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CHAPTER 20

DAM SAFETY STANDARDS

Authority

N.J.S.A. 58:4-1 et seq. and 13:1D-1 et seq.

Source and Effective Date

R.2000 d.219, effective April 28, 2000.  
See: 31 N.J.R. 3897(a), 32 N.J.R. 2081(a).

Executive Order No. 66(1978) Expiration Date

Chapter 20, Dam Safety Standards, expires on April 28, 2005.

Chapter Historical Note

Chapter 20, Bureau of Water Control, was filed and became effective prior to September 1, 1969.

Subchapter 3, , was repealed by R.1977 d.477, effective December 16, 1977. See: 9 N.J.R. 461(a), 10 N.J.R. 10(c).

Chapter 20, , was repealed and a new chapter, Dam Safety Standards, was adopted as R.1985 d.214, effective May 6, 1985. See: 16 N.J.R. 790(a), 17 N.J.R. 1081(a).

Pursuant to Executive Order No. 66(1978), Chapter 20, Dam Safety Standards, was readopted as R.1990 d.276, effective May 2, 1990. See: 22 N.J.R. 279(a), 22 N.J.R. 1760.

Pursuant to Executive Order No. 66(1978), Chapter 20, Dam Safety Standards, was readopted as R.1995 d.266, effective April 28, 1995. See: 27 N.J.R. 795(a), 27 N.J.R. 2210(a).

Pursuant to Executive Order No. 66(1978), Chapter 20, Dam Safety Standards, was readopted as R.2000 d.219, effective April 28, 2000. See: Source and Effective Date. See, also, section annotations.

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DESIGN CRITERIA FOR DAM CONSTRUCTION;  
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Cross References

Flood control, dams, engineering review, see N.J.A.C. § 7:13-2.12.

SUBCHAPTER 1. APPLICATION PROCEDURE;  
DESIGN CRITERIA FOR DAM  
CONSTRUCTION; DAM INSPECTION  
PROCEDURE

7:20-1.1 Scope and applicability

(a) The rules in this subchapter were adopted pursuant to the authority of N.J.S.A. 58:4-1 et seq., as amended by the Safe Dam Act of 1981, and N.J.S.A. 13:1D-1 et seq.

1. These rules set forth procedures for application to construct, repair or modify a dam, as defined in N.J.A.C. 7:20-1.2, and set standards for design and maintenance of dams. These rules also establish a dam inspection procedure.

2. Any dam which raises the waters of a stream five feet or less above its usual, mean, low water height falls under the jurisdiction of the Flood Hazard Area Control Act, N.J.S.A. 58:16A-50 et seq.

3. The requirements in this subchapter shall not affect or relate to a dam or reservoir in the pinelands area, as designated by subsection a. of section 10 of P.L. 1979, c.111 (C. 13:18A-11), which will raise the waters of any river or stream less than eight feet above the surface of the ground where the drainage area above the same is less than one square mile in extent and where the water surface created by the dam or reservoir is less than 100 acres in extent except that the commissioner may investigate and take appropriate action regarding any dam or reservoir about which he has a security or safety concern. With respect to dams and reservoirs located on lands utilized for agricultural or horticultural purposes within the pinelands area, the commissioner's actions shall be undertaken after consultation with the Secretary of Agriculture. See N.J.S.A. 58:4-1, P.L. 1985, c. 33, § 1 and 2.

Amended by R.1990 d.276, effective June 4, 1990.

See: 22 N.J.R. 279(a), 22 N.J.R. 1760(a).

Added authority N.J.S.A. 13:1D-1 et seq.

7:20-1.2 Definitions

The following words and terms, as used in this chapter, shall have the following meanings, unless the context clearly indicates otherwise.

“Applicant” means any person making application for a dam permit.

“Auxiliary spillway” means the second used spillway during flood flows which is not the emergency spillway.

“Dam” means any artificial dike, levee or other barrier, together with appurtenant works, which is constructed for the purpose of impounding water, on a permanent or temporary basis, that raises the water level five feet or more above the usual, mean, low water height when measured from the downstream toe-of-dam to the emergency spillway crest or, in the absence of an emergency spillway, the top-of-dam.

“Department” means the New Jersey Department of Environmental Protection.

“Design freeboard” means the minimum freeboard which would exist during passage of the design flood.

"Division" means the Division of Engineering and Construction in the Department of Environmental Protection.

"Emergency spillway" means the spillway capable of passing the spillway design storm with the principal and/or auxiliary spillway blocked.

"Environmental impact statement" means a report which describes the real and potential impacts which will or may result from the construction and operation of a proposed dam project, the adverse environmental impacts which cannot be avoided, the steps to be taken to minimize adverse impacts and the alternatives to the project with reasons for the acceptability or unacceptability.

1. The report shall address real or potential impacts upon ecology, natural resources, historical and archeological resources, recreational resources, aesthetic resources, endangered and non-game species, fisheries and any other identifiable impacts; and

2. The report shall include a listing of qualifications of those preparing the report and a reference list of pertinent published information relating to the project, the project site and the surrounding region.

"Formal inspection" means the inspection by a New Jersey licensed professional engineer to reevaluate the safety and integrity of the dam and appurtenant structures to determine if the structure meets current design criteria, including a field inspection and a review of the records on project design, construction and performance.

"Freeboard" means the vertical dimension between the crest of the embankment of a dam (without camber) and the reservoir water surface at the spillway design flood stage.

"Height-of-dam" means the vertical dimension from the lowest point in the stream bed or ground surface at the downstream toe of the dam to the elevation of the top of dam (without camber).

"Independent Review Board" means one or more independent professional engineers who are qualified in the design, construction and rehabilitation of dams to perform a review of the project design and construction.

"Informal inspection" means the visual inspection of the dam by the dam owner or operator to detect apparent signs of deterioration or other deficiencies of the dam structure or function.

"Levee" or "dike" means any artificial barrier together with appurtenant works that will divert or restrain the flow of a stream or river.

"One-hundred-year storm" means the storm which is estimated to have a one percent chance, or one chance in 100, of being equalled or exceeded in any one year.

"Outlet" means an opening through which water can be freely discharged from a reservoir for a particular purpose.

"Owner and/or operator" means any person who owns, controls, operates, maintains, manages or proposes to construct a dam.

"Permit" or "dam permit" means all approvals required under N.J.S.A. 58:4-1 et seq. for the construction and operation of a dam.

"Person" means any individual, proprietorship, partnership, association, corporation, municipality, county or public agency.

"Pipe conduit" means any hollow tube which conveys water through a dam from a reservoir, either as a spillway or as a drain.

"Principal spillway" means the primary or first used spillway during normal inflow and flood flows.

"Probable maximum precipitation" or "(PMP)" means the theoretically greatest depth of precipitation for a given duration that is physically possible, over a given size storm area, at a particular geographic location, at a certain time of year.

"Regular inspection" means the visual inspection of a dam by a New Jersey licensed professional engineer to detect any signs of deterioration in material, developing weaknesses or unsafe hydraulic or structural behavior.

"Reservoir" means any impoundment or any potential impoundment that will be created by a dam, dike or levee.

"Spillway" means a structure other than low flow outlets, over or through which flood flows are discharged.

"Spillway design storm" means the storm upon which the hydraulic capacity of the spillway structure is designed.

"Toe-of-dam" means the junction of the downstream face of a dam with the ground surface or the invert of the outlet pipe, whichever is the lowest point.

Amended by R.1990 d.276, effective June 4, 1990.

See: 22 N.J.R. 279(a), 22 N.J.R. 1760(a).

Added "Emergency spillway", "Independent Review Board", and "Toe-of-dam". Revised "Division" and "Height-of-dam".

Amended by R.1995 d.266, effective June 5, 1995.

See: 27 N.J.R. 795(a), 27 N.J.R. 2210(a).

### 7:20-1.3 Permit-by-rule

(a) All dams must be designed, constructed, operated, maintained or removed in compliance with the rules in this subchapter except as set forth below:

1. Owners and operators of Class IV dams (see N.J.A.C. 7:20-1.8, Dam classification) are not required to file documents with nor obtain a permit from the Department, but must meet the following requirements, in addition to those set forth elsewhere in this subchapter:

i. Design must be based upon a spillway design storm that results from a rainfall of 50 percent greater than a 24-hour, 100-year, Type III storm (Later technology adopted by the United States Department of Agriculture, Soil Conservation Service may be substituted for the use of the Type III storm.); and

ii. All necessary local approvals must be obtained; and

iii. A New Jersey licensed professional engineer must design the Class IV Dam to meet all technical requirements of this subchapter.

2. Owners and operators of Class III agricultural impoundments, meaning any impoundment used for fish and wildlife, fire control or livestock or crop production and maintenance, where the drainage area is less than one-half square mile in extent, must meet only the following requirements:

i. All necessary local approvals must be obtained; and

ii. Design and construction must be supervised by the United States Department of Agriculture, Soil Conservation Service.

(b) The Department may, in its discretion, require the owner or operator of any dam subject to (a) above to obtain a permit and/or to submit any information relating to dam design, construction, operation or maintenance.

(c) The Department may, in its discretion, require the owner or operator of any dam to make modification of the design, construction or operation of the dam in order to comply with the intent of this chapter and the Safe Dam Act, N.J.S.A. 58:4-1 et seq.

Amended by R.1990 d.276, effective June 4, 1990.

See: 22 N.J.R. 279(a), 22 N.J.R. 1760(a).

In (a), added "or removed"; in (a)1ii.

Type III was Type II; deleted (a)3.

Amended by R.1995 d.266, effective June 5, 1995.

See: 27 N.J.R. 795(a), 27 N.J.R. 2210(a).

Added (a)1.iii.

#### 7:20-1.4 General requirements and prohibitions

(a) No person may construct or operate a new dam or modify or repair an existing dam without first having obtained a permit from the Department, unless subject to the permit-by-rule provision in N.J.A.C. 7:20-1.3. Where emergency circumstances justify, repairs of a dam may be undertaken prior to obtaining a permit, in accordance with (i) below.

(b) No dam may be approved by the Department where, in the opinion of the Department, there is an unacceptable potential for harm to human health or to human safety.

(c) Backwater created by a dam during a 100-year storm shall be the minimum which is contained within the applicant's property unless written consent is obtained from all potentially affected property owners. Effects on both surface and ground water shall be considered, during normal pool conditions.

(d) No person may construct a dam in any waterway of this State which is a runway for migratory fish, without installing a fish ladder or other approved structure to permit the fish to pass the dam in either direction (see N.J.S.A. 23:5-29.1).

1. This provision is applicable to dams of any size.

2. The Department will determine whether a stream is currently a runway for migratory fish, during the review of the dam permit application. Applicants should consult the Division of Fish, Game and Wildlife in this matter prior to finalizing the application.

(e) Unless otherwise approved by the Department, dam construction shall commence within one year from the date of the permit and be completed within two years from the said date or the permit will become null and void. For good cause shown, the Department may extend the two year construction deadline for a total of no more than five years, one year at a time. Applicants must make written request for an extension, prior to the expiration date of the permit or prior extension.

(f) No action shall be brought against the State or the Department or its agents or employees for the recovery of damages caused by the partial or total failure of any dam or reservoir or through the operation of any dam or reservoir upon the ground that the Department is liable by virtue of any of the following:

1. The approval of the dam or reservoir, or approval of flood handling plans during construction.

2. The issuance or enforcement of orders relative to maintenance or operation of the dam or reservoir.

3. Control, regulation and inspection of the dam or reservoir.

4. Measures taken to protect against failure during an emergency.

(g) The Department may deny any application for a dam permit, based upon its conclusion that the construction or operation of dam will cause an unacceptable threat to or impact on natural or cultural resources or the environment.

(h) The Department shall be notified immediately by the owner or operator upon the detection of any condition which may jeopardize the safety of the structure.

(i) Situations which threaten the public health, safety and welfare and require emergency dam repair will be considered by the Department under the following procedure:

1. The owner or operator shall inform the Department by telephone as to the extent of work to be performed, the reason for the emergency and the location of the project.

2. The owner or operator shall perform the emergency work upon verbal approval of the Department, which approval shall be verified by the Department in writing within three working days. The Department shall offer guidance and instructions in performing the work.

3. After the work has been completed in accordance with the Department's instructions, the owner or operator shall submit a dam permit application and "as built" drawings to the Department for review. A letter shall be issued by Department in lieu of a dam permit.

(j) The Department shall be notified in writing on or before the transfer of dam ownership.

(k) Unless otherwise approved by the Department in writing, no person shall dredge within 200 feet of a dam.

(l) Utilities crossing within dam embankments are prohibited unless demonstrated to the satisfaction of the Department that such utilities will not jeopardize the safety of the dam.

(m) No person shall remove or breach an existing dam without first having obtained a permit from the Department unless subject to the permit-by-rule provisions in N.J.A.C. 7:20-1.3.

(n) Unless otherwise approved by the Department, no trees shall be permitted to grow on the dam embankment.

Amended by R.1990 d.276, effective June 4, 1990.

See: 22 N.J.R. 279(a), 22 N.J.R. 1760(a).

Added new (i), redesignated existing (i) as (j), and stipulated the "owner or operator" as responsible party in (j)1 through 3. Added (k) through (n).

Amended by R.1995 d.266, effective June 5, 1995.

See: 27 N.J.R. 795(a), 27 N.J.R. 2210(a).

Deleted (h); recodified existing (i) to (m) as (h) to (l); and added (n).

#### Case Notes

Definition of structure in former Bureau of Water Control regulation cited to permit removal or repair of stream-side landfill by state agency; denial of landfill permit reversed and remanded. *Deskovick v. Water Policy and Supply Council*, 157 N.J.Super. 89, 384 A.2d 554 (App.Div. 1978), certiorari granted 77 N.J. 482, 391 A.2d 497 (1978), certiorari dismissed 78 N.J. 410, 396 A.2d 597 (1978).

#### 7:20-1.5 General application procedures

(a) The procedures for applying for a dam construction, modification or repair permit and for submitting the supporting engineering documents, include the preapplication stage and the application stage, as described below. For Class III dams (see N.J.A.C. 7:20-1.8) all required information may be submitted at one time, with such detail as is appropriate to the safe design of the type of structure proposed.

(b) The applicant for a dam permit must use a New Jersey licensed professional engineer to prepare the plans and specifications and to supervise inspection of the construction.

(c) The Department may require any owner or operator of an existing dam to obtain a permit for repair or modification of the dam and appurtenances where:

1. Repair or modification is necessary to insure protection of human health or safety; or

2. Modification is required to comply with the provisions of this chapter, unless the following circumstances exist:

i. Compliance is impracticable; and

ii. Noncompliance poses no unacceptable threat to human health or safety.

(d) Appeal procedures; permit denials

1. An applicant for a dam permit may request in writing an administrative hearing from the Department within 15 days of receipt of the decision by the Department to deny the application. The request for a hearing shall be sent to the Office of Legal Affairs, ATTENTION: Adjudicatory Hearing Requests, Department of Environmental Protection and Energy, CN 402, Trenton, New Jersey 08625-0402.

2. The request for a hearing shall specify in detail the basis for the request, including all issues of fact or law. The Department may attempt to settle the dispute by conducting such proceedings, meetings and conferences as deemed appropriate. Should the efforts to settle the dispute fail and if the Department determines that the matter is a contested case, the Department shall forward the request for a hearing to the Office of Administrative Law, pursuant to the provisions of the Administrative Procedure Act (N.J.S.A. 52:14B-1 et seq.).

(e) Applicants for a dam permit for a Class III dam, as defined pursuant to N.J.A.C. 7:20-1.8, may submit a preliminary application, which should include that information needed to establish a Class III hazard classification. Thereafter, in its discretion, the Department may waive certain documentation and inspection requirements set forth in these rules.

Amended by R.1990 d.276, effective June 4, 1990.

See: 22 N.J.R. 279(a), 22 N.J.R. 1760(a).

Added (e).

Administrative change in (d)1.

See: 23 N.J.R. 3325(b).

#### 7:20-1.6 Preapplication stage

(a) The applicant must submit a written Preliminary Report which must include the following: