

Fact Sheet - Dams Modifications

Dam structures

The components of a typical dam include concrete structures and earthen embankments.

The concrete structures include the machinery and mechanisms needed for power generation, navigation, and for controlling the flow of water from the upstream to the downstream side of the dam.

Various earthen embankments are often part of a dam and can be located adjacent or some distance away from the concrete portion of a dam. Long, low dams typically have a lock, a powerhouse and spillways located at one end of the dam and an earthen embankment connects that concrete portion of the dam to the opposite shoreline. Some dams are concrete from one end to the other.



Saddle dams are typically earthen embankments located some distance upstream of the main dam and form part of a reservoir's rim or shoreline.

Interim modifications

Interconnected, fabric-lined, sand-filled containers have been used successfully in place of temporary dikes constructed of individual sandbags historically used for flooding events.



TVA plans to place these sand-filled containers on the top of the earth embankments at four dams to temporarily provide more floodwater storage and prevent overtopping of the embankments during an extreme flood event (PMF).

Total cost to install the temporary modifications is estimated to be about 8 million dollars.

The temporary structures are to be installed on top of the earthen portion of four dams—Fort Loudoun, Tellico, Cherokee, and Watts Bar.

The structures add about 3 to 4 feet of elevation to the top of the dams' earthen embankments and are expected to prevent overtopping and additional floodwater storage in a PMF.

Terminology

PMP - Probable Maximum Precipitation is the maximum precipitation postulated by the National Weather Service that the present climate would be physically capable of producing in a given area.

PMF - Probable Maximum Flood is the flood that can be expected from the most severe combination of meteorological and hydrologic conditions that are reasonably possible in a particular drainage area. The PMF is a very unlikely event—one that would far exceed the largest historical flood ever recorded in the Tennessee Valley.

Hydrology is the study of the movement, distribution, and quality of water including aspects related to the hydrologic cycle (commonly known as the 'water cycle') and water resources.