

DAM SAFETY EMERGENCY ACTION PLANS

What is an Emergency Action Plan?

An Emergency Action Plan (EAP) is a formal document that describes procedures to minimize the risk of loss of life and property damage when potential emergency conditions threaten a Hazard Potential Category 1, 2 or 3 dam. The dam owner must prepare an EAP to conform to the law and guidelines established by Pennsylvania's Department of Environmental Protection (DEP) and Pennsylvania's Emergency Management Agency (PEMA). The owner submits the EAP to DEP for review and approval by both agencies.

An emergency at a dam is any condition that endangers the structural integrity of the dam which might result in the dam's failure, thus unexpectedly inundating downstream areas. Such threatening conditions demand immediate action on the part of the owner. Those actions are described beforehand in an approved EAP.

Every EAP is tailored to site specific conditions, as well as the requirements of the owner, agency or organization that operates or regulates use of the dam, and to the emergency response organizations that will respond to the emergency.

What is a Hazard Category 1, 2 or 3 Dam?

Pennsylvania's "Dam Safety and Encroachments Act" defines a high hazard dam as "any dam so located as to endanger populated areas downstream by its failure." Practically, the term "high hazard" refers to a dam whose sudden failure would put the occupants of residential, commercial or industrial structures at risk. The extent of potential loss or damage is determined by a hydraulic engineer's analysis of dam breach scenarios, translated into an inundation map. The inundation map is the most significant feature of an EAP.

Category 1 Hazard potential describes a "high-hazard" dam that could cause substantial loss of life, excessive economic loss, or substantial public inconvenience by its sudden failure. A Category 2, "high hazard" potential dam is one that, in the event of operational or structural failure, could result in the loss of a few lives. Failure of a Category 3, "non-high-hazard" dam, would not likely endanger human life, but could result in appreciable property damage or short duration public inconvenience. Public inconvenience could result from flooding of important roads, washout of a bridge, destruction or disruption of public utilities, etc.

Why Must the Dam Have an EAP?

An EAP is needed for three reasons:

1. To plan the coordination of necessary actions and resources by the dam owner and the responsible local, state and federal emergency organizations.
2. To provide for timely notification or warning for evacuation in the event of an emergency situation at the dam.
3. **It's the law!** Requirements for the design, construction, operation, maintenance and inspection of dams are intended to prevent dam failures. Despite these efforts, abnormal conditions sometimes develop that could threaten a dam's safety. Therefore, Pennsylvania's Dam Safety and Encroachments Act (Act 325 and Act 70) mandates EAPs for Hazard Potential Category 1, 2 and 3 dams.

Regulations in Title 25 of the Pennsylvania Code detail the conditions and requirements of emergency procedures and emergency action and operation plans (25 Pa. Code, Chapter 105 Dam Safety and Waterways Management, Sections 105.63 and 105.134).

The Emergency Management Services Code (35 Pa. C.S. Section 7101 et seq.), as amended, authorizes PEMA to implement a comprehensive emergency management program of prevention, mitigation, preparedness, response and recovery activities for any kind of man-made or natural disaster or emergency.

The dam owner's responsibilities:

1. **Operation** - Quarterly inspections of the dam by the owner or operator with a written, dated log of conditions.
2. **Maintenance** - Cutting vegetation on embankments and within 10 feet of the downstream toe of the dam, checking the dam's appurtenances and operating valves, and performing timely repairs when needed.
3. **Annual dam inspection** (of a "high-hazard" dam) - Annual inspection by an experienced registered, professional engineer, including a field review of the downstream inundation map. This Owner's Annual Inspection Report must be submitted to DEP by December 31 every year.
4. **Developing an EAP**, with assistance by an engineer, local emergency personnel and county emergency management office. Develop an acceptable EAP and update it every five years. When complete, the EAP will be reviewed by PEMA before being approved by DEP.
5. **Review and update EAP**. Every five years a dam owner must thoroughly review and update the EAP as needed. This includes revising the inundation map, obtaining new concurrence signatures, and submitting the revised plan to DEP for review and approval.
6. **Comply with the law!** DEP has the authority to issue Dam Permits and to enforce compliance with Pennsylvania's dam safety laws. The owner's attention to the laws and the dam is the key element of maintaining a dam in safe condition.

For more information contact:

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