

**Final Rulemaking**  
**25. Pa. Code Chapter 105**  
**Dam Safety and Waterway Management**

**Environmental Quality Board**  
**October 12, 2010**

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**Water Management**  
**Pennsylvania Department of**  
**Environmental Protection**



# Background and Purpose

- Clarify application, permitting and construction requirements.
- Revise outdated sections.
- Address findings in audit of the Dam Safety Program by the Auditor General's office.



# Background

- High hazard dam – Failure of the dam has the potential to cause loss of life.
- Hazard Potential Classifications:
  - Category 1 – Substantial loss of life or excessive economic loss.
  - Category 2 – Few loss of life or appreciable economic loss.
  - Category 3 – No loss of life or minimal economic loss.



# Amendments

Update classification of dams and reservoirs:

- Adds a fourth Hazard Potential Category.
- Eliminates confusion of existing regulations having Category 2 High and Category 2 Non-High Dams.
- Brings Pennsylvania's Hazard Potential Categories in line with pending revisions of the National Dam Safety Program.



# Potential Impacts

- Potential impacts from failure of high hazard dams:
  - 1.1 million people
  - 14,450 businesses
  - 350 schools
  - 34 hospitals
  - 275 daycare or assisted living care facilities
  - Personal liability of the dam owner
- If owner is unwilling or unable to take corrective actions to prevent failure, this responsibility and cost may fall to the Commonwealth.



# Amendments

## Proof of financial responsibility:

- Require proof of financial responsibility for the operation and maintenance of all existing High Hazard Potential Dams.
- Allow five years to come into compliance with this requirement.
- Allow the Department to require an increase in the amount of the bond or other legal device as necessary once every ten years unless the facility is being modified by permit.



# Estimated Dam Owner Costs

- Proof of financial responsibility met by providing a Surety Bond or a Collateral Bond in the amount of \$25,000 to \$200,000 per dam.
- The annual cost of the bond to the permittee could range from \$250 to \$4,000 depending on the amount and type of bond.
- Because most privately owned dams are relatively small, the amount of the bond and annual maintenance cost will be toward the lower end of the range.



# Amendments

Update requirements for construction notification

- Require a pre-construction meeting.
- Includes the permittee, the Department, the contractor and the engineer responsible for construction supervision.
- Must be scheduled at least 15 days but not more than 30 days prior to the commencement of construction.
- Permittee must sign form acknowledging the terms, conditions, restrictions and covenants in the permit at the pre-construction meeting.





# Amendments

## Time limits for dam construction or modification

- The Dam Permit or other Department approval for construction or modification will not have an expiration date.
- If authorized work is to commence after December 31 of the 5th year following authorization:
  - The Department must be notified six months prior to the anticipated commencement of work.
  - The Department may require revisions to the design due to changes in site conditions or new technology and will reauthorize the project.
- If the permittee or owner decides not to perform the work, the Department must be notified in writing and the dam permit or Department approval will become void.



# Amendments

Clarify existing requirements for the stability of structures:

- This section was expanded to explain the conditions under which the dam must be demonstrated to be stable.
- Require submittal of “Dam Stability Report”.
- Establish required factors of safety for the different types of dams and the various operating conditions.



# Amendments

Update requirements for establishment of design flood:

- Require Incremental Dam Breach Analysis to determine the spillway design flood for high hazard dams.



# Amendments

## Completion of construction

- Require a final inspection.
- Mandatory attendance of permittee or owner, the permittee or owner's supervising engineer, and the Department's field representative.



# Amendments

Expand requirements for commencement of storage of water, fluid or semi-fluid:

- Requires monitoring plan prior to the filling/refilling of water, fluid or semi-fluid behind a newly constructed or modified dam.



# Amendments

Enhance requirements related to Emergency Action Plan (EAP):

- Requires EAP to be prepared in accordance with the most recent guidelines developed by the Department and PEMA.
- Requires permittee or owner to meet with the county emergency management coordinators to develop the EAP.
- Requires permittee or owner to certify in the annual inspection report that Notices remain posted.
- Requires the EAP to be reviewed and updated every 5 years or the frequency interval indicated in the most recent EAP guidelines or sooner if required by the Department.



# Board Approval and Publication

- The Board approved the proposed rulemaking at its February 16, 2010 meeting.
- The proposed rulemaking was published in the *Pa Bulletin* on April 24, 2010, with a 30-day public comment period.
- In addition to the IRRC, five commentators provided comments to the Board on the proposed rulemaking.



# Advisory Committee Review

- The final rulemaking was presented to WRAC on July 14, 2010 and was approved pending a revision to §105.102.
- WRAC requested §105.102(b) be revised to exclude the Department approval of a professional engineer.
- The Department made this revision to the regulations.





# Public Comment Issues

- **Comment** – Several comments involved issues pertaining to both dams and water obstructions and encroachments.
- **Action** – Language was reverted back to the existing language and these issues will be addressed during the Water Obstructions and Encroachments 105 regulation package currently under review by the Department.



# Public Comment Issues

## 105.96. Outlet works.

- **Recommendation** - Define how to calculate “highest mean monthly inflow.”
- **Definition** - The highest mean monthly flow shall be determined from statistics of an appropriate stream gage, as approved by the Department, transferred to the dam site by the ratio of the drainage areas.



# Public Comment Issues

## 105.97. Stability of Structures.

- **Recommendation** - Remove the required factors of safety and publish them in a separate document, such as design guidance, giving the Department the ability to rapidly respond to advancements in the field of dam engineering rather than revising the regulations.
- **Action** - The Department may, at its discretion, consider a revised factor of safety for a class of dams or reservoirs when it can be demonstrated that the factor of safety provides for the integrity of the dams or reservoirs and adequately protects life and property.



# Recommendation

- EQB Approval

