

# **Obtaining a Dam Operation Permit From the Montana Dam Safety Program**

*For existing recently classified high hazard dams*

## **Engineer's inspection**

- A. Hire an engineer licensed in Montana with experience with dams to conduct a thorough inspection. For additional information on inspection requirements, please refer to our website at <http://dnrc.mt.gov/divisions/water/operations/dam-safety>.
- B. Conduct a preliminary investigation of spillway adequacy. The reservoir and dam must route and pass at a minimum the 500 year storm (the minimum design storm) in order to be permitted. Over the next five years, the dam must be analyzed for compliance with the State's "risk based" spillway design standard.

## **Emergency Action Plan**

- A. An Emergency Action Plan (EAP) must be developed to help guide actions in case of a dam emergency. The Natural Resource Conservation Service (NRCS) has a model EAP available. We recommend this model be used for all new EAPS. Our website has links to this model EAP and other important information related to emergency action planning.
- B. An evacuation map must be developed. We recommend that a HEC-HMS dam breach model be used to develop a dam breach inundation area, upon which the evacuation map will be based. Note that a breach model is not necessary in all cases. We recommend that the model assume the reservoir is at the top of the dam prior to the breach. Spillway and outlet flows should be ignored. This provides a conservative basis for an evacuation map, and includes a "safety factor" for debris and other modeling uncertainties which can raise the breach flood wave height. At key locations downstream of the dam, note the time it will take for the breach floodwave to first reach that location (initial floodwave arrival time). The Dam Safety Program may be able to provide you a copy of the breach model that was used to conduct the hazard evaluation which can be used to develop the evacuation map. The Dam Safety Program also has available example HEC-HMS dam breach models that can easily be modified to fit your dam.
- C. After your draft evacuation map is developed, meet with local disaster and emergency officials to obtain their input on the map (additional roads or residences not necessarily inundated but likely requiring evacuation).

## **Operation and Maintenance Manual**

- A. Develop a manual that describes procedures used to operate and maintain the dam including but not limited to the following: seepage monitoring schedule, gate lubrication and operation instructions, annual owner inspection procedures, vegetation and rodent removal guidelines, record drawings and a table of all pertinent dam information. The Dam Safety Program has a model Operation and Maintenance manual available for you to use.

## **Permit**

- A. If the dam safety act requirements are met, the Dam Safety Program will then issue an operation permit. The operation permit is a statement by the Department of Natural Resources and Conservation that the inherent risks to public safety associated with dam operations are reduced to an acceptable level. If a dam has a valid operation permit and required maintenance is regularly performed, in absence of negligence, a dam owner is not liable for damages due to flood waters from dam failure.
- B. The operation permit is valid for 5 years. The Dam Safety Program may put conditions on the operation permit that must be addressed within a certain period of time. Failure to address the conditions may result in revocation of the permit.
- C. The dam owner is responsible for conducting an annual “owners” inspection of the dam. The purpose is to identify needed maintenance, record measurements and make observations of the dam. This does not need to be done by an engineer. Most dam owners have the dam tender conduct the inspection. Dam Safety Program regional engineers are available to assist with this inspection upon request. Documentation of this annual owner inspection must be sent to the Dam Safety Program regional engineer.
- D. The emergency action plan must also be updated annually that includes checking emergency contact phone numbers. Updates must be sent to all plan holders.

*The above information is an attempt to explain the requirements of the Dam Safety Act (Chapter 15, Title 85, Montana Code Annotated) and Chapter 36.14 of the Administrative Rules and is not a substitute for these statutory and administrative requirements.*