

Maharashtra Pollution Control Board, Nagpur

Note on DOMESTIC WEST WATER REUSE PROJECT AT NAGPUR By MAHAGENCO- NAGPUR MUNICIPAL CORPORATION TO UPPLY WATER FOR (3X660 MW) KORADI THERMAL POWER PLANT

Considering the growing power demand, Mahagenco expand the existing capacity of Koradi Thermal Power Plant in 2008 by Capacity 1980 MW(3 X 660 MW). Requirement of water for the expansion project was 130 MLD. No additional water reservation was available from the existing Kamptee Khairee Pench project. Considering the water scarcity in the Vidharbha Region and huge water demand for upcoming power plants, MAHAGENCO decided to go for a alternate unconventional source.

Nagpur Municipal Corporation is having population of about 27.41 Lacs as per census 2011. Presently Nagpur city is generating about 505 MLD sewage. Nallas Carrying sewage opens into Nag River & its tributaries.

MPC Board has issued direction to Nagpur Municipal Corporation install sewage treatment plants & provide sewerage system for treatment of entire sewage generated from Nagpur city.

Nagpur Municipal Corporation (NMC) had already submitted a proposal of 110 MLD STP under JnNURM. USAID conducted a feasibility study for re-use of treated sewage from Nagpur city for its use in a Thermal Power Station. MAHAGENCO found the proposal feasible and economical. MoU signed between NMC and MAHAGENCO for "Construction and Operating Agreement of Treatment and Transmission Facilities for Reclaimed Water Usage".

STP along with secondary and tertiary treatment has been constructed, operated and maintained by MAHAGENCO as per their requirements. Grant of Rs. 90 Cr received from JnNURM by NMC had been passed on to MAHAGENCO towards construction. Land required for the project was provided by NMC. NMC is supplying 110 MLD (+10%) sewage to MAHAGENCO @ Rs 15 Crs./ year.

TREATMENT PROCESS INCLUDE

Intake Works: KT Weir, Raw Sewage Pumping Station at Nag Nallah & M.S. Transmission Pipe Line (1200mm dia, 2.3 Km.)
From Nag Nallah to STP at Bhandewadi.

Sewage Treatment Plant at Bhandewadi: Primary treatment : Parshall Flume & Primary Clarifiers Secondary treatment (Biological Treatment) : Sequential Batch Reactor

Tertiary Treatment Plant at Bhandewadi : Deep Bed Multi-Media Filters, Chlorination, Sludge Handling System Treated water Pumping Station at Bhandewadi. M.S. Transmission Pipe line (1200mm dia, 16.2 Km.) from Bhandewadi to one day storage reservoir at Koradi Thermal power station.

PROJECT BENEFITS

Saving of fresh water.

- New STP of 130 MLD has improve ecology and environment of surrounding water bodies.
- Reliable and economical source of water supply for power plant.
- In future, power generation from STP sludge is also envisaged to make the power requirement of STP.

TYPICAL WATER SUPPLY SOURCES FOR TPS

- Fresh water from rivers, canals, etc.
- For power plants located in coastal areas water for cooling of condenser and auxiliaries is drawn from sea or a creek in an open cycle.
- For coastal plants, requirement of water for other auxiliaries is met from an alternative source or it is generated from sea water by installing a desalination plant.

MPC Board directed Nagpur Municipal Corporation to provide sewerage system for collection treatment of entire sewage generated from Nagpur city.