

Papan dam studies and remedies.

C.MAKINSON, JacobsGIBB Ltd, Reading, UK.

SYNOPSIS. As part of a major irrigation refurbishment programme in Kyrgystan, seven major dams built in the Soviet era have been examined and rehabilitation measures designed and costed. Perhaps the most complex of these was Papan Dam near the city of Osh on the Silk Road. The dam is a 100m high gravel embankment with a grouted core, set in a very narrow limestone gorge. High regional seismicity and local fault alignments all increase the risk of failure of the works, and the provincial capital downstream is only part of the consequent hazard. This paper describes the inspection and investigation process, and the difficulties of identifying the seepage pattern in a three dimensional context. The justification of remedial measures currently in progress, and comprising a 70m deep diaphragm wall through the upper half of the dam core, is discussed. A short description of the bottom outlet and spillway and their current condition is given, together with comments on the parallel issue of reservoir operation and flood freeboard.