

VIRGINIA SOIL AND WATER CONSERVATION BOARD
CHAPTER 20
IMPOUNDING STRUCTURE REGULATIONS

November 2, 2011 Draft Version –Amend Sections Only

Part I
General

4VAC50-20-30. Definitions.

The following words and terms when used in this chapter shall have the following meanings unless the context clearly indicates otherwise:

"Acre-foot" means a unit of volume equal to 43,560 cubic feet or 325,853 gallons (equivalent to one foot of depth over one acre of area).

"Agricultural purpose" means the production of an agricultural commodity as defined in ~~§ 3.1-249.27~~ § 3.2-3900 of the Code of Virginia that requires the use of impounded waters.

"Agricultural purpose dams" means impounding structures which are less than 25 feet in height or which create a maximum impoundment smaller than 100 acre-feet, and operated primarily for agricultural purposes.

"Alteration" means changes to an impounding structure that could alter or affect its structural integrity. Alterations include, but are not limited to, changing the height or otherwise enlarging the dam, increasing normal pool or principal spillway elevation or physical dimensions, changing the elevation or physical dimensions of the emergency spillway, conducting necessary structural repairs or structural maintenance, or removing the impounding structure. Structural maintenance does not include routine maintenance.

"Alteration permit" means a permit required for any alteration to an impounding structure.

"Annual average daily traffic" or "AADT" means the total volume of vehicle traffic of a highway or road for a year divided by 365 days and is a measure used in transportation planning and transportation engineering of how busy a road is.

"Board" means the Virginia Soil and Water Conservation Board.

"Conditional Operation and Maintenance Certificate" means a certificate required for impounding structures with deficiencies.

"Construction" means the construction of a new impounding structure.

"Construction permit" means a permit required for the construction of a new impounding structure.

"Dam break inundation zone" means the area downstream of a dam that would be inundated or otherwise directly affected by the failure of a dam.

"Department" means the Virginia Department of Conservation and Recreation.

"Design flood" means the calculated volume of runoff and the resulting peak discharge utilized in the evaluation, design, construction, operation and maintenance of the impounding structure.

"Director" means the Director of the Department of Conservation and Recreation or his designee.

"Drill" means a type of emergency action plan exercise that tests, develops, or maintains skills in an emergency response procedure. During a drill, participants perform an in-house exercise to verify telephone numbers and other means of communication

47 along with the owner's response. A drill is considered a necessary part of ongoing
48 training.

49 "Emergency Action Plan or EAP" means a formal document that recognizes
50 potential impounding structure emergency conditions and specifies preplanned actions to
51 be followed to minimize loss of life and property damage. The EAP specifies actions the
52 owner must take to minimize or alleviate emergency conditions at the impounding
53 structure. It contains procedures and information to assist the owner in issuing early
54 warning and notification messages to responsible emergency management authorities. It
55 shall also contain dam break inundation zone maps as required to show emergency
56 management authorities the critical areas for action in case of emergency.

57 "Emergency Action Plan Exercise" means an activity designed to promote
58 emergency preparedness; test or evaluate EAPs, procedures, or facilities; train personnel
59 in emergency management duties; and demonstrate operational capability. In response to
60 a simulated event, exercises should consist of the performance of duties, tasks, or
61 operations very similar to the way they would be performed in a real emergency. An
62 exercise may include but not be limited to drills and tabletop exercises.

63 "Emergency Preparedness Plan" means a formal document prepared for Low
64 Hazard impounding structures that provides maps and procedures for notifying owners of
65 downstream property that may be impacted by an emergency situation at an impounding
66 structure.

67 "Existing impounding structure" means any impounding structure in existence or
68 under a construction permit prior to July 1, 2010.

69 "Freeboard" means the vertical distance between the maximum water surface
70 elevation associated with the spillway design flood and the top of the impounding
71 structure.

72 "Height" means the hydraulic height of an impounding structure. If the
73 impounding structure spans a stream or watercourse, height means the vertical distance
74 from the natural bed of the stream or watercourse measured at the downstream toe of the
75 impounding structure to the top of the impounding structure. If the impounding structure
76 does not span a stream or watercourse, height means the vertical distance from the lowest
77 elevation of the downstream limit of the barrier to the top of the impounding structure.

78 "Impounding structure" or "dam" means a man-made structure, whether a dam
79 across a watercourse or structure outside a watercourse, used or to be used to retain or
80 store waters or other materials. The term includes: (i) all dams that are 25 feet or greater
81 in height and that create an impoundment capacity of 15 acre-feet or greater, and (ii) all
82 dams that are six feet or greater in height and that create an impoundment capacity of 50
83 acre-feet or greater. The term "impounding structure" shall not include: (a) dams
84 licensed by the State Corporation Commission that are subject to a safety inspection
85 program; (b) dams owned or licensed by the United States government; (c) dams
86 operated primarily for agricultural purposes which are less than 25 feet in height or which
87 create a maximum impoundment capacity smaller than 100 acre-feet; (d) water or silt
88 retaining dams approved pursuant to § 45.1-222 or § 45.1-225.1 of the Code of Virginia;
89 or (e) obstructions in a canal used to raise or lower water.

90 "Impoundment" means a body of water or other materials the storage of which is
91 caused by any impounding structure.

92 "Life of the impounding structure" and "life of the project" mean that period of time for
93 which the impounding structure is designed and planned to perform effectively, including
94 the time required to remove the structure when it is no longer capable of functioning as
95 planned and designed.

96 "Maximum impounding capacity" means the volume of water or other materials
97 in acre-feet that is capable of being impounded at the top of the impounding structure.

98 "New construction" means any impounding structure issued a construction permit
99 or otherwise constructed on or after July 1, 2010.

100 "Normal or typical water surface elevation" means the water surface elevation at
101 the crest of the lowest ungated outlet from the impoundment or the elevation of the
102 normal pool of the impoundment if different than the water surface elevation at the crest
103 of the lowest ungated outlet. For calculating sunny day failures for flood control
104 impounding structures, stormwater detention impounding structures, and related facilities
105 designed to hold back volumes of water for slow release, the normal or typical water
106 surface elevation shall be measured at the crest of the auxiliary or emergency spillway.

107 "Operation and Maintenance Certificate" means a certificate required for the
108 operation and maintenance of all impounding structures.

109 "Owner" means the owner of the land on which an impounding structure is
110 situated, the holder of an easement permitting the construction of an impounding
111 structure and any person or entity agreeing to maintain an impounding structure. The
112 term "owner" may include the Commonwealth or any of its political subdivisions,
113 including but not limited to sanitation district commissions and authorities, any public or
114 private institutions, corporations, associations, firms or companies organized or existing
115 under the laws of this Commonwealth or any other state or country, as well as any person
116 or group of persons acting individually or as a group.

117 "Planned land use" means land use that has been approved by a locality or
118 included in a master land use plan by a locality, such as in a locality's comprehensive
119 land use plan.

120 "Spillway" means a structure to provide for the controlled release of flows from
121 the impounding structure into a downstream area.

122 "Stage I Condition" means a flood watch or heavy continuous rain or excessive
123 flow of water from ice or snow melt.

124 "Stage II Condition" means a flood watch or emergency spillway activation or
125 impounding structure overtopping where a failure may be possible.

126 "Stage III Condition" means an emergency spillway activation or impounding
127 structure overtopping where imminent failure is probable.

128 "Sunny day dam failure" means the failure of an impounding structure with the
129 initial water level at the normal reservoir level, usually at the lowest ungated principal
130 spillway elevation or the typical operating water level.

131 "Tabletop Exercise" means a type of emergency action plan exercise that involves
132 a meeting of the impounding structure owner and the state and local emergency
133 management officials in a conference room environment. The format is usually informal
134 with minimum stress involved. The exercise begins with the description of a simulated
135 event and proceeds with discussions by the participants to evaluate the EAP and response
136 procedures and to resolve concerns regarding coordination and responsibilities.

137 "Top of the impounding structure" means the lowest point of the nonoverflow
138 section of the impounding structure.

139 "Watercourse" means a natural channel having a well-defined bed and banks and
140 in which water normally flows.

141
142 **4VAC50-20-40. Hazard potential classifications of impounding structures.**

143 A. Impounding structures shall be classified in one of three hazard classifications
144 as defined in subsection B of this section and Table 1.

145 B. For the purpose of this chapter, hazards pertain to potential loss of human life
146 or damage to the property of others downstream from the impounding structure in event
147 of failure or faulty operation of the impounding structure or appurtenant facilities.

148 Hazard potential classifications of impounding structures are as follows:

149 1. High Hazard Potential is defined where an impounding structure failure will
150 cause probable loss of life or serious economic damage. "Probable loss of life" means
151 that impacts will occur that are likely to cause a loss of human life, including but not
152 limited to impacts to residences, businesses, other occupied structures, or major
153 roadways. Economic damage may occur to, but not be limited to, building(s), industrial
154 or commercial facilities, public utilities, major roadways, railroads, personal property,
155 and agricultural interests. "Major roadways" include, but are not limited to, interstates,
156 primary highways, high-volume urban streets, or other high-volume roadways, except
157 those having an AADT volume of 400 vehicles or less in accordance with subsection 45.

158 2. Significant Hazard Potential is defined where an impounding structure failure
159 may cause the loss of life or appreciable economic damage. "May cause loss of life"
160 means that impacts will occur that could cause a loss of human life, including but not
161 limited to impacts to facilities that are frequently utilized by humans other than
162 residences, businesses, or other occupied structures, or to secondary roadways.
163 Economic damage may occur to, but not be limited to, building(s), industrial or
164 commercial facilities, public utilities, secondary roadways, railroads, personal property,
165 and agricultural interests. "Secondary roadways" include, but are not limited to,
166 secondary highways, low-volume urban streets, service roads, or other low-volume
167 roadways, except those having an AADT volume of 400 vehicles or less in accordance
168 with subsection 45.

169 3. Low Hazard Potential is defined where an impounding structure failure would
170 result in no expected loss of life and would cause no more than minimal economic
171 damage. "No expected loss of life" means no loss of human life is anticipated.

172 C. ~~The hazard potential classification shall be proposed by the owner and shall be~~
173 ~~subject to approval by the board.~~ To support the appropriate hazard potential
174 classification, dam break analysis shall be conducted by the owner's engineer or the
175 department in accordance with one of the following alternatives utilizing procedures set
176 out in 4VAC50-20-54.: ~~Present and planned land use for which a development plan has~~
177 ~~been officially approved by the locality in the dam break inundation zones downstream~~
178 ~~from the impounding structure shall be considered in determining the classification.~~

179 1. The owner of an impounding structure that does not currently hold a regular or
180 conditional certificate from the board, or the owner of an impounding structure that is
181 already under certificate but the owner believes that the condition has changed
182 downstream of the impounding structure that may reduce its hazard potential

183 classification, may request in writing that the department conduct a simplified dam break
184 inundation zone analysis to determine whether the impounding structure has a low hazard
185 potential classification. The owner shall pay a fee to the department in accordance with
186 4VAC50-20-395 for conducting ~~such an~~ each requested analysis. The department shall
187 address requests in the order received and shall strive to complete analyses within 90
188 days; or

189 2. The owner may propose a hazard potential classification that shall be subject to
190 approval by the board. To support the proposed hazard potential classification, an
191 analysis shall be conducted by the owner's engineer.

192 D. Findings of the analysis conducted pursuant to subsection C, shall result in one
193 of the following actions:

194 1. For findings by the department resulting from analyses conducted in
195 accordance with subsection DC, subdivision 1:

196 a. If the department finds that the impounding structure appears to have a low
197 hazard potential classification, the owner may be eligible for general permit coverage in
198 accordance with 4VAC50-20-103;

199 b. If the department finds that the impounding structure appears to be a high or
200 significant hazard potential classification, the owner's engineer shall provide further
201 analysis in accordance with the procedures set out in 4VAC50-20-54 and this article.
202 The owner may be eligible for grant assistance from the Dam Safety, Flood Prevention
203 and Protection Assistance Fund in accordance with §10.1-603.16 et seq.

204 2. For findings by the owner's engineer resulting from analyses conducted in
205 accordance with subsection DC, subdivision 2:

206 a. If the engineer finds that the impounding structure has a low hazard potential
207 classification, the owner may be eligible for general permit coverage in accordance with
208 4VAC50-20-103;

209 b. If the engineer finds that the impounding structure appears to be a high or
210 significant hazard potential classification, then the owner shall comply with the
211 applicable certification requirements set out in this article.

212 E. An incremental damage analysis in accordance with 4VAC50-20-52 may be
213 utilized as part of hazard potential classification by the owner's engineer.

214 DF. The hazard potential classification shall be proposed and certified by the
215 owner and shall be subject to approval by the board. Impounding structures shall be
216 subject to reclassification by the board as necessary.

217

218 **4VAC50-20-45. Hazard potential classifications based on low volume roadways.**

219 A. All impacted public and private roadways downstream or across an
220 impounding structure shall be considered in determining hazard potential classification.
221 To determine whether a road is impacted by a dam failure, one of the following
222 methodologies shall be utilized:

223 1. Section IV, Part D of the United States Department of Interior, Bureau of
224 Reclamation's ACER Technical Memorandum No. 11. An impact shall be deemed to
225 occur where there are one or more lives in jeopardy as a result of a dam failure; or

226 2. An approach to determining impacts to roadways found in any document that is
227 in the list of acceptable references set out in 4VAC50-20-320. The owner's engineer
228 shall reference the methodology utilized; or

229 3. Any roadway that would be overtopped, at any depth, by a dam failure under
230 any flood or nonflood condition, including but not limited to probable maximum flood,
231 spillway design flood, or sunny day, as determined using analysis procedures set out in
232 4VAC50-20-54.

233 In all cases, an incremental damage analysis conducted in accordance with
234 4VAC50-20-52 may be utilized to further refine what roads should be considered
235 impacted.

236 B. In certain cases, an impounding structure may qualify for low hazard potential
237 classification in spite of a potential impact to a downstream public or private roadway. If
238 a roadway is found to be impacted in accordance with subsection A, and other factors
239 such as downstream residences, businesses, or other concerns as set forth in this article
240 that would raise the hazard potential classification do not exist, such classification may be
241 adjusted in accordance with this section dependent on vehicle traffic volume, based on
242 AADT, and roadway type.

243 C. For the purposes of determining AADT volume, one of the following
244 techniques may be utilized using data obtained within the last year except as otherwise
245 set out in subdivision 1:

246 1. The AADT volumes available in the most recent published Daily Traffic
247 Volume Estimates from the Virginia Department of Transportation for the road segment
248 nearest the impounding structure shall be utilized. This information is available from
249 VDOT at <http://www.virginiadot.org/info/ct-TrafficCounts.asp>;

250 2. Data developed by a local government may be utilized where the locality
251 conducts its own traffic counts;

252 3. Where AADT volumes are not available from VDOT or a locality, an Average
253 Daily Traffic trip rate that meets the standards set forth in the most recent Institute for
254 Traffic Engineers (ITE) ITE Trip Generation information report (available for ordering
255 online at <http://www.ite.org/tripgen/trippubs.asp>) may be utilized if practicable; or

256 4) In all cases, average daily traffic volumes may also be established by a traffic
257 count that meets VDOT standards and is conducted or overseen by the owner's engineer
258 or otherwise approved by the Regional Engineer.

259 D. Where it can be demonstrated that a public or private roadway has a limited
260 usage, and that the hazard potential classification is being determined solely upon
261 impacts to roadways, the roadway may be considered to be "limited use" and the
262 impounding structure may be considered a low hazard potential impounding structure
263 despite the presence of the roadway. Such roadways, located either across or below an
264 impounding structure, include those that result in an AADT volume of 400 vehicles or
265 less.

266 Where a downstream analysis finds that multiple limited use roadways may be
267 impacted by an impounding structure failure, the traffic volumes of those limited use
268 roadways, determined in accordance with subsection B, shall be combined for the
269 purposes of determining the impounding structure's hazard potential classification unless
270 it can be demonstrated that the traffic using each of the roadways is composed of
271 substantially the same vehicle trips, such that the combined number of individual vehicle
272 trips utilizing all of the roadways would result in an AADT of 400 or less.

273 E. Although a roadway may be considered to have a "limited use" in accordance
274 with subsection D, the Emergency Preparedness Plan for the low hazard impounding

275 structure shall clearly outline a reliable and timely approach for notification of the proper
276 local emergency services by the dam owner regarding the hazards of continued use of the
277 road during an emergency condition.
278

279 **4VAC50-20-52. Incremental damage analysis.**

280 A. When appropriate, the spillway design flood requirement may be reduced by
281 the board in accordance with this section. Additionally, the proposed potential hazard
282 classification for the impounding structure may be adjusted lowered based on the results
283 of an incremental damage analysis, if there are no impacts during the sunny day failure.

284 When considering the failure of the impounding structure under a flood condition,
285 the owner's engineer's analysis shall only consider those hazards that exceed those
286 created by the flood event and impacted by the dam failure.

287 B. The owner's engineer may proceed with an incremental damage analysis.
288 Once the owner's engineer has determined the required spillway design flood through
289 application of Table 1, further analysis may be performed to evaluate the limiting flood
290 condition for incremental damages. Site-specific conditions should be recognized and
291 considered. This analysis may be used to lower the spillway design flood. In no situation
292 shall the allowable reduced level be less than the level at which the incremental increase
293 in water surface elevation downstream due to failure of an impounding structure is no
294 longer considered to present an additional downstream threat. This engineering analysis
295 will need to present water surface elevations at each structure that may be impacted
296 downstream of the dam. An additional downstream threat to persons or property is
297 presumed to exist when water depths exceed two feet or when the product of water depth
298 (in feet) and flow velocity (in feet per second) is greater than seven.

299 C. The spillway design flood shall not be reduced below the minimum threshold
300 values as determined by Table 1.

301 D. The required spillway design flood shall be subject to reclassification by the
302 board as necessary to reflect changed conditions at the impounding structure and in the
303 dam break inundation zone.

304
305 **4VAC50-20-54. Dam break inundation zone mapping.**

306 A. Dam break inundation zone maps and analyses shall be provided to the
307 department, except as provided for in 4VAC50-20-51, to meet the requirements set out in
308 Hazard Potential Classifications of Impounding Structures (4VAC50-20-40), Emergency
309 Action Plan for High and Significant Potential Hazard Impounding Structures (4VAC50-
310 20-175), and Emergency Preparedness for Low Hazard Potential Impounding Structures
311 (4VAC50-20-177), as applicable. In accordance with subsection H, the a simplified dam
312 break inundation zone map and analysis may be completed by the department and shall
313 be provided to the impounding structure's owner to assist such owner in complying with
314 the requirements of this article. All analyses shall be completed in accordance with
315 4VAC50-20-20 D.

316 B. The location of the end of the inundation mapping should be indicated where
317 the water surface elevation of the dam break inundation zone and the water surface
318 elevation of the spillway design flood during an impounding structure nonfailure event
319 converge to within one foot of each other. The inundation maps shall be supplemented

320 with water surface profiles showing the peak water surface elevation prior to failure and
321 the peak water surface elevation after failure.

322 C. All inundation zone map(s), ~~except those utilized in meeting the requirements~~
323 ~~of Emergency Preparedness for Low Hazard Potential Impounding Structures (4VAC50-~~
324 ~~20-177)~~, shall be signed and sealed by a licensed professional engineer.

325 D. ~~Present and planned land-use for which a development plan has been officially~~
326 ~~approved by the locality in the dam break inundation zones downstream from the~~
327 ~~impounding structure shall be considered in determining the classification.~~

328 E. For determining the hazard potential classification, ~~an analysis of including but~~
329 ~~not limited to those hazards created by flood and nonflood dam failures shall be~~
330 ~~considered. At a minimum, of the following shall be provided to the department:~~

331 1. A sunny day dam break analysis utilizing the volume retained at the normal or
332 typical water surface elevation of the impounding structure;

333 2. A dam break analysis utilizing the spillway design flood with a dam failure;

334 3. An analysis utilizing the spillway design flood without a dam failure; and

335 4. For the purposes of future growth planning, a dam break analysis utilizing the
336 probable maximum flood with a dam failure.

337 E. ~~To meet the requirements of Emergency Preparedness set out in 4VAC50-20-~~
338 ~~177, all Low Hazard Potential impounding structures shall provide a simple map,~~
339 ~~acceptable to the department, demonstrating the general inundation that would result~~
340 ~~from a dam failure. Such maps do not require preparation by a professional licensed~~
341 ~~engineer, however, it is preferred that the maps be prepared by a licensed professional~~
342 ~~engineer.~~

343 F. To meet the Emergency Action Plan requirements set out in 4VAC50-20-175
344 ~~and the Emergency Preparedness Plan requirements set out in 4VAC50-20-177~~, all
345 owners of ~~High and Significant Hazard Potential~~ impounding structures shall provide
346 dam break inundation zone map(s) representing the impacts that would occur with both a
347 sunny day dam failure and a ~~spillway design flood probable maximum flood with a~~ dam
348 failure.

349 1. The map(s) shall be developed at a scale sufficient to graphically display
350 downstream inhabited areas and structures, roads, public utilities that may be affected,
351 and other pertinent structures within the identified inundation area. In coordination with
352 the local organization for emergency management, a list of downstream inundation zone
353 property owners and occupants, including telephone numbers may be plotted on the map
354 or may be provided with the map for reference during an emergency.

355 2. Each map shall include the following statement: "The information contained in
356 this map is prepared for use in notification of downstream property owners by emergency
357 management personnel."

358 ~~Should the department prepare a dam break inundation zone map and analysis in~~
359 ~~response to a request received pursuant to 4VAC50-20-40 C, the owner shall utilize this~~
360 ~~map to prepare a plan in accordance with this subsection.~~

361 G. ~~If an incremental damage analysis conducted in accordance with 4VAC50-20-~~
362 ~~52 allows for a spillway design flood to be reduced, dam break inundation zone maps~~
363 ~~produced in accordance with subsection F of this section shall still include those areas~~
364 ~~impacted without the incremental analysis.~~

365 H. Upon receipt of a written request in accordance with 4VAC50-20-40 C and
366 receipt of a payment in accordance with 4VAC50-20-395, the department shall conduct a
367 simplified dam break inundation zone analysis. In conducting the analysis, ~~a two-~~
368 ~~dimensional model such as Flo-2D, the Dams Sector Analysis Tool (DSAT), or such~~
369 ~~other a model selected by acceptable to the department shall be utilized. The simulation~~
370 ~~analysis shall result in flood depth and arrival time maps as Geographic Information~~
371 ~~System shape files for viewing and analyzing and shall meet the other analysis criteria of~~
372 ~~this section.~~

373 Upon completion of the analysis, the department shall issue a letter to the owner
374 communicating the results of the analysis including the dam break inundation zone map,
375 stipulating the department's finding regarding hazard potential classification based on the
376 information available to the department, and explaining what the owner needs to do
377 procedurally with this information to be complaint compliant with the requirements of the
378 Dam Safety Act (§ 10.1-604 et seq.) and this article.

379

380 Part III

381 Certificate Requirements

382

383 **4VAC50-20-101 General permit requirements for low hazard potential impounding** 384 **structures.**

385 Any impounding structure owner whose registration statement is accepted by the
386 Board will receive the following permit and shall comply with the requirements in it. If
387 the failure of a low hazard potential impounding structure is not expected to cause loss of
388 human life or economic damage to any property except property owned by the owner, the
389 owner may follow the special criteria established for certain low hazard impounding
390 structures in accordance with 4VAC50-20-51 in lieu of coverage under the general
391 permit.

392

393 General Permit No.: Dam Safety 1

394 Effective Date: (Date of Issuance of Coverage)

395 Expiration Date: (6 years following Date of Issuance of Coverage)

396 **GENERAL PERMIT FOR OPERATION OF A LOW HAZARD POTENTIAL** 397 **IMPOUNDING STRUCTURE**

398

399 In compliance with the provisions of the Dam Safety Act and attendant
400 regulations, owners of an impounding structure covered by this permit are authorized to
401 operate and maintain a low hazard potential impounding structure. The owner shall be
402 subject to the following requirements as set forth herein.

403 A. The owner shall ensure that the spillway design of the owner's impounding
404 structure is engineered shall be able to safely pass a flood resulting from a 100-year
405 flood. When appropriate, the spillway design flood requirement may be further reduced
406 to the 50-year flood in accordance with an incremental damage analysis conducted by the
407 owner's engineer.

408 B. The owner shall develop and maintain a simplified an emergency preparedness
409 plan in accordance with 4VAC50-20-177.that provides:

410 a. Name and location information for the impounding structure;

411 ~~b. Name of owner and operator and associated contact information;~~
412 ~~e. Contact information for relevant emergency responders;~~
413 ~~d. Procedures for notifying downstream property owners or occupants; and~~
414 ~~e. Identification of any downstream roadways that would be impacted by a failure.~~
415 The owner shall update and resubmit the ~~simplified~~ emergency preparedness plan
416 immediately upon becoming aware of necessary changes to keep the plan workable.
417 C. The owner shall perform an annual inspection of the impounding structure.
418 The owner shall maintain such records and make them available to the department upon
419 request. The Department is authorized to conduct inspections in accordance with
420 4VAC50-20-180.
421 D. The owner shall ensure that the impounding structure is properly and safely
422 maintained and operated and shall have the following documents available for inspection
423 upon request of the department:
424 1. An operating plan and schedule including narrative on the operation of control
425 gates and spillways and the impoundment drain;
426 2. For earthen embankment impounding structures, a maintenance plan and
427 schedule for the embankment, principal spillway, emergency spillway, low-level outlet,
428 impoundment area, downstream channel, and staff gages; and
429 3. For concrete impounding structures, a maintenance plan and schedule for the
430 upstream face, downstream face, crest of dam, galleries, tunnels, abutments, spillways,
431 gates and outlets, and staff gages.
432 Impounding structure owners shall not permit growth of trees and other woody
433 vegetation and shall remove any such vegetation from the slopes and crest of
434 embankments and the emergency spillway area, and within a distance of 25 feet from the
435 toe of the embankment and abutments of the dam.
436 DE. The owner shall file a dam break inundation zone map developed in
437 accordance with 4VAC50-20-54 with the department and with the offices with plat and
438 plan approval authority or zoning responsibilities as designated by the locality for each
439 locality in which the dam break inundation zone resides in.
440 EF. The owner shall notify the department immediately of any change in
441 circumstances that would cause the impounding structure to no longer qualify for
442 coverage under the general permit. In the event of a failure or an imminent failure at the
443 impounding structure, the owner shall immediately notify the local emergency services
444 coordinator, the Department of Emergency Management, and the Department. The
445 Department shall take actions in accordance with § 10.1-608 or 10.1-609, depending on
446 the degree of hazard and the imminence of failure caused by the unsafe condition.
447
448 **4VAC50-20-103. Registering for coverage under the general permit for low hazard**
449 **potential impounding structures.**
450 A. Pursuant to § 10.1-605.3, an impounding structure owner may seek general
451 permit coverage from the Board for a low hazard potential impounding structure in lieu
452 of obtaining a Low Hazard Potential Regular Operation and Maintenance Certificate in
453 accordance with 4VAC50-20-105 or a Conditional Operation and Maintenance
454 Certificate for Low Hazard Potential impounding structures in accordance with 4VAC50-
455 20-150.

456 B. An owner shall submit a complete and accurate registration statement in
457 accordance with the requirements of this section prior to the issuance of coverage under
458 the general permit. A complete registration statement shall include the following:

- 459 1. The name and address of the owner;
- 460 2. The location of the impounding structure;
- 461 3. The height of the impounding structure;
- 462 4. The volume of water impounded;
- 463 5. ~~A simplified~~ An emergency preparedness plan prepared in accordance with
464 4VAC50-20-101;
- 465 6. The applicable fee for the processing of registration statements as set out in
466 4VAC50-20-375;
- 467 7. A dam break inundation zone map ~~completed in accordance with 4VAC50-20-~~
468 54 and evidence that such map has been filed with the offices with plat and plan approval
469 authority or zoning responsibilities as designated by the locality for each locality in
470 which the dam break inundation zone resides; and
- 471 8. A certification from the owner that the impounding structure (i) is classified as
472 low hazard pursuant to a determination by the department or the owner's professional
473 engineer in accordance with § 10.1-604.1 and this article; (ii) is, to the best of his
474 knowledge, properly and safely constructed and currently has no observable deficiencies;
475 and (iii) shall be maintained and operated in accordance with the provisions of the
476 general permit.

477
478 **4VAC50-20-104 Maintaining General permit coverage for low hazard potential**
479 **impounding structures.**

480 Provided that an impounding structure's hazard potential classification has not
481 changed, an owner's coverage under the general permit shall be for a six-year term after
482 which time the owner shall reapply for coverage by filing a new registration statement
483 and paying the necessary fee. No inspection of the impounding structure by a licensed
484 professional engineer shall be required if the owner certifies at the time of general permit
485 coverage renewal that conditions at the impounding structure and downstream are
486 unchanged. If such certification is made, the owner is not required to submit an updated
487 dam break inundation

488
489 **4VAC50-20-177. Emergency Preparedness Plan for Low Hazard impounding**
490 **structures.**

491 Low Hazard impounding structures shall provide information for emergency
492 preparedness to the department, the local organization for emergency management and
493 the Virginia Department of Emergency Management. A form for the submission is
494 available from the department (Emergency Preparedness Plan for Low Hazard Virginia
495 Regulated Impounding Structures). The information shall include, but not be limited, to
496 the following:

- 497 1. Name and location information for the impounding structure ~~including city or~~
498 county and latitude and longitude;
- 499 2. Name of owner and operator and associated contact information ~~including~~
500 residential and business telephone numbers, and other means of communication. Contact
501 information shall provide for 24-hour telephone contact capability;

502 3. Contact information for relevant emergency responders including the
503 following:
504 a. For the local dispatch center nearest impounding structure including address
505 and 24-hour telephone number; and
506 b. City or county emergency services coordinator's name, mailing address,
507 residential and business telephone numbers, and other means of communication;
508 4. Procedures for notifying downstream property owners or occupants potentially
509 impacted by the impounding structure's failure;
510 5. A dam break inundation zone map completed in accordance with 4VAC50-20-
511 54 and evidence that:
512 a. Such map has been filed with the offices with plat and plan approval authority
513 or zoning responsibilities as designated by the locality for each locality in which the dam
514 break inundation zone resides; and
515 b. Required copies of such plan have been submitted to the local organization for
516 emergency management and the Virginia Department of Emergency Management; and
517 6. Certification of the plan by the owner.
518 1. Name of the impounding structure, inventory number, city or county, latitude,
519 and longitude;
520 2. Owner's name, mailing address, residential and business telephone numbers,
521 and other means of communication. Contact information shall provide for 24-hour
522 telephone contact capability;
523 3. Impounding structure operator's name, mailing address, residential and
524 business telephone numbers, and other means of communication. Contact information
525 shall provide for 24-hour telephone contact capability;
526 4. Rainfall and staff gage observer's name, mailing address, residential and
527 business telephone numbers, and other means of communication. Contact information
528 shall provide for 24-hour telephone contact capability;
529 5. Contact information for alternate operator and alternate rainfall and staff gage
530 observer, if applicable;
531 6. Contact information for the local dispatch center nearest impounding structure
532 including address and 24-hour telephone number;
533 7. City or county emergency services coordinator's name, mailing address,
534 residential and business telephone numbers, and other means of communication;
535 8. A procedure and the responsible parties for notifying to the extent possible any
536 known local occupants, owners, or lessees of downstream properties potentially impacted
537 by the impounding structure's failure;
538 9. A discussion of the procedures for timely and reliable detection, evaluation,
539 and classification of emergency situations considered to be relevant to the project setting
540 and impounding features. Each relevant emergency situation is to be documented to
541 provide an appropriate course of action based on the urgency of the situation;
542 10. A simple dam break inundation map acceptable to the director, demonstrating
543 the general inundation that would result from an impounding structure failure. Such
544 maps required pursuant to this section do not require preparation by a professional
545 licensed engineer; however, maps prepared by a licensed professional engineer are
546 preferred;

- 547 11. Identification of public roads downstream noting the highway number and
548 distance below the impounding structure. If roads exist, contact information for the
549 resident Virginia Department of Transportation engineer or city or county engineer
550 including address and 24-hour telephone numbers;
- 551 12. Amount of rainfall that will initiate a Stage II Condition in inches per six
552 hours, inches per 12 hours, and inches per 24 hours and a Stage III Condition in inches
553 per six hours, inches per 12 hours, and inches per 24 hours;
- 554 13. Amount of flow in the emergency spillway that will initiate a Stage II
555 Condition in feet (depth of flow) and a Stage III Condition in feet (depth of flow);
- 556 14. Staff gage location and description; the frequency of observations by the
557 rainfall or staff gage observer under a Stage I Condition, and Stage II Condition, and a
558 Stage III Condition; and a clear description of an access route and means of travel during
559 flood conditions to the impounding structure;
- 560 15. Evacuation procedures including notification, monitoring, evacuation, and
561 reporting processes and responsibilities;
- 562 16. Evidence that the required copies of such plan have been submitted to the
563 local organization for emergency management and the Virginia Department of
564 Emergency Management; and
- 565 17. Certification of the plan by the owner.

566
567 Part IV
568 Procedures

569
570 **4VAC50-20-195. Judicial review.**

571 Any owner aggrieved by a decision of the director, department, or board
572 regarding the owner's impounding structure shall have the right to judicial review of the
573 final decision pursuant to provisions of the Administrative Process Act (§ 2.2-4000 et
574 seq.).

575
576 **4VAC50-20-200. Enforcement.**

577 The provisions of this chapter may be enforced by the board, the director, or both
578 in any manner consistent with the provisions of the Dam Safety Act (§ 10.1-604 et seq. of
579 the Code of Virginia). Failure to comply with the provisions of the general permit issued
580 in accordance with 4VAC50-20-103, may result in penalties assessed in accordance with
581 §§ 10.1-613.1 and 10.1-613.2.

582
583 Part VI
584 Fees

585
586 **4VAC50-20-340. Authority to establish fees.**

587 Under § 10.1-613.5 of the Code of Virginia, the board is authorized to establish
588 and collect application fees to be used for the administration of the dam safety program,
589 administrative review, certifications, and the repair and maintenance of impounding
590 structures including actions taken in accordance with §§ 10.1-608, 10.1-6009, and 10.1-
591 613. The fees will be deposited into the Dam Safety, Flood Prevention and Protection
592 Assistance Administrative Fund.

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4VAC50-20-375. Fee for coverage under the General Permit for low hazard impounding structures.

The fee for processing registration statements from impounding structure owners seeking to obtain coverage under the General Permit for low hazard impounding structures shall be \$300.

4VAC50-20-395. Simplified Dam Break Inundation Zone Analysis fee.

Pursuant to authority provided in §10.1-604.1 subsection A, subdivision 1 and in accordance with 4VAC50-20-40 C, when the Department receives a request from the owner of a dam to conduct a simplified dam break inundation zone analysis, the owner shall pay 50 percent of the cost of the analysis. Accordingly, prior to the Department conducting an analysis, the owner shall submit a fee of \$1,000 prior to the department conducting an analysis. The fee shall be submitted in accordance with 4VAC50-20-350 subsections B and C as applicable. The fee shall be deposited into the Dam Safety Administrative Fund to be used to cover the partial cost of such analysis. No analysis fee remitted to the department shall be subject to refund.