

**Water and Natural Resource Committee
Dam Liability
Office of State Engineer
October 11, 2011**

Deficient Dams as of July 1, 2011 (See attached list)

- 111 rated as high hazard potential
- 38 rated as significant hazard potential
- 62 rated as low hazard potential

Condition Rating and Hazard Classifications Definitions (Attachment)

- OSE began using Condition Ratings in 2006
- Federal Government adopted ratings in 2008 to support federal funding for dams
- Federal Rating uses similar terms as OSE previous rating but definition slightly differ
- OSE should have all dams rated under the Federal Definitions by the end of FY14

Poor Condition Rating

- The state did not have an active dam safety program at the time that many of the dams were constructed and our records are incomplete for many dams – Incomplete records results in a POOR condition using Federal Classification
- Your list of deficient dams shows two rating for some dams, the second rating is the anticipated rating if we had complete documentation.

Resources needed to address deficient dams

- 111 deficient dams are classified as high hazard potential and an estimated \$183 million is needed for the publicly owned dams
- 38 deficient dams are classified as significant hazard potential and an estimated \$46 million is needed for the publicly owned dams
- 68 deficient dams are classified as low hazard potential and an estimated \$18 million is needed for the publicly owned dams
- The Dam Safety Bureau has only 5 engineering positions to regulate dam safety and one engineer just left at the end of September. Design of dams is a highly specialized discipline with limited number of candidates available. Retain and recruitment is a problem.

Progress on Dam Rehab Projects

- Bloomfield Dam: Design and construction complete for a total cost of \$3.7 million
- Cabresto Dam: Issued limited “Notice to Proceed” to improve access road for construction and complete geotechnical investigation. A redesign is underway because construction funds are not adequate. Estimated total cost is \$6.6 million
- Town of Springer Dams: Design is complete for a cost of \$735,000. Construction estimate is \$6.9 million
- As time is available, the Dam Safety Bureau is testing our precipitation tool that will provide updated precipitation design data for spillways

O&M Manuals and Emergency Action Plan to reduce Liability (attachment)

- The OSE through rules and regulations requires owners of dams classified as high and significant hazard potential to prepare an O&M Manual and EAP.
- The EAP assists the owner in recognizing an emergency and identifies what is in harms way if the dam were to fail.
- Emergency Action Plans must be updated each year with current contact information and periodically exercised to ensure the plan will work
- An O&M Manual gives the owner the tools to better plan, identify and budget for maintenance.
- The Manual is a living document that must be updated and provides a means to document the institutional knowledge from each owner.

OFFICE OF THE STATE ENGINEER

Dam Safety Bureau

Condition Classification for Dams

(Adopted from 2008 Federal¹ Dam Safety Definitions)

SATISFACTORY

No existing or potential dam safety deficiencies are recognized. Acceptable performance is expected under all loading conditions in accordance with state engineer's rules and regulations for dams or tolerable risk guidelines.

FAIR

No existing dam safety deficiencies are recognized for normal loading conditions. Rare or extreme hydrologic and/or seismic events may result in a dam safety deficiency. Risk may be in the range to take further action.

POOR

A dam safety deficiency is recognized for loading conditions, which may realistically occur. Remedial action is necessary. A POOR condition is also used when uncertainties exist as to critical analysis parameters, which identify a potential dam safety deficiency. Further investigations and studies are necessary.

UNSATISFACTORY

A dam safety deficiency is recognized that requires immediate or emergency remedial action for problem resolution.

¹ The federal government through the US Army Corps of Engineers requested states begin using a standard condition classification system to evaluate the condition of our nation's dams and to support a federal dam rehabilitation program for publicly owned non-federal dams. The OSE adopted the conditions definitions in July 2008.

Hazard Potential Classification for Dams

The hazard potential classification is a rating for a dam based on the potential consequences of failure. The hazard potential classification is not a reflection of the condition of the dam.

HIGH HAZARD POTENTIAL

Dams where failure or misoperation will probably cause loss of human life

SIGNIFICANT HAZARD POTENTIAL

Dams where failure or misoperation results in no probable loss of human life but can cause economic loss, environmental damage, disruption of lifeline facilities, or can impact other concerns

LOW HAZARD POTENTIAL

Dams where failure or misoperation results in no probable loss of life and low economic or environmental losses, losses are principally limited to the dam owner's property