

## **Dams Operation Management Criteria during Floods: Case Study of Dez Dam in Southwest Iran**

**Authors :** Ali Heidari

**Abstract :** This paper presents the principles for improving flood mitigation operation in multipurpose dams and maximizing reservoir performance during flood occurrence with a focus on the real-time operation of gated spillways. The criteria of operation include the safety of dams during flood management, minimizing the downstream flood risk by decreasing the flood hazard and fulfilling water supply and other purposes of the dam operation in mid and long terms horizons. The parameters deemed to be important include flood inflow, outlet capacity restrictions, downstream flood inundation damages, economic revenue of dam operation, and environmental and sedimentation restrictions. A simulation model was used to determine the real-time release of the Dez dam located in the Dez rivers in southwest Iran, considering the gate regulation curves for the gated spillway. The results of the simulation model show that there is a possibility to improve the current procedures used in the real-time operation of the dams, particularly using gate regulation curves and early flood forecasting system results. The Dez dam operation data shows that in one of the best flood control records, % 17 of the total active volume and flood control pool of the reservoir have not been used in decreasing the downstream flood hazard despite the availability of a flood forecasting system.

**Keywords :** dam operation, flood control criteria, Dez dam, Iran

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