

CHHOTU RAM POLYTECHNIC, ROHTAK

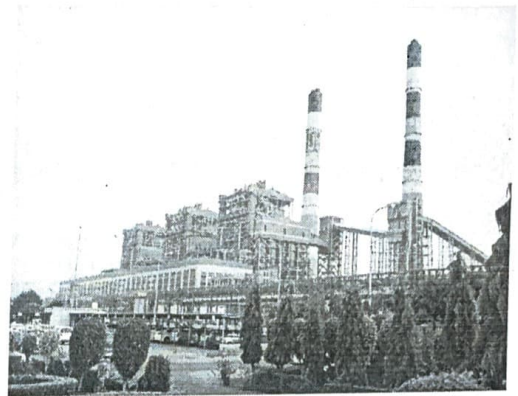
DEPARTMENT OF ELECTRICAL ENGG.

Brief report of Industrial Visit of 5th semester students

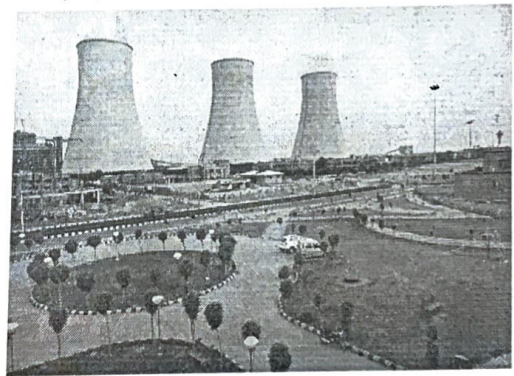


Industrial visit of 5th semester students has been organized on 16.12.2022 at Indira Gandhi Super Thermal Power Project (IGSTPP). Total 48 students have participated in the visit under the mentorship of Sh. K.K. Bisla (Lecturer) and Sh. Hansraj (Lecturer)

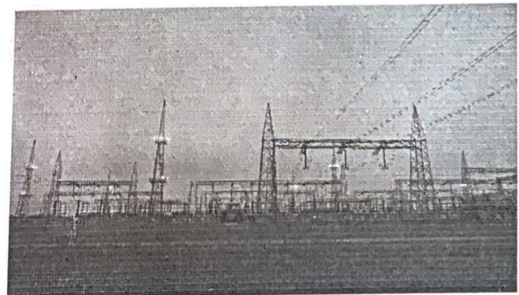
APCPL has constructed a coal based power plant near Village Jharli, District- Jhajjar (Haryana) named Indira Gandhi Super Thermal Power Project (IGSTPP). Aravali Power Company Private Limited (APCPL) is a joint venture company with 50% share of NTPC Ltd, 25% of Haryana Power Generation Company Ltd (HPGCL, Haryana State company), and 25% of Indraprastha Power Generation Company Ltd (IPGCL, Delhi State company).



It is one of India's largest supercritical coal-fired power plants. Its two 660MW units were completed on time and within budget in 2012. The use of supercritical technology increases energy efficiency and so reduces carbon intensity. Flue gas desulphurisation equipment was installed to reduce its environmental impact. CLP has a 60% indirect equity ownership in Jhajjar Power Station held through Apraava Energy. It is the largest thermal power plant located in Haryana.



Main plant equipment of Boiler and Turbine was awarded to M/s BHEL on 7th July 2007. The First unit was commissioned on 31st October, 2010 in 39 months from the date of investment approval. This is the best achieved target for green field project. The Second unit was commissioned on 5th November, 2011, and the Third unit on 7th November, 2012. The Commercial operation



Submitted to Principle Sir for information please
tjw
Principle Sir
20.12.22

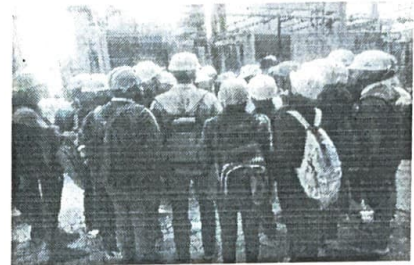
declaration of first and second unit was done on 5th March, 2011 and 21st April 2012 respectively. Third unit was declared commercialised on 26th April, 2013 & the station was dedicated to the Nation by Shri Jyotiraditya Scindia, the then Union Minister of State for Power (I/c).

Project Location

The project is located at village Jharli in Jhajjar district of Haryana, covering land area of 2191 acres. The plant is surrounded by four villages- Jharli, Gorla, Mohan Bari and KhanpurKhurd. The district head quarter, Jhajjar is 35 km, Rewari town is 35 km and the nearest airport, New Delhi is 90 KM.

Township

The project has a self-contained township with all modern amenities such as a 50 Bedded Hospital, School, Community Centre, Shopping Complex, Club and Stadium for quality life of the employees and their families.



Synopsis

Company	Aravali Power Company Pvt. Ltd. - A Joint venture of NTPC Ltd, HPGCL and IPGCL
Capacity	Stage I: 1500MW(3X500MW) -Commissioned
Status	Mega Power Project
Equity Sharing	NTPC (50%), HPGCL (25%), IPGCL (25%)
Location	Site Jharli is 35 km from Jhajjar district of Haryana and 100 km (approx.) from Delhi.
Beneficiary	Haryana, Delhi, Himachal Pradesh, Jammu & Kashmir, Punjab, Rajasthan, Uttar Pradesh, Uttarakhand, Andhra Pradesh, Kerala and Telangana.
Coal Linkage	As on date, coal linkage made from Eastern Coalfield Ltd. & Northern Coalfield Ltd.
Water Source	Make up water from Jawahar Lal Nehru (JLN) feeder canal.
Power Evacuation	Through two associated 400. KV Double Circuit transmission system to Daulatabad (Haryana) and Mundka (Delhi).
Special Feature	<ol style="list-style-type: none"> 1. Drum type sub critical boiler Pressure 178 Kg/Sq cm and steam Temp 540 deg (MS) & 568 deg (RH). 2. KWU turbine with Single reheats, having 17 stages in HP, 12X2 stages in IP and 6X2 stages in LP. 3. Closed cycle cooling system with Natural Draft Cooling tower. 4. Water being stored into two reservoirs built on 350 Acres land and provided with HDPE lining. Each has storage capacity of 35 Lac Cum. 5. 100% Dry Ash collection from ESP hoppers and disposal by High concentration Slurry Disposal system (HCSD) and dry ash system. 6. Ash water recirculation system is installed to re-use the ash slurry disposal over flow water 7. RO Plant for recycling the waste water of station to ensure zero effluent discharge. 8. The height of chimney is 275 meters.

Coal Linkage

Coal Linkage has been accorded from Eastern Coalfield Ltd. & Northern Coalfield Ltd.

Eastern Coalfield Ltd. - 1.0 MTPA

Northern Coalfield Ltd. - 1.0 MTPA

Cooling Water Source Requirement

Make up water requirement for the project (3 X 500 MW) is 7400 M³/hr. Water Linkage of 150 cusecs from Jawahar Lal Nehru (JLN) Feeder canal in a roaster of 16 days in 32 days period is available. Three Natural Draft Cooling Towers have been constructed for the commissioned three units.



Power Transmission

Two 400 KV Double Circuit Transmission lines have been constructed for evacuation of power from station. The same are as follows:-

1. IGSTPP to Daulatabad by Haryana Vidyut Prasaran Nigam Limited (HVPNL).
2. IGSTPP to Mundka by APCPL.



Beneficiary

Power generated from the project is mostly supplied to Haryana and Delhi besides to Himachal Pradesh, Jammu & Kashmir, Punjab, Rajasthan, Uttar Pradesh, Uttarakhand, Andhra Pradesh, Kerala and Telangana

Project Financing

The debt equity ratio is 70:30. Equity portion is financed by promoters and debt is being financed by Power Finance Corporation Ltd.

Environmental Aspects

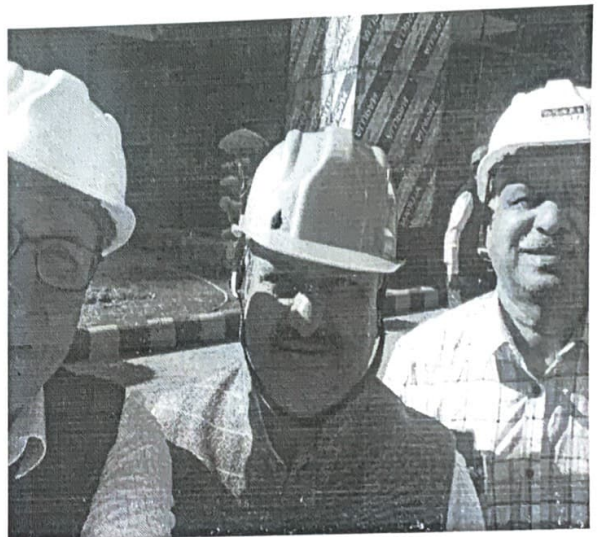
- All regulatory clearances from State Pollution Control Board and Ministry of Environment & Forests were obtained.


100 % Dry Ash collection from ESP hoppers and disposal by High concentration Slurry Disposal system (HCSD) and dry ash system. HCSD has been adopted for the 1st time in India for such large capacity station. This system is designed for Ash water ratio of 6:4 to conserve water as compared to 1:5 ash water ration used in conventional ash slurry disposal system.

- Infrastructure facilities for 100 % fly ash utilisation designed are being installed.
- Reverse osmosis (RO) Plant is being installed for the 1st time in NTPC plants to recycle the waste water of station. Ash water re-circulation system is installed to re-use the ash slurry disposal over flow water. Waste water management system is designed for zero effluent discharge.
- 100 mtr.wide green-belt has been developed all along the plant boundary to conserve natural resources.

Community Development Activities

- **Annuity scheme:** The annuity scheme has been implemented for land oustees as per policy guidelines of Govt of Haryana.
- **Education:** To develop technical skill in the vicinity, ITI Matanhail and Salhawas have been adopted. Plant visit and vocational training of students of nearby villages is regularly being conducted. Prizes are being distributed to the meritorious students of Project affected villages.
- **Medical Facility:** OPD facility in project for affected villages and labour colony is being provided on regular basis. Free health check up and medical camps are being organized in project affected villages .
- **Employment:** A large number of local people are engaged through various agencies. Co-operative societies of land oustees are formed to whom work of plant is awarded. Some shops in township of IGSTPP have been allotted to the land oustees. To uplift the social and economic status of women of project affected villages, self-employment training classes are being conducted.




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