Alaska Dam Safety Program

HAZARD POTENTIAL CLASSIFICATION AND JURISDICTIONAL REVIEW

This form is used to review and indicate the hazard potential classification of an artificial barrier in accordance with 11 AAC 93.157 and to determine if the barrier is a dam under the jurisdiction of the Alaska dam safety regulations, based on the definition articulated under Alaska Statute 46.17.900 (3), and summarized as follows:

"Dam" includes an artificial barrier, and its appurtenant works, which may impound or divert water and which...

- has or will have an impounding capacity at maximum water storage elevation of 50 acre-feet and is at least 10 feet in height measured from the lowest point at either the upstream or downstream toe of the dam to the crest of the dam; or
- is at least 20 feet in height measured from the lowest point at either the upstream or downstream toe of the dam to the crest of the dam; or
- poses a threat to lives and property as determined by the department after an inspection.

In accordance with 11 AAC 93.151, an artificial barrier with a Class I or Class II designation is determined to meet the third definition of a dam, regardless of its geometry.

Please complete items 1 through 20. Attach additional information as necessary. This form must be certified and stamped on page 3 by an Alaska-registered professional engineer, qualified in accordance with 11 AAC 93.193.

1. Name of barrier: _____

   National Inventory of Dams (NID) number: _____ (Assigned by Department)

   Name of stream: _____

   General location and region: _____

   Legal location: Township _____ Range _____ Section _____ Meridian _____

   Purpose and type of barrier: _____

   This barrier is: ❑ Existing ❑ Proposed ❑ Under construction

   Current hazard potential classification: ❑ I ❑ II ❑ III ❑ Not assigned

2. Owner: _____

   Address: _____

   _____

   Contact name: _____

   Phone: _____

3. Is barrier federally owned, or regulated by the Federal Energy Regulatory Commission?

   ❑ Yes (stop here) ❑ No (complete form)

4. Maximum crest height of barrier: _____ feet
   Measured from: ❑ Upstream toe ❑ Downstream toe ❑ Offstream toe
   Basis of height: ❑ Conceptual design drawing ❑ Detailed design drawing
   ❑ As-built drawing ❑ Field measurement ❑ NID data

5. Maximum impoundment volume: _____ acre-feet
   Surface area of reservoir at maximum storage: _____ acres
   Average depth of reservoir above bottom of barrier: _____feet (live storage)
   Basis of volume estimate:
   ❑ Surface area multiplied by average depth
   ❑ Bathymetry
   ❑ NID data
   ❑ Other: _____

6. Downstream development: ❑ Yes ❑ No ❑ Unknown
   Type of development (check all that apply):
   - ❑ Homes
   - ❑ School
   - ❑ Community halls, churches, etc.
   - ❑ Industrial or commercial property
   - ❑ Major highway
   - ❑ Primary roads
   - ❑ Secondary or rural roads
   - ❑ Railroads
   - ❑ Power or communication utilities
   - ❑ Water or wastewater treatment facilities or lines
   - ❑ Overnight campgrounds
   - ❑ Public parks or trails
   - ❑ Fish hatchery or processor
   - ❑ Barrier owner's property or facilities
   - ❑ Other utilities:_____
   - ❑ Other development:_____

   Basis of observations: ❑ Ground reconnaissance ❑ Aerial reconnaissance
   ❑ Aerial photo ❑ Other: _____
   Date of observations:_____

7. Proximity of development to downstream channel (add maps or other information as necessary):
   Distance downstream from barrier: _____
   Distance from stream bed: _____
   Relative elevation above streambed: _____

8. Is development in the inundation zone of a flood from an uncontrolled release of water from the barrier?
   ❑ Yes ❑ No ❑ Unknown

9. Was a dam break analysis conducted? ❑ Yes ❑ No

   What model was used to determine inundation zone: : _____
   (Please attach calculations)

   Maximum depth and velocity of flow through development: _____

10. Is development at risk from improper operation or a "sunny day" failure?
    ❑ Yes ❑ No ❑ Unknown

11. Is development at risk from an incremental increase in the flood if the barrier fails under flood conditions?
    ❑ Yes ❑ No ❑ Unknown
    Flood condition evaluated: ❑ 100 year ❑ ½ PMF ❑ PMF ❑ Other_____

12. Could an uncontrolled release cause other significant property damage or loss?
❑ Yes ❑ No ❑ Unknown
Description: _____

13. Could an uncontrolled release effect public health? ❑ Yes ❑ No ❑ Unknown
Description: _____

14. Is the reservoir created by the barrier the primary water supply for a community of more than 500 residents? ❑ Yes ❑ No ❑ Unknown

Is a backup water supply available? ❑ Yes ❑ No ❑ Unknown ❑ N/A

15. Is barrier located on waters important to anadromous fish? ❑ Yes ❑ No ❑ Unknown

Are anadromous fish waters at risk of damage or loss if an uncontrolled release occurs?
❑ Yes ❑ No ❑ Unknown ❑ N/A

16. Does the barrier contain mine mill tailings, process water or contact water?
❑ Yes ❑ No

17. Proposed hazard potential classification: ❑ Class I (High) ❑ Class II (Significant) ❑ Class III (Low)

18. Basis of classification:
❑ Quantitative - Numerical dam break analysis conducted
❑ Qualitative - Limited engineering calculations
❑ Preliminary - No engineering calculations

19. Comments: _____

20. Certified by: _____ (Print name)

Date: _____

Company: _____

Phone: _____

Engineer's Seal and Signature

Notes:

1. *This form must be certified and stamped by an Alaska-registered professional engineer qualified in accordance with 11 AAC 93.193.*
2. *The information presented in this form may be overruled based on current data that reveals a higher level of confidence in the quality of information necessary to make the appropriate determinations.*
3. *Anadromous fish waters are determined in accordance with 11 AAC 195.010 (a).*
4. *Alaska dam safety regulations are articulated under 11 AAC 93.151 through 11 AC 93.291 (Article 3).*

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Jurisdictional Status of Barrier:

❑ Dam under state jurisdiction

Reasons:
- ❑ Height
- ❑ Height and storage volume
- ❑ Hazard potential classification
- ❑ Anadromous fish stream
- ❑ Other:_____

❑ Barrier is not a dam under state jurisdiction

Reasons:
- ❑ Height
- ❑ Height and storage volume
- ❑ Hazard potential classification
- ❑ Federal ownership or regulation
- ❑ Other:_____

Concur with proposed hazard potential classification: ❑ Yes ❑ No

Hazard potential classification based on current information: ❑ Yes ❑ No

Official hazard potential classification:

❑ Class I (High) ❑ Class II (Significant) ❑ Class III (Low)

Comments:_____

Reviewed by: _____

Title: _____

Signature: _____

Date: _____

11 AAC 93.157. Hazard classification

(a) In order to determine design, operation, inspection, maintenance, emergency action, and reporting criteria under AS 46.17 and 11 AAC 93.151 - 11 AAC 93.201, the department will periodically review and classify each artificial barrier according to the barrier's potential danger to life or property, and will assign the barrier one of the following hazard potential classifications:

(1) a Class I (high) hazard potential classification, if the department determines that the failure or improper operation of the barrier will result in probable loss of human life;

(2) a Class II (significant) hazard potential classification, if the department determines that the failure or improper operation of the barrier will result in

(A) a significant danger to public health;

(B) the probable loss of or probable significant damage to homes, occupied structures, commercial property, high-value property, major highways, primary roads, railroads, or public utilities, other than losses described in (3)(B) of this subsection;

(C) other probable significant property losses or damage, other than losses described in (3)(B) of this subsection; or

(D) probable loss of or significant damage to waters identified under 11 AAC 195.010(a) as important for the spawning, rearing, or migration of anadromous fish; or

(3) a Class III (low) hazard potential classification if the department determines that the failure or improper operation of the barrier will result in

(A) limited impacts to rural or undeveloped land, rural or secondary roads, and structures;

(B) property losses or damage limited to the owner of the barrier; or

(C) insignificant danger to public health.

(b) As necessary to obtain accurate information for a review and classification under (a) of this section, the department will require the owner of an artificial barrier to submit the following information, on a form provided by the department and sealed by an engineer qualified under 11 AAC 93.193(a) :

(1) the type and height of the barrier and the impounding capacity of the reservoir at the maximum storage elevation;

(2) the name of the water body, the location of the barrier and a description of the area downstream;

(3) a proposed hazard potential classification, and any supporting information for that proposed classification; supporting information may include maps, an inundation map prepared in substantial accordance with 11 AAC 93.195, a dam break analysis, photographs, and engineering calculations.

(c) The department may reject a hazard potential classification proposed under (b)(3) of this section and require the owner to submit additional information if the department determines that the

(1) engineer who sealed that information is not qualified under 11 AAC 93.193(a) ; or

(2) information previously provided is insufficient for the department to assign that hazard potential classification.

(d) The department may assign an artificial barrier a higher hazard potential classification than one proposed under (b)(3) of this section. The department will assign the barrier a hazard potential classification based on the level of information readily available regarding the barrier and its potential hazards.

NOTE: *This excerpt from 11 AAC 93 is for information only and is not an official document. The official version may be viewed at the following address: http://www.legis.state.ak.us/basis/folio.asp).*