

BRIEF WRITE UP OF THE PROJECT

Visakhapatnam Steel Plant (VSP) is the first shore-based integrated steel plant in India owned by M/s. Rashtriya Ispat Nigam Limited (RINL), Visakhapatnam, a Navratna PSE under Ministry of Steel, Government of India.

It is located in Village Gajuwaka, District Visakhapatnam, State Andhra Pradesh was received Environmental clearance for expansion of Hot metal from 4.0 to 6.5 MTPA by Ministry of Environment, Forest and climate change (MoEFCC) vide their letter no.J-11011/196/2005-IA II (I) dated 11-08-2005.

The said EC was for increase in hot metal production from 4.0 to 6.5 MTPA, liquid steel production from 3.5 to 6.3 MTPA, saleable steel from 3.17 to 5.72 MTPA, coal chemicals from 0.18 to 0.23 MTPA and power generation from 235 MW to 384 MW. Now RINL intends to expand its capacity of liquid steel production from 6.3 to 7.3 MTPA.

The total land area in possession with the company is 8827 ha of which the plant area is 3240 ha. No additional land will be required for this capacity augmentation project.

Process Description.

The process steps for steel production in sequence are as follows:

- Coal Carbonization in coke ovens with recovery of coke oven gas (COG)
- Agglomeration of iron ore fines by sintering
- Hot Metal making in BF by reduction of sintered and lump iron ore with coke in presence of additive materials.
- Oxidation of carbon present in the hot metal by oxygen blowing in presence of lime in BOF for producing liquid steel.
- Refining of liquid carbon steel by addition of micro- alloys to get the desired chemistry of liquid carbon steel for casting.
- Continuous casting of refined liquid carbon steel to blooms and slab.

The existing plant lies between 17° 34' 29" to 17 ° 38' 49" N Latitude and 83° 09' 23" to 83° 14' 12" E Longitude in Survey of India topo sheet No. 65 O/2, at an elevation of 10 m AMSL.

The plant water requirement is 1,36,350 m³/day (30 MGD) and for township and others it is estimated at 36,360 m³/day (8 MGD) for 6.3 MTPA stage. The additional water required for the proposed augmentation would be 31,815 m³/day (7 MGD) of which 27,270 m³/day (6 MGD) would be required for the operation of plant and 4,545 m³/day (1 MGD) for the township and others. The water will be sourced from existing Yeleru Reservoir. RINL has accorded permission for withdrawal of 45 MGD from Visakhapatnam Industrial Water Supply Company Limited (VIWSCO).

The power requirement for operating the steel plant including township at 6.3 MTPA stage is 470 MW of which in plant generation is 384 MW and the balance 86 MW is drawn from APTRANSCO. The additional power required for the proposed expansion is 76 MW, which will be sourced from the APTRANSCO.

Since the capacity augmentation project will be taken up within the existing land boundary of RINL/VSP and therefore this project is not envisaged any R&R issue.

The solid waste generated at 6.3 MTPA stage will be approx 11,700 TPD which includes granulated BF slag, SMS slag, mill scales, sludges, ESP/Bag filter dust etc. In addition, about 2000 TPD of coal ash will be generated at 6.3 MTPA stage. There would be additional generation of approx 1,700 TPD of solid waste. It is estimated that 100% of the granulated BF slag would be sold to the cement making industries for manufacturing of slag cement. Other waste such as mill scale, sludges, dust etc would be 100% recycled into the sinter plant. 60% of the SMS slag would also be used within the steel plant and the balance would be stored for further processing for secondary use.

Tar sludge/solid sludge generated in by-product plant will be transported to coal yard for mixing with coal. Alternatively, mechanized handling system will be explored to facilitate charging into ovens.

Liquid Effluent

WWTP will Consists of bowl rake classifier/spiral classifier, thickener, thickener under flow pumps sludge dewatering units etc. A HRT will be provided to further reduce the sludge loading on the sludge filtration equipment. HRT under flow pumps, Separate sludge tanks will be provided to collect the sludge from the HRT and pump the same to vertical filter press (1 W +1S) of 12T/hr capacity. Working hours for same shall be 12 hrs max. The sludge tank will be provided with mechanical agitator including air agitation to maintain consistency of the sludge. For emergency handling of the sludge, sludge pumps along with pipeline will be provided at the sludge tank for pumping the sludge to the waste water treatment plant of the SMS-1.

Most part of the treated wastewater will be recycled within the plant. A small part (about 8%) of the treated effluent may get discharged to sea, maintaining the statutory norms. No untreated waste-water will be disposed of.

Out of total acquired land of 8827 ha, greenbelt has been done in 1969 ha within the plant area. On the whole about 38% of the land is afforested with the planting of 5.16 million trees. This will help to attenuate the noise levels and trap the dust generated due to operation of plant/project development activities.

Consent for Establishment (CFE) has been obtained from the Andhra Pradesh State Pollution Control Board vide order no APPCB/VSP/108/HO/2005/317 dated 09.05.2005. Consent for Operation has been obtained from Andhra Pradesh State Pollution Control Board vide order no. APPCB/VSP/VSP/108/CFO/HO/2015 dt.27-04-2015.

The Public hearing of the project was held on 15/06/2017 at Trishna Grounds, Sector -2, Ukkunagaram under the chairmanship of District Collector and District Magistrate Visakhapatnam for production of 7.3 million TPA.

The Compliance Report from Zonal Office Chennai has been issued vide Lr. No. EP/12.1/354/AP/2052 dated 21-12-2017. RO stated that “ PA is now going for an expansion from 6.5 MTpa to 7.5 MTpa (Hot metal) and for this they have approached the Ministry in the year 2015 to get an Amendment. As informed by the PA during the discussion, the Ministry directed the PA to submit an application for getting TOR and further the PA also submitted their application to the Ministry and TOR was issued on 19/09/2016.”

As per RO Letter, the violation is PA started their construction activities for their modernization / expansion from 2013 onwards without obtaining EC. Blast furnace - I was started in October 2013, Blast Furnace —II was started in May, 2016, Sinter Plant - I was started in October 2016, Converter — III was started in March, 2013, Converter — IV was started in June, 2014, Turbo Blower — V was started in June 2014 and Reservoir was started in July 2016. All these expansion activities were started without obtaining prior Environmental Clearance.

Along with planned revamping of Blast Furnaces, Sinter Plant and Steel Melting Shop, VSP went ahead with the construction activity of the auxiliary stand by facilities such as Coke Oven Battery-5 as a replacement battery to facilitate rebuilding of existing Coke Oven Batteries in phases, Twin ladle heating furnace, augmentation of utilities such as LPG storage facility, Nitrogen Buffer Vessel and tendering process of Rebar Mill in place of Seamless Tube Mill considered under 6.3 MTpa expansion, revamping and upgradation of reheating furnace in Light and Medium Merchant Mill, rebuilding of Coke Oven Battery No.1, revamping and upgradation of electrostatic precipitators in Thermal Power Plant and revamping and modernization of Continuous Casting Department and Guard Pond.

RINL, VSP started the construction works to safeguard the ageing plant operations to avoid sudden mishaps and to ensure cleaner environment complying with the latest environmental norms.

The capital cost of the expansion project is estimated at around Rs 9439.53 Crores.

Consultant Name – Bhagavathi Ana Labs Private Limited.

NABET Certificate No : NABET/EIA/1619/RA0049.