



Ohio Administrative Code

Rule 1501:21-13-02 Design flood for dams and determination of critical flood.

Effective: May 24, 2018

The magnitude of the design flood for each dam shall be set by the chief and determined from actual streamflow and flood frequency records or from synthetic hydrologic criteria based on current publications prepared by the division, the United States army corps of engineers, the United States geological survey, the national oceanic and atmospheric administration, or others acceptable to the chief.

(A) The minimum design flood will be:

(1) For class I dams, the probable maximum flood or the critical flood;

(2) For class II dams, fifty percent of the probable maximum flood or the critical flood; and,

(3) For class III dams, twenty-five percent of the probable maximum flood or the critical flood.

(B) Selection of a critical flood as the design flood is acceptable. The design for the critical flood shall be for site-specific conditions and based on a quantitative and relative impact analysis of the downstream critical routing reach. In determining the critical flood, the spillway and storage capacity for the dam shall be designed so that there will be no additional potential for loss of life, health or property in the critical routing reach from overtopping failure of the dam when compared to the potential for loss of life, health or property caused by the flood in the absence of a dam overtopping failure.

(1) Where the incremental depth of flow between the failure and non-failure floods is 2.0 feet or greater, or the product of the average floodplain flow velocity (in feet per second) and the incremental flood depth (in feet) is greater than 7.0, additional potential for loss of life, health or property in the critical routing reach is expected.

(2) If the incremental depth of flow between the failure and non-failure floods is less than 2.0 feet,



and the product of the average floodplain flow velocity (in feet per second) and the incremental flood depth (in feet) is less than 7.0, it does not necessarily mean that the critical flood has been determined. Further investigation will be required to determine that no additional potential for loss of life, health or property will occur.

(C) The minimum critical flood shall be as follows:

(1) Forty per cent of the probable maximum flood for a class I dam,

(2) Twenty per cent of the probable maximum flood for a class II dam, and

(3) The one-hundred-year flood for a class III dam.

(D) The owner or applicant shall submit to the chief, in writing, a request for consideration of the critical flood as the design flood. As required by the chief, this request shall be accompanied by appropriate supporting calculations. The chief will not consider risk assessment based upon planned evacuation, probability of inhabitation, or monetary recovery of property damage.

(E) If downstream hazard conditions change at any time during the life of the structure, a reevaluation of the critical routing reach and modification of the critical flood may be required by the chief.