

ASK Weir creates additional storage volume. Optimum discharge for flood-control reservoirs (HRB)

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Even before the serious flooding, flood protection was a subject to which specialist engineers were devoting increasing attention – nationally as well as internationally. Changing climatic conditions require additional effort for the protection of the landscape, infrastructure and, above all, of the population. We are experiencing "floods of the century" with increasing frequency. This makes it necessary to revise many of the principles originally used for dimensioning flood-protection constructions in order to adapt them to present-day conditions. Existing facilities such as flood-control reservoirs and similar constructions are being pushed to the limit of their capacity much more often than was planned. This means that the primary objective of flood protection in the vicinity of rivers and streams can no longer be assured to the same extent as it was, for example, 20 years ago.

To cope adequately with the new situation, the responsible authorities are now designing and building new and larger constructions. In the case of new facilities, the aim is to take maximum advantage of storage volumes, whereas existing ones are being expanded and their storage capacities enlarged. But what is the best way of increasing existing capacities? Increasing the depth of the reservoir base or the height of the dike are not realistic solutions.

The ASK Weir

One efficient and economical solution is the ASK Weir (automatic float-controlled gate). Through the use of an ASK Weir in the discharge threshold zone, the useful top water level in the reservoir can be increased by the size of the overflow height of the fixed threshold by one metre and more without increasing the maximum water level. For a surface area of 1 sq. kilometre, this produces an additional storage volume of 1 million cubic metres.

Position of the ASK Weir

The ASK Weir is integrated in the U-shaped discharge canal in the dike and is located on the crest of the dividing wall. The desired amount of discharge is controlled by a protector located on the upstream side of the dividing wall.

A bottom outlet is no longer needed, thereby fulfilling the nature-conservancy requirements regarding amphibian migration. By adding the Telematic HST-Monitoring System, current water levels and discharge quantities can be monitored online and when critical levels are achieved, reported

to the emergency services concerned. The electronic dam logbook in the HST management program KANI[®] can be used to organise and document all events as well as repair and maintenance activities.

The ASK Weir is also suitable for adding to existing discharge canals. Depending on the volume to be gained, it may even ma-

ke expensive conversion and expansion work unnecessary.

The Weir Configurer

The Weir Configurer on the website www.systemtechnik.net can be used for configuring and dimensioning retaining and discharging facilities used in water eco-



