

Spillway Modelling

Burrendong Dam, Dubbo, NSW

Background

Burrendong Dam is located on the Macquarie River near Dubbo in NSW. The dam is managed by State Water who commissioned Manly Hydraulics Laboratory (MHL) to undertake a physical model study.

Project Scope

The aim of the study was to evaluate and cost the strengthening works needed for the existing spillway to safely accommodate the revised PMF.

Our Role

MHL constructed a 1:85 scale model of the spillway and tested the hydraulic behaviour at four flood discharges. Model investigations focused on testing overflows of the spillway chute training walls, pressures on the chute floor and downstream behaviour. A number of modifications were made to the model and tested to determine design criteria for strengthening works.

Outcomes

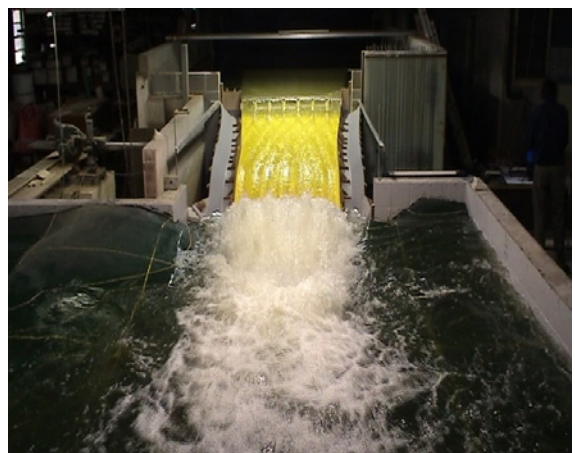
The PMF was reassessed and increased from 14,150 m³/s to 22,000 m³/s. The hydraulic performance of the existing structure was assessed and decisions were made on the strengthening works required to safely pass the revised PMF estimate.



Burrendong Dam spillway looking upstream



Burrendong Dam spillway 1:85 scale physical model



Physical model testing