD/Rourkela/prelim and IS1893 shall be followed.

M) **Temperature Loads**

The structures shall be designed to withstand stresses due to fifty (50) percent of the total temperature variation. The total temperature variation for temperature loading shall be taken as two thirds (2/3) of the average annual variation in temperature. The average maximum annual variation for this purpose shall be taken as the difference between the mean daily minimum temperature during the coldest month of the year and mean daily maximum temperature during the hottest month of the year.

Expansion and contraction due to changes of temperature of materials of a structure shall be considered and adequate provision shall be made for the effects produced as per provision in the relevant IS codes.

N) **Earth Pressure Load**

Earth pressure for all underground structures shall be calculated using coefficients of earth pressure at rest, coefficient of active or passive earth pressure (whichever is applicable). However, for design of substructure of pump house, cold water basin of cooling water and under ground liquid storage tanks earth pressure at rest shall be considered.

In addition to earth pressure and ground water pressure, etc., surcharge load shall also be considered for the design of all underground structures including channels, sumps, cable & pipe trenches, etc., to take into account the vehicular traffic in the vicinity of the structure. Intensity of Surcharge Load shall be as described elsewhere in this specification.

O) **Crane & Monorail Loads**

Crane girders and supporting columns shall be designed for vertical and horizontal forces (including impact forces) as per crane vendor's data. All lifting beams and monorails shall have their design loads increased for impact factor as mentioned hereinafter.

Impact Factor

Loads for cranes, hoists and elevators shall be taken as per IS:875. The minimum impact factor to be used in design shall be as follows:

Crane loads :

a) For vertical force, an impact factor of 25% of the maximum crane wheel load

b) A lateral crane surge of 10% of the weight of the trolley plus lifted load applied at the top of each rail