THAR INSTITUE OF ENGINEERING SCIENCE'S & TECHNOLOGY

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REPORT OF STUDY TOUR OF KOTRI BARRAGE

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1. INTRODUCTION:

The Kotri Barrage also known as Ghulam Muhammad Barrage, located on the Indus River in Sindh, Pakistan, holds historical significance and plays a crucial role in the region's agriculture and flood control**.**

2. HISTORY & CONSTRUCTION:

- Constructed in 1955, the barrage was designed to regulate water flow for irrigation and prevent saltwater intrusion into the fertile lands of Sindh.
- The construction involved substantial engineering efforts, with a primary focus on managing the mighty Indus River's flow**.**
- The total construction cost at that time was 935 Million Rupees**.**

3. AN OVERVIEW OF KOTRI BARRAGE:

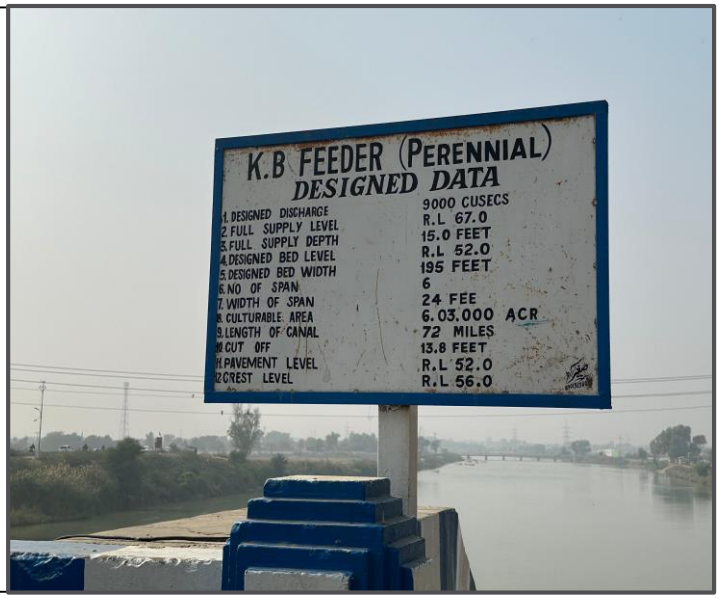
- The total length barrage 1600 meters or 1.6 km.
- It is a gate controlled weir type barrage.
- The barrage has total 44 bays or gates.
- Each gate is 18 meters or 60 ft wide.
- The total discharge capacity of barrage is 875,000 cusecs.
- During the flooding season of 2010 963,000 cusecs of water was easily passed.
- Maintain by Sindh irrigation and power department'
- The maximum flood level height of kotri barrage 13.1 meter.

4. WORKING PROCESS:

During normal conditions, the barrage regulates water flow to facilitate irrigation through various canals. The gates are manipulated to control water levels, ensuring optimal distribution for agricultural purposes. In times of floods, the barrage plays a crucial role in mitigating potential damage by managing the increased water volume.

5. CANALS AND IRRIGATION:

- The Kotri Barrage feeds several major canals.
- including the Dadu Canal with a
- Phuleli Canal total length of 60 miles and a discharge of 14350 cusecs.
- Pinyari Old phuleli with a length of 56 miles and a discharge 13800 cusecs.
- The Akram wah canal with a length of 76 miles and a discharge of 4100 cusecs.
- Kalri baghar canal with a length of 50 miles and a discharge of 9100 cusecs. Also main source of water to Karachi.
- These canals play a pivotal role in distributing water to agricultural lands, fostering a prosperous farming community in Sindh.



6. ADVANTAGES:

6.1 SINDH AGRICULTURE:

The barrage significantly contributes to the prosperity of Sindh's agriculture. By regulating water supply, it ensures consistent irrigation for crops, supporting the livelihoods of farmers in the region. The controlled release of water also prevents waterlogging, preserving the fertility of the soil.

6.2 FLOOD PREVENTION:

During flood events, the barrage acts as a crucial defense mechanism. By regulating water discharge, it helps prevent catastrophic flooding in the surrounding areas, safeguarding lives and property. The controlled release of water mitigates the impact of the floodwaters downstream.

7. FUTURE CHALLENGES:

- Despite its benefits, the barrage faces challenges such as sedimentation and silt accumulation, which can reduce its efficiency over time.
- Additionally, the risk of structural issues or breaches during extreme weather events poses a constant concern.
- Ensuring the sustainable operation of the Kotri Barrage requires ongoing maintenance and potential upgrades.
- Climate change and shifting precipitation patterns pose additional challenges, necessitating adaptive measures to manage water resources effectively.

8. CONCLUSION:

- The Kotri Barrage stands as a critical infrastructure supporting agriculture and flood control in Sindh.
- Its historical significance, coupled with its ongoing importance, highlights the need for strategic planning and investment to address current challenges and adapt to future uncertainties.

Visit in Pictures

THE END