

Citation

Iowa's dam safety law is contained in Chapter 455B, Division III (Water Quality), Part 4 (Water Allocation and Use), first enacted in 1949, and last amended in 1986. Regulations are in Chapters 70-75 of the Iowa Administrative Code, Title V, Flood Plain Development. The regulations were enacted in 1975, and last amended in 1994.

Definitions/Dam Classification

IAC Chapter 70 defines *Flood Control Works* as “physical works such as dams, levees, floodwalls, and channel improvements or relocations undertaken to provide moderate to high degree of flood protection to existing or proposed structures or land uses.” *Dams* are defined as barriers which impound or store water, and the term *height of dam* is defined in the same section as “the vertical distance from the top of the dam to the natural bed of the stream or watercourse measured at the downstream toe of the dam or to the lowest elevation of the outside limit of the dam if it is not across a watercourse”.

Criteria to be followed in defining a jurisdictional dam are found in Chapter 71 of the regulations, Section 567-71.3. In rural areas, such dams include: a) those designed with a permanent or temporary storage capacity of more than 50 acre-feet at the top of dam elevation, (or 25 acre-feet if the dam does not have an emergency spillway and has a height of 5 feet or more); b) dams with permanent storage in excess of 18 acre-feet and which have a height of five feet or more; dams across streams draining more than 10 square miles; and 3) dams located within 1 mile of a municipality which are 10 feet or more in height, store 10 acre-feet or more at the top of the dam elevation and are situated such that the discharge from the dam will flow through the incorporated area. Dams located in urban areas meeting any of the requirements a), b), or d) above are also jurisdictional dams, as are low head dams located on a stream draining 2 or more square miles in an urban area or 10 or more square miles in a rural area. Approval of the department for construction, operation or maintenance of a dam is required when the dam meets or exceeds the thresholds established by 567-71.3 for rural, urban area, and low head dams. Certain modifications to existing dams and maintenance of pre-existing dams are also covered by this regulation. Hazard classifications are listed in 567-72.3(2).

These include (for dams other than low head dams):

- *Low Hazard* - Structures located in areas where damages from a failure would be limited to the loss of the dam, loss of livestock, damages to farm outbuildings, agricultural lands, and lesser used roads, and where loss of human life is considered unlikely.
- *Moderate Hazard* - Structures located in areas where failure may damage isolated homes, industrial or commercial buildings, moderately traveled roads or railroads, and interrupt utility services, but without substantial risk of loss of life. Structures that of themselves are of public importance are also considered moderate hazard structures.
- *High Hazard* - Structures located in areas where failure may create a serious threat of loss of human life or result in serious damage to residential, industrial or commercial areas, important public utilities, public buildings, or major transportation facilities.
- *Multiple Dams* - Where failure of a dam could contribute to failure of downstream dams, the minimum hazard class of the dam is the same or higher than that of the downstream dams.

Jurisdiction/Powers of Department

The Iowa Department of Natural Resources is responsible for the water resource programs in the state and has jurisdiction over all flood plains and floodways. Section 455B.262-263 of the Iowa Code includes the

declaration of policy and the duties of the Department in this regard. In addition, 567-70.1 of the regulations describes the scope of title of the Department, giving it the authority to “implement a program for the protection of life and property from floods and to promote the orderly development and wise use of the flood plains of the state” Along with these broad powers, the Department is authorized in Section 455B.264 to grant or deny permits upon application for the construction or maintenance of dams.

Other responsibilities of the Department are listed in Sections 455B.271 and 275. These include: the issuance of emergency orders to suspend or restrict water usage; modification or cancellation of a permit for violation of the terms of the permit or the law, or to protect the public health or safety; removal of a structure which affects the efficiency or capacity of the floodway; requirement of a performance bond as a condition of an approval order or permit; the establishment by rule, of thresholds for determining the dimension and effects of dams which will be under department regulation.

Section 455B.276 describes the powers of the Department regarding the establishment of encroachment limits of flood plains, and states that the Department shall also work with local governments in establishing encroachment limits, flood plain regulations, and zoning ordinances relating to flood plain areas within local jurisdictions. Right of entry is specifically authorized in Section 567-73.25 of the regulations as part of the dam safety inspection program.

The power to promulgate rules and regulations is granted to the Department in Iowa Code 455B.278.

Permitting/Approval Process

Section 455B.278 gives the department the authority to establish a process by which permits shall be “issued, suspended, revoked, modified, or denied”, and provides for an appeal and hearing process. Several sections of regulations deal with the permitting process and related requirements. Section 567-70.3 & 4 list the application forms and where they are to be submitted, and describe the requirements for certified engineering plans. Engineering plans shall include information on specifications, operation procedures, and environmental impacts, and must be certified by a registered professional engineer. No fees are charged with the applications.

Section 567-70.5 describes the application review process, including the initial screening, the order of processing, the project investigation, and provisions for the initial decision and appeal thereof. The project investigation involves an inspection, hydraulic review, solicitation of expert comments on environmental effects, notice to affected landowners, and a summary report. General criteria for all regulated dams are listed in Section 567-72.3, and include determination that the dam was designed in accordance with the provisions of department Bulletin No. 16, “Design Criteria and Guidelines for Iowa Dams”, (December 1990).

Other criteria listed in this regulation concern landowner notification and assignment of hazard class. Hazard classes are assigned based on the potential consequences of failure, and shall determine the design requirements of the structure. Details on the design criteria of design floods and embankments, special requirements for major dam structures, as well as hydraulic and structural criteria for spillways are found in Technical Bulletin #16.

Other important guidelines found in this publication are those relating to the preparation of project specifications, dam breach wave analysis, and the development of a written operating plan (required for any dam with gates or other moveable structures). Finally, Section 567-72.3 requires that the determination of lands, easements, and rights-of-way necessary for the construction of a dam project be regulated as part of the design process, and provide guidelines for the acquisition of such. Separate

approvals are required for the raising or lowering of impoundment water levels, and for the removal of dams. Regulations concerning these processes are found in Sections 567-73.2 and 73.11.

Inspection Process

State

The dam safety inspection program is described in Section 567-73.20 through 73.26 of the regulations. Agency inspections are conducted to evaluate the construction, operation, and maintenance of dams, to identify deficiencies in dams, and to identify other structures or uses which may affect the hazard class or use of a dam. Inspection reports are prepared by the department for the purpose of determining whether a project complies with applicable criteria, and whether or not violations of permit regulations, law, or safety conditions exist. All major structures are inspected by agency personnel prior to construction (to determine hazard class), during construction, and when as-built plans and a construction report have been completed. Filling of the impoundment is not allowed until after the acceptance inspection has determined that the dam is consistent with approved plans and the conditions of the agency approval order, and a letter of acceptance has been issued. The regulations require that agency inspections be conducted on a regular basis: once every two years for high hazard structures and once every five years for other major structures. No fees are assessed for agency inspections.

Owner

Dam owners are responsible for annual maintenance inspections and submission of a written inspection report. Inspection requirements for permit approvals for major dam structures are provided for in detail in Department Bulletin #16, Chapter VI, and include the following: soils and foundation investigations, anticipated sedimentation rates, a dam breach wave analysis, a detailed inspection plan, and annual maintenance reports. Construction must also be inspected by a registered engineer, and as-built plans shall be prepared and certified. Inspections of dams other than major structures, milldams, and pre-existing structures are provided for in Section 73.21 of the regulations. Special inspections can be made by department personnel upon notice of the events or conditions listed in Section 567-73.23.

Owner Non-Compliance/Violations/Penalties

Chapter 455B.275(4)(5) of the Iowa Code authorizes the department to maintain an action in equity to enjoin a person from erecting a structure for which a permit has not been granted. The department may also seek judicial abatement of any structure erected or made without a permit, with the costs of abatement to be born by the violator. The department is also authorized to remove, by action in condemnation, a structure that adversely affects the efficiency or restricts the capacity of a floodway. Section 455B.279 describes the department's powers relating to the initiation of legal proceedings necessary to obtain compliance with the law or regulations, and subjects persons who violate such to a civil penalty not to exceed 500 dollars for each day that the violation occurs.

Emergencies

Iowa Administrative Code Sections 567-73.30 to 73.32 provide for procedures and criteria for designating a dam as unsafe, and for agency action concerning an unsafe dam. If the initial agency report "requires emergency remedial work to abate an imminent danger of failure, the director may request the assistance of the attorney general to seek an appropriate judicial order compelling performance of emergency remedial work". There are no direct references to emergency action plans in Iowa's laws or regulations.

Liability

One of the conditions for department approval of an activity or project listed in Section 567-72.30 is that "No legal or financial responsibility arising from the construction or maintenance of the approved works shall attach to the state of Iowa or the agency due to the issuance of an order or administrative waiver".

Oversight

Section 455B.278 describes the process of appealing department orders approving or denying permits, and orders necessary to secure compliance with or prevent a violation of regulations. In both cases, persons affected by such orders may file a notice of appeal within 30 days of the issuance of the order, and the appeal shall be conducted as a contested case according to the provisions of Chapter 17A of the Iowa Code. Section 567-70.6 of the regulations gives further explanation of the appeal process.

Miscellaneous

1. Dam safety laws are contained in the sections of the Iowa Codes dealing with Water Allocation and Use. The majority of the statutes provide for the broader goals of development, use, protection, and conservation of the state's water resources, with dam safety being a part of that larger purpose. Thus many of the statutes speak to water policy and planning issues, beneficial use, coordination between levels of government regarding flood control, permits for diversion, storage, and withdrawal of water, priority allocation of water rights, and well interference.

2. Dam safety regulations are contained in those sections of the administrative code dealing with Flood Plain Development, thus embodying only one aspect of the established purpose of "implementing a program to promote the protection of life and property from floods and to promote the orderly development and wise use of the flood plains of the state". Also contained in the regulations, specifically Chapters 71 and 72, are conditions for approval of bridges and culverts, channel changes, levees or dikes, treatment facilities, landfills, pipelines, buildings, and boat docks. Sections 567-72.50 and 72.51 describe the protected stream designation procedure, and a list of protected streams in the state.

3. Chapter 75 of the regulations explains the process of determining jurisdiction over specific dams and flood plain areas. The department regulates flood plain development in three ways: 1) by issuance of flood plain management orders for specific stream reaches, 2) by approval of flood plain management regulations adopted by local governments, and 3) on a case-by-case basis. Persons wishing to construct or maintain a structure, dam, obstruction, deposit or excavation or allow the same in a flood plain must contact the department to determine whether approval is required from the department or from the local government (567-75.1). The chapter also includes provisions for determining the flooding characteristics of specific streams, encroachment limits defining outer limits of floodways within flood plains, and minimum standards for flood plain and floodway uses.

4. Chapter 76 of the regulations describes the process of notification and coordination of efforts regarding federal water resource projects.

5. Technical Bulletin #16 is published by the department to provide the technical design criteria and guidelines used in reviewing applications for permits. It coordinates and gives references to related regulations, but also explains in detail the requirements for determining hazard classification, design floods and spillway capacities, the design of earth embankments, specifications, operating plans, the determination and acquisition of easements and right-of-ways, and special requirements for major structures. The bulletin also lists hydrologic and hydraulic design references from several sources.

6. Portions of Iowa Code Chapter 469 relating to regulation of milldams by the Department of Natural Resources were repealed by 1990 Iowa Acts, Chapter 108. In effect, the legislation eliminated milldams as a separate class of dam and placed the regulatory control over such dams under the provisions of Iowa Code Section 455B.275, the section of the Iowa Code which gives the Department regulatory authority over all other types of floodplain development, including non-milldams.