



JAYPEE

GROUP

*Growth with a human face...*



JAYPEE  
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# JAYPEE NIGRIE SUPER THERMAL POWER PLANT

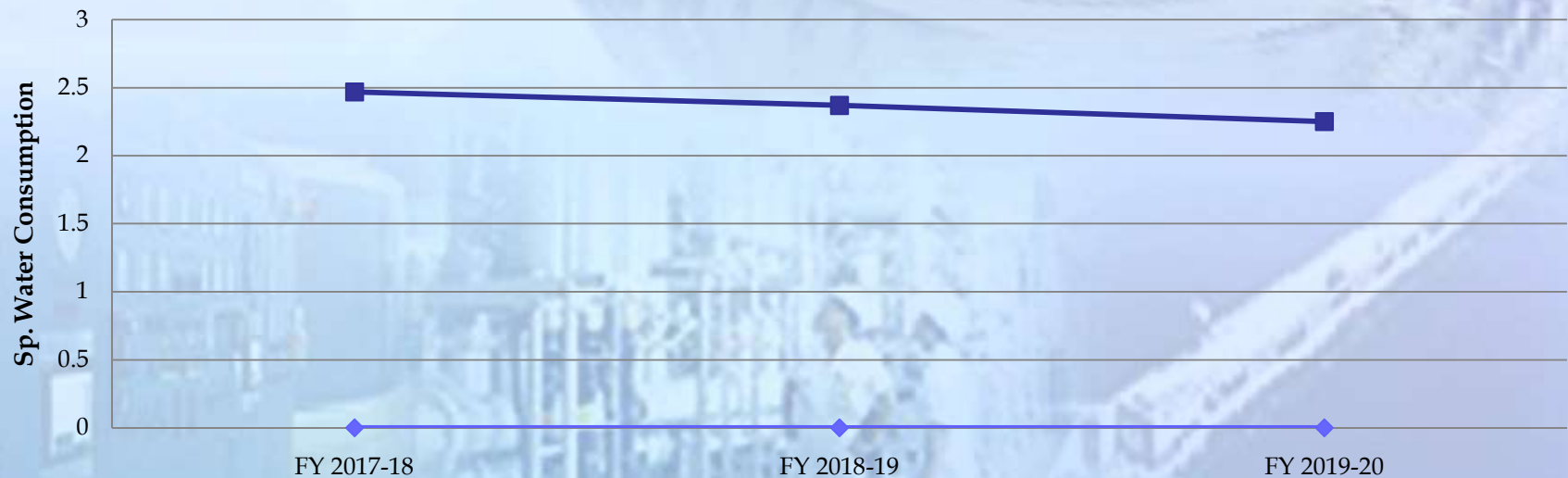
- Capacity - 2 x 660 MW.
- Coal based Super Critical technology.
- Location:- Nigrie Village, Sarai Tehsil  
Singrauli, Madhya Pradesh



- **Year of Commercial Operation Declaration (COD): -**  
Unit # 1 - Sept. 2014.      Unit # 2 - March 2015.
- **(As per New Environmental Regulations - 07.12.2015)**
- **Specific Water Consumption for existing CT-based plants - 3.5 m<sup>3</sup> /MWh**
- **Source of Water - Gopad River**  
**Initial Quantity Allotted - 58.32 Mcm/Annum.**  
(Agreement Dated 16/02/2013)
- **Quantity Revised - 42 Mcm/Annum.**  
(Agreement Dated 05/08/2016)

# SPECIFIC WATER CONSUMPTION LAST THREE YEARS

	Raw Water cum	Power Gen. in MU	Specific Water Consumption cum/MWh
FY 2017-18	18975000	7688.93	2.50
FY 2018-19	17364747	7330.28	2.37
FY 2019-20	14205176	6312.59	2.25



## SPECIFIC WATER CONSUMPTION FOR JAN,FEB & MAR, 2020

Month	Raw Water cum	Power Gen. in MU	Specific Water Consumption cum/MWh
January 20	1276370	596.56	2.14
February 20	911540	407.30	2.24
March 20	1044500	474.60	2.20

REPORTED TO CEA & CPCB

# **ACTION TAKEN TO OPTIMIZE WATER CONSUMPTION**

## **AS PER DESIGN AND ENGINEERING:**

- **Closed Cycle NDCT based Cooling water System.**
- **All waste water is collected in Central Monitoring Basin(CMB).**
- **Pre-treatment plant has High Rate Solid Contact Clarifier (HRSCC) base technology.**
- **Ion Exchange Resin based DM Plant with UF.**
- **All effluent from DM Plant & CPU Treated at WWTP.**
- **WWTP has Effluent Treatment with HRSCC, DMF & RO based Technology.**

- **100% Dry Fly Ash Collection & Conveying with Compressed Air to fly ash Silo.**
- **Maintaining Zero Liquid Discharge (ZLD).**
- **RO reject is utilized for coal dust suppression.**
- **DMF Back Wash & UF Reject Water retreated at PT Plant.**
- **Oil water separation system installed.**
- **100 % Ash Water Recirculation System**

## **OPERATION AND MAINTENANCE PRACTICES**

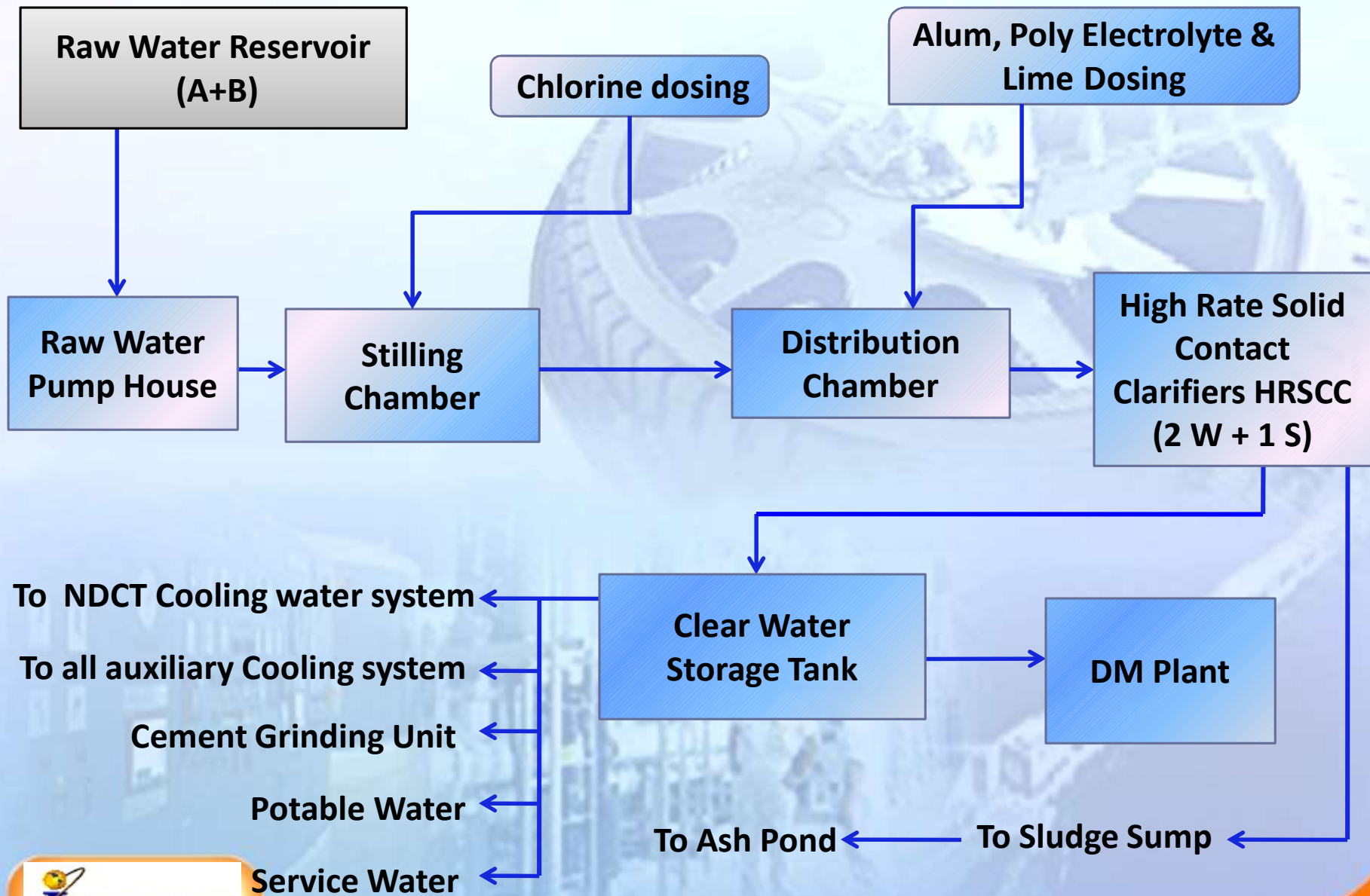
- **Every intake point has Water Metering system.**
- **Close monitoring of Raw water intake.**
- **Close monitoring of Daily water consumption.**
- **Attempts to keep plant water & Steam Leakage free.**
- **Regular monitoring of Boiler drain & vents.**
- **Ash Pond Toe Drain Water Recycling.**
- **Treated Sewage water is used in Horticulture and Vegetable farming.**
- **STP treated water used for Dust Suppression on PCC Roads.**



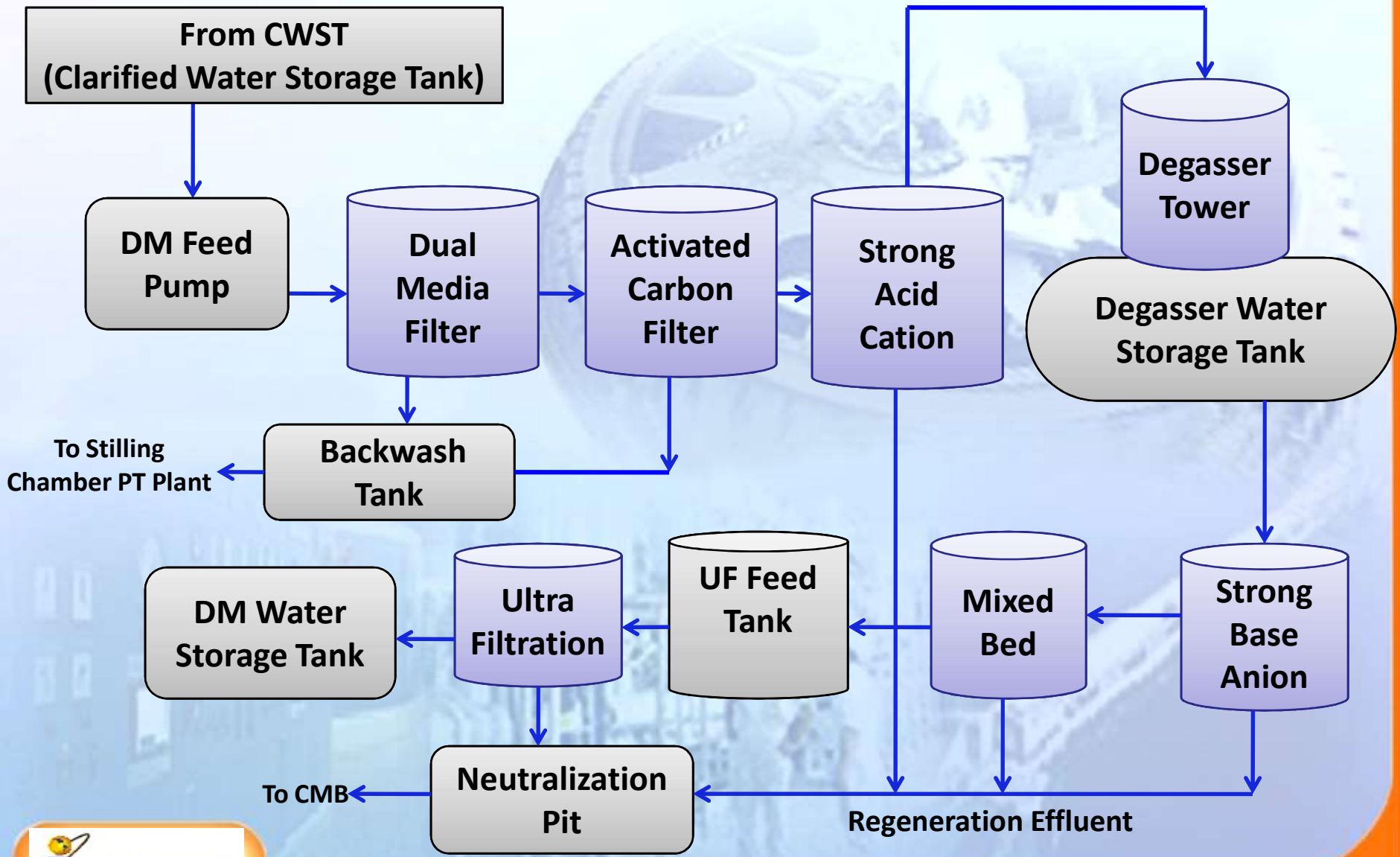
## SIGNIFICANT ACHIEVEMENTS

- 27.98% Reduction in water allocation voluntarily.
- 16.32 Mcm/Annum of Water Allocation has been reduced within One Year of Operation.
- Sp. Water consumption achieved to 2.2 cum/MWh against norms 3.5 cum/MWh .
- IMS Certified Plant
  - ISO 9001-2015
  - ISO 14001-2015
  - ISO 45001-2018

# PRE-TREATMENT PLANT



# DM PLANT (CLARIFIED WATER TO DM WATER)



# COLLECTION OF ALL WASTE WATER

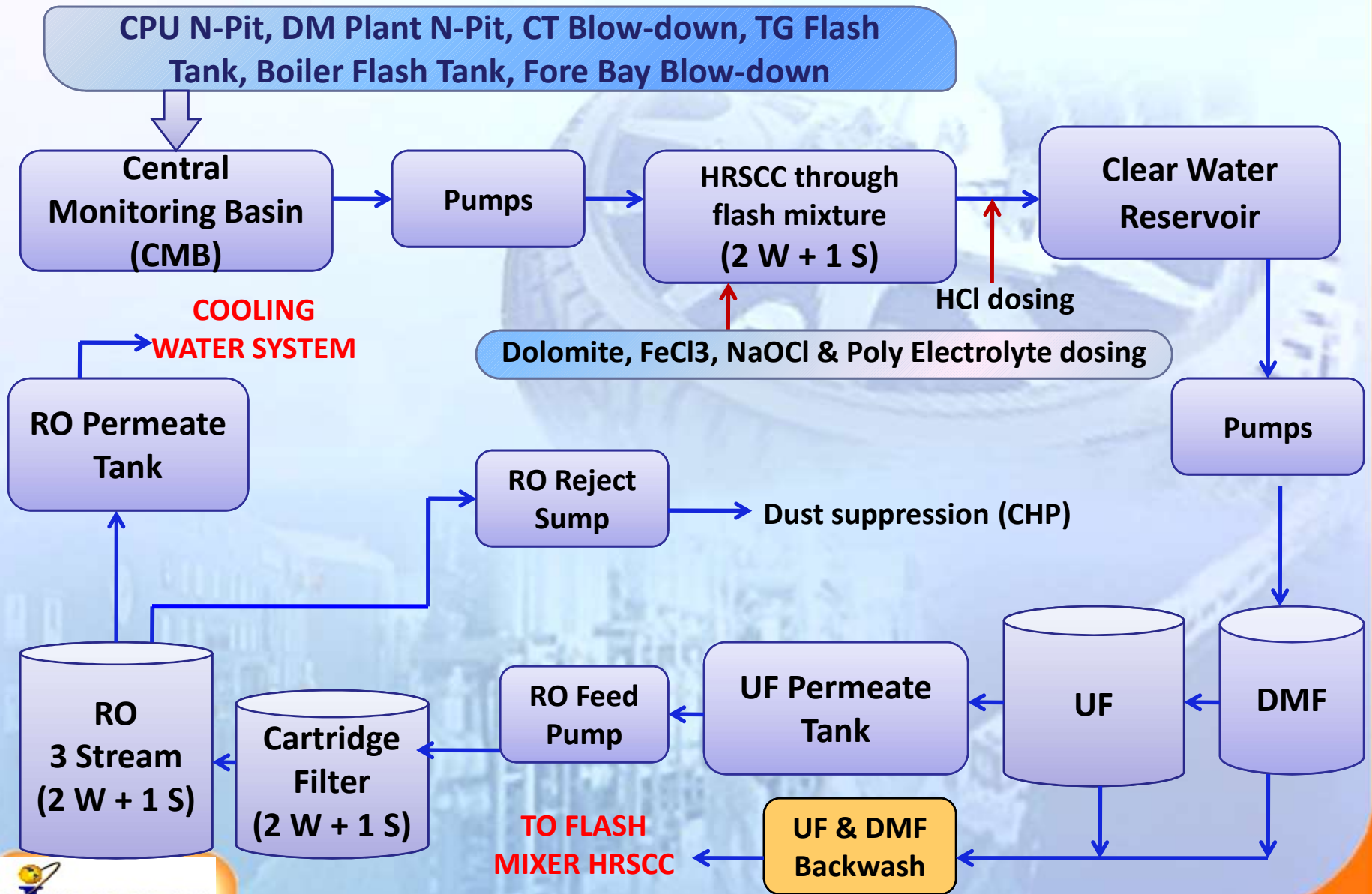
Collection of Waste Water from all Possible Sources:-

- CT Blow Down
- AVGF Backwash
- DM Plant Neutralization Pit
- CPU Neutralization Pit
- Boiler Flash Tank
- TG Flash Tank

Central Monitoring  
Basin (CMB)

TO WASTE WATER  
TREATMENT PLANT  
(WWTP)

# WASTE WATER TREATMENT PLANT



# WASTE WATER TREATMENT PLANT (RO BASED)



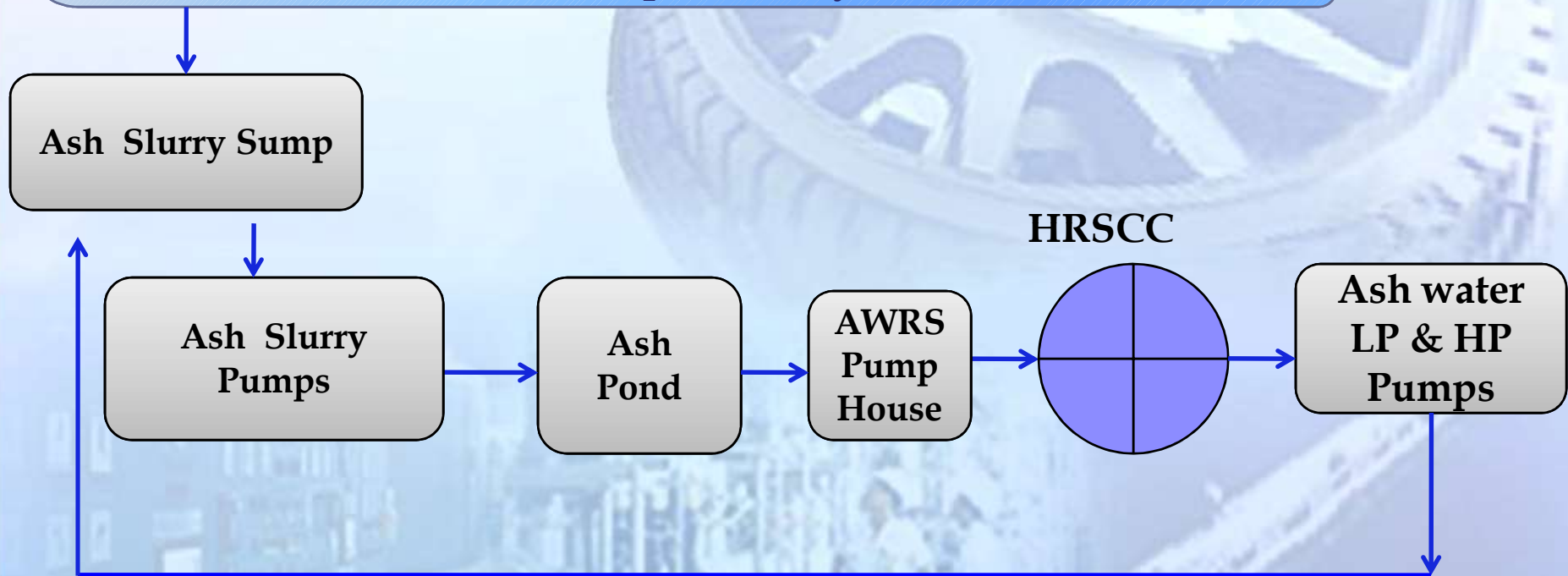
# WWTP - UF AND RO SKIDS



# ASH WATER RECIRCULATION SYSTEM

100% Recirculation of Ash Pond Water over flow through Ash Water Recirculation System (Closed Cycle)

PT Plant Sludge, Ash clarifier Sludge, WWTP Sludge, Water from Oil Water Separation System.



Water used in Lean Slurry Disposal of Bottom Ash with Ash : Water ratio 1 : 2.8



# ASH POND AND CHANNEL



## ASH POND CHANNEL & PUMP HOUSE



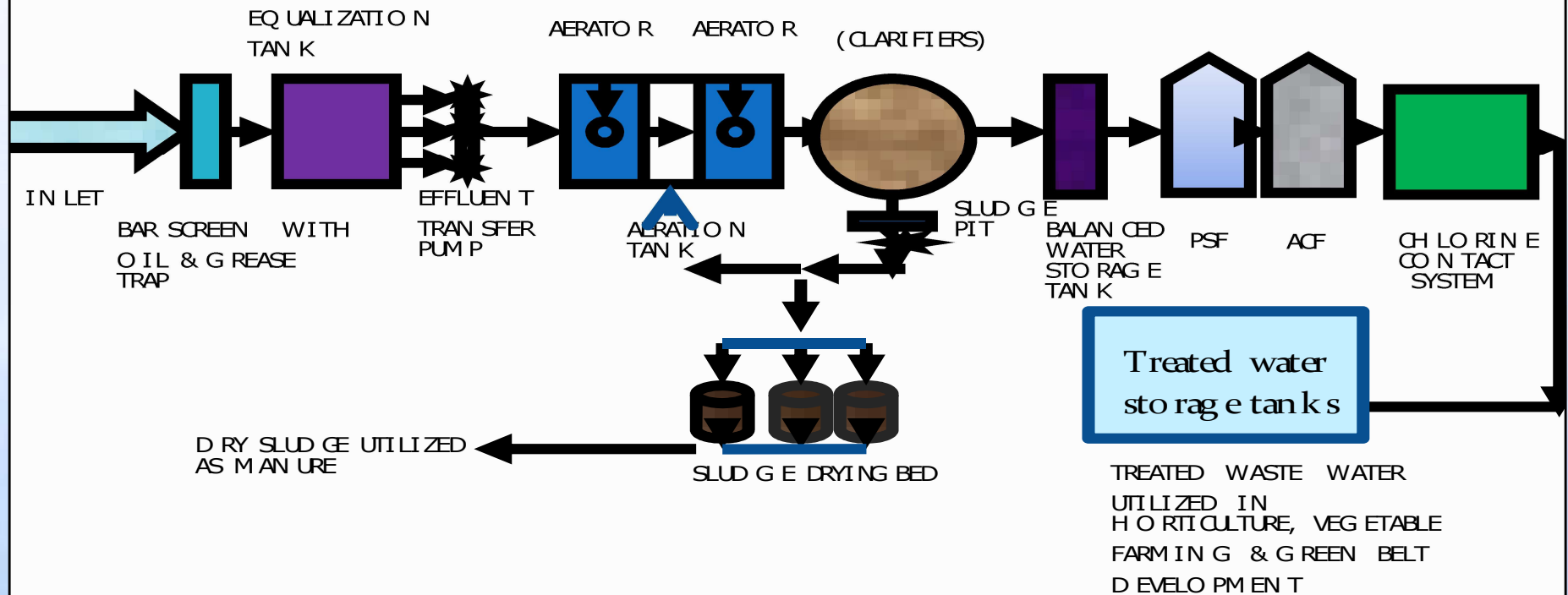
# ASH POND RECIRCULATION WATER CLARIFIER



# FLOW DIAGRAM OF SEWAGE TREATMENT PLANT

(2 NOS)

CAPACITY - 1000 & 100 KLD



# SEWAGE TREATMENT PLANT, 1000 KLD



STP

## **JNSTPP NIGRIE, WE ARE COMMITTED TO :**

- ❖ Minimize Sp. Water Consumption.**
- ❖ Maintain Zero Liquid Discharge &**
- ❖ Run Plant in Eco-Friendly manner.**



*Thanks*