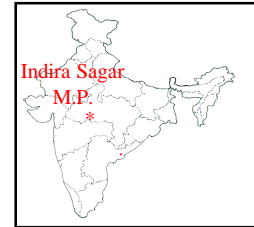


INDIRA SAGAR DAM SPILLWAY, MADHYA PRADESH

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

SALIENT FEATURES

Location	: Khandwa, Madhya Pradesh
River	: Narmada
Power Generation	: 1000 MW
Maximum Discharge	: 83400 m ³ /s
Type of Dam	: Concrete gravity
Height of Dam	: 92 m
Spillway	: Overflow spillway with 12 Spans for Main and 8 spans for Auxiliary spillway 20 m (W) x 17 m (H)
Energy Dissipator	: Ski-jump bucket



2-D SECTIONAL MODEL STUDIES

- “ Discharging capacity of main spillway with full and partial gate operation
- “ Assessment of pressures and water profiles on spillway
- “ Performance of ski jump bucket



RECOMMENDATIONS OF STUDY

- “ A discharge of 35,537 m³/s could be passed at FRL El. 262.13 m and a discharge of 38,896 m³/s could be passed at MWL El. 263.25 m with all 12 spans of main spillway fully open. The height of both the training walls were sufficient in order to contain the flow.
- “ Pressures were generally positive on the crest profile. Isolated negative pressures of the order of -0.03 to -1.75 m are observed at the inlet to the bucket and the corresponding cavitation index is in the vicinity of critical cavitation index of 0.2. Also, this region is aerated from the air entrained jet from the aerator. Hence, there is no possibility of cavitation.
- “ Clear ski action was observed for discharges up to 17,769 m³/s (50%) for gated and ungated operation of the spillway. Submerged ski action was observed for discharges beyond 17,769 m³/s. A 15 m wide concrete apron has been recommended downstream of ski jump bucket with end key firmly anchored to the fresh rock to prevent undermining of the spillway toe due to cascading flows.