



अनुसंधान के माध्यम से सेवा
Service Through Research

ETALIN H.E. PROJECT, DRI DAM SPILLWAY, ARUNACHAL PRADESH



SALIENT FEATURES

Location	: Dist. Dibang Valley
State	: Arunachal Pradesh
River	: Dri (a tributary of Dibang river)
Power Generation	: 1862 MW
Maximum Discharge	: PMF 11811 m ³ /s + GLOF 1170 m ³ /s
Type of dam	: Concrete Gravity Dam Height 101.5 m
Spillway	: 7 Spans of 12.6 m wide x 6.1 m high with breast wall
Energy dissipator	: Ski-Jump bucket

MAJOR STUDIES

Comprehensive model scale 1: 60 and 2-D Sectional model scale 1:40

- ☺ Approach flow conditions upstream of spillway and power intake
- ☺ Assessment of discharging capacity of spillway
- ☺ Assessment of water surface and pressure profiles on spillway
- ☺ Assessment of discharging capacity of spillway
- ☺ Performance of spillway, energy dissipator and power intake



RESULTS

- ❖ The discharging capacity of the spillway was found to be adequate.
- ❖ Negative pressures of the order of 0.2 to 3 m were observed on the crest profile of the spillway making it susceptible to cavitation indicating necessity of aerator.
- ❖ Performance of ski-jump bucket was satisfactory for entire range of discharges. For higher range of discharges strong rooster tails could be seen. It was suggested to taper the intermediate piers or extend up to the lip to avoid violent rooster tails
- ❖ It is suggested to elevated the trunnion suitably based on water surface profiles as the jet was hitting trunnion more frequently for RWL 1039.4 m and above
- ❖ Flow conditions near the power intake were tranquil for all power intake operating conditions
- ❖ Studies discharging capacity and pressures over spillway surface were also conducted for raised spillway crest by simulating the Reservoir Water Levels