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REGULATIONS COMPILER

1 ENERGY AND ENVIRONMENT CABINET

2 Department for Natural Resources

3 Division of Mine Reclamation and Enforcement

4 (Amendment)

5 405 KAR 16:100. Permanent and temporary impoundments.

6 RELATES TO: KRS 151.100, 151.250(3), 350.100, 350.420, 350.455, 350.465, 30 C.F.R.
7 Parts 730-733, 735, 816.49, 917, 30 U.S.C. 1253, 1255, 1265

8 STATUTORY AUTHORITY: KRS 350.028, 350.465, 30 C.F.R. Parts 730-733, 735,
9 816.49, 917, 30 U.S.C. 1253, 1255, 1265

10 NECESSITY, FUNCTION, AND CONFORMITY: KRS 350.028(2), (5), 350.151(1), and
11 350.465(2) authorize the cabinet to promulgate administrative regulations relating to surface and
12 underground coal mining operations. This administrative regulation establishes the requirements
13 for the design, construction, certification, inspection, and maintenance of temporary and
14 permanent impoundments for surface mines. This administrative regulation differs from federal
15 regulations as follows: (1) Section 1 of this administrative regulation provides criteria related to
16 the stability, settlement, embankment height and width, and freeboard of impoundments which is
17 not found in the federal regulations. These criteria have been retained because they have long been
18 effective guidelines for embankment safety and stability. (2) Section 1(9)(c) of this administrative
19 regulation provides an exemption from engineering inspection for certain types of impoundments
20 without embankments. These inspections are unnecessary because the embankments do not
21 present a safety hazard or environmental concern that would warrant routine, detailed inspection.

1 (3) Section 1(10)(b) of this administrative regulation provides an exemption from quarterly
2 inspections for certain small nonhazardous impoundments without embankment structures. These
3 inspections are unnecessary because the structures cannot develop the hazardous conditions which
4 the inspections were intended to detect.

5 Section 1. General Requirements. The requirements of this section apply to both temporary
6 and permanent impoundments.

7 (1)(a) Impoundments meeting the criteria of MSHA, 30 C.F.R. 77.216(a), shall comply
8 with the requirements of 30 C.F.R. 77.216 and this administrative regulation. The plan required to
9 be submitted to the district manager of MSHA under 30 C.F.R. 77.216 shall be submitted to the
10 cabinet as part of the permit application in accordance with 405 KAR 8:030, Section 34(3). (b) All
11 impoundments classified as Class B-moderate hazard or Class C-high hazard, and all permanent
12 "dams," as defined in KRS 151.100, shall comply with 405 KAR 7:040, Section 5 and with 401
13 KAR 4:030.

14 (2) Design certification. The design of impoundments shall be certified by a qualified
15 registered professional engineer as designed to meet the requirements of this administrative
16 regulation using current, prudent engineering practices, and any design criteria established by the
17 cabinet. The qualified registered professional engineer shall be experienced in the design and
18 construction of impoundments.

19 (3) Stability. (a)1. Permanent and temporary impoundments meeting the criteria of MSHA,
20 30 C.F.R. 77.216(a), all Class B and C impoundments, and all permanent impoundments, shall
21 have a minimum static safety factor of 1.5 for the normal pool with steady seepage saturation
22 conditions, and a seismic safety factor of at least 1.2. 2. Impoundments not included in

subparagraph 1 of this paragraph, except coal mine waste impoundments, shall have a minimum static safety factor of 1.3 for the normal pool with steady state seepage saturation conditions.

(b) The constructed height of the dam shall be increased a minimum of five (5) percent over the design height to allow for settlement, unless it has been demonstrated to the cabinet that the material used and the design will ensure against all settlement.

(c) The minimum top width of the embankment shall not be less than the quotient of (H+35)/5, where H is the height, in feet, of the embankment as measured from the upstream toe of the embankment.

(d) Unless the cabinet approves steeper slopes, based upon a satisfactory demonstration of stability by the applicant acceptable to the cabinet, the sum of the upstream and downstream side slopes (h/v) of the settled embankment shall not be less than 5h:1v, with neither slope steeper than 2h:1v. Slopes shall be designed to be stable in all cases, even if flatter side slopes are required.

(e) The fill material shall be free of sod, large roots, other large vegetative matter, and frozen soil and shall not contain coal mine waste except for coal mine waste impounding structures pursuant to 405 KAR 16:160.

(f) The placing and spreading of fill material shall be started at the lowest point of the foundation. The fill shall be brought up in horizontal layers of thickness as is required to facilitate compaction and meet the design requirement of this administrative regulation. Compaction shall be conducted as specified in the design approved by the cabinet.

(g) The entire embankment including the surrounding areas disturbed by construction shall be stabilized with respect to erosion by a vegetative cover or other means immediately after the embankment is completed. The active upstream face of the embankment where water will be impounded may be riprapped or otherwise stabilized. Areas in which the vegetation is not

successful or where rills and gullies develop shall be repaired and revegetated in accordance with 405 KAR 16:190, Section 6.

(h) Slope protection shall be provided to protect against surface erosion at the site and protect against sudden drawdown.

(4) Freeboard. Impoundments shall have adequate freeboard to resist overtopping by waves and by sudden increases in storage volume. The minimum elevation at the top of the settled embankment shall be one (1.0) foot above the water surface in the pond with the emergency spillway flowing at design depth. For embankments subject to settlement, this one (1.0) foot minimum elevation requirement shall apply at all times, including the period after settlement. Freeboard requirements shall not apply to incised impoundments which have no embankment or levee.

(5) Foundation. (a)1. Foundation and abutments for the impounding structure shall be designed to be stable under all conditions of construction and operation of the impoundment and shall be designed based on adequate and accurate information on the foundation conditions.

2. For permanent and temporary impoundments meeting the criteria of MSHA, 30 C.F.R. 77.216(a), for all Class B and C impoundments, and for all permanent impoundments, foundation investigations as well as any necessary laboratory testing of materials shall be performed in order to determine the design requirements for foundation and embankment stability.

3. If an approved temporary impoundment has been constructed and the permittee subsequently seeks a permit revision to upgrade the structure to a permanent impoundment, the cabinet may waive the foundation investigations and laboratory testing required by subparagraph 2 of this paragraph under the following circumstances:

a. The structure has been recently verified as being a Class A-low hazard structure;

1 b. The structure does not meet the definition of the term "dam," as defined at KRS 151.100;
2 and
3 c. The cabinet approves conservative, assumed values for the strength parameters used in
4 the stability analyses to ensure compliance with subsection (3)(a) of this section.
5 (b) All vegetative and organic materials shall be removed and foundations excavated and
6 prepared to resist failure. Cutoff trenches shall be installed if necessary to ensure stability.
7 (6) Impoundments shall include a combination of principal and emergency spillways which
8 shall be designed and constructed to safely pass the design precipitation event specified in this
9 subsection unless the cabinet requires a larger event. Twenty-four (24) hours may be used in lieu
10 of six (6) hours for the duration of a design precipitation event specified in this subsection.
11 (a) Except as provided in paragraph (c) of this subsection, Class A structures that do not
12 meet the criteria of MSHA, 30 C.F.R. 77.216(a), shall pass the:
13 1. Twenty-five (25) year, six (6) hour precipitation event if it is a temporary structure; or
14 2. The fifty (50) year, six (6) hour precipitation event if it is a permanent structure.
15 (b) Class A structures that meet the criteria of MSHA, 30 C.F.R. 77.216(a), shall pass the
16 100 year, six (6) hours precipitation event.
17 (c) Class B and C structures and all permanent dams as defined in KRS 151.100 shall
18 comply with the criteria established in 401 KAR 4:030.
19 (7) Class A impoundments not meeting the criteria of MSHA, 30 C.F.R. 77.216(a), may
20 use a single spillway (if allowed pursuant to subsection (1)(b) of this section) if the spillway:
21 (a) Is an open channel of nonerodible construction and capable of maintaining sustained
22 flows; and
23 (b) Is not earth or grass lined.

(8) The vertical portion of any remaining highwall shall be located far enough below the low-water line along the full extent of the highwall to provide adequate safety and access for the proposed water users.

(9) Engineer inspections. A qualified registered professional engineer or other qualified professional specialist, under the direction of the professional engineer, shall inspect the impoundment. The professional engineer or specialist shall be experienced in the construction of impoundments.

(a) Inspections shall be made regularly during construction, upon completion of construction, and at least yearly until removal of the structure or release of the performance bond.

(b) The qualified registered professional engineer shall promptly, after each inspection, provide to the cabinet a certified report that the impoundment has been constructed and maintained as designed and in accordance with the plan approved in the permit and 405 KAR Chapters 7 through 24. The report shall include discussion of any appearances of instability, structural weakness or other hazardous conditions, depth and elevation of any impounded waters, existing storage capacity, any existing or required monitoring procedures and instrumentation and any other aspects of the structure affecting stability. The report shall also confirm the hazard classification of the impoundment, or if the hazard classification has changed, the report shall contain a detailed explanation of the change and the conditions causing the change. A copy of the report shall be retained at or near the mine site.

(c) An impoundment with no embankment structure, that is completely incised or is created by a depression left by backfilling and grading, that is not a sedimentation pond or coal mine waste impoundment and is not otherwise intended to facilitate active mining, shall be exempt from this subsection unless the cabinet determines on a case-by-case basis that engineering inspection and

1 certification are necessary to insure public health and safety or environmental conditions, in which
2 case the cabinet shall establish appropriate inspection and certification requirements for the
3 impoundment that shall apply in lieu of the requirements of this subsection and shall notify the
4 permittee in writing.

5 (10) Operator examinations.

6 (a) Impoundments subject to 30 C.F.R. 77.216, and Class B and C impoundments, shall be
7 examined in accordance with 30 C.F.R. 77.216-3.

8 (b) Impoundments not included in paragraph (a) of this subsection shall be examined at
9 least quarterly by a qualified person designated by the operator for appearance of structural
10 weakness and other hazardous conditions. Quarterly examinations shall be conducted each
11 calendar quarter (i.e., January-March, April-June, July-September, and October-December) and
12 no two (2) examinations shall be within thirty (30) days of each other unless additional
13 examination within a quarter are required. Reports of the examinations shall be retained at or near
14 the mine site. An impoundment with no embankment structure, that is completely incised or is
15 created by a depression left by backfilling and grading, shall be exempt from this paragraph.

16 (11) Emergency procedures. If any examination or inspection discloses that a potential
17 hazard exists, the person who examined the impoundment shall immediately notify the department
18 and the Kentucky Division of Water, or if these agencies cannot be reached, Disaster and
19 Emergency Services. The permittee shall immediately implement emergency procedures
20 formulated for public protection and remedial action. If adequate emergency procedures cannot be
21 formulated or implemented by the permittee, the cabinet shall be notified, and the cabinet shall
22 notify the appropriate agencies that other emergency procedures are required to protect the public.

23 <u>(12) Maintenance. An owner or operator of an impoundment shall:</u>

1 (a) Cut vegetative growth where necessary to facilitate inspection and repairs;

2 (b) Clean any ditches and spillways; and

3 (c) Remove any combustible material present on the surface, other than that used for

4 stability such as mulch or dry vegetation.

5 Section 2. Permanent Impoundments. A permanent impoundment of water may be created,

6 if authorized by the cabinet in the approved permit based upon the following demonstration:

7 (1) The size and configuration of the impoundment will be adequate for its intended

8 purposes.

9 (2) The quality of impounded water will be suitable on a permanent basis for its intended

10 use and, after reclamation, will meet applicable state and federal water quality standards, and

11 discharges from the impoundment will meet applicable effluent limitations and will not degrade

12 the quality of receiving water below applicable state and federal water quality standards.

13 (3) The water level will be sufficiently stable and be capable of supporting the intended

14 use.

15 (4) Final grading will provided for adequate safety and access for proposed water users.

16 Perimeter slopes shall be stable and shall be protected against erosion.

17 (5) The impoundment will not result in the diminution of the quality and quantity of water

18 utilized by adjacent or surrounding landowners for agricultural, industrial, recreational, or

19 domestic uses.

20 (6) The impoundment will be suitable for the approved postmining land use.

405 KAR 16:100 approved for filing.
Pages (1-8)

9/13/2019

Date

Charles G. Snavely, Secretary
Energy and Environment Cabinet

PUBLIC HEARING AND PUBLIC COMMENT PERIOD: A public hearing on this administrative regulation shall be held on November 26, 2019 at 5:00 P.M. (Eastern Time) in Training Room C of the Energy and Environment Cabinet at 300 Sower Blvd, Frankfort, Kentucky. Individuals interested in being heard at this hearing shall notify this agency five workdays prior to the hearing, of their intent to attend. If no notification of intent to attend the hearing is received by that date, the hearing may be cancelled. This hearing is open to the public. Any person who wishes to be heard will be given an opportunity to comment on the proposed administrative regulation. A transcript of the public hearing will not be made unless a written request for a transcript is made. If you do not wish to be heard at the public hearing, you may submit written comments on the proposed administrative regulation. Written comments shall be accepted through November 30, 2019. Send written notification of intent to attend the public hearing or written comments on the proposed administrative regulation to the contact person.

CONTACT PERSON: Michael Mullins, Regulation Coordinator, 300 Sower Blvd, Frankfort, Kentucky 40601, phone: (502) 782-6720, fax: (502) 564-4245, email: michael.mullins@ky.gov.

REGULATORY IMPACT ANALYSIS AND TIERING STATEMENT

Administrative Regulation No.: 405 KAR 16:100
Contact Person: Michael Mullins

Contact number: (502) 782-6720
Email: michael.mullins@ky.gov

(1) Provide a brief summary of:

(a) What this administrative regulation does: This administrative regulation establishes the requirements for the design, construction, certification, inspection, and maintenance of temporary and permanent impoundments for surface mines.

(b) The necessity of this administrative regulation: This administrative regulation is necessary to establish requirements for the design, construction, certification, inspection, and maintenance of temporary and permanent impoundments for surface mines.

(c) How this administrative regulation conforms to the content of the authorizing statutes: KRS 350.151(1) directs the cabinet to promulgate an administrative regulation setting forth the requirements for the mining and reclamation of land disturbed or removed by operations resulting from or incident to surface coal mining, including impoundments. This administrative regulation conforms to the authorizing statutes by establishing those requirements.

(d) How this administrative regulation currently assists or will assist in the effective administration of the statutes: This administrative regulation assists in the effective administration of the statutes by establishing the requirements for the design, construction, certification, inspection, and maintenance of temporary and permanent impoundments for surface mines.

(2) If this is an amendment to an existing administrative regulation, provide a brief summary of:

(a) How the amendment will change this existing administrative regulation: This amendment includes information related to maintaining impoundments that was previously included in the interim program administrative regulations that were repealed in 2018.

(b) The necessity of the amendment to this administrative regulation: This amendment is necessary to include requirements that were in the interim program administrative regulations that were repealed in 2018.

(c) How the amendment conforms to the content of the authorizing statutes: This amendment conforms to the authorizing statutes by including information related to maintaining impoundments that was previously in the interim program administrative regulations that were repealed in 2018.

(d) How the amendment will assist in the effective administration of the statutes: KRS 350.151 directs the cabinet to promulgate an administrative regulation setting forth the

requirements for the mining and reclamation of land disturbed or removed by operations resulting from or incident to surface coal mining, including impoundments. This amendment inserts information related to maintaining impoundments.

(3) List the type and number of individuals, businesses, organizations, or state and local governments affected by this administrative regulation: This amendment would apply to any entity that operates a surface coal mine within Kentucky. There are approximately 104 licensed surface mines in the Commonwealth.

(4) Provide an analysis of how the entities identified in question (3) will be impacted by either the implementation of this administrative regulation, if new, or by the change, if it is an amendment, including:

(a) List the actions that each of the regulated entities identified in question (3) will have to take to comply with this administrative regulation or amendment: The entities listed in question (3) above will comply with information related to permanent and temporary impoundments. The information was previously included in the interim program administrative regulations and therefore, is not new.

(b) In complying with this administrative regulation or amendment, how much will it cost each of the entities identified in question (3): There is not a cost increase associated with the proposed amendments.

(c) As a result of compliance, what benefits will accrue to the entities identified in question (3): The entities listed in (3) will have information related maintaining impoundments in the permanent program administrative regulation related to impoundments.

(5) Provide an estimate of how much it will cost the administrative body to implement this administrative regulation:

(a) Initially: There will be no costs to the department associated with implementation of this amendment.

(b) On a continuing basis: There will be no costs to the department associated with implementation of this amendment.

(6) What is the source of the funding to be used for the implementation and enforcement of this administrative regulation: The funding for implementation of the amendments to this administrative regulation will be a combination of general funds and restricted funds.

(7) Provide an assessment of whether an increase in fees or funding will be necessary to implement this administrative regulation, if new, or by the change if it is an amendment: The amendments to this administrative regulation will not require an increase in fees or funding.

(8) State whether or not this administrative regulation established any fees or directly or indirectly increased any fees: This administrative regulation does not establish or increase any fees.

(9) TIERING: Is tiering applied? (Explain why or why not) No. All entities that operate a surface coal mine will be required to meet the same requirements related to maintaining impoundments.

FISCAL NOTE ON STATE OR LOCAL GOVERNMENT

Administrative Regulation No.: 405 KAR 16:100 Contact number: (502) 782-6720
Contact Person: Michael Mullins, Reg. Coordinator Email: Michael.mullins@ky.gov

1. What units, parts or divisions of state or local government (including cities, counties, fire departments, or school districts) will be impacted by this administrative regulation? The Division of Mine Permits and the Division of Mine Reclamation and Enforcement.

2. Identify each state or federal statute or federal regulation that requires or authorizes the action taken by the administrative regulation. KRS 350.028, 350.465, 30 C.F.R. Parts 730-733, 735, 816.49, 917, 30 U.S.C. 1253, 1255, 1265.

3. Estimate the effect of this administrative regulation on the expenditures and revenues of a state or local government agency (including cities, counties, fire departments, or school districts) for the first full year the administrative regulation is to be in effect.

(a) How much revenue will this administrative regulation generate for the state or local government (including cities, counties, fire departments, or school districts) for the first year? This amended administrative regulation will not generate any new revenue for the state or local government.

(b) How much revenue will this administrative regulation generate for the state or local government (including cities, counties, fire departments, or school districts) for subsequent years? This amended administrative regulation will not generate revenue in subsequent years.

(c) How much will it cost to administer this program for the first year? There will not be a cost increase associated with the amendments to this administrative regulation.

(d) How much will it cost to administer this program for subsequent years? Future costs would remain essentially unchanged related to this amendment.

Note: If specific dollar estimates cannot be determined, provide a brief narrative to explain the fiscal impact of the administrative regulation.

Revenues (+/-):	There is no known effect on current revenues.
Expenditures (+/-):	There is no known effect on current expenditures.
Other Explanation:	There is no further explanation.

FEDERAL MANDATE ANALYSIS COMPARISON

Administrative Regulation No.: 405 KAR 16:100
Contact Person: Michael Mullins, Reg. Coordinator

Contact number: (502) 782-6720
Email: Michael.mullins@ky.gov

1. Federal statute or regulation constituting the federal mandate. 30 C.F. R. 816.84.

2. State Compliance Standards. KRS 350.151.

3. Minimum or uniform standards contained in the federal mandate. The C.F.R. citations listed above set the minimum information related to impounding structures.

4. Will this administrative regulation impose stricter requirements, or additional or different responsibilities or requirements, than those required by the federal mandate? No. This amendment will not make the administrative regulation more stringent than the corresponding federal regulation.

5. Justification for the imposition of the stricter standard, or additional or different responsibilities or requirements. NA