अनुसंधान के माध्यम से सेवा
Service Through Research

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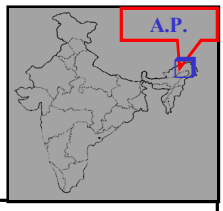
SALMA DAM SPILLWAY, AFGHANISTAN



SALIENT FEATURES

Location : Herat District
Country : Afghanistan
River : Hari Rud
Power Generation : 45 MW
Maximum Discharge : 2,100 m^3/s
Type of dam : Earth and Rockfill Dam Height 107.5 m
Spillway : 3 Spans of 8.0 m wide x 11.08 m high radial gate
Energy dissipator : Ski-jump bucket with pre-formed plunge pool

MAJOR STUDIES

Comprehensive model scale 1: 55

- ☺ Approach flow conditions upstream of spillway
- ☺ Assessment of discharging capacity and pressures on spillway profile
- ☺ Performance of spillway and energy dissipator
- ☺ Introduction of 1 and 2 divide walls on spillway
- ☺ Layout of plunge pool

RESULTS

- ❖ The discharging capacity of the spillway was adequate.
- ❖ The ski-jump jet was deflected into the plunge pool by providing a 10° deflector wall downstream of ski-jump bucket at the right end..
- ❖ The exit angle of ski-jump bucket was reduced from 40° to 30° to initiate early flipping action.
- ❖ Two divide walls were introduced on the spillway chute in continuation of the pier to separate the span and pass the mean annual discharge of 700 cumec through the central span.
- ❖ Negative pressures of 0 to 1.6 m were observed on the spillway chute.