



TEESTA DAM SPILLWAY, STAGE-IV, SIKKIM

CENTRAL WATER AND POWER RESEARCH STATION,
PUNE - 411 024, INDIA.

SALIENT FEATURES

Location	: New Jalpaiguri, North Sikkim
River	: Teesta
Power Generation	: 520 MW
Maximum Discharge	: 13000 m ³ /s
Type of Dam	: Concrete gravity
Height of Dam	: 65 m
Spillway	: Orifice spillway with 6 Spans 9 m (W) x 14.5 m (H)
Energy Dissipator	: Ski-jump bucket



3-D COMPREHENSIVE MODEL STUDIES

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

BENEFITS OF STUDY

- * After incorporating the modification which includes the tapering of the spillway span, curvature in the dam axis and tilting by 30, revision in the design of intake and modification in breast wall bottom profile, it was found that the discharging capacity was improved with C_d increasing from 0.78 to 0.84.
- * It was also observed that the ski-jump jet is impinging in the pre-formed plunge pool which was earlier hitting the right bank but it is recommended that the dam axis should be tilted to 50 instead of 30 so that the flow concentrated towards the right bank is further improved
- * No vortices were observed in front of all the 4 units of power intake for the entire range of discharges with and without operation of ungated and gated operation of spillway



Original Design



Modified Design