



LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING (Autonomous)

L.B.REDDY NAGAR, MYLAVARAM-521 230.A.P. INDIA

Affiliated to JNTUK, Kakinada & Approved by AICTE, New Delhi

NAAC Accredited with "A" grade, Accredited by NBA

New Delhi & Certified by ISO 9001:2008

DEPARTMENT OF CIVIL ENGINEERING (C.E Dept)

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INDUSTRIAL VISITS ORGANIZED

A.Y	PROGRAM	NAME OF INDUSTRY/COMPANY	DATE	NO OF STUDENTS PARTICIPATED
2018-19	B.Tech	REPORT ON INDUSTRIAL VISIT TO Dr. NTPS	27-07-2018	60
2018-19	B.Tech	REPORT ON INDUSTRIAL VISIT TO POLAVARAM PROJECT	01-12-2018	89
2018-19	B.Tech	REPORT ON INDUSTRIAL VISIT TO POLAVARAM PROJECT	29-12-2018	90



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L.B.Reddy Nagar, Mylavaram-521230, Krishna Dist, Andhra Pradesh, India

DEPARTMENT OF CIVIL ENGINEERING

REPORT ON INDUSTRIAL VISIT TO Dr. NTPS

Event Type: Industrial visit

Date / Duration: 27-07-2018

Resource Persons: --

Name of Coordinators: 1. Sri J.Rangaiah-Associate Professor
2. Sri B.Rama Krishna-Assistant Professor

Target Audience: 4th year B.Tech Civil Engineering students of LBRCE

Total no of Participants: 60

Objective of the event: 1. To bridge the gap between theory and practice

Outcome of event: 1. Students became aware of the several operations that are carried out in the plant.
2. Students became aware raw water is collected from Krishna River and the water is sent to DM plant after basic filtration process.



Students at NTPPS



Students at NTPPS



Resource Person explaining the operations in plant



Students are observing the disposal of fly ash and reuse



Resource Person explaining the operations of DM plant



Resource Person explaining collection of coal and Processing

REPORT

The 4th year B.Tech civil engineering students underwent an industrial visit to Dr. NTTPS, Ibrahimpatnam, Vijayawada on **27-07-2018**. Smt. N.Mahalakshmi garu (AE, Env.) and Sri Syam garu (AE Fly ash) explained the (i) basic operations in power plant (ii) DM plant necessity in power plant (iii) operation of DM plant (iv) collection of coal and processing and (v) fly ash collection and reuse.

The students visited the several operations that are carried out in the plant. They observed the activities starting from unloading of coal from wagons, its processing until it reaches the burning point. The C- grade required for plant operations is obtained from Singareni Collieries.

Raw water is collected from Krishna River and the water is sent to DM plant after basic filtration process. The necessity of DM plant is to avoid formation of scales in boilers. The DM plant contains Ion exchange resins and the water after the DM process is tested for its quality before used in boilers. Students also visited the turbines connecting with generators which are used for producing electricity.

In the entire operation of electricity production from coal in Dr NTTPS, large amount of waste is generated in the form of fly ash due to combustion of coal. ESP is used as the primary air pollution control equipment to remove fly ash from the process. The fly ash generated is disposed off at fly ash pond spread in 365 acres through the pipe lines. Some quantity of fly ash is supplied to the surrounding small scale industries for making cement and fly ash bricks.

The industrial visit helped the students in visualising DM plant operation and collection and disposal of fly ash and reuse. The visit is fully interactive and all the students participated enthusiastically and enjoyed the experience.



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DEPARTMENT OF CIVIL ENGINEERING

REPORT ON INDUSTRIAL VISIT TO POLAVARAM PROJECT

Event Type: Industrial visit

Date / Duration: 01-12-2018

Resource Persons: --

Name of Coordinators: 1. Sri J.Rangaiah-Associate Professor
2. Sri B.Rama Krishna-Assistant Professor
3. Sri J.Eeswar Ram-Assistant Professor
4. Sri K.Harish Kumar-Assistant Professor

Target Audience: 2nd and 3rd year B.Tech Civil Engineering students of LBRCE

Total no of Participants: 89

Objective of the event: 1. To bridge the gap between theory and practice

Outcome of event: 1. Students became aware of the construction of spillway and how earth work is carried out at construction site
2. Students became aware about new concrete placing techniques which are used at Polavaram construction site

Feedback / Suggestions: Positive. More programmes are required.

REPORT

The 2nd & 3rd year B.Tech civil engineering students underwent an industrial visit to Polavaram Project, Polavaram on **01-12-2018**. The students visited the Pattisema project, Polavaram project spillway construction, diaphragm wall and rock fill dam. They observed the activities of construction of spillway and excavation work carried at Polavaram project.

Origin of the project:

The Godavari is one of the most flooded rivers in South India, and nearly 3000 TMCs of water flows into the ocean as wastage every year. Whereas the water levels in other major rivers Krishna and Penna are reducing year by year. This has become a serious concern to lakhs of farmers and administration. The need of the hour is utilizing the partial extent of those 3000 TMCs which is reaching the ocean unutilized to cater to the needs of the agricultural and domestic needs of the state. Polavaram project is a kind of interlinking of rivers project that is bringing water from Godavari to Krishna river. The excess water from Krishna is planned to get diverted to Penna and other rivulets through linking of water resources.

Benefits from the project:

The Polavaram Irrigation Project is a Multipurpose **National project** covering a wide range of benefits given below:

- Increased Agriculture production to a tune of 109 lakhs M.T. per annum.
- Increased power generation of 960 M.W.
- Assured water supply to Visakhapatnam City, and enroute villages, Steel Plant and Other Industries in the vicinity.
- Diversion of 2.27 TM. Cum. (80 TM. Cft) of Godavari Waters into the: Krishna River.
- Inland water transport for the mineral and forest produce and other agricultural and industrial products.
- Provides recreation facilities and pisciculture etc., and urbanisation.

Locational details:

The Project is located in Andhra Pradesh near Polavaram village about 34 Km (21 miles) upstream of Kovvur - Rajahmundry Road and 42 Km (26 miles) upstream of Sir Arthur Cotton Barrage, at Longitude 81°-39' 46" E and Latitude 17°-16' 53" N. The project is constructed with a catchment area of 3,06.643 Sq. Km and is expected to provide irrigation to 2.914 lakh hectares.

Major components of the Polavaram Project:

1. **Spillway:** Constructing the Spillway is the first step in the process. After constructing the Spillway, 48 huge radial Spillway gates will be fitted to it. After the gates are fitted, then the Approach and Spill channels will be constructed to channelize river water through Spillway. Each gate is fitted with 2 hydraulic cylinders to enable faster movement of the heavy gates, to secure dam from heavily flooded Godavari river. The 96 hydraulic cylinders for 48 gates are being manufactured in Germany. The excess flood water is released through the remote controlled spillway gates.

Spillway Dimensions: Height 45 ft; Width 1000 m; Concrete required 17 lakh cubic metres

Spillway Radial Gate dimensions: Each Spillway Radial gate: Height 21m; Width 16m; Weight 350 tonnes.

- 2. Coffer dams:** Two Coffer Dams, at u/s and d/s will be built across the river. The main purpose of the Coffer Dams is to protect the Earth Cum Rock fill Dam (ECRF Dam) from floods during construction. The Coffer dams are being built by renowned German company Keller. The upstream cofferdam will be 27 metres above the river bed and the other one will be about 20 metres from the river bed. The upstream cofferdam has the capacity to hold 120 TMCft while the project will have the capacity to hold 194 TMCft. The project on completion will have a “live” capacity of 75 TMCft, but water could be sent into the Left and Right Polavaram main canals by holding just 30 to 40 TMCft,

Coffer Dam Dimensions:

Coffer Dam u/s: Height 41m; Length 2.3 km; Width 145m; 600m from the ECRF Dam.

Coffer Dam d/s: Length 1.45 km

3. ECRF Dam (Earth Cum Rockfill Dam)

The ECRF dam will be built between the two Coffer dams. ECRF dam is the most crucial component of the entire project, constructed across the river Godavari and plays a major role in holding river water. It can withstand up to 50 lakh Cusecs water flow, which is higher than the maximum flood flow of 30 lakh cusecs recorded in Godavari river till date. ECRF is being built by Mega Engineering Company.

ECRF dam dimensions:

Length 1750 m; Height 41m; Width 300 m at the bottom and 30 m at the top

4. Diaphragm Wall:

Diaphragm wall is the foundation of ECRF dam. It is constructed below the ECRF dam and prevents leakage of water across the dam from the bottom of ECRF through sand pores. Without Diaphragm wall the ECRF will not sustain and will succumb to water leakage from the bottom of it.

Diaphragm wall dimensions:

Depth (below the ECRF dam) 40–100 m; length: 1450 m; width 1.5 m.

Diaphragm wall is being executed as a joint venture by L&T Geo and renowned German Company Bauer.

5. Canals

The Project will have two lined canals, one on the left side and the other on the right side. The Left canal is 181.5 Km (112.7 Miles) long with a capacity to irrigate 1.52 Lakhs hectares (4.0 Lakhs acres) in the upland areas of East Godavari and Visakhapatnam Districts besides providing water supply to the Township of Visakhapatnam and other towns and villages enroute and to the Industries in the vicinity. The Left Canal has the facility of Navigation. The Right Canal is 174 Km (110.5 Miles) long and provides irrigation to 1.29 Lakh hectares (3.19 Lakh acres) in the up-land areas of West Godavari and Krishna Districts and also enables a diversion of 2.27 T.M.Cum. (80 T.M.C) to the Krishna river at Vijayawada. 7000 Nos Tube wells are also proposed in the command area of the Project for conjunctive use of ground water along with the river water, to control water logging problems.

6. Reservoir:

The project reservoir has a live storage 75.2 TMCs at canal's full supply level of 41.15m (135 ft) MSL and gross storage of 194 TMCs thereby enabling irrigation of 23,20,000 acres.

Pattiseema project:

80 TMCs of Godavari water can be diverted every year to the Krishna River using 24 pumping units to pump a maximum of 240 cumecs of water. These pumps deliver water drawn from the river Godavari in Pattiseema into the Polavaram Project Right Main Canal for the benefit of farmers in the Krishna river delta. The Godavari water then travels for 174 Km in the Polavaram Right canal with the help of gravity and then meets River Krishna at ‘Pavithra Sangamam’ near Vijayawada, located at the upstream of Prakasam barrage. The diverted Godavari water will be utilised for irrigation and drinking purposes in Krishna Delta region. The river linking benefits around 14 lakh acres in Krishna delta region. Four districts Krishna, West Godavari, Guntur and Prakasam under Krishna delta region will benefit from the Godavari water. This project is completed with an estimated cost of Rs 1600 crores.

Status:

Approximately 32 lakh cubic metres of concrete will be required for the entire project. The civil works are in progress and around 60% of the civil works are completed. Heavy machinery and construction equipment are used in the site. Heavy machinery, imported from abroad, is actively involved to speed up the construction process. The erection of radial gates to spillway is scheduled from the third week of December 2018.

Photographs:





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Date / Duration: 29-12-2018

Resource Persons: --

Name of Coordinators: 1. Sri J. Eeswar Ram-Assistant Professor
2. Sri B.Narasimha Rao-Assistant Professor
3. Sri M. Manoj Kumar - Assistant Professor
4. Sri P.M. Ganga Raju - Assistant Professor

Target Audience: 1st and 4th year B.Tech Civil Engineering students of LBRCE

Total no of Participants: 90

Objective of the event: 1. To bridge the gap between theory and practice

Outcome of event: 1. Students became aware of the construction of spillway and how earth work is carried out at construction site
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Feedback / Suggestions: Positive. More programmes are required.

REPORT

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Photographs:



Spillway construction site



Polavaram Irrigation Project location



Polavaram project model



Pattiseema Lift Irrigation scheme