335-13-5-.02 Permit Application. Existing and proposed landfill units shall obtain permits to construct and/or operate in accordance with the following:

(1) Application Requirements. Landfill units proposed after the effective date of this Division shall submit the following in order to request a permit:

(a) A completed form designated by the Department;

(b) Documentation of host government approval, as provided in the Code of Alabama 1975, § 22-27-48 and 48.1;

(c) Facility design plans and operational procedures in accordance with Permit Application Procedures for Solid Waste Disposal Facilities as prepared by the Department; and

(d) Technical data and reports to comply with 335-13-4-.01, 335-13-4-.11 through 335-13-4-.24 and this Division,

(e) All technical reports, plans and specifications, plats, geological and hydrological reports required by this Division, prepared under the following:

1. Plans, specifications, operational procedures, letters of final construction certification and other technical data, except as provided in 335-13-5-.02(1)(e)2. and 3 for the construction and operation of a facility shall be prepared by an engineer. The seal or signature and registration number of the design engineer shall be affixed to the plans, specifications and reports.

2. Reports, letters of certification and other documents and technical data concerning the siting standards of 335-13-4-.01 shall be prepared by a person with technical expertise in the field of concern.

3. Legal property descriptions and survey plats shall be by a land surveyor with the seal or signature and registration number of the land surveyor affixed.

(f) The name and mailing address of all property owners whose property, per county tax records, is adjacent to the proposed site shall be submitted as part of a landfill unit's permit application.

(g) In addition to the requirements listed in (a) through (f) above the Department may waive certain requirements of (c) and (d) for those landfill units that will receive for disposal only construction and demolition type waste. A permit application for a C/DLF will be submitted on a form developed by the Department which shall specify the minimum requirements for a complete application. The C/DLF permit application shall also include statements signed by an engineer and a representative of the facility owner/operator certifying

that the information being submitted is accurate and correct. The submittal of false or inaccurate information shall result in the C/DLF permit application being suspended or denied.

(h) CCR Landfills. In addition to the requirements listed in (a) through (f) above, a permit application for an existing CCR landfill shall also include the following:

1. Technical data and reports documenting compliance with the unstable area requirements in 335-13-15-.03(5).

2. A run-on and run-off control system plan developed in accordance with 335-13-15-.05(2)(c), which should include existing and proposed surface drainage patterns and control structures designed to handle run-on and run-off.

3. A detailed description of the groundwater monitoring and analysis program developed in accordance with 335-13-15-.06.

4. Procedures for complying with recordkeeping and notification as required under 335-13-15-.08.

5. Procedures for updating all plans and assessments periodically as required by ADEM Admin. Code 335-13-15.

6. Any additional information that may be required by the Department.

(i) New CCR Landfills and any lateral expansion of a CCR Landfill. In addition to the requirements listed in (a) through (f) and (h) above, applications for new CCR landfills and any lateral expansion of a CCR landfill shall include the following in order to request a permit:

1. Technical data and reports documenting compliance with the following location requirements:

(i) Five foot separation of the base of the CCR unit above the uppermost aquifer ~~from the highest measured groundwater level requirement~~ as specified in ~~under~~ 335-13-15-.03(1).

(ii) Wetland and endangered species requirements under 335-13-15-.03(2).

(iii) Fault area requirements under 335-13-15-.03(3).

(iv) Seismic impact zones under 335-13-15-.03(4).

2. Design of the liner and leachate collection and removal system as required by 335-13-15-.04(1).

(2) Permit Duration. Solid waste disposal permits obtained in compliance with this Division shall be valid for the design life of the facility or as otherwise determined by the Department, but no longer than a period of ten years. Permits, however, are subject to revocation under 335-13-5-.05 of this Division.

(3) Filing Deadline. Request for extension, renewal, or a new permit for any landfill unit shall be filed with the Department by the operating agency at least 180 days prior to the expiration date for existing permits or the proposed construction date for new facilities.

(4) Modifications. Prior to any change in the permitted service area, increasing the volume of waste received or changing the design or operating procedure as described in 335-13-5-.06(1) and (2) and the current permit, the permittee shall request a modification of the permit as described in 335-13-5-.06(3). A request for modification described in 335-13-5-.06(1) and (2) must be filed with the Department at least 90 days prior to the anticipated change and shall receive approval from the Department prior to the implementation of the proposed change.

(5) Effect of non-compliance.

(a) As determined by the Director, substantial non-compliance with Department regulations or permits at any facility owned or operated by the applicant, including any facility for which the pending permit application is requested, will be grounds for denial of the application, or alternatively, for suspension of further consideration of the application until such non-compliance is corrected.

(b) In addition to the foregoing, the Director may deny a permit application if:

1. The Director determines that a permit could not be issued that would result in compliance with applicable solid waste standards; or

2. The applicant could not comply with the permit as issued.

Author: Russell A. Kelly, Eric L. Sanderson, S. Scott Story, Heather M. Jones.
Statutory Authority: Code of Alabama 1975, §§ 22-27-3, 22-27-5, 22-27-7, and 22-27-48 and 48.1.
History: Effective: November 18, 1981. **Amended:** Effective: March 31, 1988 (Emergency Regulations). **Amended:** Effective: July 21, 1988. **Amended:** Effective: October 2, 1990. **Amended:** Effective: November 2, 1993. **Amended:** Effective: July 26, 1996. **Amended:** Filed: April 24, 2018; Effective: June 8, 2018. **Amended:** Filed: June 25, 2019; Effective: August 9, 2019. **Amended:** Proposed: September 21, 2020.

335-13-15-.02 Definitions. The following definitions apply to this chapter. Terms not defined in this chapter have the meaning given in 335-13-1-.03. ~~When used in this chapter, the following terms have the meaning given below:~~

(1) Acre foot - the volume of one acre of surface area to a depth of one foot.

(2) Active facility or active electric utilities or independent power producers - any facility subject to the requirements of this chapter that is in operation on October 19, 2015. An electric utility or independent power producer is in operation if it is generating electricity that is provided to electric power transmission systems or to electric power distribution systems on or after October 19, 2015. An off-site disposal facility is in operation if it is accepting or managing CCR on or after October 19, 2015.

(3) Active life or in operation - the period of operation beginning with the initial placement of CCR in the CCR unit and ending at completion of closure activities in accordance with 335-13-15-.07(3).

(4) Active portion - that part of the CCR unit that has received or is receiving CCR or non-CCR waste and that has not completed closure in accordance with 335-13-15-.07(3).

(5) Aquifer - a geologic formation, group of formations, or portion of a formation capable of yielding usable quantities of groundwater to wells, springs or waters of the state.

(6) Area-capacity curves - graphic curves which readily show the reservoir water surface area, in acres, at different elevations from the bottom of the reservoir to the maximum water surface, and the capacity or volume, in acre-feet, of the water contained in the reservoir at various elevations.

(7) Areas susceptible to mass movement - those areas of influence (i.e., areas characterized as having an active or substantial possibility of mass movement) where, because of natural or human-induced events, the movement of earthen material at, beneath, or adjacent to the CCR unit results in the downslope transport of soil and rock material by means of gravitational influence. Areas of mass movement include, but are not limited to, landslides, avalanches, debris slides and flows, soil fluctuation, block sliding, and rock fall.

(8) Beneficial use of CCR - the CCR meet all of the following conditions:

(a) The CCR must provide a functional benefit;

(b) The CCR must substitute for the use of a virgin material, conserving natural resources that would otherwise need to be obtained through practices, such as extraction;

(c) The use of the CCR must meet relevant product specifications, regulatory standards or design standards when available, and when such standards are not available, the CCR is not used in excess quantities; and

(d) When unencapsulated use of CCR involves placement on the land of 12,400 tons or more in non-roadway applications, the user must demonstrate and keep records, and provide such documentation upon request, that environmental releases to groundwater, surface water, soil and air are comparable to or lower than those from analogous products made without CCR, or that environmental releases to groundwater, surface water, soil and air will be at or below relevant regulatory and health-based benchmarks for human and ecological receptors during use.

(9) Closed - placement of CCR in a CCR unit has ceased, and the owner or operator has completed closure of the CCR unit in accordance with 335-13-15-.07(3) and has initiated post-closure care in accordance with 335-13-15-.07(5).

(10) Coal combustion residuals (CCR) - fly ash, bottom ash, boiler slag, and flue gas desulfurization materials generated from burning coal for the purpose of generating electricity by electric utilities and independent power producers.

(11) CCR fugitive dust - solid airborne particulate matter that contains or is derived from CCR, emitted from any source other than a stack or chimney.

(12) CCR landfill or landfill - an area of land or an excavation that receives CCR and which is not a surface impoundment, an underground injection well, a salt dome formation, a salt bed formation, an underground or surface coal mine, or a cave. For purposes of this chapter, a CCR landfill also includes sand and gravel pits and quarries that receive CCR, CCR piles, and any practice that does not meet the definition of a beneficial use of CCR.

(13) CCR pile or pile - any non-containerized accumulation of solid, non-flowing CCR that is placed on the land. CCR that is beneficially used off-site is not a CCR pile.

(14) CCR surface impoundment or impoundment - a natural topographic depression, man-made excavation, or diked area, which is designed to hold an accumulation of CCR and liquids, and the unit treats, stores, or disposes of CCR.

(15) CCR unit - any CCR landfill, CCR surface impoundment, or lateral

expansion of a CCR unit, or a combination of more than one of these units, based on the context of the paragraph(s) in which it is used. This term includes both new and existing units, unless otherwise specified.

(16) Dike - an embankment, berm, or ridge of either natural or man-made materials used to prevent the movement of liquids, sludges, solids, or other materials.

(17) Disposal – the discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste as defined in 335-13-1-.03 into or on any land or water so that such solid waste, or constituent thereof, may enter the environment or be emitted into the air or discharged into any waters, including groundwaters. Disposal does not include the storage or the beneficial use of CCR.

(18) Downstream toe - the junction of the downstream slope or face of the CCR surface impoundment with the ground surface.

(19) Encapsulated beneficial use - a beneficial use of CCR that binds the CCR into a solid matrix that minimizes its mobilization into the surrounding environment.

(20) Eligible unlined CCR surface impoundment – an existing CCR surface impoundment that meets all of the following conditions:

(a) The owner or operator has documented that the CCR unit is in compliance with the location restrictions specified in 335-13-15-.03(1) through (5);

(b) The owner or operator has documented that the CCR unit is in compliance with the periodic safety factor assessment requirements in 335-13-15-.04(4)(e) and (f); and

(c) No constituent listed in Appendix IV to this chapter has been detected at a statistically significant level exceeding a groundwater protection standard defined in 335-13-15-.06(6)(h).

(2~~0~~1) Existing CCR landfill - a CCR landfill that receives CCR both before and after October 19, 2015, or for which construction commenced prior to October 19, 2015 and receives CCR on or after October 19, 2015. A CCR landfill has commenced construction if the owner or operator has obtained the federal, state, and local approvals or permits necessary to begin physical construction and a continuous on-site, physical construction program had begun prior to October 19, 2015.

(2~~1~~2) Existing CCR surface impoundment - a CCR surface impoundment that receives CCR both before and after October 19, 2015, or for which construction commenced prior to October 19, 2015 and receives CCR on or after

October 19, 2015. A CCR surface impoundment has commenced construction if the owner or operator has obtained the federal, state, and local approvals or permits necessary to begin physical construction and a continuous on-site, physical construction program had begun prior to October 19, 2015.

(2~~2~~3) Facility - all contiguous land, and structures, other appurtenances, and improvements on the land, used for treating, storing, disposing, or otherwise conducting solid waste management of CCR. A facility may consist of several treatment, storage, or disposal operational units (e.g., one or more landfills, surface impoundments, or combinations of them).

(2~~3~~4) Factor of safety (Safety factor) - the ratio of the forces tending to resist the failure of a structure to the forces tending to cause such failure as determined by accepted engineering practice.

(2~~4~~5) Flood hydrograph - a graph showing, for a given point on a stream, the discharge, height, or other characteristic of a flood as a function of time.

(2~~5~~6) Freeboard - the vertical distance between the lowest point on the crest of the impoundment dike and the surface of the waste contained therein.

(2~~6~~7) Hazard potential classification - the possible adverse incremental consequences that result from the release of water or stored contents due to failure of the diked CCR surface impoundment or mis-operation of the diked CCR surface impoundment or its appurtenances. The hazardous potential classifications include high hazard potential CCR surface impoundment, significant hazard potential CCR surface impoundment, and low hazard potential CCR surface impoundment, which terms mean:

(a) High hazard potential CCR surface impoundment - a diked surface impoundment where failure or mis-operation will probably cause loss of human life.

(b) Low hazard potential CCR surface impoundment - a diked surface impoundment where failure or mis-operation results in no probable loss of human life and low economic and/or environmental losses. Losses are principally limited to the surface impoundment owner's property.

(c) Significant hazard potential CCR surface impoundment - a diked surface impoundment where failure or mis-operation results in no probable loss of human life, but can cause economic loss, environmental damage, disruption of lifeline facilities, or impact other concerns.

(2~~7~~8) Height - the vertical measurement from the downstream toe of the CCR surface impoundment at its lowest point to the lowest elevation of the crest of the CCR surface impoundment.

(2~~8~~9) Hydraulic conductivity - the rate at which water can move through a permeable medium (i.e., the coefficient of permeability).

(~~29~~30)Inactive CCR surface impoundment - a CCR surface impoundment that no longer receives CCR on or after October 19, 2015 and still contains both CCR and liquids on or after October 19, 2015.

(3~~0~~1) Incised CCR surface impoundment - a CCR surface impoundment which is constructed by excavating entirely below the natural ground surface, holds an accumulation of CCR entirely below the adjacent natural ground surface, and does not consist of any constructed diked portion.

(3~~1~~2) Indian country or Indian lands:

(a) All land within the limits of any Indian reservation under the jurisdiction of the United States Government, notwithstanding the issuance of any patent, and including rights-of-way running throughout the reservation;

(b) All dependent Indian communities within the borders of the United States whether within the original or subsequently acquired territory thereof, and whether within or without the limits of Alabama; and

(c) All Indian allotments, the Indian titles to which have not been extinguished, including rights-of-way running through the same.

(3~~2~~3) Indian Tribe or Tribe – any Indian tribe, band, nation, or community recognized by the Secretary of the Interior and exercising substantial governmental duties and powers on Indian lands.

(3~~3~~4) Inflow design flood - the flood hydrograph that is used in the design or modification of the CCR surface impoundments and its appurtenant works.

(3~~4~~5) In operation - the same as active life.

(3~~5~~6) Karst terrain - an area where karst topography, with its characteristic erosional surface and subterranean features, is developed as the result of dissolution of limestone, dolomite, or other soluble rock. Characteristic physiographic features present in karst terrains include, but are not limited to, dolines, collapse shafts (sinkholes), sinking streams, caves, seeps, large springs, and blind valleys.

(3~~6~~7) Lateral expansion - a horizontal expansion of the waste boundaries of an existing CCR landfill or existing CCR surface impoundment made after October 19, 2015.

(3~~7~~8) Liquefaction factor of safety - the factor of safety (safety factor) determined using analysis under liquefaction conditions.

(3~~8~~9) Maximum horizontal acceleration in lithified earth material - the maximum expected horizontal acceleration at the ground surface as depicted on a seismic hazard map, with a 98% or greater probability that the acceleration will not be exceeded in 50 years, or the maximum expected horizontal acceleration based on a site-specific seismic risk assessment.

(~~39~~40) New CCR landfill - a CCR landfill or lateral expansion of a CCR landfill that first receives CCR or commences construction after October 19, 2015. A new CCR landfill has commenced construction if the owner or operator has obtained the federal, state, and local approvals or permits necessary to begin physical construction and a continuous on-site, physical construction program had begun after October 19, 2015. Overfills are also considered new CCR landfills.

(4~~0~~1) New CCR surface impoundment - a CCR surface impoundment or lateral expansion of an existing or new CCR surface impoundment that first receives CCR or commences construction after October 19, 2015. A new CCR surface impoundment has commenced construction if the owner or operator has obtained the federal, state, and local approvals or permits necessary to begin physical construction and a continuous on-site, physical construction program had begun after October 19, 2015.

(4~~1~~2) Operator - the person(s) responsible for the overall operation of a CCR unit.

(4~~2~~3) Overfill - a new CCR landfill constructed over a closed CCR surface impoundment.

(4~~3~~4) Owner - the person(s) who owns a CCR unit or part of a CCR unit.

(4~~4~~5) Poor foundation conditions - those areas where features exist which indicate that a natural or human- induced event may result in inadequate foundation support for the structural components of an existing or new CCR unit. For example, failure to maintain static and seismic factors of safety as required in 335-13-15-.04(4)(e) and 335-13-15-.04(5)(e) would cause a poor foundation condition.

(4~~5~~6) Probable maximum flood - the flood that may be expected from the most severe combination of critical meteorologic and hydrologic conditions that are reasonably possible in the drainage basin.

(4~~6~~7) Qualified person - a person or persons trained to recognize specific appearances of structural weakness and other conditions which are disrupting or have the potential to disrupt the operation or safety of the CCR unit by visual observation and, if applicable, to monitor instrumentation.

(4~~7~~8) Qualified professional engineer - an individual who is licensed by the State of Alabama as a Professional Engineer to practice one or more disciplines of engineering and who is qualified by education, technical knowledge and experience to make the specific technical certifications required under this chapter. ~~Professional engineers making these certifications must be currently licensed in the state where the CCR unit(s) is located.~~

(4~~8~~9) Recognized and generally accepted good engineering practices - engineering maintenance or operation activities based on established codes, widely accepted standards, published technical reports, or a practice widely recommended throughout the industry. Such practices generally detail approved ways to perform specific engineering, inspection, or mechanical integrity activities.

(~~49~~50)Retrofit - to remove all CCR and contaminated soils and sediments from the CCR surface impoundment, and to ensure the unit complies with the requirements in 335-13-15-.04(3).

(5~~1~~0) Run-off - any rainwater, leachate, or other liquid that drains over land from any part of a CCR landfill or lateral expansion of a CCR landfill.

(5~~1~~2) Run-on - any rainwater, leachate, or other liquid that drains over land onto any part of a CCR landfill or lateral expansion of a CCR landfill.

(5~~2~~3) Sand and gravel pit or quarry - an excavation for the extraction of aggregate, minerals or metals. The term sand and gravel pit and/or quarry does not include subsurface or surface coal mines.

(5~~3~~4) Seismic factor of safety - the factor of safety (safety factor) determined using analysis under earthquake conditions using the peak ground acceleration for a seismic event with a 2% probability of exceedance in 50 years, equivalent to a return period of approximately 2,500 years, based on the U.S. Geological Survey (USGS) seismic hazard maps for seismic events with this return period for the region where the CCR surface impoundment is located.

(5~~4~~5) Seismic impact zone - an area having a 2% or greater probability that the maximum expected horizontal acceleration, expressed as a percentage of the earth's gravitational pull (g), will exceed 0.10 g in 50 years.

(5~~5~~6) Slope protection - engineered or non-engineered measures installed on the upstream or downstream slope of the CCR surface impoundment to protect the slope against wave action or erosion, including but not limited to rock riprap, wooden pile, or concrete revetments, vegetated wave berms, concrete facing, gabions, geotextiles, or fascines.

(5~~7~~6) Solid waste management or management - the systematic administration of the activities which provide for the collection, source

separation, storage, transportation, processing, treatment, or disposal of solid waste.

(5~~7~~8) Static factor of safety - the factor of safety (safety factor) determined using analysis under the long-term, maximum storage pool loading condition, the maximum surcharge pool loading condition, and under the end-of-construction loading condition.

(5~~8~~9) Structural components - liners, leachate collection and removal systems, final covers, run-on and run-off systems, inflow design flood control systems, and any other component used in the construction and operation of the CCR unit that is necessary to ensure the integrity of the unit and that the contents of the unit are not released into the environment.

(60) Technically feasible - possible to do in a way that would likely be successful.

(61) Technically infeasible - not possible to do in a way that would likely be successful.

(62~~59~~)Unstable area - a location that is susceptible to natural or human-induced events or forces capable of impairing the integrity, including structural components of some or all of the CCR unit that are responsible for preventing releases from such unit. Unstable areas can include poor foundation conditions, areas susceptible to mass movements, and karst terrains.

(6~~3~~0) Uppermost aquifer - the geologic formation nearest the natural ground surface that is an aquifer, as well as lower aquifers that are hydraulically interconnected with this aquifer within the facility's property boundary. Upper limit is measured at a point nearest to the natural ground surface to which the aquifer rises during the wet season.

(6~~4~~1) Waste boundary - a vertical surface located at the hydraulically downgradient limit of the CCR unit. The vertical surface extends down into the uppermost aquifer.

Author: Heather M. Jones
Statutory Authority: Code of Alabama 1975, §§ 22-27-2, 22-27-3, 22-27-7, 22-27-9 and 22-27-12
History: Filed: April 24, 2018; Effective: June 8, 2018. **Amended:** Proposed: September 21, 2020.

335-13-15-.03 Location Restrictions.

(1) Placement above the uppermost aquifer.

(a) New CCR landfills, existing and new CCR surface impoundments, and all lateral expansions of CCR units must be constructed with a base that is located no less than 1.52 meters (five feet) above the ~~highest measured groundwater level~~ uppermost aquifer as determined by the following procedures:

1. The site hydrogeology shall be established to the upper-most aquifer and subsequent interconnecting aquifers. The hydrogeological evaluation for a specific site must be performed by a firm or individual having expertise in hydrogeology. The hydrogeological evaluation shall require a minimum of three exploration borings to include sampling and geologic logging and completion of these borings as piezometers.

2. Two groundwater measurements shall be taken during each of the three consecutive months of February, March, and April with no two measurements taken within any twelve day period, or as otherwise approved by the Department.

3. From the hydrogeological evaluation and groundwater measurements, the subsequent establishment of the first saturation zone, the uppermost aquifer and subsequent underlying and interconnected aquifers, piezometer measuring point elevations, water table elevations and an estimate of groundwater flow direction and rate will be required.

4. Based on the groundwater measurements, the owner or operator of a new CCR unit or any lateral expansion of a CCR unit shall design the CCR unit so that the bottom base is five feet above the ~~highest measured groundwater level~~uppermost aquifer.

5. When the geological and hydrological data so indicate, the Department may specify greater separation distances to protect groundwater.

6. When the geological and hydrological data so indicate, the Department may allow engineering controls to remove, divert, drain, or otherwise modify zones of saturation above the uppermost aquifer.

(b) The owner or operator must demonstrate by the dates specified in 335-13-15-.03(1)(d) that the CCR unit meets the minimum requirements for placement above the uppermost aquifer.

(c) The owner or operator of the CCR unit must obtain a certification from a qualified professional engineer stating that the demonstration meets the requirements of 335-13-15-.03(1)(a).

(d) The owner or operator of the CCR unit must complete the demonstration required by 335-13-15-.03(1)(a) by the date specified in either 335-13-15-.03(1)(d)1. or 2.

1. For an existing CCR surface impoundment, the owner or operator must complete the demonstration no later than October 17, 2018.

2. For a new CCR landfill, new CCR surface impoundment, or any lateral expansion of a CCR unit, the owner or operator must complete the demonstration no later than the date of initial receipt of CCR in the CCR unit.

3. The owner or operator has completed the demonstration required by 335-13-15-.03(1)(a) when the demonstration is placed in the facility's operating record as required by 335-13-15-.08(1)(e).

4. An owner or operator of an existing CCR surface impoundment who fails to demonstrate compliance with the requirements of 335-13-15-.03(1)(a) by the date specified in 335-13-15-.03(1)(d)1. is subject to the requirements of 335-13-15-.07(2)(b)1.

5. An owner or operator of a new CCR landfill, new CCR surface impoundment, or any lateral expansion of a CCR unit who fails to make the demonstration showing compliance with the requirements of 335-13-15-.03(1)(a) is prohibited from placing CCR in the CCR unit.

(e) The owner or operator of the CCR unit must comply with the recordkeeping requirements specified in 335-13-15-.08(1)(e), the notification requirements specified in 335-13-15-.08(2)(e), and the internet requirements specified in 335-13-15-.08(3)(e).

(2) Wetlands.

(a) New CCR landfills, existing and new CCR surface impoundments, and all lateral expansions of CCR units must not be located in wetlands, as defined in 335-13-1-.03, unless the owner or operator demonstrates by the dates specified in 335-13-15-.03(2)(c) that the CCR unit meets the requirements of 335-13-15-.03(2)(a)1. through 5.

1. Where applicable under section 404 of the Clean Water Act or applicable state wetlands laws, a clear and objective rebuttal of the presumption that an alternative to the CCR unit is reasonably available that does not involve wetlands.

2. The construction and operation of the CCR unit will not cause or contribute to any of the following:

(i) A violation of any applicable state or federal water quality standard;

(ii) A violation of any applicable toxic effluent standard or prohibition under section 307 of the Clean Water Act;

(iii) Jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of a critical habitat, protected under the Endangered Species Act of 1973; and

(iv) A violation of any requirement under the Marine Protection, Research, and Sanctuaries Act of 1972 for the protection of a marine sanctuary.

3. The CCR unit will not cause or contribute to significant degradation of wetlands by addressing all of the following factors:

(i) Erosion, stability, and migration potential of native wetland soils, muds and deposits used to support the CCR unit;

(ii) Erosion, stability, and migration potential of dredged and fill materials used to support the CCR unit;

(iii) The volume and chemical nature of the CCR;

(iv) Impacts on fish, wildlife, and other aquatic resources and their habitat from release of CCR;

(v) The potential effects of catastrophic release of CCR to the wetland and the resulting impacts on the environment; and

(vi) Any additional factors, as necessary, to demonstrate that ecological resources in the wetland are sufficiently protected.

4. To the extent required under section 404 of the Clean Water Act or applicable state wetlands laws, steps have been taken to attempt to achieve no net loss of wetlands (as defined by acreage and function) by first avoiding impacts to wetlands to the maximum extent reasonable as required by 335-13-15-.03(2)(a)1. through 3., then minimizing unavoidable impacts to the maximum extent reasonable, and finally offsetting remaining unavoidable wetland impacts through all appropriate and reasonable compensatory mitigation actions (e.g., restoration of existing degraded wetlands or creation of man-made wetlands); and

5. Sufficient information is available to make a reasoned determination with respect to the demonstrations in 335-13-15-.03(2)(a)1. through 4.

(b) The owner or operator of the CCR unit must obtain a certification from a qualified professional engineer stating that the demonstration meets the requirements of 335-13-15-.03(2)(a).

(c) The owner or operator of the CCR unit must complete the demonstrations required by 335-13-15-.03(2)(a) by the date specified in either 335-13-15-.03(2)(c)1. or 2.

1. For an existing CCR surface impoundment, the owner or operator must complete the demonstration no later than October 17, 2018.

2. For a new CCR landfill, new CCR surface impoundment, or any lateral expansion of a CCR unit, the owner or operator must complete the demonstration no later than the date of initial receipt of CCR in the CCR unit.

3. The owner or operator has completed the demonstration required by 335-13-15-.03(2)(a) when the demonstration is placed in the facility's operating record as required by 335-13-15-.08(1)(e).

4. An owner or operator of an existing CCR surface impoundment who fails to demonstrate compliance with the requirements of 335-13-15-.03(2)(a) by the date specified in 335-13-15-.03(2)(c)1. is subject to the requirements of 335-13-15-.07(2)(b)1.

5. An owner or operator of a new CCR landfill, new CCR surface impoundment, or any lateral expansion of a CCR unit who fails to make the demonstrations showing compliance with the requirements of 335-13-15-.03(2)(a) is prohibited from placing CCR in the CCR unit.

(d) The owner or operator must comply with the recordkeeping requirements specified in 335-13-15-.08(1)(e), the notification requirements specified in 335-13-15-.08(2)(e), and the internet requirements specified in 335-13-15-.08(3)(e).

(3) Fault areas.

(a) New CCR landfills, existing and new CCR surface impoundments, and all lateral expansions of CCR units must not be located within 60 meters (200 feet) of the outermost damage zone of a fault that has had displacement in Holocene time unless the owner or operator demonstrates by the dates specified in 335-13-15-.03(3)(c) that an alternative setback distance of less than 60 meters (200 feet) will prevent damage to the structural integrity of the CCR unit.

(b) The owner or operator of the CCR unit must obtain a certification from a qualified professional engineer stating that the demonstration meets the requirements of 335-13-15-.03(3)(a).

(c) The owner or operator of the CCR unit must complete the demonstration required by 335-13-15-.03(3)(a) by the date specified in either 335-13-15-.03(3)(c)1. or 2.

1. For an existing CCR surface impoundment, the owner or operator must complete the demonstration no later than October 17, 2018.

2. For a new CCR landfill, new CCR surface impoundment, or any lateral expansion of a CCR unit, the owner or operator must complete the demonstration no later than the date of initial receipt of CCR in the CCR unit.

3. The owner or operator has completed the demonstration required by 335-13-15-.03(3)(a) when the demonstration is placed in the facility's operating record as required by 335-13-15-.08(1)(e).

4. An owner or operator of an existing CCR surface impoundment who fails to demonstrate compliance with the requirements of 335-13-15-.03(3)(a) by the date specified in 335-13-15-.03(3)(c)1. is subject to the requirements of 335-13-15-.07(2)(b)1.

5. An owner or operator of a new CCR landfill, new CCR surface impoundment, or any lateral expansion of a CCR unit who fails to make the demonstration showing compliance with the requirements of 335-13-15-.03(3)(a) is prohibited from placing CCR in the CCR unit.

(d) The owner or operator of the CCR unit must comply with the recordkeeping requirements specified in 335-13-15-.08(1)(e), the notification requirements specified in 335-13-15-.08(2)(e), and the internet requirements specified in 335-13-15-.08(3)(e).

(4) Seismic impact zones.

(a) New CCR landfills, existing and new CCR surface impoundments, and all lateral expansions of CCR units must not be located in seismic impact zones unless the owner or operator demonstrates by the dates specified in 335-13-15-.03(4)(c) that all structural components including liners, leachate collection and removal systems, and surface water control systems, are designed to resist the maximum horizontal acceleration in lithified earth material for the site.

(b) The owner or operator of the CCR unit must obtain a certification from a qualified professional engineer stating that the demonstration meets the requirements of 335-13-15-.03(4)(a).

(c) The owner or operator of the CCR unit must complete the demonstration required by 335-13-15-.03(4)(a) by the date specified in either 335-13-15-.03(4)(c)1. or 2.

1. For an existing CCR surface impoundment, the owner or operator must complete the demonstration no later than October 17, 2018.

2. For a new CCR landfill, new CCR surface impoundment, or any lateral expansion of a CCR unit, the owner or operator must complete the demonstration no later than the date of initial receipt of CCR in the CCR unit.

3. The owner or operator has completed the demonstration required by 335-13-15-.03(4)(a) when the demonstration is placed in the facility's operating record as required by 335-13-15-.08(1)(e).

4. An owner or operator of an existing CCR surface impoundment who fails to demonstrate compliance with the requirements of 335-13-15-.03(4)(a) by the date specified in 335-13-15-.03(4)(c)1. is subject to the requirements of 335-13-15-.07(2)(b)1.

5. An owner or operator of a new CCR landfill, new CCR surface impoundment, or any lateral expansion of a CCR unit who fails to make the demonstration showing compliance with the requirements of 335-13-15-.03(4)(a) is prohibited from placing CCR in the CCR unit.

(d) The owner or operator of the CCR unit must comply with the recordkeeping requirements specified in 335-13-15-.08(1)(e), the notification requirements specified in 335-13-15-.08(2)(e), and the internet requirements specified in 335-13-15-.08(3)(e).

(5) Unstable areas.

(a) An existing or new CCR landfill, existing or new CCR surface impoundment, or any lateral expansion of a CCR unit must not be located in an unstable area unless the owner or operator demonstrates by the dates specified in 335-13-15-.03(5)(d) that recognized and generally accepted good engineering practices have been incorporated into the design of the CCR unit to ensure that the integrity of the structural components of the CCR unit will not be disrupted.

(b) The owner or operator must consider all of the following factors, at a minimum, when determining whether an area is unstable:

1. On-site or local soil conditions that may result in significant differential settling;

2. On-site or local geologic or geomorphologic features; and

3. On-site or local human-made features or events (both surface and subsurface).

(c) The owner or operator of the CCR unit must obtain a certification from a qualified professional engineer stating that the demonstration meets the

requirements of 335-13-15-.03(5)(a).

(d) The owner or operator of the CCR unit must complete the demonstration required by 335-13-15-.03(5)(a) by the date specified in either 335-13-15-.03(5)(d)1. or 2.

1. For an existing CCR landfill or existing CCR surface impoundment, the owner or operator must complete the demonstration no later than October 17, 2018.

2. For a new CCR landfill, new CCR surface impoundment, or any lateral expansion of a CCR unit, the owner or operator must complete the demonstration no later than the date of initial receipt of CCR in the CCR unit.

3. The owner or operator has completed the demonstration required by 335-13-15-.03(5)(a) when the demonstration is placed in the facility's operating record as required by 335-13-15-.08(1)(e).

4. An owner or operator of an existing CCR surface impoundment or existing CCR landfill who fails to demonstrate compliance with the requirements of 335-13-15-.03(5)(a) by the date specified in 335-13-15-.03(5)(d)1. is subject to the requirements of 335-13-15-.07(2)(b)1. or (d)1., respectively.

5. An owner or operator of a new CCR landfill, new CCR surface impoundment, or any lateral expansion of a CCR unit who fails to make the demonstration showing compliance with the requirements of 335-13-15-.03(5)(a) is prohibited from placing CCR in the CCR unit.

(e) The owner or operator of the CCR unit must comply with the recordkeeping requirements specified in 335-13-15-.08(1)(e), the notification requirements specified in 335-13-15-.08(2)(e), and the internet requirements specified in 335-13-15-.08(3)(e).

(6) Buffer Requirement. A buffer requirement of 100 feet measured in a horizontal plane shall be required from the perimeter of the facility boundary. In addition, a 100 foot buffer shall be required around wetlands, beaches, or dunes. No disposal or storage practices for solid waste shall take place in the buffer zone. Roads, access control measures, earth storage, and buildings may be placed in the buffer zone.

Author: Heather M. Jones
Statutory Authority: Code of Alabama 1975, §§ 22-27-3 and 22-27-7
History: Filed: April 24, 2018; Effective: June 8, 2018. **Amended:** Proposed: September 21, 2020.

335-13-15-.04 Design Criteria.

(1) Design Criteria for new CCR landfills and any lateral expansion of a CCR landfill.

(a) 1. New CCR landfills and any lateral expansion of a CCR landfill must be designed, constructed, operated, and maintained with either a composite liner that meets the requirements of 335-13-15-.04(1)(b) or an alternative composite liner that meets the requirements in 335-13-15-.04(1)(c), and a leachate collection and removal system that meets the requirements of 335-13-15-.04(1)(d).

2. Prior to construction of an overfill, the underlying surface impoundment must meet the requirements of 335-13-15-.07(3)(d).

(b) A composite liner must consist of two components; the upper component consisting of, at a minimum, a 40-mil geomembrane liner (GM), and the lower component consisting of at least a two-foot layer of compacted soil with a hydraulic conductivity of no more than $1x10^{-7}$ centimeters per second (cm/sec). GM components consisting of high density polyethylene (HDPE) must be at least 60-mil thick. The GM or upper liner component must be installed in direct and uniform contact with the compacted soil or lower liner component. The composite liner must be:

1. Constructed of materials that have appropriate chemical properties and sufficient strength and thickness to prevent failure due to pressure gradients (including static head and external hydrogeologic forces), physical contact with the CCR or leachate to which they are exposed, climatic conditions, the stress of installation, and the stress of daily operation;

2. Constructed of materials that provide appropriate shear resistance of the upper and lower component interface to prevent sliding of the upper component, including on slopes;

3. Placed upon a foundation or base capable of providing support to the liner and resistance to pressure gradients above and below the liner to prevent failure of the liner due to settlement, compression, or uplift; and

4. Installed to cover all surrounding earth likely to be in contact with the CCR or leachate.

(c) If the owner or operator elects to install an alternative composite liner, all of the following requirements must be met:

1. An alternative composite liner must consist of two components; the upper component consisting of, at a minimum, a 40-mil GM, and a lower component, that is not a geomembrane, with a liquid flow rate no greater than

the liquid flow rate of two feet of compacted soil with a hydraulic conductivity of no more than $1x10^{-7}$ cm/sec. GM components consisting of high density polyethylene (HDPE) must be at least 60-mil thick. If the lower component of the alternative liner is compacted soil, the GM must be installed in direct and uniform contact with the compacted soil.

2. The owner or operator must obtain certification from a qualified professional engineer that the liquid flow rate through the lower component of the alternative composite liner is no greater than the liquid flow rate through two feet of compacted soil with a hydraulic conductivity of $1x10^{-7}$ cm/sec. The hydraulic conductivity for the two feet of compacted soil used in the comparison shall be no greater than $1x10^{-7}$ cm/sec. The hydraulic conductivity of any alternative to the two feet of compacted soil must be determined using recognized and generally accepted methods. The liquid flow rate comparison must be made using Equation 1 of this section, which is derived from Darcy's Law for gravity flow through porous media.

(Eq. 1) $$\frac{Q}{A} = q = k\left(\frac{h}{t} + 1\right)$$

Where,
Q = flow rate (cubic centimeters/second);
A = surface area of the liner (squared centimeters);
q = flow rate per unit area (cubic centimeters/-second/squared centimeter);
k = hydraulic conductivity of the liner (centimeters/second);
h = hydraulic head above the liner (centimeters); and
t = thickness of the liner (centimeters).

3. The alternative composite liner must meet the requirements specified in 335-13-15-.04(1)(b)1. through 4.

(d) The leachate collection and removal system must be designed, constructed, operated, and maintained to collect and remove leachate from the landfill during the active life and post-closure care period. The leachate collection and removal system must be:

1. Designed and operated to maintain less than a 30-centimeter depth of leachate over the composite liner or alternative composite liner;

2. Constructed of materials that are chemically resistant to the CCR and any non-CCR waste managed in the CCR unit and the leachate expected to be generated, and of sufficient strength and thickness to prevent collapse under the pressures exerted by overlying waste, waste cover materials, and equipment used at the CCR unit; and

3. Designed and operated to minimize clogging during the active life and post-closure care period.

(e) Prior to construction of the CCR landfill or any lateral expansion of a CCR landfill, the owner or operator must obtain a certification from a qualified professional engineer that the design of the composite liner (or, if applicable, alternative composite liner) and the leachate collection and removal system meets the requirements of this section.

(f) Upon completion of construction of the CCR landfill or any lateral expansion of a CCR landfill, the owner or operator must obtain a certification from a qualified professional engineer that the composite liner (or, if applicable, alternative composite liner) and the leachate collection and removal system has been constructed in accordance with the requirements of this section.

(g) The owner or operator of the CCR unit must comply with the recordkeeping requirements specified in 335-13-15-.08(1)(f), the notification requirements specified in 335-13-15-.08(2)(f), and the internet requirements specified in 335-13-15-.08(3)(f).

(2) Liner design criteria for existing CCR surface impoundments.

(a) 1. No later than October 17, 2016, the owner or operator of an existing CCR surface impoundment must document whether or not such unit was constructed with any one of the following:

(i) ~~A liner consisting of a minimum of two feet of compacted soil with a hydraulic conductivity of no more than $1x10^{-7}$ cm/sec;~~[Reserved]

(ii) A composite liner that meets the requirements of 335-13-15-.04(1)(b); or

(iii) An alternative composite liner that meets the requirements of 335-13-15-.04(1)(c).

2. The hydraulic conductivity of the compacted soil must be determined using recognized and generally accepted methods.

3. An existing CCR surface impoundment is considered to be an existing unlined CCR surface impoundment if either:

(i) The owner or operator of the CCR unit determines that the CCR unit is not constructed with a liner that meets the requirements of 335-13-15-.04(2)(a)1.~~(i),~~ (ii), or (iii); or

(ii) The owner or operator of the CCR unit fails to document whether the CCR unit was constructed with a liner that meets the requirements of 335-13-15-.04(2)(a)1.~~(i),~~ (ii), or (iii).

4. All existing unlined CCR surface impoundments are subject to the

requirements of 335-13-15-.07(2)(a).

(b) The owner or operator of the CCR unit must obtain a certification from a qualified professional engineer attesting that the documentation as to whether a CCR unit meets the requirements of 335-13-15-.04(2)(a) is accurate. This certification must be submitted to the Department.

(c) The owner or operator of the CCR unit must comply with the recordkeeping requirements specified in 335-13-15-.08(1)(f), the notification requirements specified in 335-13-15-.08(2)(f), and the internet requirements specified in 335-13-15-.08(3)(f).

(3) Liner design criteria for new CCR surface impoundments and any lateral expansion of a CCR surface impoundment.

(a) New CCR surface impoundments and lateral expansions of existing and new CCR surface impoundments must be designed, constructed, operated, and maintained with either a composite liner or an alternative composite liner that meets the requirements of 335-13-15-.04(1)(b) or (c).

(b) Any liner specified in this section must be installed to cover all surrounding earth likely to be in contact with CCR. Dikes shall not be constructed on top of the composite liner.

(c) Prior to construction of the CCR surface impoundment or any lateral expansion of a CCR surface impoundment, the owner or operator must obtain certification from a qualified professional engineer that the design of the composite liner or, if applicable, the design of an alternative composite liner complies with the requirements of this section. This certification must be submitted to the Department.

(d) Upon completion, the owner or operator must obtain certification from a qualified professional engineer that the composite liner or if applicable, the alternative composite liner has been constructed in accordance with the requirements of this section.

(e) The owner or operator of the CCR unit must comply with the recordkeeping requirements specified in 335-13-15-.08(1)(f), the notification requirements specified in 335-13-15-.08(2)(f), and the internet requirements specified in 335-13-15-.08(3)(f).

(4) Structural integrity criteria for existing CCR surface impoundments.

(a) The requirements of 335-13-15-.04(4)(a)1. through 4. apply to all existing CCR surface impoundments, except for those existing CCR surface impoundments that are incised CCR units. If an incised CCR surface impoundment is subsequently modified (e.g., a dike is constructed) such that

the CCR unit no longer meets the definition of an incised CCR unit, the CCR unit is subject to the requirements of 335-13-15-.04(4)(a)1. through 4.

1. No later than December 17, 2015, the owner or operator of the CCR unit must place on or immediately adjacent to the CCR unit a permanent identification marker, at least six feet high showing the identification number of the CCR unit, if one has been assigned by the state, the name associated with the CCR unit and the name of the owner or operator of the CCR unit.

2. Periodic hazard potential classification assessments.

(i) The owner or operator of the CCR unit must conduct initial and periodic hazard potential classification assessments of the CCR unit according to the timeframes specified in 335-13-15-.04(4)(f). The owner or operator must document the hazard potential classification of each CCR unit as either a high hazard potential CCR surface impoundment, a significant hazard potential CCR surface impoundment, or a low hazard potential CCR surface impoundment. The owner or operator must also document the basis for each hazard potential classification.

(ii) The owner or operator of the CCR unit must obtain a certification from a qualified professional engineer stating that the initial hazard potential classification and each subsequent periodic classification specified in 335-13-15-.04(4)(a)2.(i) was conducted in accordance with the requirements of this section. This certification must be submitted to the Department.

3. Emergency Action Plan (EAP).

(i) Development of the plan. No later than April 17, 2017, the owner or operator of a CCR unit determined to be either a high hazard potential CCR surface impoundment or a significant hazard potential CCR surface impoundment under 335-13-15-.04(4)(a)2. must prepare and maintain a written EAP. At a minimum, the EAP must:

(I) Define the events or circumstances involving the CCR unit that represent a safety emergency, along with a description of the procedures that will be followed to detect a safety emergency in a timely manner;

(II) Define responsible persons, their respective responsibilities, and notification procedures in the event of a safety emergency involving the CCR unit;

(III) Provide contact information of emergency responders;

(IV) Include a map which delineates the downstream area which would be affected in the event of a CCR unit failure and a physical description of the CCR unit; and

(V) Include provisions for an annual face-to-face meeting or exercise between representatives of the owner or operator of the CCR unit and the local emergency responders.

(ii) Amendment of the plan.

(I) The owner or operator of a CCR unit subject to the requirements of 335-13-15-.04(4)(a)3.(i) may amend the written EAP at any time provided the revised plan is placed in the facility's operating record as required by 335-13-15-.08(1)(f)6. The owner or operator must amend the written EAP whenever there is a change in conditions that would substantially affect the EAP in effect.

(II) The written EAP must be evaluated, at a minimum, every five years to ensure the information required in 335-13-15-.04(4)(a)3.(i) is accurate. As necessary, the EAP must be updated and a revised EAP placed in the facility's operating record as required by 335-13-15-.08(1)(f)6.

(iii) Changes in hazard potential classification.

(I) If the owner or operator of a CCR unit determines during a periodic hazard potential assessment that the CCR unit is no longer classified as either a high hazard potential CCR surface impoundment or a significant hazard potential CCR surface impoundment, then the owner or operator of the CCR unit is no longer subject to the requirement to prepare and maintain a written EAP beginning on the date the periodic hazard potential assessment documentation is placed in the facility's operating record as required by 335-13-15-.08(1)(f)5.

(II) If the owner or operator of a CCR unit classified as a low hazard potential CCR surface impoundment subsequently determines that the CCR unit is properly re-classified as either a high hazard potential CCR surface impoundment or a significant hazard potential CCR surface impoundment, then the owner or operator of the CCR unit must prepare a written EAP for the CCR unit as required by 335-13-15-.04(4)(a)3.(i) within six months of completing such periodic hazard potential assessment.

(iv) The owner or operator of the CCR unit must obtain a certification from a qualified professional engineer stating that the written EAP, and any subsequent amendment of the EAP, meets the requirements of 335-13-15-.04(4)(a)3. The EAP, as well as the certification from a qualified professional engineer, must be submitted to the Department for approval.

(v) Activation of the EAP. The EAP must be implemented once events or circumstances involving the CCR unit that represent a safety emergency are detected, including conditions identified during periodic structural stability assessments, annual inspections, and inspections by a qualified person.

4. The CCR unit and surrounding areas must be designed, constructed, operated, and maintained with vegetated slopes of dikes. Deep rooted vegetation (roots that may grow below the six inch erosion layer) shall be prohibited as vegetative cover.

(b) The requirements of 335-13-15-.04(4)(c) through (e) apply to an owner or operator of an existing CCR surface impoundment that either:

1. Has a height of five feet or more and a storage volume of 20 acre-feet or more; or

2. Has a height of 20 feet or more.

(c) 1. No later than October 17, 2016, the owner or operator of the CCR unit must compile a history of construction, which shall contain, to the extent feasible, the information specified in 335-13-15-.04(4)(c)1.(i) through (xi).

(i) The name and address of the person(s) owning or operating the CCR unit; the name associated with the CCR unit; and the identification number of the CCR unit if one has been assigned by the state.

(ii) The location of the CCR unit identified on the most recent U.S. Geological Survey (USGS) 7½ minute or 15 minute topographic quadrangle map, or a topographic map of equivalent scale if a USGS map is not available.

(iii) A statement of the purpose for which the CCR unit is being used.

(iv) The name and size in acres of the watershed within which the CCR unit is located.

(v) A description of the physical and engineering properties of the foundation and abutment materials on which the CCR unit is constructed.

(vi) A statement of the type, size, range, and physical and engineering properties of the materials used in constructing each zone or stage of the CCR unit; the method of site preparation and construction of each zone of the CCR unit; and the approximate dates of construction of each successive stage of construction of the CCR unit.

(vii) At a scale that details engineering structures and appurtenances relevant to the design, construction, operation, and maintenance of the CCR unit, detailed dimensional drawings of the CCR unit, including a plan view and cross sections of the length and width of the CCR unit, showing all zones, foundation improvements, drainage provisions, spillways, diversion ditches, outlets, instrument locations, and slope protection, in addition to the normal operating pool surface elevation and the maximum pool surface elevation following peak discharge from the inflow design flood, the expected maximum

depth of CCR within the CCR surface impoundment, and any identifiable natural or manmade features that could adversely affect operation of the CCR unit due to malfunction or mis-operation.

(viii) A description of the type, purpose, and location of existing instrumentation.

(ix) Area-capacity curves for the CCR unit.

(x) A description of each spillway and diversion design feature and capacities and calculations used in their determination.

(xi) The construction specifications and provisions for surveillance, maintenance, and repair of the CCR unit.

(xii) Any record or knowledge of structural instability of the CCR unit.

2. Changes to the history of construction. If there is a significant change to any information compiled under 335-13-15-.04(4)(c)1., the owner or operator of the CCR unit must update the relevant information and place it in the facility's operating record as required by 335-13-15-.08(1)(f)9.

(d) Periodic structural stability assessments.

1. The owner or operator of the CCR unit must conduct initial and periodic structural stability assessments and document whether the design, construction, operation, and maintenance of the CCR unit is consistent with recognized and generally accepted good engineering practices for the maximum volume of CCR and CCR wastewater which can be impounded therein. The assessment must, at a minimum, document whether the CCR unit has been designed, constructed, operated, and maintained with:

(i) Stable foundations and abutments;

(ii) Adequate slope protection to protect against surface erosion, wave action, and adverse effects of sudden drawdown;

(iii) Dikes mechanically compacted to a density sufficient to withstand the range of loading conditions in the CCR unit;

(iv) Vegetated slopes of dikes and surrounding areas not to include deep rooted vegetation (roots that may grow below the six inch erosion layer);

(v) A single spillway or a combination of spillways configured as specified in 335-13-15-.04(4)(d)1.(v)(I). The combined capacity of all spillways must be designed, constructed, operated, and maintained to adequately manage flow during and following the peak discharge from the event specified in 335-13-

15-.04(4)(d)1.(v)(II).

(I) All spillways must be either:

I. Of non-erodible construction and designed to carry sustained flows; or

II. Earth- or grass-lined and designed to carry short-term, infrequent flows at non-erosive velocities where sustained flows are not expected.

(II) The combined capacity of all spillways must adequately manage flow during and following the peak discharge from a:

I. Probable maximum flood (PMF) for a high hazard potential CCR surface impoundment; or

II. 1000-year flood for a significant hazard potential CCR surface impoundment; or

III. 100-year flood for a low hazard potential CCR surface impoundment.

(vi) Hydraulic structures underlying the base of the CCR unit or passing through the dike of the CCR unit that maintain structural integrity and are free of significant deterioration, deformation, distortion, bedding deficiencies, sedimentation, and debris which may negatively affect the operation of the hydraulic structure; and

(vii) For CCR units with downstream slopes which can be inundated by the pool of an adjacent water body, such as a river, stream or lake, downstream slopes that maintain structural stability during low pool of the adjacent water body or sudden drawdown of the adjacent water body.

2. The periodic assessment described in 335-13-15-.04(4)(d)1. must identify any structural stability deficiencies associated with the CCR unit in addition to recommending corrective measures. If a deficiency or a release is identified during the periodic assessment, the owner or operator of a CCR unit must remedy the deficiency or release as soon as feasible and prepare a report detailing the corrective measures taken. This report must be submitted to the Department for review and approval.

3. The owner or operator of the CCR unit must obtain a certification from a qualified professional engineer stating that the initial assessment and each subsequent periodic assessment was conducted in accordance with the requirements of this section. This certification must be submitted to the Department.

(e) Periodic safety factor assessments.

1. The owner or operator must conduct an initial and periodic safety factor assessments for each CCR unit and document whether the calculated factors of safety for each CCR unit achieve the minimum safety factors specified in 335-13-15-.04(4)(e)1.(i) through (iv) for the critical cross section of the embankment. The critical cross section is the cross section anticipated to be the most susceptible of all cross sections to structural failure based on appropriate engineering considerations, including loading conditions. The safety factor assessments must be supported by appropriate engineering calculations.

(i) The calculated static factor of safety under the long-term, maximum storage pool loading condition must equal or exceed 1.50.

(ii) The calculated static factor of safety under the maximum surcharge pool loading condition must equal or exceed 1.40.

(iii) The calculated seismic factor of safety must equal or exceed 1.00.

(iv) For dikes constructed of soils that have susceptibility to liquefaction, the calculated liquefaction factor of safety must equal or exceed 1.20.

2. The owner or operator of the CCR unit must obtain a certification from a qualified professional engineer stating that the initial assessment and each subsequent periodic assessment specified in 335-13-15-.04(4)(e)1. meets the requirements of this section. This certification must be submitted to the Department.

(f) Timeframes for periodic assessments.

1. Initial assessments. Except as provided by 335-13-15-.04(4)(f)2., the owner or operator of the CCR unit must complete the initial assessments required by 335-13-15-.04(4)(a)2., (d), and (e) no later than October 17, 2016. The owner or operator has completed an initial assessment when the owner or operator has placed the assessment required by 335-13-15-.04(4)(a)2., (d) and (e) in the facility's operating record as required by 335-13-15-.08(1)(f)5., 10., and 12.

2. Use of a previously completed assessment(s) in lieu of the initial assessment(s). The owner or operator of the CCR unit may elect to use a previously completed assessment to serve as the initial assessment required by 335-13-15-.04(4)(a)2., (d), and (e) provided that the previously completed assessment(s):

(i) Was completed no earlier than 42 months prior to October 17, 2016; and

(ii) Meets the applicable requirements of 335-13-15-.04(4)(a)2., (d), and (e).

3. Frequency for conducting periodic assessments. The owner or operator of the CCR unit must conduct and complete the assessments required by 335-13-15-.04(4)(a)2., (d), and (e) every five years. The date of completing the initial assessment is the basis for establishing the deadline to complete the first subsequent assessment. If the owner or operator elects to use a previously completed assessment(s) in lieu of the initial assessment as provided by 335-13-15-.04(4)(f)2., the date of the report for the previously completed assessment is the basis for establishing the deadline to complete the first subsequent assessment. The owner or operator may complete any required assessment prior to the required deadline provided the owner or operator places the completed assessment(s) into the facility's operating record within a reasonable amount of time. In all cases, the deadline for completing subsequent assessments is based on the date of completing the previous assessment. The owner or operator has completed an assessment when the relevant assessment(s) required by 335-13-15-.04(4)(a)2., (d), and (e) has been placed in the facility's operating record as required by 335-13-15-.08(1)(f)5., 10., and 12.

4. Closure of the CCR unit. An owner or operator of a CCR unit who either fails to complete a timely safety factor assessment or fails to demonstrate minimum safety factors as required by 335-13-15-.04(4)(e) is subject to the requirements of 335-13-15-.07(2)(b)2.

(g) The owner or operator of the CCR unit must comply with the recordkeeping requirements specified in 335-13-15-.08(1)(f), the notification requirements specified in 335-13-15-.08(2)(f), and the internet requirements specified in 335-13-15-.08(3)(f).

(5) Structural integrity criteria for new CCR surface impoundments and any lateral expansion of a CCR surface impoundment.

(a) The requirements of 335-13-15-.04(5)(a)1. through 4. apply to all new CCR surface impoundments and any lateral expansion of a CCR surface impoundment, except for those new CCR surface impoundments that are incised CCR units. If an incised CCR surface impoundment is subsequently modified (e.g., a dike is constructed) such that the CCR unit no longer meets the definition of an incised CCR unit, the CCR unit is subject to the requirements of 335-13-15-.04(5)(a)1. through 4.

1. No later than the initial receipt of CCR, the owner or operator of the CCR unit must place on or immediately adjacent to the CCR unit a permanent identification marker, at least six feet high showing the identification number of the CCR unit, if one has been assigned by the state, the name associated with the CCR unit and the name of the owner or operator of the CCR unit.

2. Periodic hazard potential classification assessments.

(i) The owner or operator of the CCR unit must conduct initial and periodic hazard potential classification assessments of the CCR unit according to the timeframes specified in 335-13-15-.04(5)(f). The owner or operator must document the hazard potential classification of each CCR unit as either a high hazard potential CCR surface impoundment, a significant hazard potential CCR surface impoundment, or a low hazard potential CCR surface impoundment. The owner or operator must also document the basis for each hazard potential classification.

(ii) The owner or operator of the CCR unit must obtain a certification from a qualified professional engineer stating that the initial hazard potential classification and each subsequent periodic classification specified in 335-13-15-.04(5)(a)2.(i) was conducted in accordance with the requirements of this section. This certification must be submitted to the Department.

3. Emergency Action Plan (EAP).

(i) Development of the plan. Prior to the initial receipt of CCR in the CCR unit, the owner or operator of a CCR unit determined to be either a high hazard potential CCR surface impoundment or a significant hazard potential CCR surface impoundment under 335-13-15-.04(5)(a)2. must prepare and maintain a written EAP. At a minimum, the EAP must:

(I) Define the events or circumstances involving the CCR unit that represent a safety emergency, along with a description of the procedures that will be followed to detect a safety emergency in a timely manner;

(II) Define responsible persons, their respective responsibilities, and notification procedures in the event of a safety emergency involving the CCR unit;

(III) Provide contact information of emergency responders;

(IV) Include a map which delineates the downstream area which would be affected in the event of a CCR unit failure and a physical description of the CCR unit; and

(V) Include provisions for an annual face-to-face meeting or exercise between representatives of the owner or operator of the CCR unit and the local emergency responders.

(ii) Amendment of the plan.

(I) The owner or operator of a CCR unit subject to the requirements of 335-13-15-.04(5)(a)3.(i) may amend the written EAP at any time provided the

revised plan is placed in the facility's operating record as required by 335-13-15-.08(1)(f)6. The owner or operator must amend the written EAP whenever there is a change in conditions that would substantially affect the EAP in effect.

(II) The written EAP must be evaluated, at a minimum, every five years to ensure the information required in 335-13-15-.04(5)(a)3.(i) is accurate. As necessary, the EAP must be updated and a revised EAP placed in the facility's operating record as required by 335-13-15-.08(1)(f)6.

(iii) Changes in hazard potential classification.

(I) If the owner or operator of a CCR unit determines during a periodic hazard potential assessment that the CCR unit is no longer classified as either a high hazard potential CCR surface impoundment or a significant hazard potential CCR surface impoundment, then the owner or operator of the CCR unit is no longer subject to the requirement to prepare and maintain a written EAP beginning on the date the periodic hazard potential assessment documentation is placed in the facility's operating record as required by 335-13-15-.08(1)(f)5.

(II) If the owner or operator of a CCR unit classified as a low hazard potential CCR surface impoundment subsequently determines that the CCR unit is properly re-classified as either a high hazard potential CCR surface impoundment or a significant hazard potential CCR surface impoundment, then the owner or operator of the CCR unit must prepare a written EAP for the CCR unit as required by 335-13-15-.04(5)(a)3.(i) within six months of completing such periodic hazard potential assessment.

(iv) The owner or operator of the CCR unit must obtain a certification from a qualified professional engineer stating that the written EAP, and any subsequent amendment of the EAP, meets the requirements of 335-13-15-.04(5)(a)3. The EAP, as well as the certification from a qualified professional engineer, must be submitted to the Department for approval.

(v) Activation of the EAP. The EAP must be implemented once events or circumstances involving the CCR unit that represent a safety emergency are detected, including conditions identified during periodic structural stability assessments, annual inspections, and inspections by a qualified person.

4. The CCR unit and surrounding areas must be designed, constructed, operated, and maintained with vegetated slopes of dikes. Deep rooted vegetation (roots that may grow below the six inch erosion layer) shall be prohibited as vegetative cover.

(b) The requirements of 335-13-15-.04(5)(c) through (e) apply to an owner or operator of a new CCR surface impoundment and any lateral expansion of a CCR surface impoundment that either:

1. Has a height of five feet or more and a storage volume of 20 acre-feet or more; or

2. Has a height of 20 feet or more.

(c) 1. No later than the initial receipt of CCR in the CCR unit, the owner or operator of a CCR unit must compile the design and construction plans for the CCR unit, which must include, to the extent feasible, the information specified in 335-13-15-.04(5)(c)1.(i) through (xi).

(i) The name and address of the person(s) owning or operating the CCR unit; the name associated with the CCR unit; and the identification number of the CCR unit if one has been assigned by the state.

(ii) The location of the CCR unit identified on the most recent U.S. Geological Survey (USGS) 7½ minute or 15 minute topographic quadrangle map, or a topographic map of equivalent scale if a USGS map is not available.

(iii) A statement of the purpose for which the CCR unit is being used.

(iv) The name and size in acres of the watershed within which the CCR unit is located.

(v) A description of the physical and engineering properties of the foundation and abutment materials on which the CCR unit is constructed.

(vi) A statement of the type, size, range, and physical and engineering properties of the materials used in constructing each zone or stage of the CCR unit; the method of site preparation and construction of each zone of the CCR unit; and the dates of construction of each successive stage of construction of the CCR unit.

(vii) At a scale that details engineering structures and appurtenances relevant to the design, construction, operation, and maintenance of the CCR unit, detailed dimensional drawings of the CCR unit, including a plan view and cross sections of the length and width of the CCR unit, showing all zones, foundation improvements, drainage provisions, spillways, diversion ditches, outlets, instrument locations, and slope protection, in addition to the normal operating pool surface elevation and the maximum pool surface elevation following peak discharge from the inflow design flood, the expected maximum depth of CCR within the CCR surface impoundment, and any identifiable natural or manmade features that could adversely affect operation of the CCR unit due to malfunction or mis-operation.

(viii) A description of the type, purpose, and location of existing instrumentation.

(ix) Area-capacity curves for the CCR unit.

(x) A description of each spillway and diversion design feature and capacities and calculations used in their determination.

(xi) The construction specifications and provisions for surveillance, maintenance, and repair of the CCR unit.

(xii) Any record or knowledge of structural instability of the CCR unit.

2. Changes in the design and construction. If there is a significant change to any information compiled under 335-13-15-.04(5)(c)1., the owner or operator of the CCR unit must update the relevant information and place it in the facility's operating record as required by 335-13-15-.08(1)(f)13.

(d) Periodic structural stability assessments.

1. The owner or operator of the CCR unit must conduct initial and periodic structural stability assessments and document whether the design, construction, operation, and maintenance of the CCR unit is consistent with recognized and generally accepted good engineering practices for the maximum volume of CCR and CCR wastewater which can be impounded therein. The assessment must, at a minimum, document whether the CCR unit has been designed, constructed, operated, and maintained with:

(i) Stable foundations and abutments;

(ii) Adequate slope protection to protect against surface erosion, wave action, and adverse effects of sudden drawdown;

(iii) Dikes mechanically compacted to a density sufficient to withstand the range of loading conditions in the CCR unit;

(iv) Vegetated slopes of dikes and surrounding areas not to include deep rooted vegetation (roots that may grow below the six inch erosion layer);

(v) A single spillway or a combination of spillways configured as specified in 335-13-15-.04(5)(d)1.(v)(I). The combined capacity of all spillways must be designed, constructed, operated, and maintained to adequately manage flow during and following the peak discharge from the event specified in 335-13-15-.04(5)(d)1.(v)(II).

(I) All spillways must be either:

I. Of non-erodible construction and designed to carry sustained flows; or

II. Earth- or grass-lined and designed to carry short-term, infrequent

flows at non-erosive velocities where sustained flows are not expected.

(II) The combined capacity of all spillways must adequately manage flow during and following the peak discharge from a:

I. Probable maximum flood (PMF) for a high hazard potential CCR surface impoundment; or

II. 1000-year flood for a significant hazard potential CCR surface impoundment; or

III. 100-year flood for a low hazard potential CCR surface impoundment.

(vi) Hydraulic structures underlying the base of the CCR unit or passing through the dike of the CCR unit that maintain structural integrity and are free of significant deterioration, deformation, distortion, bedding deficiencies, sedimentation, and debris which may negatively affect the operation of the hydraulic structure; and

(vii) For CCR units with downstream slopes which can be inundated by the pool of an adjacent water body, such as a river, stream or lake, downstream slopes that maintain structural stability during low pool of the adjacent water body or sudden drawdown of the adjacent water body.

2. The periodic assessment described in 335-13-15-.04(5)(d)1. must identify any structural stability deficiencies associated with the CCR unit in addition to recommending corrective measures. If a deficiency or a release is identified during the periodic assessment, the owner or operator of a CCR unit must remedy the deficiency or release as soon as feasible and prepare a report detailing the corrective measures taken. This report must be submitted to the Department for review and approval.

3. The owner or operator of the CCR unit must obtain a certification from a qualified professional engineer stating that the initial assessment and each subsequent periodic assessment was conducted in accordance with the requirements of this section. This certification must be submitted to the Department.

(e) Periodic safety factor assessments.

1. The owner or operator must conduct an initial and periodic safety factor assessments for each CCR unit and document whether the calculated factors of safety for each CCR unit achieve the minimum safety factors specified in 335-13-15-.04(5)(e)1.(i) through (v) for the critical cross section of the embankment. The critical cross section is the cross section anticipated to be the most susceptible of all cross sections to structural failure based on appropriate

engineering considerations, including loading conditions. The safety factor assessments must be supported by appropriate engineering calculations.

(i) The calculated static factor of safety under the end-of-construction loading condition must equal or exceed 1.30. The assessment of this loading condition is only required for the initial safety factor assessment and is not required for subsequent assessments.

(ii) The calculated static factor of safety under the long-term, maximum storage pool loading condition must equal or exceed 1.50.

(iii) The calculated static factor of safety under the maximum surcharge pool loading condition must equal or exceed 1.40.

(iv) The calculated seismic factor of safety must equal or exceed 1.00.

(v) For dikes constructed of soils that have susceptibility to liquefaction, the calculated liquefaction factor of safety must equal or exceed 1.20.

2. The owner or operator of the CCR unit must obtain a certification from a qualified professional engineer stating that the initial assessment and each subsequent periodic assessment specified in 335-13-15-.04(5)(e)1. meets the requirements of this section. This certification must be submitted to the Department.

(f) Timeframes for periodic assessments.

1. Initial assessments. Except as provided by 335-13-15-.04(5)(f)2., the owner or operator of the CCR unit must complete the initial assessments required by 335-13-15-.04(5)(a)2., (d), and (e) prior to the initial receipt of CCR in the unit. The owner or operator has completed an initial assessment when the owner or operator has placed the assessment required by 335-13-15-.04(5)(a)2., (d), and (e) in the facility's operating record as required by 335-13-15-.08(1)(f)5., 10., and 12.

2. Frequency for conducting periodic assessments. The owner or operator of the CCR unit must conduct and complete the assessments required by 335-13-15-.04(5)(a)2., (d), and (e) every five years. The date of completing the initial assessment is the basis for establishing the deadline to complete the first subsequent assessment. The owner or operator may complete any required assessment prior to the required deadline provided the owner or operator places the completed assessment(s) into the facility's operating record within a reasonable amount of time. In all cases, the deadline for completing subsequent assessments is based on the date of completing the previous assessment. For purposes of this paragraph, the owner or operator has completed an assessment when the relevant assessment(s) required by 335-13-15-.04(5)(a)2., (d), and (e)

has been placed in the facility's operating record as required by 335-13-15-.08(1)(f)5., 10., and 12.

3. Failure to document minimum safety factors during the initial assessment. Until the date an owner or operator of a CCR unit documents that the calculated factors of safety achieve the minimum safety factors specified in 335-13-15-.04(5)(e)1.(i) through (v), the owner or operator is prohibited from placing CCR in such unit.

4. Closure of the CCR unit. An owner or operator of a CCR unit who either fails to complete a timely periodic safety factor assessment or fails to demonstrate minimum safety factors as required by 335-13-15-.04(5)(e) is subject to the requirements of 335-13-15-.07(2)(c).

(g) The owner or operator of the CCR unit must comply with the recordkeeping requirements specified in 335-13-15-.08(1)(f), the notification requirements specified in 335-13-15-.08(2)(f), and the internet requirements specified in 335-13-15-.08(3)(f).

Author: S. Scott Story, Heather M. Jones.
Statutory Authority: Code of Alabama 1975, §§ 22-27-3 and 22-27-7
History: Filed: April 24, 2018; Effective: June 8, 2018. **Amended:** Proposed: September 21, 2020.

335-13-15-.05 Operating Criteria.

(1) Air criteria.

(a) The owner or operator of a CCR landfill, CCR surface impoundment, or any lateral expansion of a CCR unit must adopt measures that will effectively minimize CCR from becoming airborne at the facility, including CCR fugitive dust originating from CCR units, roads, and other CCR management and material handling activities.

(b) CCR fugitive dust control plan. The owner or operator of the CCR unit must prepare and operate in accordance with a CCR fugitive dust control plan as specified in 335-13-15-.05(1)(b)1. through 7. This requirement applies in addition to, not in place of, any applicable standards under the Occupational Safety and Health Act.

1. The CCR fugitive dust control plan must identify and describe the CCR fugitive dust control measures the owner or operator will use to minimize CCR from becoming airborne at the facility. The owner or operator must select, and include in the CCR fugitive dust control plan, the CCR fugitive dust control measures that are most appropriate for site conditions, along with an explanation of how the measures selected are applicable and appropriate for site conditions. Examples of control measures that may be appropriate include: locating CCR inside an enclosure or partial enclosure; operating a water spray or fogging system; reducing fall distances at material drop points; using wind barriers, compaction, or vegetative covers; establishing and enforcing reduced vehicle speed limits; paving and sweeping roads; covering trucks transporting CCR; reducing or halting operations during high wind events; or applying a daily cover.

2. If the owner or operator operates a CCR landfill or any lateral expansion of a CCR landfill, the CCR fugitive dust control plan must include procedures to emplace CCR as conditioned CCR. Conditioned CCR means wetting CCR with water to a moisture content that will prevent wind dispersal, but will not result in free liquids. In lieu of water, CCR conditioning may be accomplished with an appropriate chemical dust suppression agent.

3. The CCR fugitive dust control plan must include procedures to log citizen complaints received by the owner or operator involving CCR fugitive dust events at the facility.

4. The CCR fugitive dust control plan must include a description of the procedures the owner or operator will follow to periodically assess the effectiveness of the control plan.

5. The owner or operator of a CCR unit must prepare an initial CCR fugitive dust control plan for the facility no later than October 19, 2015, or by

initial receipt of CCR in any CCR unit at the facility if the owner or operator becomes subject to this chapter after October 19, 2015. The owner or operator has completed the initial CCR fugitive dust control plan when the plan has been placed in the facility's operating record as required by 335-13-15-.08(1)(g)1.

6. Amendment of the plan. The owner or operator of a CCR unit subject to the requirements of this section may amend the written CCR fugitive dust control plan at any time provided the revised plan is placed in the facility's operating record as required by 335-13-15-.08(1)(g)1. The owner or operator must amend the written plan whenever there is a change in conditions that would substantially affect the written plan in effect, such as the construction and operation of a new CCR unit.

7. The owner or operator must obtain a certification from a qualified professional engineer that the initial CCR fugitive dust control plan, or any subsequent amendment of it, meets the requirements of this section. The CCR fugitive dust control plan, as well as the certification from a qualified professional engineer must be submitted to the Department for approval.

(c) Annual CCR fugitive dust control report. The owner or operator of a CCR unit must prepare an annual CCR fugitive dust control report that includes a description of the actions taken by the owner or operator to control CCR fugitive dust, a record of all citizen complaints, and a summary of any corrective measures taken. The initial annual report must be completed no later than 14 months after placing the initial CCR fugitive dust control plan in the facility's operating record. The deadline for completing a subsequent report is one year after the date of completing the previous report. The owner or operator has completed the annual CCR fugitive dust control report when the ~~plan~~report has been submitted to the Department and placed in the facility's operating record as required by 335-13-15-.08(1)(g)2.

(d) The owner or operator of the CCR unit must comply with the recordkeeping requirements specified in 335-13-15-.08(1)(g), the notification requirements specified in 335-13-15-.08(2)(g), and the internet requirements specified in 335-13-15-.08(3)(g).

(2) Run-on and run-off controls for CCR landfills.

(a) The owner or operator of an existing or new CCR landfill or any lateral expansion of a CCR landfill must design, construct, operate, and maintain:

1. A run-on control system to prevent flow onto the active and/or closed portion of the CCR unit during the peak discharge from a 24-hour, 25-year storm; and

2. A run-off control system from the active and/or closed portion of

the CCR unit to collect and control at least the water volume resulting from a 24-hour, 25-year storm.

(b) Run-off from the active and/or closed portion of the CCR unit must be handled in accordance with the surface water requirements under 335-13-4-.01(2)(a) and (b).

(c) Run-on and run-off control system plan.

1. Content of the plan. The owner or operator must prepare initial and periodic run-on and run-off control system plans for the CCR unit according to the timeframes specified in 335-13-15-.05(2)(c)3. and 4. These plans must document how the run-on and run-off control systems have been designed and constructed to meet the applicable requirements of this section. Each plan must be supported by appropriate engineering calculations. The owner or operator has completed the initial run-on and run-off control system plan when the plan has been placed in the facility's operating record as required by 335-13-15-.08(1)(g)3.

2. Amendment of the plan. The owner or operator may amend the written run-on and run-off control system plan at any time provided the revised plan is placed in the facility's operating record as required by 335-13-15-.08(1)(g)3. The owner or operator must amend the written run-on and run-off control system plan whenever there is a change in conditions that would substantially affect the written plan in effect.

3. Timeframes for preparing the initial plan.

(i) Existing CCR landfills. The owner or operator of the CCR unit must prepare the initial run-on and run-off control system plan no later than October 17, 2016.

(ii) New CCR landfills and any lateral expansion of a CCR landfill. The owner or operator must prepare the initial run-on and run-off control system plan no later than the date of initial receipt of CCR in the CCR unit.

4. Frequency for revising the plan. The owner or operator of the CCR unit must prepare periodic run-on and run-off control system plans required by 335-13-15-.05(2)(c)1. every five years. The date of completing the initial plan is the basis for establishing the deadline to complete the first subsequent plan. The owner or operator may complete any required plan prior to the required deadline provided the owner or operator places the completed plan into the facility's operating record within a reasonable amount of time. In all cases, the deadline for completing a subsequent plan is based on the date of completing the previous plan. The owner or operator has completed a periodic run-on and run-off control system plan when the plan has been placed in the facility's operating record as required by 335-13-15-.08(1)(g)3.

5. The owner or operator must obtain a certification from a qualified professional engineer stating that the initial and periodic run-on and run-off control system plans meet the requirements of this section. The run-on and run-off control system plans, as well as the certification from a qualified professional engineer, must be submitted to the Department for approval.

(d) The owner or operator of the CCR unit must comply with the recordkeeping requirements specified in 335-13-15-.08(1)(g), the notification requirements specified in 335-13-15-.08(2)(g), and the internet requirements specified in 335-13-15-.08(3)(g).

(3) Hydrologic and hydraulic capacity requirements for CCR surface impoundments.

(a) The owner or operator of an existing or new CCR surface impoundment or any lateral expansion of a CCR surface impoundment must design, construct, operate, and maintain an inflow design flood control system as specified in 335-13-15-.05(3)(a)1. and 2.

1. The inflow design flood control system must adequately manage flow into the CCR unit during and following the peak discharge of the inflow design flood specified in 335-13-15-.05(3)(a)3.

2. The inflow design flood control system must adequately manage flow from the CCR unit to collect and control the peak discharge resulting from the inflow design flood specified in 335-13-15-.05(3)(a)3.

3. The inflow design flood is:

(i) For a high hazard potential CCR surface impoundment, as determined under 335-13-15-.04(4)(a)2. or 335-13-15-.04(5)(a)2., the probable maximum flood;

(ii) For a significant hazard potential CCR surface impoundment, as determined under 335-13-15-.04(4)(a)2. or 335-13-15-.04(5)(a)2., the 1,000-year flood;

(iii) For a low hazard potential CCR surface impoundment, as determined under 335-13-15-.04(4)(a)2. or 335-13-15-.04(5)(a)2., the 100-year flood; or

(iv) For an incised CCR surface impoundment, the 25-year flood.

(b) Discharge from the CCR unit must be handled in accordance with the surface water requirements under 335-13-4-.01(2)(a) and (b).

(c) Inflow design flood control system plan.

1. Content of the plan. The owner or operator must prepare initial and periodic inflow design flood control system plans for the CCR unit according to the timeframes specified in 335-13-15-.05(3)(c)3.and 4. These plans must document how the inflow design flood control system has been designed and constructed to meet the requirements of this section. Each plan must be supported by appropriate engineering calculations. The owner or operator of the CCR unit has completed the inflow design flood control system plan when the plan has been placed in the facility's operating record as required by 335-13-15-.08(1)(g)4.

2. Amendment of the plan. The owner or operator of the CCR unit may amend the written inflow design flood control system plan at any time provided the revised plan is placed in the facility's operating record as required by 335-13-15-.08(1)(g)4. The owner or operator must amend the written inflow design flood control system plan whenever there is a change in conditions that would substantially affect the written plan in effect.

3. Timeframes for preparing the initial plan.

(i) Existing CCR surface impoundments. The owner or operator of the CCR unit must prepare the initial inflow design flood control system plan no later than October 17, 2016.

(ii) New CCR surface impoundments and any lateral expansion of a CCR surface impoundment. The owner or operator must prepare the initial inflow design flood control system plan no later than the date of initial receipt of CCR in the CCR unit.

4. Frequency for revising the plan. The owner or operator must prepare periodic inflow design flood control system plans required by 335-13-15-.05(3)(c)1. every five years. The date of completing the initial plan is the basis for establishing the deadline to complete the first periodic plan. The owner or operator may complete any required plan prior to the required deadline provided the owner or operator places the completed plan into the facility's operating record within a reasonable amount of time. In all cases, the deadline for completing a subsequent plan is based on the date of completing the previous plan. The owner or operator has completed an inflow design flood control system plan when the plan has been placed in the facility's operating record as required by 335-13-15-.08(1)(g)4.

5. The owner or operator must obtain a certification from a qualified professional engineer stating that the initial and periodic inflow design flood control system plans meet the requirements of this section.

(d) The owner or operator of the CCR unit must comply with the recordkeeping requirements specified in 335-13-15-.08(1)(g), the notification

requirements specified in 335-13-15-.08(2)(g), and the internet requirements specified in 335-13-15-.08(3)(g).

(4) Inspection requirements for CCR surface impoundments.

(a) Inspections by a qualified person.

1. All CCR surface impoundments and any lateral expansion of a CCR surface impoundment must be examined by a qualified person as follows:

(i) At intervals not exceeding seven days, inspect for any appearances of actual or potential structural weakness and other conditions which are disrupting or have the potential to disrupt the operation or safety of the CCR unit;

(ii) At intervals not exceeding seven days, inspect the discharge of all outlets of hydraulic structures which pass underneath the base of the surface impoundment or through the dike of the CCR unit for abnormal discoloration, flow or discharge of debris or sediment; and

(iii) At intervals not exceeding 30 days, monitor all CCR unit instrumentation.

(iv) The results of the inspection by a qualified person must be recorded in the facility's operating record as required by 335-13-15-.08(1)(g)5.

2. Timeframes for inspections by a qualified person.

(i) Existing CCR surface impoundments. The owner or operator of the CCR unit must initiate the inspections required under 335-13-15-.05(4)(a) no later than October 19, 2015.

(ii) New CCR surface impoundments and any lateral expansion of a CCR surface impoundment. The owner or operator of the CCR unit must initiate the inspections required under 335-13-15-.05(4)(a) upon initial receipt of CCR by the CCR unit.

(b) Annual inspections by a qualified professional engineer.

1. If the existing or new CCR surface impoundment or any lateral expansion of the CCR surface impoundment is subject to the periodic structural stability assessment requirements under 335-13-15-.04(4)(d) or 335-13-15-.04(5)(d), the CCR unit must additionally be inspected on a periodic basis by a qualified professional engineer to ensure that the design, construction, operation, and maintenance of the CCR unit is consistent with recognized and generally accepted good engineering standards. The inspection must, at a minimum, include:

(i) A review of available information regarding the status and condition of the CCR unit, including, but not limited to, files available in the operating record (e.g., CCR unit design and construction information required by 335-13-15-.04(4)(c)1. and 335-13-15-.04(5)(c)1., previous periodic structural stability assessments required under 335-13-15-.04(4)(d) and 335-13-15-.04(5)(d), the results of inspections by a qualified person, and results of previous annual inspections);

(ii) A visual inspection of the CCR unit to identify signs of distress or malfunction of the CCR unit and appurtenant structures; and

(iii) A visual inspection of any hydraulic structures underlying the base of the CCR unit or passing through the dike of the CCR unit for structural integrity and continued safe and reliable operation.

2. Inspection report. The qualified professional engineer must prepare a report following each inspection that addresses the following:

(i) Any changes in geometry of the impounding structure since the previous annual inspection;

(ii) The location and type of existing instrumentation and the maximum recorded readings of each instrument since the previous annual inspection;

(iii) The approximate minimum, maximum, and present depth and elevation of the impounded water and CCR since the previous annual inspection;

(iv) The storage capacity of the impounding structure at the time of the inspection;

(v) The approximate volume of the impounded water and CCR at the time of the inspection;

(vi) Any appearances of an actual or potential structural weakness of the CCR unit, in addition to any existing conditions that are disrupting or have the potential to disrupt the operation and safety of the CCR unit and appurtenant structures; and

(vii) Any other change(s) which may have affected the stability or operation of the impounding structure since the previous annual inspection.

3. Timeframes for conducting the initial inspection.

(i) Existing CCR surface impoundments. The owner or operator of the CCR unit must complete the initial inspection required by 335-13-15-.05(4)(b)1. and 2. no later than January 19, 2016.

(ii) New CCR surface impoundments and any lateral expansion of a CCR surface impoundment. The owner or operator of the CCR unit must complete the initial annual inspection required by 335-13-15-.05(4)(b)1. and 2. no later than 14 months following the date of initial receipt of CCR in the CCR unit.

4. Frequency of inspections.

(i) Except as provided for in 335-13-15-.05(4)(b)4.(ii), the owner or operator of the CCR unit must conduct the inspection required by 335-13-15-.05(4)(b)1. and 2. on an annual basis. The date of completing the initial inspection report is the basis for establishing the deadline to complete the first subsequent inspection. Any required inspection may be conducted prior to the required deadline provided the owner or operator places the completed inspection report into the facility's operating record within a reasonable amount of time. In all cases, the deadline for completing subsequent inspection reports is based on the date of completing the previous inspection report. The owner or operator has completed an inspection when the inspection report has been placed in the facility's operating record as required by 335-13-15-.08(1)(g)6.

(ii) In any calendar year in which both the periodic inspection by a qualified professional engineer and the quinquennial (occurring every five years) structural stability assessment by a qualified professional engineer required by 335-13-15-.04(4)(d) and 335-13-15-.04(5)(d) are required to be completed, the annual inspection is not required, provided the structural stability assessment is completed during the calendar year. If the annual inspection is not conducted in a year as provided by this paragraph, the deadline for completing the next annual inspection is one year from the date of completing the quinquennial structural stability assessment.

5. If a deficiency or release is identified during an inspection, the owner or operator must remedy the deficiency or release as soon as feasible and prepare a report detailing the corrective measures taken. This report must be submitted to the Department for review and approval.

(c) The owner or operator of the CCR unit must comply with the recordkeeping requirements specified in 335-13-15-.08(1)(g), the notification requirements specified in 335-13-15-.08(2)(g), and the internet requirements specified in 335-13-15-.08(3)(g).

(5) Inspection requirements for CCR landfills.

(a) Inspections by a qualified person.

1. All CCR landfills and any lateral expansion of a CCR landfill must be examined by a qualified person as follows:

(i) At intervals not exceeding seven days, inspect for any appearances of actual or potential structural weakness and other conditions which are disrupting or have the potential to disrupt the operation or safety of the CCR unit; and

(ii) The results of the inspection by a qualified person must be recorded in the facility's operating record as required by 335-13-15-.08(1)(g)8.

2. Timeframes for inspections by a qualified person.

(i) Existing CCR landfills. The owner or operator of the CCR unit must initiate the inspections required under 335-13-15-.05(5)(a) no later than October 19, 2015.

(ii) New CCR landfills and any lateral expansion of a CCR landfill. The owner or operator of the CCR unit must initiate the inspections required under 335-13-15-.05(5)(a) upon initial receipt of CCR by the CCR unit.

(b) Annual inspections by a qualified professional engineer.

1. Existing and new CCR landfills and any lateral expansion of a CCR landfill must be inspected on a periodic basis by a qualified professional engineer to ensure that the design, construction, operation, and maintenance of the CCR unit is consistent with recognized and generally accepted good engineering standards. The inspection must, at a minimum, include:

(i) A review of available information regarding the status and condition of the CCR unit, including, but not limited to, files available in the operating record (e.g., the results of inspections by a qualified person, and results of previous annual inspections); and

(ii) A visual inspection of the CCR unit to identify signs of distress or malfunction of the CCR unit.

2. Inspection report. The qualified professional engineer must prepare a report following each inspection that addresses the following:

(i) Any changes in geometry of the structure since the previous annual inspection;

(ii) The approximate volume of CCR contained in the unit at the time of the inspection;

(iii) Any appearances of an actual or potential structural weakness of the CCR unit, in addition to any existing conditions that are disrupting or have the potential to disrupt the operation and safety of the CCR unit; and

(iv) Any other change(s) which may have affected the stability or operation of the CCR unit since the previous annual inspection.

3. Timeframes for conducting the initial inspection.

(i) Existing CCR landfills. The owner or operator of the CCR unit must complete the initial inspection required by 335-13-15-.05(5)(b)1. and 2. no later than January 19, 2016.

(ii) New CCR landfills and any lateral expansion of a CCR landfill. The owner or operator of the CCR unit must complete the initial annual inspection required by 335-13-15-.05(5)(b)1. and 2. no later than 14 months following the date of initial receipt of CCR in the CCR unit.

4. Frequency of inspections. The owner or operator of the CCR unit must conduct the inspection required by 335-13-15-.05(5)(b)1. and 2. on an annual basis. The date of completing the initial inspection report is the basis for establishing the deadline to complete the first subsequent inspection. Any required inspection may be conducted prior to the required deadline provided the owner or operator places the completed inspection report into the facility's operating record within a reasonable amount of time. In all cases, the deadline for completing subsequent inspection reports is based on the date of completing the previous inspection report. The owner or operator has completed an inspection when the inspection report has been placed in the facility's operating record as required by 335-13-15-.08(1)(g)9.

5. If a deficiency or release is identified during an inspection, the owner or operator must remedy the deficiency or release as soon as feasible and prepare a report detailing the corrective measures taken. This report must be submitted to the Department for review and approval.

(c) The owner or operator of the CCR unit must comply with the recordkeeping requirements specified in 335-13-15-.08(1)(g), the notification requirements specified in 335-13-15-.08(2)(g), and the internet requirements specified in 335-13-15-.08(3)(g).

(6) General operational standards for CCR units.

(a) The operation and use of the CCR unit shall be as stipulated in the approved plans and the permit.

(b) The disposal area shall be identified with a sufficient number of permanent markers which are at least visible from one marker to the next.

(c) Open Burning.

1. Open burning at any CCR unit is prohibited unless approved by the Department as follows:

(i) Clearing debris at the CCR unit such as trees and stumps may be burned if prior approval is received from the Department and the Alabama Forestry Commission.

(ii) If approved, burning shall not occur within 200 feet of existing disposal operations unless otherwise specified by the Department and such burning shall not cause a public nuisance or pose a threat to public health.

2. The person or agency requesting permission to burn shall apply in writing to the Department, outlining why a burn request should be granted. This request should include, but not be limited to, specifically what areas will be utilized, types of waste to be burned, the projected starting and completion dates for the project, and the projected days and hours of operation.

(d) The owner or operator of a CCR landfill unit must prevent the disposal of free liquids in the CCR landfill.

(e) Adequate equipment shall be provided to ~~i~~ensure continued operation in accordance with the permit and regulations.

(f) The site shall be adequately secured using artifical barriers, natural barriers, or both to prevent entry of unauthorized vehicular traffic.

(g) Adequate personnel shall be provided to insure continued and smooth operation of the facility.

(h) Provisions shall be made for disposal activities in adverse weather conditions.

(i) Environmental monitoring and treatment structures shall be clearly marked and identified, protected and maintained in good repair and shall be easily accessible.

Author: Eric L. Sanderson, Heather M. Jones
Statutory Authority: Code of Alabama 1975, §§ 22-22A-5, 22-27-3 and 22-27-7
History: Filed: April 24, 2018; Effective: June 8, 2018. **Amended:** Proposed: September 21, 2020.

335-13-15-.06 Groundwater Monitoring and Corrective Action.

(1) Applicability.

(a) All CCR landfills, CCR surface impoundments, and lateral expansions of CCR units are subject to the groundwater monitoring and corrective action requirements under 335-13-15-.06(1) through 335-13-15-.06(9).

~~(b) Groundwater monitoring requirements under paragraphs (1) through (6) of this rule may be suspended by the Department for a CCR unit if the owner or operator can demonstrate that there is no potential for migration of hazardous constituents from the CCR unit to the uppermost aquifer, as defined in 335-13-15-.02, during the active life of the CCR unit and the post-closure care period. This demonstration must be certified by a qualified professional engineer, as defined by 335-13-15-.02, and approved by the Department. The information used to make the demonstration must be re-evaluated every ten years and submitted to the Department for approval. The initial, and any subsequent demonstration must be based upon:~~

~~1. Site specific field collected measurements, sampling, and analysis of physical, chemical and biological processes affecting contaminant fate and transport, and~~

~~2. Contaminant fate and transport predictions that maximize contaminant migration and consider impacts on human health and the environment.~~

~~The provisions of 335-13-15-.06(1)(b) will become operative on [DATE (Forty-five days after approval by the U.S. Environmental Protection Agency)].~~

(~~c~~b) Initial timeframes.

1. Existing CCR landfills and existing CCR surface impoundments. No later than October 17, 2017, the owner or operator of the CCR unit must be in compliance with the following groundwater monitoring requirements:

(i) Install the groundwater monitoring system as required by 335-13-15-.06(2);

(ii) Develop the groundwater sampling and analysis program to include selection of the statistical procedures to be used for evaluating groundwater monitoring data as required by 335-13-15-.06(4);

(iii) Initiate the detection monitoring program to include obtaining a minimum of eight independent samples for each background and downgradient well as required by 335-13-15-.06(5)(b); and

(iv) Begin evaluating the groundwater monitoring data for statistically

significant increases over background levels for the constituents listed in Appendix III as required by 335-13-15-.06(5).

2. New CCR landfills, new CCR surface impoundments, and all lateral expansions of CCR units. Prior to initial receipt of CCR by the CCR unit, the owner or operator must be in compliance with the groundwater monitoring requirements specified in 335-13-15-.06(1)(~~e~~b)1.(i)and (ii). In addition, the owner or operator of the CCR unit must initiate the detection monitoring program to include obtaining a minimum of eight independent samples for each background well as required by 335-13-15-.06(5)(b).

(~~d~~c) Once a groundwater monitoring system and groundwater monitoring program has been established at the CCR unit as required by this chapter, the owner or operator must conduct groundwater monitoring and, if necessary, corrective action throughout the active life and post-closure care period of the CCR unit.

(~~e~~d) In the event of a release from a CCR unit, the owner or operator must immediately take all necessary measures to control the source(s) of releases so as to reduce or eliminate, to the maximum extent feasible, further releases of contaminants into the environment. The owner or operator of the CCR unit must comply with all applicable requirements in 335-13-15-.06(7), 335-13-15-.06(8), and 335-13-15-.06(9).

(~~f~~e) Annual groundwater monitoring and corrective action report. For existing CCR landfills and existing CCR surface impoundments, no later than January 31, 2018, and annually thereafter, the owner or operator must prepare an annual groundwater monitoring and corrective action report. For new CCR landfills, new CCR surface impoundments, and all lateral expansions of CCR units, the owner or operator must prepare the initial annual groundwater monitoring and corrective action report no later than January 31 of the year following the calendar year a groundwater monitoring system has been established for such CCR unit as required by this chapter, and annually thereafter. For the preceding calendar year, the annual report must document the status of the groundwater monitoring and corrective action program for the CCR unit, summarize key actions completed, describe any problems encountered, discuss actions to resolve the problems, and project key activities for the upcoming year. The owner or operator has prepared the annual report when the report is submitted to the Department and placed in the facility's operating record as required by 335-13-15-.08(1)(h)1. At a minimum, the annual groundwater monitoring and corrective action report must contain the following information, to the extent available:

1. A map, aerial image, or diagram showing the CCR unit and all background (or upgradient) and downgradient monitoring wells, to include the well identification numbers, that are part of the groundwater monitoring program for the CCR unit;

2. Identification of any monitoring wells that were installed or decommissioned during the preceding year, along with a narrative description of why those actions were taken;

3. In addition to all the monitoring data obtained under 335-13-15-.06(1) through 335-13-15-.06(9), a summary including the number of groundwater samples that were collected for analysis for each background and downgradient well, the dates the samples were collected, and whether the sample was required by the detection monitoring or assessment monitoring programs;

4. A narrative discussion of any transition between monitoring programs (e.g., the date and circumstances for transitioning from detection monitoring to assessment monitoring in addition to identifying the constituent(s) detected as a statistically significant increase over background levels); and

5. Other information required to be included in the annual report as specified in 335-13-15-.06(1) through 335-13-15-.06(9).

6. A section at the beginning of the annual report that provides an overview of the current status of groundwater monitoring and corrective action programs for the CCR unit. At a minimum, the summary must specify all of the following:

(i) At the start of the current annual reporting period, whether the CCR unit was operating under the detection monitoring program in 335-13-15-.06(5) or the assessment monitoring program in 335-13-15-.06(6);

(ii) At the end of the current annual reporting period, whether the CCR unit was operating under the detection monitoring program in 335-13-15-.06(5) or the assessment monitoring program in 335-13-15-.06(6);

(iii) If it was determined that there was a statistically significant increase over background for one or more constituents listed in Appendix III pursuant to 335-13-15-.06(5)(e):

I. Identify those constituents listed in Appendix III and the names of the monitoring wells associated with such an increase; and

II. Provide the date when the assessment monitoring program was initiated for the CCR unit.

(iv) If it was determined that there was a statistically significant level above the groundwater protection standard for one or more constituents listed in Appendix IV pursuant to 335-13-15-.06(6)(g) include all of the following:

I. Identify those constituents listed in Appendix IV and the names of the monitoring wells associated with such an increase;

II. Provide the date when the assessment of corrective measures was initiated for the CCR unit;

III. Provide the date when the public meeting was held for the assessment of corrective measures for the CCR unit; and

IV. Provide the date when the assessment of corrective measures was completed for the CCR unit.

(v) Whether a remedy was selected pursuant to 335-13-15-.06(8) during the current annual reporting period, and if so, the date of remedy selection; and

(vi) Whether remedial activities were initiated or are ongoing pursuant to 335-13-15-.06(9) during the current annual reporting period.

(f) ~~(g)~~ Semi-annual groundwater monitoring report. The owner or operator of a CCR unit must submit a semi-annual groundwater monitoring report to the Department to coincide with the semi-annual sampling event. The report shall be certified by a qualified professional engineer. The semi-annual report must document the status of the groundwater monitoring program for the CCR unit. The owner or operator has prepared the semi-annual report when the report is submitted to the Department and placed in the facility's operating record as required by 335-13-15-.08(1)(h)14. At a minimum, the semi-annual groundwater monitoring report must contain the following information, to the extent available:

1. A map, aerial image, or diagram showing the CCR unit and all background (or upgradient) and downgradient monitoring wells, to include the well identification numbers, that are part of the groundwater monitoring program for the CCR unit;

2. Identification of any monitoring wells that were installed or decommissioned during the preceding semi-annual period;

3. In addition to all the monitoring data obtained under 335-13-15-.06(1) through 335-13-15-.06(9), a summary including the number of groundwater samples that were collected for analysis for each background and downgradient well, the dates the samples were collected, and whether the sample was required by the detection monitoring or assessment monitoring programs; and

4. A narrative discussion of any transition between monitoring programs (e.g., the date and circumstances for transitioning from detection monitoring to assessment monitoring in addition to identifying the constituent(s) detected as a statistically significant increase over background levels).

(g) The owner or operator of the CCR unit must comply with the recordkeeping requirements specified in 335-13-15-.08(1)(h), the notification requirements specified in 335-13-15-.08(2)(h), and the internet requirements specified in 335-13-15-.08(3)(h).

(2) Groundwater monitoring systems.

(a) Performance standard. The owner or operator of a CCR unit must install a groundwater monitoring system that consists of a sufficient number of wells, installed at appropriate locations and depths, to yield groundwater samples from the uppermost aquifer that:

1. Accurately represent the quality of background groundwater that has not been affected by leakage from a CCR unit. A determination of background quality may include sampling of wells that are not hydraulically upgradient of the CCR management area where:

(i) Hydrogeologic conditions do not allow the owner or operator of the CCR unit to determine what wells are hydraulically upgradient; or

(ii) Sampling at other wells will provide an indication of background groundwater quality that is as representative or more representative than that provided by the upgradient wells; and

2. Accurately represent the quality of groundwater passing the waste boundary of the CCR unit. The downgradient monitoring system must be installed at the waste boundary that ensures detection of groundwater contamination in the uppermost aquifer. All potential contaminant pathways must be monitored.

(b) The number, spacing, and depths of monitoring systems shall be determined based upon site-specific technical information that must include thorough characterization of:

1. Aquifer thickness, groundwater flow rate, groundwater flow direction, including seasonal and temporal fluctuations in groundwater flow; and

2. Saturated and unsaturated geologic units and fill materials overlying the uppermost aquifer, materials comprising the uppermost aquifer, and materials comprising the confining unit defining the lower boundary of the uppermost aquifer, including, but not limited to, thicknesses, stratigraphy, lithology, hydraulic conductivities, porosities and effective porosities.

3. The number, spacing, and depth of the monitoring system developed under 335-13-15-.06(2) shall be certified by a qualified professional engineer and submitted to the Department for approval. Within 14 days of the Department's approval, the owner or operator must notify the Department that the certification has been placed in the facility operating record.

(c) The groundwater monitoring system must include, at a minimum, the number of monitoring wells necessary to meet the performance standards specified in 335-13-15-.06(2)(a), based on the site-specific information specified in 335-13-15-.06(2)(b). The groundwater monitoring system must contain:

1. A minimum of one upgradient and three downgradient monitoring wells; and

2. Additional monitoring wells as necessary to accurately represent the quality of background groundwater that has not been affected by leakage from the CCR unit and the quality of groundwater passing the waste boundary of the CCR unit.

(d) The owner or operator of multiple CCR units may install a multiunit groundwater monitoring system instead of separate groundwater monitoring systems for each CCR unit.

1. The multiunit groundwater monitoring system must be equally as capable of detecting monitored constituents at the waste boundary of the CCR unit as the individual groundwater monitoring system specified in 335-13-15-.06(2)(a) through (c) for each CCR unit based on the following factors:

(i) Number, spacing, and orientation of each CCR unit;

(ii) Hydrogeologic setting;

(iii) Site history; and

(iv) Engineering design of the CCR unit.

2. ~~If the owner or operator elects to install a multiunit groundwater monitoring system, and if the multiunit system includes at least one existing unlined CCR surface impoundment as determined by 335-13-15-.04(2)(a), and if at any time after October 19, 2015 the owner or operator determines in any sampling event that the concentrations of one or more constituents listed in Appendix IV are detected at statistically significant levels above the groundwater protection standard established under 335-13-15-.06(6)(h) or (i) for the multiunit system, then all unlined CCR surface impoundments comprising the multiunit groundwater monitoring system are subject to the requirements under 335-13-15-.07(2)(a) to retrofit or close.~~[Reserved]

(e) Well design and construction.

1. Groundwater monitoring wells shall be designed and constructed in accordance with the following reference: “Design and Installation of Groundwater Monitoring Wells in Aquifers”, ASTM Subcommittee D18.21 on Groundwater Monitoring or otherwise as specifically approved by the Department.

2. Plans for groundwater monitoring well location, design, construction and/or abandonment shall be submitted to the Department for review and approval prior to installation or abandonment.

3. Monitoring wells must be cased in a manner that maintains the integrity of the monitoring well borehole. This casing must be screened or perforated and packed with gravel or sand, where necessary, to enable collection of groundwater samples. The annular space (i.e., the space between the borehole and well casing) above the sampling depth must be sealed to prevent contamination of samples and the groundwater.

4. The owner or operator of the CCR unit must document and include in the operating record the design, installation, development, and decommissioning of any monitoring wells, piezometers and other measurement, sampling, and analytical devices. The qualified professional engineer must be given access to this documentation when completing the groundwater monitoring system certification required under 335-13-15-.06(2)(f).

5. The monitoring wells, piezometers, and other measurement, sampling, and analytical devices must be operated and maintained so that they perform to the design specifications throughout the life of the monitoring program.

(f) The owner or operator must obtain a certification from a qualified professional engineer stating that the groundwater monitoring system has been designed and constructed to meet the requirements of this section. If the groundwater monitoring system includes the minimum number of monitoring wells specified in 335-13-15-.06(2)(c)1., the certification must document the basis supporting this determination. Once completed, the certification must be submitted to the Department and placed in the operating record in accordance with 335-13-15-.08(1)(h)3.

(g) Abandoned wells and bore holes shall be abandoned in accordance with the following procedures in order to prevent contamination of groundwater resources. A plan of abandonment must be submitted and approved by the Department prior to implementing abandonment of any well.

1. A well shall be measured for depth prior to sealing to ensure that it is free from any obstructions that may interfere with sealing operations.

2. Where feasible, wells shall be completely filled with neat cement. If the well cannot be completely filled, the sealing materials for the top 20 feet must be neat cement and no material that could impart taste, odor, or toxic components to water may be used in the sealing process.

3. Liner pipe shall be removed from each well in order to ensure placement of an effective seal. If the liner pipe cannot be readily removed, it shall be perforated to ensure that proper sealing is obtained.

4. Concrete, cement grout, or neat cement shall be used as primary sealing materials and shall be placed from the bottom upwards using methods that will avoid segregation or dilution of material.

5. Complete, accurate records of the abandonment procedure shall be kept for each well abandoned. The record of abandonment shall include, at a minimum, the depth of each layer of all sealing and backfilling materials, the quantity of sealing materials used, measurements of static water levels and depth, and any changes made in the well during the sealing. A copy of these records shall be submitted to the Department and a copy placed in the operating record.

(h) The owner or operator of the CCR unit must comply with the recordkeeping requirements specified in 335-13-15-.08(1)(h), the notification requirements specified in 335-13-15-.08(2)(h), and the internet requirements specified in 335-13-15-.08(3)(h).

(3) [Reserved]

(4) Groundwater sampling and analysis requirements.

(a) The groundwater monitoring program must include consistent sampling and analysis procedures that are designed to ensure monitoring results that provide an accurate representation of groundwater quality at the background and downgradient wells required by 335-13-15-.06(2). The owner or operator of the CCR unit must develop, and submit to the Department for approval, a sampling and analysis program that includes procedures and techniques for:

1. Sample collection;

2. Sample preservation and shipment;

3. Analytical procedures;

4. Chain of custody control; and

5. Quality assurance and quality control.

(b) The groundwater monitoring program must include sampling and

analytical methods that are appropriate for groundwater sampling and that accurately measure hazardous constituents and other monitoring parameters in groundwater samples. For purposes of 335-13-15-.06(1) through 335-13-15-.06(9), the term constituent refers to both hazardous constituents and other monitoring parameters listed in either Appendix III or IV.

(c) Groundwater elevations must be measured in each well immediately prior to purging, each time groundwater is sampled. The owner or operator of the CCR unit must determine the rate and direction of groundwater flow each time groundwater is sampled. Groundwater elevations in wells which monitor the same CCR management area must be measured within a period of time short enough to avoid temporal variations in groundwater flow which could preclude accurate determination of groundwater flow rate and direction.

(d) The owner or operator of the CCR unit must establish background groundwater quality in a hydraulically upgradient or background well(s) for each of the constituents required in the particular groundwater monitoring program that applies to the CCR unit as determined under 335-13-15-.06(5)(a) or 335-13-15-.06(6)(a). Background groundwater quality may be established at wells that are not located hydraulically upgradient from the CCR unit if it meets the requirements of 335-13-15-.06(2)(a)1.

(e) The number of samples collected when conducting detection monitoring and assessment monitoring (for both downgradient and background wells) must be consistent with the statistical procedures chosen under 335-13-15-.06(4)(f) and the performance standards under 335-13-15-.06(4)(g). The sampling procedures shall be those specified under 335-13-15-.06(5)(b) through (d) for detection monitoring, 335-13-15-.06(6)(b) through (d) for assessment monitoring, and 335-13-15-.06(7)(b) for corrective action.

(f) The owner or operator of the CCR unit must specify in writing to the Department and place in the operating record one of the statistical methods specified in 335-13-15-.06(4)(f)1. through 5. to be used in evaluating groundwater monitoring data for each specified constituent. The statistical test chosen shall be conducted separately for each constituent in each monitoring well.

1. A parametric analysis of variance followed by multiple comparison procedures to identify statistically significant evidence of contamination. The method must include estimation and testing of the contrasts between each compliance well's mean and the background mean levels for each constituent.

2. An analysis of variance based on ranks followed by multiple comparison procedures to identify statistically significant evidence of contamination. The method must include estimation and testing of the contrasts between each compliance well's median and the background median levels for each constituent.

3. A tolerance or prediction interval procedure, in which an interval for each constituent is established from the distribution of the background data and the level of each constituent in each compliance well is compared to the upper tolerance or prediction limit.

4. A control chart approach that gives control limits for each constituent.

5. Another statistical test method that meets the performance standards of 335-13-15-.06(4)(g). The owner or operator must place a justification for this alternative in the operating record and submit it to the Department for approval to use this alternative method. The justification must demonstrate that the alternative method meets the performance standards of 335-13-15-.06(4)(g).

6. The owner or operator of the CCR unit must obtain a certification from a qualified professional engineer stating that the selected statistical method is appropriate for evaluating the groundwater monitoring data for the CCR management area. The certification must include a narrative description of the statistical method selected to evaluate the groundwater monitoring data.

(g) Any statistical method chosen under 335-13-15-.06(4)(f) shall comply with the following performance standards, as appropriate, based on the statistical test method used:

1. The statistical method used to evaluate groundwater monitoring data shall be appropriate for the distribution of constituents. Normal distributions of data values shall use parametric methods. Non-normal distributions shall use non-parametric methods. If the distribution of the constituents is shown by the owner or operator of the CCR unit to be inappropriate for a normal theory test, then the data must be transformed or a distribution-free (non-parametric) theory test must be used. If the distributions for the constituents differ, more than one statistical method may be needed.

2. If an individual well comparison procedure is used to compare an individual compliance well constituent concentration with background constituent concentrations or a groundwater protection standard, the test shall be done at a Type I error level no less than 0.01 for each testing period. If a multiple comparison procedure is used, the Type I experiment wise error rate for each testing period shall be no less than 0.05; however, the Type I error of no less than 0.01 for individual well comparisons must be maintained. This performance standard does not apply to tolerance intervals, prediction intervals, or control charts.

3. If a control chart approach is used to evaluate groundwater monitoring data, the specific type of control chart and its associated parameter

values shall be such that this approach is at least as effective as any other approach in this section for evaluating groundwater data. The parameter values shall be determined after considering the number of samples in the background data base, the data distribution, and the range of the concentration values for each constituent of concern.

4. If a tolerance interval or a predictional interval is used to evaluate groundwater monitoring data, the levels of confidence and, for tolerance intervals, the percentage of the population that the interval must contain, shall be such that this approach is at least as effective as any other approach in this section for evaluating groundwater data. These parameters shall be determined after considering the number of samples in the background data base, the data distribution, and the range of the concentration values for each constituent of concern.

5. The statistical method must account for data below the limit of detection with one or more statistical procedures that shall be at least as effective as any other approach in this section for evaluating groundwater data. Any practical quantitation limit that is used in the statistical method shall be the lowest concentration level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions that are available to the facility.

6. If necessary, the statistical method must include procedures to control or correct for seasonal and spatial variability as well as temporal correlation in the data.

(h) The owner or operator of the CCR unit must determine and certify in writing to the Department if there is a statistically significant increase over background values or the groundwater protection standard for each constituent required in the particular groundwater monitoring program that applies to the CCR unit, as determined under 335-13-15-.06(5)(a) or 335-13-15-.06(6)(a).

1. In determining whether a statistically significant increase has occurred, the owner or operator must compare the groundwater quality of each constituent at each monitoring well designated pursuant to 335-13-15-.06(2)(a)2. or (d)1. to the background value of that constituent when in detection monitoring or to the groundwater protection standard when in assessment monitoring, according to the statistical procedures and performance standards specified under 335-13-15-.06(4)(f) and (g).

2. Within 90~~30~~ days after completing sampling and analysis~~receiving analytical results~~, the owner or operator must determine whether there has been a statistically significant increase over background when in detection monitoring or to the groundwater protection standard when in assessment monitoring for any constituent at each monitoring well.

3. If a statistically significant increase is detected over background groundwater quality when in detection monitoring or over the groundwater protection standard when in assessment monitoring, the owner or operator must notify the Department in writing within 14 days of this event.

(i) The owner or operator must measure "total recoverable metals" concentrations in measuring groundwater quality. Measurement of total recoverable metals captures both the particulate fraction and dissolved fraction of metals in natural waters. Groundwater samples shall not be field-filtered prior to analysis.

(j) The owner or operator of the CCR unit must comply with the recordkeeping requirements specified in 335-13-15-.08(1)(h), the notification requirements specified in 335-13-15-.08(2)(h), and the internet requirements specified in 335-13-15-.08(3)(h).

(5) Detection monitoring program.

~~(a)~~ The owner or operator of a CCR unit must conduct detection monitoring at all groundwater monitoring wells consistent with this section.

~~(b)~~

~~(c)~~(a) ~~1.~~ At a minimum, a detection monitoring program must include groundwater monitoring for the constituents listed in Appendix III of this chapter.

~~2. The Department may establish an alternative list of parameters, in addition to the Appendix III constituents, if the additional parameters provide a reliable indication of releases from the CCR unit to the groundwater. In determining additional parameters, the Department shall consider the following factors:~~

~~(i) The types, quantities, and concentrations of constituents in waste managed at the CCR unit;~~

~~(ii) The mobility, stability, and persistence of waste constituents or their reaction products in the unsaturated zone beneath the CCR unit;~~

~~(iii) The detectability of indicator parameters, waste constituents, and reaction products in groundwater; and~~

~~(iv) The concentration or values and coefficients of variation of monitoring parameters or constituents in the groundwater background.~~

(b) Except as provided in 335-13-15-.06(5)(d), the monitoring frequency for the constituents listed in ~~335-13-15-.06(5)(a)~~Appendix III shall be at least semiannual during the active life of the CCR unit and the post-

closure period. For existing CCR landfills and existing CCR surface impoundments, a minimum of eight independent samples from each background and downgradient well must be collected and analyzed for the constituents listed in Appendix III~~, or the alternative list as provided by in 335-13-15-.06(5)(a)2.,~~ and Appendix IV, for the purpose of establishing background concentrations no later than October 17, 2017. For new CCR landfills, new CCR surface impoundments, and all lateral expansions of CCR units, a minimum of eight independent samples for each background well must be collected and analyzed for the constituents listed in Appendix III and Appendix IV~~335-13-15-.06(5)(a)~~ for the purpose of establishing background concentrations during the first six months of sampling.

(c) The number of samples collected and analyzed for each background well and downgradient well during subsequent semiannual sampling events must be consistent with 335-13-15-.06(4)(e), and must account for any unique characteristics of the site, but must be at least one sample from each background and downgradient well.

(d) The owner or operator of a CCR unit may demonstrate the need for an alternative monitoring frequency for repeated sampling and analysis for constituents listed in Appendix III~~, or the alternative list as provided by in 335-13-15-.06(5)(a)2.,~~ during the active life and the post-closure care period based on the availability of groundwater. If there is not adequate groundwater flow to sample wells semiannually, the alternative frequency shall be no less than annual. The need to vary monitoring frequency must be evaluated on a site-specific basis. The demonstration must be supported by, at a minimum, the information specified in 335-13-15-.06(5)(d)1. and 2.

1. Information documenting that the need for less frequent sampling. The alternative frequency must be based on consideration of the following factors:

(i) Lithology of the aquifer and unsaturated zone;

(ii) Hydraulic conductivity of the aquifer and unsaturated zone; and

(iii) Groundwater flow rates.

2. Information documenting that the alternative frequency will be no less effective in ensuring that any leakage from the CCR unit will be discovered within a timeframe that will not materially delay establishment of an assessment monitoring program.

3. The owner or operator must obtain a certification from a qualified professional engineer stating that the demonstration for an alternative groundwater sampling and analysis frequency meets the requirements of this section. The owner or operator must submit the demonstration providing the

basis for the alternative monitoring frequency and the certification by a qualified professional engineer to the Department for approval. If Departmental approval is granted, the owner or operator must place the demonstration in the annual groundwater monitoring and corrective action report required by 335-13-15-.06(1)(~~f~~e).

(e) If the owner or operator of the CCR unit determines, pursuant to 335-13-15-.06(4)(h) that there is a statistically significant increase over background levels for one or more of the constituents listed in Appendix III~~, or the alternative list as provided by in 335-13-15-.06(5)(a)2.,~~ at any monitoring well at the waste boundary specified under 335-13-15-.06(2)(a)2., the owner or operator must:

1. Except as provided for in 335-13-15-.06(5)(e)2., within 90 days of detecting a statistically significant increase over background levels for any constituent, establish an assessment monitoring program meeting the requirements of 335-13-15-.06(6).

2. The owner or operator may demonstrate that a source other than the CCR unit caused the statistically significant increase over background levels for a constituent or that the statistically significant increase resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. The owner or operator must complete the written demonstration within 90 days of detecting a statistically significant increase over background levels. A report documenting this demonstration must be certified by a qualified professional engineer verifying the accuracy of the information in the report, ~~-~~and placed in the operating record. If a successful demonstration is completed within the 90-day period, the owner or operator of the CCR unit may continue with a detection monitoring program under this section, subject to subsequent review and approval from the Department. If a successful demonstration is not completed within the 90-day period, the owner or operator of the CCR unit must initiate an assessment monitoring program as required under 335-13-15-.06(6). The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by 335-13-15-.06(1)(~~f~~e), in addition to the certification by a qualified professional engineer.

3. The owner or operator of a CCR unit must prepare a notification stating that ~~a statistically significant increase over background has been detected and~~ an assessment monitoring program has been established. The owner or operator has completed the notification when the notification is placed in the facility's operating record as required by 335-13-15-.08(1)(h)5; and

4. Must, within 14 days of this finding, place a notice in the operating record, and submit a copy of this notice to the Department, stating that a statistically significant increase over background has been detected and indicat~~ing~~ which constituents have shown statistically significant changes from background levels.

(f) The owner or operator of the CCR unit must comply with the recordkeeping requirements specified in 335-13-15-.08(1)(h), the notification requirements specified in 335-13-15-.08(2)(h), and the iInternet requirements specified in 335-13-15-.08(3)(h).

~~(g) The owner or operator of a CCR unit must submit a semi-annual report to the Department to coincide with the semi-annual sampling event. The report shall be certified by a qualified professional engineer.~~

(6) Assessment monitoring program.

(a) Assessment monitoring is required whenever a statistically significant increase over background levels has been detected for one or more of the constituents listed in Appendix III~~, or the alternative list as provided by in 335-13-15-.06(5)(a)2~~.

(b) Within 90 days of triggering an assessment monitoring program, and annually thereafter, the owner or operator of the CCR unit must sample and analyze the groundwater for all constituents listed in Appendix III~~, or the alternative list as provided by in 335-13-15-.06(5)(a)2,.~~ and Appendix IV. The number of samples collected and analyzed for each well during each sampling event must be consistent with 335-13-15-.06(4)(e), and must account for any unique characteristics of the site, but must be at least one sample from each well.

(c) The owner or operator of a CCR unit may demonstrate the need for an alternative monitoring frequency for repeated sampling and analysis for constituents listed in Appendix III~~, or the alternative list as provided by in 335-13-15-.06(5)(a)2.,~~ and Appendix IV during the active life and the post-closure care period based on the availability of groundwater. If there is not adequate groundwater flow to sample wells semiannually, the alternative frequency shall be no less than annual. The need to vary monitoring frequency must be evaluated on a site-specific basis. The demonstration must be supported by, at a minimum, the information specified in 335-13-15-.06(6)(c)1. and 2.

1. Information documenting that the need for less frequent sampling. The alternative frequency must be based on consideration of the following factors:

(i) Lithology of the aquifer and unsaturated zone;

(ii) Hydraulic conductivity of the aquifer and unsaturated zone;

(iii) Groundwater flow rates; and

(iv) Nature (fate and transport) of any constituents detected in response to this rule.

2. Information documenting that the alternative frequency will be no less effective in ensuring that any leakage from the CCR unit will be discovered within a timeframe that will not materially delay the initiation of any necessary remediation measures.

3. The owner or operator must obtain a certification from a qualified professional engineer stating that the demonstration for an alternative groundwater sampling and analysis frequency meets the requirements of this section. The owner or operator must submit the demonstration providing the basis for the alternative monitoring frequency and the certification by a qualified professional engineer to the Department for approval. If Departmental approval is granted, the owner or operator must place the demonstration in the annual groundwater monitoring and corrective action report required by 335-13-15-.06(1)(~~f~~e).

(d) After obtaining the results from the initial and subsequent sampling events required in 335-13-15-.06(6)(b), the owner or operator must:

1. Within 14 days, place a notice in the operating record and submit a copy of this notice to the Department identifying the Appendix IV constituents that have been detected;

2. Within 90 days of obtaining the results, and on at least a semiannual basis thereafter, resample all wells that were installed pursuant to the requirements of 335-13-15-.06(2), conduct analyses for all parameters in Appendix III~~, or the alternative list as provided by in 335-13-15-.06(5)(a)2.,~~ and for those constituents in Appendix IV that are detected in response to 335-13-15-.06(6)(b), and record their concentrations in the facility operating record. The number of samples collected and analyzed for each background well and downgradient well during subsequent semiannual sampling events must be consistent with 335-13-15-.06(4)(e), and must account for any unique characteristics of the site, but must be at least one sample from each background and downgradient well;

3. Establish groundwater protection standards for all Appendix IV constituents detected pursuant to 335-13-15-.06(6)(b) or (d). The groundwater protection standards must be established in accordance with 335-13-15-.06(6)(h) ~~or (i)~~; and

4. Include the recorded concentrations required by 335-13-15-.06(6)(d)2., identify the background concentrations established under 335-13-15-.06(5)(b), and identify the groundwater protection standards established under 335-13-15-.06(6)(d)3. in the annual groundwater monitoring and corrective action report required by 335-13-15-.06(1)(~~f~~e) and the semi-annual groundwater monitoring report required by 335-13-15-.06(1)(f).

~~5. The Department may specify an alternative monitoring frequency during the active life (including closure) and the post closure period for the constituents referred to 335-13-15-.06(6)(d)2. The alternative frequency shall be no less than annual and shall be based on consideration of the factors specified in 335-13-15-.06(6)(c)~~

~~The provisions of 335-13-15-.06(6)(d)5. will become operative on [DATE (Forty-five days after approval by the U.S. Environmental Protection Agency)].~~

(e) If the concentrations of all constituents listed in Appendix III~~, or the alternative list as provided by in 335-13-15-.06(5)(a)2.,~~ and Appendix IV are shown to be at or below background values, using the statistical procedures in 335-13-15-.06(4)(g), for two consecutive sampling events, the owner or operator may return to detection monitoring of the CCR unit. The owner or operator must prepare a notification stating that detection monitoring is resuming for the CCR unit. The owner or operator has completed the notification when the notification is placed in the facility's operating record as required by 335-13-15-.08(1)(h)7. and submitted to the Department.

(f) If the concentrations of any constituent in Appendix III~~, or the alternative list as provided by in 335-13-15-.06(5)(a)2.,~~ and Appendix IV are above background values, but all concentrations are below the groundwater protection standard established under 335-13-15-.06(6)(h)~~ or (i)~~, using the statistical procedures in 335-13-15-.06(4)(g), the owner or operator must continue assessment monitoring in accordance with this section.

(g) If one or more constituents in Appendix IV are detected at statistically significant levels above the groundwater protection standard established under 335-13-15-.06(6)(h)~~ or (i)~~ in any sampling event, the owner or operator must prepare a notification identifying the constituents in Appendix IV that have exceeded the groundwater protection standard. The owner or operator has completed the notification when the notification is placed in the facility's operating record as required by 335-13-15-.08(1)(h)8. The owner or operator of the CCR unit also must:

1. Submit a copy of the notification to the Department and all appropriate local government officials, if the facility is subject to the local host government approval requirements as specified in 335-13-5-.02(a); and

2. Characterize the nature and extent of the release and any relevant site conditions that may affect the remedy ultimately selected. The characterization must be sufficient to support a complete and accurate assessment of the corrective measures necessary to effectively clean up all releases from the CCR unit pursuant to 335-13-15-.06(7). Characterization of the release includes the following minimum measures:

(i) Install additional monitoring wells necessary to define the contaminant plume(s);

(ii) Collect data on the nature and estimated quantity of material released including specific information on the constituents listed in Appendix IV and the levels at which they are present in the material released;

(iii) Install at least one additional monitoring well at the facility boundary in the direction of contaminant migration and sample this well in accordance with 335-13-15-.06(6)(d)2. ~~or 5.~~; and

(iv) Sample all wells in accordance with 335-13-15-.06(6)(d)2. ~~or 5.~~ to characterize the nature and extent of the release.

3. Notify all persons who own the land or reside on the land that directly overlies any part of the plume of contamination if contaminants have migrated off-site if indicated by sampling of wells in accordance with 335-13-15-.06(6)(g)2. The owner or operator has completed the notifications when they are placed in the facility's operating record as required by 335-13-15-.08(1)(h)8.

4. Within 90 days of finding that any of the constituents listed in Appendix IV have been detected at a statistically significant level exceeding the groundwater protection standards the owner or operator must either:

(i) Initiate an assessment of corrective measures as required by 335-13-15-.06(7); or

(ii) Demonstrate that a source other than the CCR unit caused the contamination, or that the statistically significant increase resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. Any such demonstration must be supported by a report that includes the factual or evidentiary basis for any conclusions and must be certified to be accurate by a qualified professional engineer and approved by the Department. If a successful demonstration is made, the owner or operator must continue monitoring in accordance with the assessment monitoring program pursuant to this section, and may return to detection monitoring if the constituents in Appendix III~~, or the alternative list as provided by in 335-13-15-.06(5)(a)2.,~~ and Appendix IV are at or below background as specified in 335-13-15-.06(6)(e). The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by 335-13-15-.06(1)(~~f~~e), in addition to the certification by a qualified professional engineer.

5. If a successful determination has not been made at the end of the 90 day period provided by 335-13-15-.06(6)(g)4., the owner or operator of the CCR unit must initiate the assessment of corrective measures requirements under 335-13-15-.06(7).

6. ~~If an assessment of corrective measures is required under 335-13-15-.06(7) by either 335-13-15-.06(6)(g)4.(i) or (g)5., and if the CCR unit is an existing unlined CCR surface impoundment as determined by 335-13-15-.04(2)(a), then the CCR unit is subject to the requirements under 335-13-15-.07(2)(a) to retrofit or close. In addition, t~~The owner or operator must prepare a notification stating that an assessment of corrective measures has been initiated.

(h) The owner or operator of the CCR unit must establish a groundwater protection standard for each constituent in Appendix IV detected in the groundwater. The groundwater protection standard shall be:

1. For constituents for which a maximum contaminant level (MCL) has been established under 335-7-2-.03(1) and 335-7-2-.08(1) and (2), the MCL for that constituent;

2. For the following constituents:

(i) Cobalt 6 micrograms per liter (µg/L);

(ii) Lead 15 µg/L;

(iii) Lithium 40 µg/L; and

(iv) Molybdenum 100 µg/L.

~~for which an MCL has not been established, the background concentration for the constituent established from wells in accordance with 335-13-15-.06(5)(b); or~~

3. For constituents for which the background level is higher than the levels~~MCL~~ identified under 335-13-15-.06(6)(h)1. or (h)2., the background concentration.

~~(i) The Department may establish an alternative groundwater protection standard for constituents for which MCLs have not been established. These groundwater protection standards shall be appropriate health based levels that satisfy the following criteria:~~

~~1. The level is derived in a manner consistent with EPA guidelines for assessing the health risks of environmental pollutants (51 FR 33992, 34006, 34014, 34028, September 24, 1986);~~

~~2. The level is based on scientifically valid studies conducted in accordance with the Toxic Substances Control Act Good Laboratory Practice Standards (40 CFR 792) or equivalent;~~

~~3. For carcinogens, the level represents a concentration associated with an excess lifetime cancer risk level (due to continuous lifetime exposure) with the $1x10^{-4}$ to $1x10^{-6}$ range; and~~

~~4. For systemic toxicants, the level represents a concentration to which the human population (including sensitive subgroups) could be exposed to on a daily basis that is likely to be without appreciable risk of deleterious effects during a~~

~~lifetime. For purposes of this rule, systemic toxicants include toxic chemicals that cause effects other than cancer or mutation.~~

~~The provisions of 335-13-15-.06(6)(i) will become operative on [DATE (Forty-five days after approval by the U.S. Environmental Protection Agency)].~~

~~(j) In establishing groundwater protection standards under subparagraph (i) of this paragraph, the Department may consider the following:~~

~~1. Multiple contaminants in the groundwater;~~

~~2. Exposure threats to sensitive environmental receptors; and~~

~~3. Other site-specific exposure or potential exposure to groundwater.~~

(i~~k~~) The owner or operator of the CCR unit must comply with the recordkeeping requirements specified in 335-13-15-.08(1)(h), the notification requirements specified in 335-13-15-.08(2)(h), and the internet requirements specified in 335-13-15-.08(3)(h).

(7) Assessment of corrective measures.

(a) Within 90 days of finding that any constituent listed in Appendix IV has been detected at a statistically significant level exceeding the groundwater protection standard defined under 335-13-15-.06(6)(h) ~~or (i)~~, or immediately upon detection of a release from a CCR unit, the owner or operator must initiate an assessment of corrective measures to prevent further releases, to remediate any releases and to restore affected areas to original conditions. The assessment of corrective measures must be completed within 90 days, unless the owner or operator demonstrates the need for additional time to complete the assessment of corrective measures due to site-specific conditions or circumstances. The owner or operator must obtain a certification from a qualified professional engineer attesting that the demonstration is accurate and submit the demonstration to the Department for approval. The 90-day deadline to complete the assessment of corrective measures may be extended for no longer than 60 days. The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by 335-13-15-.06(1)(~~f~~e), in addition to the certification by a qualified professional engineer.

(b) The owner or operator of the CCR unit must continue to monitor groundwater in accordance with the assessment monitoring program as specified in 335-13-15-.06(6).

(c) The assessment under 335-13-15-.06(7)(a) must include an analysis of the effectiveness of potential corrective measures in meeting all of the requirements and objectives of the remedy as described under 335-13-15-.06(8) addressing at least the following:

1. The performance, reliability, ease of implementation, and potential impacts of appropriate potential remedies, including safety impacts, cross-media impacts, and control of exposure to any residual contamination;

2. The time required to begin and complete the remedy;

3. The institutional requirements, such as state or local permit requirements or other environmental or public health requirements that may substantially affect implementation of the remedy(s).

(d) The owner or operator must place the completed assessment of corrective measures in the facility's operating record. The assessment has been completed when it is placed in the facility's operating record as required by 335-13-15-.08(1)(h)10.

(e) The owner or operator must discuss the results of the corrective measures assessment at least 30 days prior to the selection of remedy, in a public meeting with interested and affected parties.

(f) The owner or operator of the CCR unit must comply with the recordkeeping requirements specified in 335-13-15-.08(1)(h), the notification requirements specified in 335-13-15-.08(2)(h), and the internet requirements specified in 335-13-15-.08(3)(h).

(8) Selection of remedy.

(a) Based on the results of the corrective measures assessment conducted under 335-13-15-.06(7), the owner or operator must, as soon as feasible, select a remedy that, at a minimum, meets the standards listed in 335-13-15-.06(8)(b). This requirement applies to, not in place of, any applicable standards under the Occupational Safety and Health Act. The owner or operator must prepare a semiannual report describing the progress in selecting and designing the remedy. Upon selection of a remedy, the owner or operator must prepare a final report describing the selected remedy and how it meets the standards specified in 335-13-15-.06(8)(b). The owner or operator must obtain a certification from a qualified professional engineer that the remedy selected meets the requirements of this section. Within 14 days of selecting a remedy, the owner or operator must submit the report to the Department for approval of the selected remedy. The report has been completed when it is placed in the operating record as required by 335-13-15-.08(1)(h)12.

(b) Remedies must:

1. Be protective of human health and the environment;

2. Attain the groundwater protection standard as specified pursuant to 335-13-15-.06(6)(h) ~~or (i)~~;

3. Control the source(s) of releases so as to reduce or eliminate, to the maximum extent feasible, further releases of constituents in Appendix IV into the environment;

4. Remove from the environment as much of the contaminated material that was released from the CCR unit as is feasible, taking into account factors such as avoiding inappropriate disturbance of sensitive ecosystems;

5. Comply with standards for management of wastes as specified in 335-13-15-.06(9)(dе).

(c) In selecting a remedy that meets the standards of 335-13-15-.06(8)(b), the owner or operator of the CCR unit shall consider the following evaluation factors:

1. The long- and short-term effectiveness and protectiveness of the potential remedy(s), along with the degree of certainty that the remedy will prove successful based on consideration of the following:

(i) Magnitude of reduction of existing risks;

(ii) Magnitude of residual risks in terms of likelihood of further releases due to CCR remaining following implementation of a remedy;

(iii) The type and degree of long-term management required, including monitoring, operation, and maintenance;

(iv) Short-term risks that might be posed to the community or the environment during implementation of such a remedy, including potential threats to human health and the environment associated with excavation, transportation, and re-disposal of contaminant;

(v) Time until full protection is achieved;

(vi) Potential for exposure of humans and environmental receptors to remaining wastes, considering the potential threat to human health and the environment associated with excavation, transportation, re-disposal, or containment;

(vii) Long-term reliability of the engineering and institutional controls; and

(viii) Potential need for replacement of the remedy.

2. The effectiveness of the remedy in controlling the source to reduce further releases based on consideration of the following factors:

(i) The extent to which containment practices will reduce further releases; and

(ii) The extent to which treatment technologies may be used.

3. The ease or difficulty of implementing a potential remedy(s) based on consideration of the following types of factors:

(i) Degree of difficulty associated with constructing the technology;

(ii) Expected operational reliability of the technologies;

(iii) Need to coordinate with and obtain necessary approvals and permits from other agencies;

(iv) Availability of necessary equipment and specialists; and

(v) Available capacity and location of needed treatment, storage, and disposal services.

~~4. Feasibility of the owner or operator, including a consideration of the technical feasibility.~~

~~5.~~ 4. The degree to which community concerns are addressed by a potential remedy(s).

~~The provisions of 335-13-15-.06(8)(c)4. will become operative on [DATE (Forty-five days after approval by the U.S. Environmental Protection Agency)].~~

(d) The owner or operator must specify as part of the selected remedy a schedule(s) for implementing and completing remedial activities. Such a schedule must require the completion of remedial activities within a reasonable period of time taking into consideration the factors set forth in 335-13-15-.06(8)(d)1. through 6. The owner or operator of the CCR unit must consider the following factors in determining the schedule of remedial activities:

1. Extent and nature of contamination, as determined by the characterization required under 335-13-15-.06(6)(g);

2. Reasonable probabilities of remedial technologies in achieving compliance with the groundwater protection standards established under 335-13-15-.06(6)(h) ~~or (i)~~ and other objectives of the remedy;

3. Availability of treatment or disposal capacity for CCR managed during implementation of the remedy;

4. Potential risks to human health and the environment from exposure to contamination prior to completion of the remedy;

5. Resource value of the aquifer including:

(i) Current and future uses;

(ii) Proximity and withdrawal rate of users;

(iii) Groundwater quantity and quality;

(iv) The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to CCR constituents;

(v) The hydrogeologic characteristic of the facility and surrounding land; and

(vi) The availability of alternative water supplies; and

6. Other relevant factors.

~~(e) The Department may determine that remediation of a release of an Appendix IV constituent from a CCR unit is not necessary if the owner or operator demonstrates to the Department that:~~

~~1. The groundwater is additionally contaminated by substances that have originated from a source other than a CCR unit and those substances are present in concentrations such that cleanup of the release from the CCR unit would provide no significant reduction in risk to actual or potential receptors; or~~

~~2. The constituent(s) is present in groundwater that:~~

~~(i) Is not currently or reasonably expected to be a source of drinking water; and~~

~~(ii) Is not hydraulically connected with waters to which the hazardous constituents are migrating or are likely to migrate in a concentration(s) that would exceed the groundwater protection standards established under subparagraphs (6)(h) or (i) of this rule; or~~

~~3. Remediation of the release(s) is technically impracticable; or~~

~~4. Remediation results in unacceptable cross-media impacts.~~

~~The provisions of 335-13-15-.06(8)(e) will become operative on [DATE (Forty-five days after approval by the U.S. Environmental Protection Agency)].~~

~~(f) A determination by the Department pursuant to subparagraph (e) of this paragraph shall not affect the authority of the State to require the owner or operator to undertake source control measures or other measures that may be necessary to eliminate or minimize further releases to the groundwater, to prevent exposure to the groundwater, or to remediate the groundwater to concentrations that are technically practicable and significantly reduce threats to human health or the environment.~~

(c~~g~~) The owner or operator of the CCR unit must comply with the recordkeeping requirements specified in 335-13-15-.08(1)(h), the notification requirements specified in 335-13-15-.08(2)(h), and the internet requirements specified in 335-13-15-.08(3)(h).

(9) Implementation of the corrective action program.

(a) Within 90 days of selecting a remedy under 335-13-15-.06(8), the owner or operator must initiate remedial activities. Based on the schedule established under 335-13-15-.06(8)(d) for implementation and completion of remedial activities the owner or operator must:

1. Establish and implement a corrective action groundwater monitoring program that:

(i) At a minimum, meets the requirements of an assessment monitoring program under 335-13-15-.06(6);

(ii) Documents the effectiveness of the corrective action remedy; and

(iii) Demonstrates compliance with the groundwater protection standard pursuant to 335-13-15-.06(9)(c~~d~~).

2. Implement the corrective action remedy selected under 335-13-15-.06(8); and

3. Take any interim measures necessary to reduce the contaminants leaching from the CCR unit, and/or potential exposures to human or ecological receptors. Interim measures must, to the greatest extent feasible, be consistent with the objectives of and contribute to the performance of any remedy that may be required pursuant to 335-13-15-.06(8). The following factors must be considered by an owner or operator in determining whether interim measures are necessary:

(i) Time required to develop and implement a final remedy;

(ii) Actual or potential exposure of nearby populations or environmental receptors to any of the constituents listed in Appendix IV;

(iii) Actual or potential contamination of drinking water supplies or sensitive ecosystems;

(iv) Further degradation of the groundwater that may occur if remedial action is not initiated expeditiously;

(v) Weather conditions that may cause any of the constituents listed in Appendix IV to migrate or be released;

(vi) Potential for exposure to any of the constituents listed in Appendix IV as a result of an accident or failure of a container or handling system; and

(vii) Other situations that may pose threats to human health and the environment.

(b) If an owner or operator of the CCR unit, determines, at any time, that compliance with the requirements of 335-13-15-.06(8)(b) is not being achieved through the remedy selected, the owner or operator must implement other methods or techniques that could feasibly achieve compliance with the requirements~~, unless the owner or operator successfully makes the demonstration under subparagraph (c) of this paragraph~~.

~~(c) If the owner or operator demonstrates to the satisfaction of the Department that compliance with requirements under subparagraph (8)(b) of this section cannot be feasibly achieved with any currently available methods, the owner or operator must:~~

~~1. Obtain certification of a qualified professional engineer stating that compliance with the requirements under subparagraph (8)(b) of this section cannot be feasibly achieved with any currently available methods;~~

~~2. Implement alternate measures to control exposure of humans or the environment to residual contamination, as necessary to protect human health and the environment; and~~

~~3. Implement alternate measures for control of the sources of contamination, or for removal or decontamination of equipment, units, devices, or structures that are:~~

~~(i) Technically feasible; and~~

~~(ii) Consistent with the overall objective of the remedy.~~

~~4. Submit the demonstration and the proposed alternative measures to the Department for review and approval within 14 days of completing the demonstration and prior to implementing the alternative measures. Concern over the costs associated with the remedial action is not sufficient to support the demonstration under this section.~~

~~The provisions of 335-13-15-.06(9)(c) will become operative on [DATE (Forty-five days after approval by the U.S. Environmental Protection Agency)].~~

(~~d~~c) Remedies selected pursuant to 335-13-15-.06(8) shall be considered complete when:

1. The owner or operator of the CCR unit demonstrates compliance with the groundwater protection standards established under 335-13-15-.06(6)(h)~~ or (i)~~ has been achieved at all points within the plume of contamination that lie beyond the groundwater monitoring well system established under 335-13-15-.06(2).

2. Compliance with the groundwater protection standards established under 335-13-15-.06(6)(h)~~ or (i)~~ has been achieved by demonstrating that concentrations of constituents listed in Appendix IV have not exceeded the groundwater protection standard(s) for a period of three consecutive years using the statistical procedures and performance standards in 335-13-15-.06(4)(f) and (g).

~~(i) The Department may specify an alternative length of time during which the owner or operator must demonstrate that concentrations of Appendix IV constituents have not exceeded the groundwater protection standard(s) taking into consideration:~~

~~I. Extent and concentration of the release(s);~~

~~II. Behavior characteristics of the hazardous constituents in the groundwater;~~

~~III. Accuracy of monitoring or modeling techniques, including any seasonal, meteorological, or other environmental variabilities that may affect the accuracy; and~~

~~IV. Characteristics of the groundwater.~~

~~(ii) The provisions of 335-13-15-.06(9)(d)2.(i) will become operative on [DATE (Forty-five days after approval by the U.S. Environmental Protection Agency)].~~

3. All actions required to complete the remedy have been satisfied.

(~~e~~d) All CCR that are managed pursuant to a remedy required under 335-13-15-.06(8), or an interim measure required under 335-13-15-.06(9)(a)3., shall be managed in a manner that complies with all applicable ~~RCRA~~ state and/or federal requirements.

(~~f~~e) Upon completion of the remedy, the owner or operator must notify

the Department within 14 days that a certification from a qualified professional engineer attesting that the remedy has been completed in compliance with the requirements of 335-13-15-.06(9)(~~d~~c) has been placed in the operating record. The certification must be signed by the owner or operator and by a qualified professional engineer and approved by the Department. The report has been completed when it is placed in the operating record as required by 335-13-15-.08(1)(h)13.

(f~~g~~) The owner or operator of the CCR unit must comply with the recordkeeping requirements specified in 335-13-15-.08(1)(h), the notification requirements specified in 335-13-15-.08(2)(h), and the internet requirements specified in 335-13-15-.08(3)(h).

Author: Heather M. Jones
Statutory Authority: Code of Alabama 1975, §§ 22-27-3 and 22-27-7
History: Filed: April 24, 2018; Effective: June 8, 2018. **Amended:** Proposed: September 21, 2020.

335-13-15-.07 Closure and Post-Closure Care.

(1) Inactive CCR surface impoundments.

(a) Inactive CCR surface impoundments are subject to all of the requirements of this chapter applicable to existing CCR surface impoundments.

(b) [Reserved]

(c) [Reserved]

(d) [Reserved]

(e) Timeframes for certain inactive CCR surface impoundments.

1. An inactive CCR surface impoundment for which the owner or operator has completed the actions by the deadlines specified in 335-13-15-.07(1)(e)1.(i) through (iii) is eligible for the alternative timeframes specified in 335-13-15-.07(1)(e)2. through 6. The owner or operator of the CCR unit must comply with the applicable recordkeeping, ~~and notification~~ notification, and internet requirements associated with these provisions. For the inactive CCR surface impoundment:

(i) The owner or operator must have prepared and placed in the facility's operating record by December 17, 2015, a notification of intent to initiate closure of the inactive CCR surface impoundment pursuant to 335-13-15-.08(1)(i)1.; ~~and~~

(ii) The owner or operator must have provided notification to the Director by January 19, 2016, of the intent to initiate closure of the inactive CCR surface impoundment pursuant to 335-13-15-.08(2)(i)1~~.~~; and

~~(ii)~~(iii) The owner or operator must have placed on its CCR website by January 19, 2016, the notification of intent to initiate closure of the inactive CCR surface impoundment pursuant to 335-13-15-.08(3)(i)1.

2. Location restrictions.

(i) No later than April 16, 2020, the owner or operator of the inactive CCR surface impoundment must:

(I) Complete the demonstration for placement above the uppermost aquifer as set forth by 335-13-15-.03(1)(a), (b), (c) and (d)3.;

(II) Complete the demonstration for wetlands as set forth by 335-13-15-.03(2)(a), (b), and (c)3.;

(III) Complete the demonstration for fault areas as set forth by 335-13-15-.03(3)(a), (b), and (c)3.;

(IV) Complete the demonstration for seismic impact zones as set forth by 335-13-15-.03(4)(a), (b), and (c)3.; and

(V) Complete the demonstration for unstable areas as set forth by 335-13-15-.03(5)(a), (b), (c), and (d)3.

(ii) An owner or operator of an inactive CCR surface impoundment who fails to demonstrate compliance with the requirements of 335-13-15-.07(1)(e)2.(i) is subject to the closure requirements of 335-13-.15-.07(2)(b)1.

3. Design criteria. The owner or operator of the inactive CCR surface impoundment must:

(i) No later than April 17, 2018, complete the documentation of liner type as set forth by 335-13-15-.04(2)(a) and (b).

(ii) No later than June 16, 2017, place on or immediately adjacent to the CCR unit the permanent identification marker as set forth by 335-13-15-.04(4)(a)1.

(iii) No later than October 16, 2018, prepare and maintain an Emergency Action Plan as set forth by 335-13-15-.04(4)(a)3.~~[Reserved]~~

(iv) No later than April 17, 2018, compile a history of construction as set forth by 335-13-15-.04(4)(b) and (c).

(v) No later than April 17, 2018, complete the initial hazard potential classification, structural stability, and safety factor assessments as set forth by 335-13-15-.04(4)(a)2., (b), (d), (e), and (f).

4. Operating criteria. The owner or operator of the inactive CCR surface impoundment must:

(i) No later than April 18, 2017, prepare the initial CCR fugitive dust control plan as set forth in 335-13-15-.05(1)(b).~~[Reserved]~~

(ii) No later than April 17, 2018, prepare the initial inflow design flood control system plan as set forth in 335-13-15-.05(3)(c).

(iii) No later than April 18, 2017, initiate the inspections by a qualified person as set forth by 335-13-15-.05(4)(a).

(iv) No later than July 19, 2017, complete the initial annual inspection by a qualified professional engineer as set forth by 335-13-15-.05(4)(b).

5. Groundwater monitoring and corrective action. The owner or operator of the inactive CCR surface impoundment must:

(i) No later than April 17, 2019, comply with groundwater monitoring requirements set forth in 335-13-15-.06(1)(b) and 335-13-15-.06(5)(b); and

(ii) No later than August 1, 2019, prepare the initial groundwater monitoring and corrective action report as set forth in 335-13-15-.06(1)(~~f~~e).

6. Closure and post-closure care. The owner or operator of the inactive CCR surface impoundment must:

(i) No later than April 17, 2018, prepare an initial written closure plan as set forth in 335-13-15-.07(3)(b); and

(ii) No later than April 17, 2018, prepare an initial written post-closure care plan as set forth in 335-13-15-.07(5)(d).

(2) Closure or retrofit of CCR units.

(a) The owner or operator of an existing unlined CCR surface impoundment, as determined under 335-13-15-.04(2)(a), is subject to the requirements of 335-13-15-.07(2)(a)1.

1. Except as provided by 335-13-15-.07(2)(a)3., as soon as technically feasible, but not later than April 11, 2021, ~~if at any time after October 19, 2015 an owner or operator of an existing unlined CCR surface impoundment determines in any sampling event that the concentrations of one or more constituents listed in Appendix IV are detected at statistically significant levels above the groundwater protection standard established under 335-13-15-.06(6)(h) or (i) for such CCR unit, within six months of making such determination, the~~an owner or operator of ~~the~~an existing unlined CCR surface impoundment must cease placing CCR and non-~~-~~CCR waste~~-~~streams into such CCR surface impoundment and either retrofit or close the CCR unit in accordance with the requirements of 335-13-15-.07(3).

2. An owner or operator of an existing unlined CCR surface impoundment that closes in accordance with 335-13-15-.07(2)(a)1. must include a statement in the notification required under 335-13-15-.07(3)(g) or (l)5. that the CCR surface impoundment is closing or retrofitting under the requirements of 335-13-15-.07(2)(a)1.

3. The timeframe specified in 335-13-15-.07(2)(a)1. does not apply if the owner or operator complies with the alternative closure procedures specified in 335-13-15-.07(4).

4. At any time after the initiation of closure under 335-13-15-.07(2)(a)1., the owner or operator may cease closure activities and initiate a retrofit of the CCR unit in accordance with the requirements of 335-13-15-

.07(3)(l).

(b) The owner or operator of an existing CCR surface impoundment is subject to the requirements of 335-13-15-.07(2)(b)1.

1. (i) Location standard under 335-13-15-.03(1). Except as provided by 335-13-15-.07(2)(b)4., the owner or operator of an~~within six months of determining that an~~ existing CCR surface impoundment that has not demonstrated compliance with the ~~any~~ location standard specified in 335-13-15-.03(1)(a)~~, 335-13-15-.03(2)(a), 335-13-15-.03(3)(a), 335-13-15-.03(4)(a), and 335-13-15-.03(5)(a), the owner or operator of the CCR surface impoundment~~ must cease placing CCR and non-CCR waste~~-~~streams into such CCR unit as soon as technically feasible, but no later than April 11, 2021, and close the CCR unit in accordance with the requirements of 335-13-15-.07(3).

(ii) Location standards under 335-13-15-.03(2) through 335-13-15-.03(5). Except as provided by 335-13-15-.07(2)(b)4., within six months of determining that an existing CCR surface impoundment has not demonstrated compliance with any location standard specified in 335-13-15-.03(2)(a), 335-13-15-.03(3)(a), 335-13-15-.03(4)(a), and 335-13-15-.03(5)(a), the owner or operator of the CCR surface impoundment must cease placing CCR and non CCR waste streams into such CCR unit and close the CCR unit in accordance with the requirements of 335-13-15-.07(3).

2. Within six months of either failing to complete the initial or any subsequent periodic safety factor assessment required by 335-13-15-.04(4)(e) by the deadlines specified in 335-13-15-.04(4)(f)1. through 3. or failing to document that the calculated factors of safety for the existing CCR surface impoundment achieve the minimum safety factors specified in 335-13-15-.04(4)(e)1.(i) through (iv), the owner or operator of the CCR surface impoundment must cease placing CCR and non CCR waste streams into such CCR unit and close the CCR unit in accordance with the requirements of 335-13-15-.07(3).

3. An owner or operator of an existing CCR surface impoundment that closes in accordance with 335-13-15-.07(2)(b)1. or 2. must include a statement in the notification required under 335-13-15-.07(3)(g) that the CCR surface impoundment is closing under the requirements of 335-13-15-.07(2)(b)1. or 2.

4. The timeframe specified in 335-13-15-.07(2)(b)1. does not apply if the owner or operator complies with the alternative closure procedures specified in 335-13-15-.07(4).

(c) The owner or operator of a new CCR surface impoundment is subject to the requirements of 335-13-15-.07(2)(c)1.

1. Within six months of either failing to complete the initial or any subsequent periodic safety factor assessment required by 335-13-15-.04(5)(e) by

the deadlines specified in 335-13-15-.04(5)(f)1. through 3. or failing to document that the calculated factors of safety for the new CCR surface impoundment achieve the minimum safety factors specified in 335-13-15-.04(5)(e)1.(i) through (v), the owner or operator of the CCR surface impoundment must cease placing CCR and non CCR waste streams into such CCR unit and close the CCR unit in accordance with the requirements of 335-13-15-.07(3).

2. An owner or operator of an new CCR surface impoundment that closes in accordance with 335-13-15-.07(2)(c)1. must include a statement in the notification required under 335-13-15-.07(3)(g) that the CCR surface impoundment is closing under the requirements of 335-13-15-.07(2)(c)1.

(d) The owner or operator of an existing CCR landfill is subject to the requirements of 335-13-15-.07(2)(d)1.

1. Except as provided by 335-13-15-.07(2)(d)3., within six months of determining that an existing CCR landfill has not demonstrated compliance with the location restriction for unstable areas specified in 335-13-15-.03(5)(a), the owner or operator of the CCR unit must cease placing CCR and non CCR waste streams into such CCR landfill and close the CCR unit in accordance with the requirements of 335-13-15-.07(3).

2. An owner or operator of an existing CCR landfill that closes in accordance with 335-13-15-.07(2)(d)1. must include a statement in the notification required under 335-13-15-.07(3)(g) that the CCR landfill is closing under the requirements of 335-13-15-.07(2)(d)1.

3. The timeframe specified in 335-13-15-.07(2)(d)1. does not apply if the owner or operator complies with the alternative closure procedures specified in 335-13-15-.07(4).

(3) Criteria for conducting the closure or retrofit of CCR units.

(a) Closure of a CCR landfill, CCR surface impoundment, or any lateral expansion of a CCR unit must be completed either by leaving the CCR in place and installing a final cover system or through removal of the CCR and decontamination of the CCR unit, as described in 335-13-15-.07(3)(b) through (j). Retrofit of a CCR surface impoundment must be completed in accordance with the requirements in 335-13-15-.07(3)(l).

(b) Written closure plan.

1. Content of the plan. The owner or operator of a CCR unit must prepare a written closure plan that describes the steps necessary to close the CCR unit at any point during the active life of the CCR unit consistent with recognized and generally accepted good engineering practices. The owner or operator must submit the closure plan as part of the permit application

to the Department. The written closure plan must include, at a minimum, the information specified in 335-13-15-.07(3)(b)1.(i) through (vi).

(i) A narrative description of how the CCR unit will be closed in accordance with this section.

(ii) If closure of the CCR unit will be accomplished through removal of CCR from the CCR unit, a description of the procedures to remove the CCR and decontaminate the CCR unit in accordance with 335-13-15-.07(3)(c).

(iii) If closure of the CCR unit will be accomplished by leaving CCR in place, a description of the final cover system, designed in accordance with 335-13-15-.07(3)(d), and the methods and procedures to be used to install the final cover. The closure plan must also discuss how the final cover system will achieve the performance standards specified in 335-13-15-.07(3)(d).

(iv) An estimate of the maximum inventory of CCR ever on-site over the active life of the CCR unit.

(v) An estimate of the largest area of the CCR unit ever requiring a final cover as required by 335-13-15-.07(3)(d) at any time during the CCR unit's active life.

(vi) A schedule for completing all activities necessary to satisfy the closure criteria in this section, including an estimate of the year in which all closure activities for the CCR unit will be completed. The schedule should provide sufficient information to describe the sequential steps that will be taken to close the CCR unit, including identification of major milestones such as coordinating with and obtaining necessary approvals and permits from other agencies, the dewatering and stabilization phases of CCR surface impoundment closure, or installation of the final cover system, and the estimated timeframes to complete each step or phase of CCR unit closure. When preparing the written closure plan, if the owner or operator of a CCR unit estimates that the time required to complete closure will exceed the timeframes specified in 335-13-15-.07(3)(f)1., the written closure plan must include the site-specific information, factors and considerations that would support any time extension sought under 335-13-15-.07(3)(f)2.

2. Timeframes for preparing the initial written closure plan.

(i) Existing CCR landfills and existing CCR surface impoundments. No later than October 17, 2016, the owner or operator of the CCR unit must prepare an initial written closure plan consistent with the requirements specified in 335-13-15-.07(3)(b)1.

(ii) New CCR landfills and new CCR surface impoundments, and any lateral expansion of a CCR unit. No later than the date of the initial receipt of

CCR in the CCR unit, the owner or operator must prepare an initial written closure plan consistent with the requirements specified in 335-13-15-.07(3)(b)1.

(iii) The owner or operator has completed the written closure plan when the plan, including the certification required by 335-13-15-.07(3)(b)4., has been placed in the facility's operating record as required by 335-13-15-.08(1)(i)4.

3. Amendment of a written closure plan.

(i) The owner or operator may amend the initial or any subsequent written closure plan developed pursuant to 335-13-15-.07(3)(b)1. at any time.

(ii) The owner or operator must amend the written closure plan whenever:

(I) There is a change in the operation of the CCR unit that would substantially affect the written closure plan in effect; or

(II) Before or after closure activities have commenced, unanticipated events necessitate a revision of the written closure plan.

(iii) The owner or operator must amend the closure plan at least 60 days prior to a planned change in the operation of the facility or CCR unit, or no later than 60 days after an unanticipated event requires the need to revise an existing written closure plan. If a written closure plan is revised after closure activities have commenced for a CCR unit, the owner or operator must amend the current closure plan no later than 30 days following the triggering event.

4. The owner or operator of the CCR unit must obtain a written certification from a qualified professional engineer that the initial and any amendment of the written closure plan meets the requirements of this section. The closure plan, as well as the certification from a qualified professional engineer, must be submitted to the Department for approval.

(c) Closure by removal of CCR. An owner or operator may elect to close a CCR unit by removing and decontaminating all areas affected by releases from the CCR unit. CCR removal and decontamination of the CCR unit are complete when constituent concentrations throughout the CCR unit and any areas affected by releases from the CCR unit have been removed and groundwater monitoring concentrations do not exceed the groundwater protection standard established pursuant to 335-13-15-.06(6)(h) ~~or (i)~~ for constituents listed in Appendix IV.

(d) Closure performance standard when leaving CCR in place.

1. The owner or operator of a CCR unit must ensure that, at a minimum, the CCR unit is closed in a manner that will:

(i) Control, minimize or eliminate, to the maximum extent feasible, post-closure infiltration of liquids into the waste and releases of CCR, leachate, or contaminated run-off to the ground or surface waters or to the atmosphere;

(ii) Preclude the probability of future impoundment of water, sediment, or slurry;

(iii) Include measures that provide for major slope stability to prevent the sloughing or movement of the final cover system during the closure and post-closure care period;

(iv) Minimize the need for further maintenance of the CCR unit; and

(v) Be completed in the shortest amount of time consistent with recognized and generally accepted good engineering practices.

2. Drainage and stabilization of CCR surface impoundments. The owner or operator of a CCR surface impoundment or any lateral expansion of a CCR surface impoundment must meet the requirements of 335-13-15-.07(3)(d)2.(i) and (ii) prior to installing the final cover system required under 335-13-15-.07(3)(d)3.

(i) Free liquids must be eliminated by removing liquid wastes or solidifying the remaining wastes and waste residues.

(ii) Remaining wastes must be stabilized sufficient to support the final cover system.

3. Final cover system. If a CCR unit is closed by leaving CCR in place, the owner or operator must install a final cover system that is designed to minimize infiltration and erosion, and at a minimum, meets the requirements of 335-13-15-.07(3)(d)3.(i), or the requirements of the alternative final cover system specified in 335-13-15-.07(3)(d)3.(ii).

(i) The final cover system must be designed and constructed to meet the criteria in 335-13-15-.07(3)(d)3.(i)(I) through (VII). The design of the final cover system must be included in the written closure plan required by 335-13-15-.07(3)(b).

(I) The permeability of the final cover system must be less than or equal to the permeability of any bottom liner system or natural subsoils present, or a permeability no greater than $1x10^{-5}$ cm/sec, whichever is less.

(II) The infiltration of liquids through the closed CCR unit must be minimized by the use of an infiltration layer that contains a minimum of 18 inches of earthen material.

(III) The minimum final grade of the final cover system shall not be less than 5 percent.

(IV) The maximum final grade of the final cover system shall not exceed 25 percent, or as specified by the Department, to minimize erosion.

(V) Slopes longer than 25 feet shall require horizontal terraces, of sufficient width for equipment operation, for every 20 feet rise in elevation or utilize other erosion control measures approved by the Department.

(VI) The erosion of the final cover system must be minimized by the use of an erosion layer that contains a minimum of six inches of earthen material that is capable of sustaining native plant growth.

(VII) The disruption of the integrity of the final cover system must be minimized through a design that accommodates settling and subsidence.

(ii) The owner or operator may select an alternative final cover system design, provided the alternative final cover system is designed and constructed to meet the criteria in 335-13-15-.07(3)(d)3.(i)(I) through (IV). The design of the final cover system must be included in the written closure plan required by 335-13-15-.07(3)(b).

(I) The design of the final cover system must include an infiltration layer that achieves an equivalent reduction in infiltration as the infiltration layer specified in 335-13-15-.07(3)(d)3.(i)(I) and (II).

(II) The design of the final cover system must include an erosion layer that provides equivalent protection from wind or water erosion as the erosion layer specified in 335-13-15-.07(3)(d)3.(i)(VI).

(III) The disruption of the integrity of the final cover system must be minimized through a design that accommodates settling and subsidence.

(iii) The owner or operator of the CCR unit must obtain and submit to the Department a written certification from a qualified professional engineer that the design of the final cover system meets the requirements of this section.

(e) Initiation of closure activities. Except as provided for in 335-13-15-.07(3)(e)4. and 335-13-15-.07(4), the owner or operator of a CCR unit must commence closure of the CCR unit no later than the applicable timeframes specified in either 335-13-15-.07(3)(e)1. or 2.

1. The owner or operator must commence closure of the CCR unit no later than 30 days after the date on which the CCR unit either:

(i) Receives the known final receipt of waste, either CCR or any non-CCR waste stream; or

(ii) Removes the known final volume of CCR from the CCR unit for the purpose of beneficial use of CCR.

2. (i) Except as provided by 335-13-15-.07(3)(e)2.(ii), the owner or operator must commence closure of a CCR unit that has not received CCR or any non-CCR waste stream or is no longer removing CCR for the purpose of beneficial use within two years of the last receipt of waste or within two years of the last removal of CCR material for the purpose of beneficial use.

(ii) Notwithstanding 335-13-15-.07(3)(e)2.(i), the owner or operator of the CCR unit may request an additional two years to initiate closure of the idle unit provided the owner or operator provides written documentation to the Department that the CCR unit will continue to accept wastes or will start removing CCR for the purpose of beneficial use. The documentation must be supported by, at a minimum, the information specified in 335-13-15-.07(3)(e)2.(ii)(I) and (II). The Department may approve two-year extensions provided the owner or operator continues to be able to demonstrate that there is reasonable likelihood that the CCR unit will accept wastes in the foreseeable future or will remove CCR from the unit for the purpose of beneficial use. The owner or operator must submit each completed demonstration, if more than one time extension is sought, to the Department for approval and place in the facility's operating record as required by 335-13-15-.08(1)(i)5. prior to the end of any two-year period.

(I) Information documenting that the CCR unit has remaining storage or disposal capacity or that the CCR unit can have CCR removed for the purpose of beneficial use; and

(II) Information demonstrating that that there is a reasonable likelihood that the CCR unit will resume receiving CCR or non-CCR waste streams in the foreseeable future or that CCR can be removed for the purpose of beneficial use. The narrative must include a best estimate as to when the CCR unit will resume receiving CCR or non-CCR waste streams. The situations listed in 335-13-15-.07(3)(e)2.(ii)(II)I. through IV. are examples of situations that would support a determination that the CCR unit will resume receiving CCR or non-CCR waste streams in the foreseeable future.

I. Normal plant operations include periods during which the CCR unit does not receive CCR or non-CCR waste streams, such as the alternating use of two or more CCR units whereby at any point in time one CCR unit is receiving CCR while CCR is being removed from a second CCR unit after its dewatering.

II. The CCR unit is dedicated to a coal-fired boiler unit that is temporarily idled (e.g., CCR is not being generated) and there is a reasonable

likelihood that the coal-fired boiler will resume operations in the future.

III. The CCR unit is dedicated to an operating coal-fired boiler (i.e., CCR is being generated); however, no CCR are being placed in the CCR unit because the CCR are being entirely diverted to beneficial uses, but there is a reasonable likelihood that the CCR unit will again be used in the foreseeable future.

IV. The CCR unit currently receives only non-CCR waste streams and those non-CCR waste streams are not generated for an extended period of time, but there is a reasonable likelihood that the CCR unit will again receive non-CCR waste streams in the future.

(iii) In order to obtain additional time extension(s) to initiate closure of a CCR unit beyond the two years provided by 335-13-15-.07(3)(e)2.(i), the owner or operator of the CCR unit must include with the demonstration required by 335-13-15-.07(3)(e)2.(ii) the following statement signed by the owner or operator or an authorized representative:

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this demonstration and all attached documents, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

3. For purposes of this chapter, closure of the CCR unit has commenced if the owner or operator has ceased placing waste and completes any of the following actions or activities:

(i) Taken any steps necessary to implement the written closure plan required by 335-13-15-.07(3)(b);

(ii) Taken any steps necessary to comply with any state or other agency standards that are a prerequisite, or are otherwise applicable, to initiating or completing the closure of a CCR unit.

4. The timeframes specified in 335-13-15-.07(3)(e)1. and 2. do not apply to any of the following owners or operators:

(i) [Reserved]

(ii) An owner or operator of an existing unlined CCR surface impoundment closing the CCR unit as required by 335-13-15-.07(2)(a);

(iii) An owner or operator of an existing CCR surface impoundment

closing the CCR unit as required by 335-13-15-.07(2)(b); or

(iv) An owner or operator of a new CCR surface impoundment closing the CCR unit as required by 335-13-15-.07(2)(c); or

(v) An owner or operator of an existing CCR landfill closing the CCR unit as required by 335-13-15-.07(2)(d).

(f) Completion of closure activities.

1. Except as provided for in 335-13-15-.07(3)(f)2., the owner or operator must complete closure of the CCR unit:

(i) For existing and new CCR landfills and any lateral expansion of a CCR landfill, within six months of commencing closure activities.

(ii) For existing and new CCR surface impoundments and any lateral expansion of a CCR surface impoundment, within five years of commencing closure activities.

2. (i) Extensions of closure timeframes. The timeframes for completing closure of a CCR unit specified under 335-13-15-.07(3)(f)1. may be extended if the owner or operator can demonstrate to the Department that it was not feasible to complete closure of the CCR unit within the required timeframes due to factors beyond the facility's control. If the owner or operator is seeking a time extension beyond the time specified in the written closure plan as required by 335-13-15-.07(3)(b)1., the demonstration must include a narrative discussion providing the basis for additional time beyond that specified in the closure plan. The owner or operator must submit each completed demonstration, if more than one time extension is sought, to the Department for approval and place in the facility's operating record as required by 335-13-15-.08(1)(i)6. prior to the end of any two-year period. Factors that may support such a demonstration include:

(I) Complications stemming from the climate and weather, such as unusual amounts of precipitation or a significantly shortened construction season;

(II) Time required to dewater a surface impoundment due to the volume of CCR contained in the CCR unit or the characteristics of the CCR in the unit; or

(III) The geology and terrain surrounding the CCR unit will affect the amount of material needed to close the CCR unit.

(ii) Maximum time extensions.

(I) CCR surface impoundments of 40 acres or smaller may extend the

time to complete closure by no longer than two years.

(II) CCR surface impoundments larger than 40 acres may extend the timeframe to complete closure of the CCR unit multiple times, in two-year increments. For each two-year extension sought, the owner or operator must substantiate the factual circumstances demonstrating the need for the extension. No more than a total of five two-year extensions may be obtained for any CCR surface impoundment.

(III) CCR landfills may extend the timeframe to complete closure of the CCR unit multiple times, in one-year increments. For each one-year extension sought, the owner or operator must substantiate the factual circumstances demonstrating the need for the extension. No more than a total of two one-year extensions may be obtained for any CCR landfill.

(iii) In order to obtain additional time extension(s) to complete closure of a CCR unit beyond the times provided by 335-13-15-.07(3)(f)1., the owner or operator of the CCR unit must include with the demonstration required by 335-13-15-.07(3)(f)2.(i) the following statement signed by the owner or operator or an authorized representative:

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this demonstration and all attached documents, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

3. Upon completion, the owner or operator of the CCR unit must obtain a certification from a qualified professional engineer verifying that closure has been completed in accordance with the closure plan specified in 335-13-15-.07(3)(b) and the requirements of this section.

(g) No later than the date the owner or operator initiates closure of a CCR unit, the owner or operator must prepare a notification of intent to close a CCR unit. The notification must include the certification by a qualified professional engineer for the design of the final cover system as required by 335-13-15-.07(3)(d)3.(iii), if applicable. The owner or operator has completed the notification when it has been submitted to the Department and placed in the facility's operating record as required by 335-13-15-.08(1)(i)7.

(h) Within 30 days of completion of closure of the CCR unit, the owner or operator must prepare a notification of closure of a CCR unit. The notification must include the certification by a qualified professional engineer as required by 335-13-15-.07(3)(f)3. The owner or operator has completed the notification when it has been submitted to the Department and placed in the facility's operating

record as required by 335-13-15-.08(1)(i)8.

(i) Deed notations.

1. Except as provided by 335-13-15-.07(3)(i)4., following closure of a CCR unit, the owner or operator must record a notation on the deed to the property, or some other instrument that is normally examined during title search.

2. The notation on the deed must in perpetuity notify any potential purchaser of the property that:

(i) The land has been used as a CCR unit; and

(ii) Its use is restricted under the post-closure care requirements as provided by 335-13-15-.07(5)(d)1.(iii).

(iii) The locations and dimensions of the CCR unit with respect to permanently surveyed benchmarks and section corners shall be on a plat prepared and sealed by a land surveyor.

(iv) Contain a note, prominently displayed, which states the name of the permittee or operating agency, the type of CCR unit and the beginning and closure dates of the disposal activity.

(v) Certification by an engineer that all closure requirements have been completed as determined necessary by the Department.

3. Within 30 days of recording a notation on the deed to the property, the owner or operator must prepare a notification stating that the notation has been recorded. The owner or operator has completed the notification when it has been placed in the facility's operating record as required by 335-13-15-.08(1)(i)9. and documentation of the recording of the notation on the deed has been submitted to the Department.

4. An owner or operator that closes a CCR unit in accordance with 335-13-15-.07(3)(c) is not subject to the requirements of 335-13-15-.07(3)(i)1. through 3.

(j) Following closure, the owner or operator of a CCR unit must provide an environmental covenant to the Department in compliance with 335-5. The owner or operator must place the executed environmental covenant in the facility's operating record as required by 335-13-15-.08(1)(i)10.

(k) The owner or operator of the CCR unit must comply with the closure recordkeeping requirements specified in 335-13-15-.08(1)(i), the closure notification requirements specified in 335-13-15-.08(2)(i), and the closure

internet requirements specified in 335-13-15-.08(3)(i).

(l) Criteria to retrofit an existing CCR surface impoundment.

1. To retrofit an existing CCR surface impoundment, the owner or operator must:

(i) First remove all CCR, including any contaminated soils and sediments from the CCR unit; and

(ii) Comply with the requirements in 335-13-15-.04(3).

(iii) A CCR surface impoundment undergoing a retrofit remains subject to all other requirements of this chapter, including the requirement to conduct any necessary corrective action.

2. Written retrofit plan.

(i) Content of the plan. The owner or operator must prepare a written retrofit plan that describes the steps necessary to retrofit the CCR unit consistent with recognized and generally accepted good engineering practices. The written retrofit plan must include, at a minimum, all of the following information:

(I) A narrative description of the specific measures that will be taken to retrofit the CCR unit in accordance with this section.

(II) A description of the procedures to remove all CCR and contaminated soils and sediments from the CCR unit.

(III) An estimate of the maximum amount of CCR that will be removed as part of the retrofit operation.

(IV) An estimate of the largest area of the CCR unit that will be affected by the retrofit operation.

(V) A schedule for completing all activities necessary to satisfy the retrofit criteria in this section, including an estimate of the year in which retrofit activities of the CCR unit will be completed.

(ii) Timeframes for preparing the initial written retrofit plan.

(I) No later than 60 days prior to the date of initiating retrofit activities, the owner or operator must prepare an initial written retrofit plan consistent with the requirements specified in 335-13-15-.07(3)(l)2. For purposes of this chapter, initiation of retrofit activities has commenced if the owner or operator has ceased placing waste in the unit and completes any of the following actions or activities:

I. Taken any steps necessary to implement the written retrofit plan; or

II. Taken any steps necessary to comply with any state or other agency standards that are a prerequisite, or are otherwise applicable, to initiating or completing the retrofit of a CCR unit.

(II) The owner or operator has completed the written retrofit plan when the plan, including the certification required by 335-13-15-.07(3)(l)2.(iv), has been placed in the facility's operating record as required by 335-13-15-.08(1)(j)1.

(iii) Amendment of a written retrofit plan.

(I) The owner or operator may amend the initial or any subsequent written retrofit plan at any time.

(II) The owner or operator must amend the written retrofit plan whenever:

I. There is a change in the operation of the CCR unit that would substantially affect the written retrofit plan in effect; or

II. Before or after retrofit activities have commenced, unanticipated events necessitate a revision of the written retrofit plan.

(III) The owner or operator must amend the retrofit plan at least 60 days prior to a planned change in the operation of the facility or CCR unit, or no later than 60 days after an unanticipated event requires the revision of an existing written retrofit plan. If a written retrofit plan is revised after retrofit activities have commenced for a CCR unit, the owner or operator must amend the current retrofit plan no later than 30 days following the triggering event.

(iv) The owner or operator of the CCR unit must obtain a written certification from a qualified professional engineer that the activities outlined in the written retrofit plan, including any amendment of the plan, meet the requirements of this section. The retrofit plan, as well as the certification from a qualified professional engineer, must be submitted to the Department for approval.

3. Deadline for completion of activities related to the retrofit of a CCR unit. Any CCR surface impoundment that is being retrofitted must complete all retrofit activities within the same time frames and procedures specified for the closure of a CCR surface impoundment in 335-13-15-.07(3)(f) or, where applicable, 335-13-15-.07(4).

4. Upon completion, the owner or operator must obtain and submit to the Department a certification from a qualified professional engineer verifying

that the retrofit activities have been completed in accordance with the retrofit plan specified in 335-13-15-.07(3)(l)2. and the requirements of this section.

5. No later than the date the owner or operator initiates the retrofit of a CCR unit, the owner or operator must prepare a notification of intent to retrofit a CCR unit. The owner or operator has completed the notification when it has been placed in the facility's operating record as required by 335-13-15-.08(1)(j)5.

6. Within 30 days of completing the retrofit activities specified in 335-13-15-.07(3)(l)1., the owner or operator must prepare a notification of completion of retrofit activities. The notification must include the certification by a qualified professional engineer as required by 335-13-15-.07(3)(l)4. The owner or operator has completed the notification when it has been placed in the facility's operating record as required by 335-13-15-.08(1)(j)6.

7. At any time after the initiation of a CCR unit retrofit, the owner or operator may cease the retrofit and initiate closure of the CCR unit in accordance with the requirements of 335-13-15-.07(3).

8. The owner or operator of the CCR unit must comply with the retrofit recordkeeping requirements specified in 335-13-15-.08(1)(j), the retrofit notification requirements specified in 335-13-15-.08(2)(j), and the retrofit internet requirements specified in 335-13-15-.08(3)(j).

(4) Alternative closure requirements. The owner or operator of a CCR landfill, CCR surface impoundment, or any lateral expansion of a CCR unit that is subject to closure pursuant to 335-13-15-.07(2)(a), (b)1., or (d) may nevertheless continue to receive the wastes specified in either 335-13-15-.07(4)(a), (b), (f)1., or (f)2.~~CCR~~ in the unit, provided the owner or operator meets all the requirements in the respective paragraph~~of 335-13-15-.07(4)(a), (b), or (c), as applicable~~.

(a) CCR Landfills

1. No alternative CCR disposal capacity. Notwithstanding the provisions of 335-13-15-.07(2)~~(a), (b)1., or~~ (d), a CCR landfill~~unit~~ may continue to receive CCR if the owner or operator of the CCR unit certifies that the CCR must continue to be managed in that CCR ~~unit~~landfill due to the absence of alternative disposal capacity both on-site and off-site of the facility. To qualify under this paragraph, the owner or operator of the CCR unit must submit a plan to the Department for approval which demonstrates that all of the following conditions have been met:

(i) No alternative disposal capacity is available on-site or off-site. An increase in costs or the inconvenience of existing capacity is not sufficient to support qualification under this section;

(ii) The owner or operator has made, and continues to make, efforts to obtain additional capacity. Qualification under 335-13-15-.07(4)~~this subsection~~(a) lasts only as long as no alternative capacity is available. Once alternative capacity is identified, the owner or operator must arrange to use such capacity as soon as feasible;

(iii) The owner or operator must remain in compliance with all other requirements of this chapter, including the requirement to conduct any necessary corrective action; and

(iv) The owner or operator must prepare and submit to the Department ~~an~~the annual progress report specified in 335-13-15-.07(4)(c) documenting the continued lack of alternative capacity and the progress towards the development of alternative CCR disposal capacity.

2. Once alternative capacity is available, the CCR ~~unit~~ landfill must cease receiving CCR and initiate closure following the timeframes in 335-13-15-.07(3)(e)~~ and (f)~~.

3. If no alternative capacity is identified within five years after the initial certification, the CCR ~~unit~~landfill must cease receiving CCR and close in accordance with the timeframes in 335-13-15-.07(3)(e) and (f).

(b) CCR Landfills.

1. Permanent cessation of a coal-fired boiler(s) by a certain date. Notwithstanding the provisions of 335-13-15-.07(2)~~(a), (b)1., and~~ (d), a CCR ~~unit~~landfill may continue to receive CCR if the owner or operator certifies that the facility will cease operation of the coal-fired boilers within the timeframes specified in 335-13-15-.07(4)(b)~~2. through~~ 4., but in the interim period (prior to closure of the coal-fired boiler), the facility must continue to use the CCR ~~unit~~landfill due to the absence of alternative disposal capacity both on-site and off-site of the facility. To qualify under this paragraph, the owner or operator of the CCR ~~unit~~landfill must submit a plan to the Department for approval which demonstrates that all of the following conditions have been met:

(i) No alternative disposal capacity is available on-site or off-site. An increase in costs or the inconvenience of existing capacity is not sufficient to support qualification under this section.

(ii) The owner or operator must remain in compliance with all other requirements of this chapter, including the requirement to conduct any necessary corrective action; and

(iii) The owner or operator must prepare and submit to the Department ~~an~~the annual progress report specified in 335-13-15-.07(4)(c) documenting the continued lack of alternative capacity and the progress towards the closure of

the coal-fired boiler.

2. ~~For a CCR surface impoundment that is 40 acres or smaller, the coal-fired boiler must cease operation and the CCR surface impoundment must have completed closure no later than October 17, 2023.~~[Reserved]

3. ~~For a CCR surface impoundment that is larger than 40 acres, the coal-fired boiler must cease operation, and the CCR surface impoundment must complete closure no later than October 17, 2028.~~[Reserved]

4. For a CCR landfill, the coal-fired boiler must cease operation, and the CCR landfill must complete closure no later than April 19, 2021.

~~(c) 1. No alternative non CCR wastewater management capacity. Notwithstanding the provisions of 335-13-15-.07(2)(a), or (b)1., an existing CCR surface impoundment may continue to receive non CCR wastewater if the owner or operator of the CCR surface impoundment certifies that the non CCR wastewater must continue to be managed in that CCR surface impoundment due to the absence of alternative non CCR wastewater management capacity both on site and off site of the facility. To qualify under this paragraph, the owner or operator of the CCR surface impoundment must submit a plan to the Department for approval which demonstrates that all of the following conditions have been met:~~

~~(i) No alternative disposal capacity is available on site or off site. An increase in costs or the inconvenience of existing capacity is not sufficient to support qualification under this section;~~

~~(ii) The owner or operator has made, and continues to make, efforts to obtain additional capacity. Qualification under this subsection lasts only as long as no alternative capacity is available. Once alternative capacity is identified, the owner or operator must arrange to use such capacity as soon as feasible;~~

~~(iii) The owner or operator must remain in compliance with all other requirements of this chapter, including the requirement to conduct any necessary corrective action; and~~

~~(iv) The owner or operator must prepare and submit to the Department an annual progress report documenting the continued lack of alternative capacity and the progress towards the development of alternative non CCR wastewater management capacity.~~

~~2. Once alternative capacity is available, the CCR surface impoundment must cease receiving non CCR wastewater and initiate closure following the timeframes in 335-13-15-.07(3)(e) and (f).~~

~~3. If no alternative capacity is identified within five years after the~~

~~initial certification, the CCR surface impoundment must cease receiving non CCR wastewater and close in accordance with the timeframes in 335-13-15-.07(3)(e) and (f).~~

~~The provisions of 335-13-15-.07(4)(c) will become operative on [DATE (Forty-five days after approval by the U.S. Environmental Protection Agency)].~~

(c~~d~~) Required notices and progress reports for CCR Landfills. An owner or operator of a CCR ~~unit~~landfill that closes in accordance with 335-13-15-.07(4)(a) ~~,~~or (b) ~~or (c)~~ must complete the notices and progress reports specified in 335-13-15-.07(4)(~~d~~c)1. through 3.

1. Within six months of becoming subject to closure pursuant to 335-13-15-.07(2)~~(a), (b)1., or~~ (d), the owner or operator must prepare, ~~and~~ submit to the Department for approval and place in the facility's operating record a request to comply with the alternative closure requirements of this section. The request must describe why the CCR unit qualifies for the alternative closure provisions under either 335-13-15-.07(4)(a)~~,~~ or (b)~~ or (c)~~, in addition to providing the documentation and certifications required by 335-13-15-.07(4)(a)~~,~~ or (b)~~ or (c)~~.

2. The owner or operator must prepare the periodic progress reports required by 335-13-15-.07(4)(a)1.(iv), or (b)1.(iii) ~~or (c)1.(iv)~~, in addition to describing any problems encountered and a description of the actions taken to resolve the problems. The annual progress reports must be completed according to the following schedule:

(i) The first annual progress report must be prepared no later than 13 months after completing the request~~notification of intent~~ to comply with the alternative closure requirements required by 335-13-15-.07(4)(~~d~~c)1.

(ii) The second annual progress report must be prepared no later than 12 months after completing the first annual progress report. ~~Additional~~ Subsequent annual progress reports must be prepared within 12 months of completing the previous annual progress report.

(iii) The owner or operator has completed the progress reports specified in 335-13-15-.07(4)(~~d~~c)2. when the reports are submitted to the Department and placed in the facility's operating record as required by 335-13-15-.08(1)(i)12.

3. An owner or operator of a CCR landfill~~unit~~ must also prepare the notification of intent to close a CCR unit as required by 335-13-15-.07(3)(g).

(d~~e~~) CCR landfill recordkeeping. The owner or operator of the CCR ~~unit~~ landfill must comply with the recordkeeping requirements specified in 335-13-15-.08(1)(i), the notification requirements specified in 335-13-15-.08(2)(i), and the internet requirements specified in 335-13-15-.08(3)(i).

(e) [Reserved]

(f) Site-specific alternative deadlines to initiate closure of CCR surface impoundments. Notwithstanding the provisions of 335-13-15-.07(2)(a) and (b)1., a CCR surface impoundment may continue to receive the waste specified in 335-13-15-.07(4)(f)1. or (f)2., provided the owner or operator submits a demonstration that the criteria in either 335-13-15-.07(4)(f)1. or (f)2. have been met. The demonstration must be submitted to the Director for approval no later than the relevant deadline in 335-13-15-.07(4)(f)3. The Director will act on the submission in accordance with the procedures in 335-13-15-.07(4)(f)3.

1. Development of alternative capacity is technically infeasible. Notwithstanding the provisions of 335-13-15-.07(2)(a) and (b)1., a CCR surface impoundment may continue to receive the waste specified in 335-13-15-.07(4)(f)1.(ii)(I) or (II), provided the owner or operator demonstrates the wastestream(s) must continue to be managed in that CCR surface impoundment because it was technically infeasible to complete the measures necessary to provide alternative disposal capacity on or off-site of the facility by April 11, 2021. To obtain approval under 335-13-15-.07(4)(f)1., all of the following criteria must be met:

(i) No alternative disposal capacity is available on or off-site. An increase in costs or the inconvenience of existing capacity is not sufficient to support qualification under this section;

(ii) (I) For units closing pursuant to 335-13-15-.07(2)(a) and (b)1.(i), CCR and/or non-CCR wastestreams must continue to be managed in that CCR surface impoundment because it was technically infeasible to complete the measures necessary to obtain alternative disposal capacity either on or off-site of the facility by April 11, 2021.

(II) For units closing pursuant to 335-13-15-.07(2)(b)1.(ii), CCR must continue to be managed in that CCR surface impoundment because it was technically infeasible to complete the measures necessary to obtain alternative disposal capacity either on or off-site of the facility by April 11, 2021.

(iii) The facility is in compliance with all of the requirements of this chapter.

(iv) The owner or operator of the CCR surface impoundment must submit documentation that the criteria in 335-13-15-.07(4)(f)1.(i) through (iii) have been met by submitting to the Director all of the following:

(I) To demonstrate that the criteria in 335-13-15-.07(4)(f)1.(i) and (ii) have been met the owner or operator must submit a workplan that contains all of the following elements:

I. A written narrative discussing the options considered both on and off-site to obtain alternative capacity for each CCR and/or non-CCR wastestreams, the technical infeasibility of obtaining alternative capacity prior to April 11, 2021, and the option selected and justification for the alternative capacity selected. The narrative must also include all of the following:

A. An in-depth analysis of the site and any site-specific conditions that led to the decision to select the alternative capacity being developed;

B. An analysis of the adverse impact to plant operations if the CCR surface impoundment in question were to no longer be available for use; and

C. A detailed explanation and justification for the amount of time being requested and how it is the fastest technically feasible time to complete the development of the alternative capacity;

II. A detailed schedule of the fastest technically feasible time to complete the measures necessary for alternative capacity to be available including a visual timeline representation. The visual timeline must clearly show all of the following:

A. How each phase and the steps within that phase interact with or are dependent on each other and the other phases;

B. All of the steps and phases that can be completed concurrently;

C. The total time needed to obtain the alternative capacity and how long each phase and step within each phase will take; and

D. At a minimum, the following phases: engineering and design, contractor selection, equipment fabrication and delivery, construction, and start up and implementation.;

III. A narrative discussion of the schedule and visual timeline representation, which must discuss all of the following:

A. Why the length of time for each phase and step is needed and a discussion of the tasks that occur during the specific step;

B. Why each phase and step shown on the chart must happen in the order it is occurring;

C. The tasks that occur during each of the steps within the phase; and

D. Anticipated worker schedules; and

IV. A narrative discussion of the progress the owner or operator has made to obtain alternative capacity for the CCR and/or non-CCR wastestreams. The

narrative must discuss all the steps taken, starting from when the owner or operator initiated the design phase up to the steps occurring when the demonstration is being compiled. It must discuss where the facility currently is on the timeline and the efforts that are currently being undertaken to develop alternative capacity.

(II) To demonstrate that the criteria in 335-13-15-.07(4)(f)1.(iii) have been met, the owner or operator must submit all of the following:

I. A certification signed by the owner or operator that the facility is in compliance with all of the requirements of this chapter;

II. Visual representation of hydrogeologic information at and around the CCR unit(s) that supports the design, construction and installation of the groundwater monitoring system. This includes all of the following:

A. Map(s) of groundwater monitoring well locations in relation to the CCR unit(s);

B. Well construction diagrams and drilling logs for all groundwater monitoring wells; and

C. Maps that characterize the direction of groundwater flow accounting for seasonal variations;

III. Constituent concentrations, summarized in table form, at each groundwater monitoring well monitored during each sampling event;

IV. A description of site hydrogeology including stratigraphic cross-sections;

V. Any corrective measures assessment conducted as required by 335-13-15-.06(7);

VI. Any progress reports on corrective action remedy selection and design and the report of final remedy selection required at 335-13-15-.06(8)(a);

VII. The most recent structural stability assessment required by 335-13-15-.04(4)(d); and

VIII. The most recent safety factor assessment required by 335-13-15-.04(4)(e).

(v) As soon as alternative capacity for any CCR or non-CCR wastestream is available, the CCR surface impoundment must cease receiving that CCR or non-CCR wastestream. Once the CCR surface impoundment ceases receipt of all CCR and/or non-CCR wastestreams, the CCR surface impoundment must initiate closure following the timeframes in 335-13-15-.07(3)(e) and (f).

(vi) Maximum time frames. All CCR surface impoundments covered by this section must cease receiving waste by the deadlines specified in 335-13-15-.07(4)(f)1.(vi)(I) and (II) and close in accordance with the timeframes in 335-13-15-.07(3)(e) and (f).

(I) Except as provided by 335-13-15-.07(4)(f)1.(vi)(II), no later than October 15, 2023.

(II) An eligible unlined CCR surface impoundment must cease receiving CCR and/or non-CCR wastestreams no later than October 15, 2024. In order to continue to operate until October 15, 2024, the owner or operator must include in their demonstration to the Department as required by 335-13-15-.07(4)(f), documentation that the unit meets the definition of an eligible unlined CCR surface impoundment.

(vii) An owner or operator may seek additional time beyond the time granted in the initial approval by making the showing in 335-13-15-.07(4)(f)1.(i) through (iv), provided that no facility may be granted time to operate the impoundment beyond the maximum allowable time frames provided in 335-13-15-.07(4)(f)1.(vi).

(viii) The owner or operator at all times bears responsibility for demonstrating to the Department qualification under this section. Failure to remain in compliance with any of the requirements of this chapter will result in the automatic loss of authorization under this section.

(ix) The owner or operator must:

(I) Upon submission of the demonstration to the Director, prepare and place in the facility's operating record a notification that the demonstration has been submitted, along with a copy of the demonstration. An owner or operator that claims confidential business information in the demonstration may post a redacted version of the demonstration to its publicly accessible CCR internet site provided that it contains sufficient detail so that the public can meaningfully comment on the demonstration. Information submitted to the Department may be considered confidential in accordance with the requirements of rule 335-1-1-.06(2), if requested by the facility in writing.

(II) Upon receipt of a decision pursuant to 335-13-15-.07(4)(f)3., must prepare and place in the facility's operating record a copy of the decision.

(III) If an extension of an approved deadline pursuant to 335-13-15-.07(4)(f)1.(vii) has been requested, place a copy of the request submitted to the Director in the facility's operating record.

(x) The owner or operator must prepare semi-annual progress reports. The semi-annual progress reports must contain all of the following elements:

(I) Discussion of the progress made to date in obtaining alternative capacity, including:

I. Discussion of the current stage of obtaining the capacity in reference to the timeline required under 335-13-15-.07(4)(f)1.(iv)(I);

II. Discussion of whether the owner or operator is on schedule for obtaining alternative capacity;

III. If the owner or operator is not on or ahead of schedule for obtaining alternative capacity, the following must be included:

A. Discussion of any problems encountered, and a description of the actions taken or planned to resolve the problems and get back on schedule; and

B. Discussion of the goals for the next six months and major milestones to be achieved for obtaining alternative capacity; and

(II) Discussion of any planned operational changes at the facility.

(xi) The progress reports must be completed according to the following schedule:

(I) The semi-annual progress reports must be prepared no later than April 30 and October 31 of each year for the duration of the alternative cease receipt of waste deadline.

(II) The first semi-annual progress report must be prepared by whichever date, April 30 or October 31, is soonest after receiving approval from the Director; and

(III) The owner or operator has completed the progress reports specified in 335-13-15-.07(4)(f)1.(x) when the reports have been placed in the facility's operating record as required by 335-13-15-.08(1)(i)18.

(xii) The owner or operator must prepare the notification of intent to close a CCR surface impoundment as required by 335-13-15-.07(3)(g).

(xiii) The owner or operator must comply with the recordkeeping requirements specified in 335-13-15-.08(1)(i), the notification requirements specified in 335-13-15-.08(2)(i), and the internet posting requirements specified in 335-13-15-.08(3)(i).

2. Permanent cessation of a coal-fired boiler(s) by a date certain. Notwithstanding the provisions of 335-13-15-.07(2)(a) and (b)1., a CCR surface impoundment may continue to receive CCR and/or non-CCR wastestreams if the facility will cease operation of the coal-fired boiler(s) and complete closure of the

impoundment within the timeframes specified in 335-13-15-.07(4)(f)2.(iv), but in the interim period (prior to closure of the coal-fired boiler), the facility must continue to use the CCR surface impoundment due to the absence of alternative disposal capacity both on and off-site of the facility. To qualify under 335-13-15-.07(4)(f)2., all of the following criteria must be met:

(i) No alternative disposal capacity is available on or off-site. An increase in costs or the inconvenience of existing capacity is not sufficient to support qualification under this section.

(ii) Potential risks to human health and the environment from the continued operation of the CCR surface impoundment have been adequately mitigated;

(iii) The facility is in compliance with all other requirements of this chapter, including the requirement to conduct any necessary corrective action; and

(iv) The coal-fired boilers must cease operation and closure of the impoundment must be completed within the following timeframes:

(I) For a CCR surface impoundment that is 40 acres or smaller, the coal-fired boiler(s) must cease operation and the CCR surface impoundment must complete closure no later than October 17, 2023.

(II) For a CCR surface impoundment that is larger than 40 acres, the coal-fired boiler(s) must cease operation, and the CCR surface impoundment must complete closure no later than October 17, 2028.

(v) The owner or operator of the CCR surface impoundment must submit to the Department the following documentation that the criteria in 335-13-15-.07(4)(f)2.(i) through (iv) have been met, as specified in 335-13-5-.07(4)(f)2.(v)(I) through (IV).

(I) To demonstrate that the criteria in 335-13-15-.07(4)(f)2.(i) have been met the owner or operator must submit a narrative that explains the options considered to obtain alternative capacity for CCR and/or non-CCR wastestreams both on and off-site.

(II) To demonstrate that the criteria in 335-13-15-.07(4)(f)2.(ii) have been met, the owner or operator must submit a risk mitigation plan describing the measures that will be taken to expedite any required corrective action, and that contains all of the following elements:

I. A discussion of any physical or chemical measures a facility can take to limit any future releases to groundwater during operation.

II. A discussion of the surface impoundment's groundwater monitoring data and any found exceedances; the delineation of the plume (if necessary based on the groundwater monitoring data); identification of any nearby receptors that might be exposed to current or future groundwater contamination; and how such exposures could be promptly mitigated.

III. A plan to expedite and maintain the containment of any contaminant plume that is either present or identified during continued operation of the unit.

(III) To demonstrate that the criteria in 335-13-15-.07(4)(f)2.(iii) have been met, the owner or operator must submit all of the following:

I. A certification signed by the owner or operator that the facility is in compliance with all of the requirements of this chapter;

II. Visual representation of hydrogeologic information at and around the CCR unit(s) that supports the design, construction and installation of the groundwater monitoring system. This includes all of the following:

A. Map(s) of groundwater monitoring well locations in relation to the CCR unit;

B. Well construction diagrams and drilling logs for all groundwater monitoring wells; and

C. Maps that characterize the direction of groundwater flow accounting for seasonal variations;

III. Constituent concentrations, summarized in table form, at each groundwater monitoring well monitored during each sampling event;

IV. Description of site hydrogeology including stratigraphic cross-sections;

V. Any corrective measures assessment required by 335-13-15-.06(7);

VI. Any progress reports on remedy selection and design and the report of final remedy selection required by 335-13-15-.06(8);

VII. The most recent structural stability assessment required by 335-13-15-.04(4)(d); and

VIII. The most recent safety factor assessment required by 335-13-15-.04(4)(e).

(IV) To demonstrate that the criteria in 335-13-15-.07(4)(f)2.(iv) have been met, the owner or operator must submit the closure plan required by 335-13-15-

.07(3)(b) and a narrative that specifies and justifies the date by which they intend to cease receipt of waste into the unit in order to meet the closure deadlines.

(vi) The owner or operator at all times bears responsibility for demonstrating to the Department qualification for authorization under this section. Failure to remain in compliance with any of the requirements of this chapter will result in the automatic loss of authorization under this section.

(vii) The owner or operator must comply with the recordkeeping requirements specified in 335-13-15-.08(1)(i), the notification requirements specified in 335-13-15-.08(2)(i) and the internet posting requirements specified in 335-13-15-.08(3)(i).

(viii) Upon submission of the demonstration to the Director, the owner or operator must prepare and place in the facility's operating record and on its publicly accessible CCR internet site a notification that the demonstration has been submitted, along with a copy of the demonstration.

(ix) Upon receipt of a decision pursuant to 335-13-15-.07(4)(f)3., the owner or operator must place a copy of the decision in the facility's operating record and on the facility's publicly accessible CCR internet site.

(x) The owner or operator must prepare an annual progress report documenting the continued lack of alternative capacity and the progress towards the closure of the CCR surface impoundment. The owner or operator has completed the progress report when the report has been submitted to the Department and placed in the facility's operating record as required by 335-13-15-.08(1)(i)(21).

3. Process to Obtain Authorization.

(i) Deadlines for Submission.

(I) The owner or operator must submit the demonstration required under 335-13-15-.07(4)(f)1.(iv), for an alternative cease receipt of waste deadline for a CCR surface impoundment pursuant to 335-13-15-.07(4)(f)1., to the Director for approval no later than November 30, 2020.

(II) An owner or operator may seek additional time beyond the time granted in the initial approval, in accordance with 335-13-15-.07(4)(f)1.(vii), by submitting a new demonstration, as required under 335-13-15-.07(4)(f)1.(iv), to the Director for approval, no later than fourteen days from determining that the cease receipt of waste deadline will not be met.

(III) The owner or operator must submit the demonstration required under 335-13-15-.07(4)(f)2.(v) to the Director for approval no later than November 30, 2020.

(ii) The Department will evaluate the demonstration and may request additional information to complete its review. Submission of a complete demonstration will toll the facility's deadline to cease receipt of waste until issuance of a decision under 335-13-15-.07(4)(f)3.(iv). Incomplete submissions will not toll the facility's deadline and will be denied. The owner or operator will be notified in writing if the request is denied, and informed of the reasons for the denial and the appeal procedures as provided in 335-13-1-.07. All decisions issued under 335-13-15-.07(4)(f)3.(ii) or (iv) will contain the facility's deadline to cease receipt of waste.

(iii) The Department shall provide notice and an opportunity for public comment on its proposed decision on a complete demonstration. The public comment period will close 30 days after the notice is published in a newspaper of general circulation in the area where the CCR unit is located.

(iv) After consideration of the comments, the Department will issue its decision on the alternative compliance deadline within a reasonable timeframe.

4. Transferring between site-specific alternatives. An owner or operator authorized to continue operating a CCR surface impoundment under this section may at any time request authorization to continue operating the impoundment pursuant to another paragraph of 335-13-15-.07(4)(f), by submitting the information in 335-13-15-.07(4)(f)4.(i) or (ii).

(i) Transfer from 335-13-15-.07(4)(f)1. to 335-13-15-.07(4)(f)2. The owner or operator of a surface impoundment authorized to operate pursuant to 335-13-15-.07(4)(f)1. may request authorization to instead operate the surface impoundment in accordance with the requirements of 335-13-15-.07(4)(f)2., by submitting a new demonstration that meets the requirements of 335-13-15-.07(4)(f)2.(v) to the Director. The Department may approve the request only upon determining that the criteria in 335-13-15-.07(4)(f)2.(i) through (iv) have been met.

(ii) Transfer from 335-13-15-.07(4)(f)2. to 335-13-15-.07(4)(f)1. The owner or operator of a surface impoundment authorized to operate pursuant to 335-13-15-.07(4)(f)2. may request authorization to instead operate the surface impoundment in accordance with the requirements of 335-13-15-.07(4)(f)1., by submitting a new demonstration that meets the requirements of 335-13-15-.07(4)(f)1.(iv) to the Director. The Department may approve the request only upon determining that the criteria at 335-13-15-.07(4)(f)1.(i) through (iii) and (vi) have been met.

(iii) The procedures in 335-13-15-.07(4)(f)3. will apply to all requests for transfer under 335-13-15-.07(4)(f)4.

(5) Post-closure care requirements.

(a) Applicability.

1. Except as provided by ~~either~~ 335-13-15-.07(5)(a)2., this section

applies to owners or operators of CCR landfills, CCR surface impoundments, and all lateral expansions of CCR units that are subject to the closure criteria under 335-13-15-.07(3).

2. An owner or operator of a CCR unit that elects to close a CCR unit by removing CCR as provided by 335-13-15-.07(3)(c) is not subject to the post-closure care criteria under this section.

(b) Post-closure care maintenance requirements. Following closure of the CCR unit, the owner or operator must conduct post-closure care for the CCR unit, which must consist of at least the following:

1. Maintaining the integrity and effectiveness of the final cover system, including making repairs to the final cover as necessary to correct the effects of settlement, subsidence, erosion, or other events, and preventing run-on and run-off from eroding or otherwise damaging the final cover;

2. If the CCR unit is subject to the design criteria under 335-13-15-.04(1), maintaining the integrity and effectiveness of the leachate collection and removal system and operating the leachate collection and removal system in accordance with the requirements of 335-13-15-.04(1); and

3. Maintaining the groundwater monitoring system and monitoring the groundwater in accordance with the requirements of 335-13-15-.06(1) through 335-13-15-.06(9).

(c) Post-closure care period.

1. Except as provided by 335-13-15-.07(5)(c)2., the owner or operator of the CCR unit must conduct post-closure care for 30 years.

2. If at the end of the post-closure care period the owner or operator of the CCR unit is operating under assessment monitoring in accordance with 335-13-15-.06(6), the owner or operator must continue to conduct post-closure care until the owner or operator returns to detection monitoring in accordance with 335-13-15-.06(6)(e).

~~3. The length of the post-closure care period may be:~~

~~(i) Decreased by the Department if the owner or operator demonstrates that the reduced period is sufficient to protect human health and the environment and this demonstration is approved by the Department; or~~

~~(ii) Increased by the Department if the Department determines that lengthening the post-closure care period is necessary to protect human health and the environment.~~

~~The provisions of 335-13-15-.07(5)(c)3. will become operative on [DATE (Forty-five days after approval by the U.S. Environmental Protection Agency)].~~

(d) Written post-closure plan.

1. Content of the plan. The owner or operator of a CCR unit must prepare and submit to the Department as part of the permit application a written post-closure plan that includes, at a minimum, the information specified in 335-13-15-.07(5)(d)1.(i) through (iii).

(i) A description of the monitoring and maintenance activities required in 335-13-15-.07(5)(b) for the CCR unit, and the frequency at which these activities will be performed;

(ii) The name, address, telephone number, and email address of the person or office to contact about the facility during the post-closure care period; and

(iii) A description of the planned uses of the property during the post-closure period. Post-closure use of the property shall not disturb the integrity of the final cover, liner(s), or any other component of the containment system, or the function of the monitoring systems unless necessary to comply with the requirements in this chapter. Any other disturbance may be approved by the Department if the owner or operator of the CCR unit demonstrates that disturbance of the final cover, liner, or other component of the containment system, including any removal of CCR, will not increase the potential threat to human health or the environment. The demonstration must be certified by a qualified professional engineer, submitted to the Department for approval and placed in the operating record and on the owners or operator's publicly accessible internet site.

2. Deadline to prepare the initial written post-closure plan.

(i) Existing CCR landfills and existing CCR surface impoundments. No later than October 17, 2016, the owner or operator of the CCR unit must prepare an initial written post-closure plan consistent with the requirements specified in 335-13-15-.07(5)(d)1.

(ii) New CCR landfills, new CCR surface impoundments, and any lateral expansion of a CCR unit. No later than the date of the initial receipt of CCR in the CCR unit, the owner or operator must prepare an initial written post-closure plan consistent with the requirements specified in 335-13-15-.07(5)(d)1.

(iii) The owner or operator has completed the written post-closure plan when the plan, including the certification required by 335-13-15-.07(5)(d)4., has been placed in the facility's operating record as required by 335-13-15-.08(1)(i)13.

3. Amendment of a written post-closure plan.

(i) The owner or operator may amend the initial or any subsequent written post-closure plan developed pursuant to 335-13-15-.07(5)(d)1. at any time.

(ii) The owner or operator must amend the written closure plan whenever:

(I) There is a change in the operation of the CCR unit that would substantially affect the written post-closure plan in effect; or

(II) After post-closure activities have commenced, unanticipated events necessitate a revision of the written post-closure plan.

(iii) The owner or operator must amend the written post-closure plan at least 60 days prior to a planned change in the operation of the facility or CCR unit, or no later than 60 days after an unanticipated event requires the need to revise an existing written post-closure plan. If a written post-closure plan is revised after post-closure activities have commenced for a CCR unit, the owner or operator must amend the written post-closure plan no later than 30 days following the triggering event.

4. The owner or operator of the CCR unit must obtain a written certification from a qualified professional engineer that the initial and any amendment of the written post-closure plan meets the requirements of this section. The post-closure plan, as well as the certification from a qualified professional engineer, must be submitted to the Department for approval.

(e) Notification of completion of post-closure care period. No later than 60 days following the completion of the post-closure care period, the owner or operator of the CCR unit must prepare a notification verifying that post-closure care has been completed. The notification must include the certification by a qualified professional engineer verifying that post-closure care has been completed in accordance with the closure plan specified in 335-13-15-.07(5)(d) and the requirements of this section. The owner or operator has completed the notification when it has been submitted to the Department and placed in the facility's operating record as required by 335-13-15-.08(1)(i)14.

(f) The owner or operator of the CCR unit must comply with the recordkeeping requirements specified in 335-13-15-.08(1)(i), the notification requirements specified in 335-13-15-.08(2)(i), and the internet requirements specified in 335-13-15-.08(3)(i).

Author: Heather M. Jones
Statutory Authority: Code of Alabama 1975, §§ 22-27-3 and 22-27-7

History: Filed: April 24, 2018; Effective: June 8, 2018. **Amended:** Proposed: September 21, 2020.

335-13-15-.08 Recordkeeping, Notification, and Posting of Information to the Internet.

(1) Recordkeeping requirements.

(a) Each owner or operator of a CCR unit subject to the requirements of this chapter must maintain files of all information required by this section in a written operating record at their facility.

(b) Unless specified otherwise, each file must be retained for at least five years following the date of each occurrence, measurement, maintenance, corrective action, report, record, or study.

(c) An owner or operator of more than one CCR unit subject to the provisions of this chapter may comply with the requirements of this section in one recordkeeping system provided the system identifies each file by the name of each CCR unit. The files may be maintained on microfilm, on a computer, on computer disks, on a storage system accessible by a computer, on magnetic tape disks, or on microfiche.

(d) The owner or operator of a CCR unit must submit to the Department any demonstration or documentation that is required by this chapter, or any other demonstration or documentation, if requested.

(e) Location restrictions. The owner or operator of a CCR unit subject to this chapter must place the demonstrations documenting whether or not the CCR unit is in compliance with the requirements under 335-13-15-.03(1)(a), 335-13-15-.03(2)(a), 335-13-15-.03(3)(a), 335-13-15-.03(4)(a), and 335-13-15-.03(5)(a), as it becomes available, in the facility's operating record.

(f) Design criteria. The owner or operator of a CCR unit subject to this chapter must place the following information, as it becomes available, in the facility's operating record:

1. The design and construction certifications as required by 335-13-15-.04(1)(e) and (f).

2. The documentation of liner type as required by 335-13-15-.04(2)(a).

3. The design and construction certifications as required by 335-13-15-.04(3)(c) and (d).

4. Documentation prepared by the owner or operator stating that the permanent identification marker was installed as required by 335-13-15-.04(4)(a)1. and 335-13-15-.04(5)(a)1.

5. The initial and periodic hazard potential classification assessments

as required by 335-13-15-.04(4)(a)2. and 335-13-15-.04(5)(a)2.

6. The emergency action plan (EAP), and any amendment of the EAP, as required by 335-13-15-.04(4)(a)3. and 335-13-15-.04(5)(a)3., except that only the most recent EAP must be maintained in the facility's operating record irrespective of the time requirement specified in 335-13-15-.08(1)(b).

7. Documentation prepared by the owner or operator recording the annual face-to-face meeting or exercise between representatives of the owner or operator of the CCR unit and the local emergency responders as required by 335-13-15-.04(4)(a)3.(i)(V) and 335-13-15-.04(5)(a)3.(i)(V).

8. Documentation prepared by the owner or operator recording all activations of the Emergency Action Plan (EAP) as required by 335-13-15-.04(4)(a)3.(v) and 335-13-15-.04(5)(a)3.(v).

9. The history of construction, and any revisions of it, as required by 335-13-15-.04(4)(c), except that these files must be maintained until the CCR unit completes closure of the unit in accordance with 335-13-15-.07(3).

10. The initial and periodic structural stability assessments as required by 335-13-15-.04(4)(d) and 335-13-15-.04(5)(d).

11. Documentation detailing the corrective measures taken to remedy the deficiency or release as required by 335-13-15-.04(4)(d)2. and 335-13-15-.04(5)(d)2.

12. The initial and periodic safety factor assessments as required by 335-13-15-.04(4)(e) and 335-13-15-.04(5)(e).

13. The design and construction plans, and any revisions of it, as required by 335-13-15-.04(5)(c), except that these files must be maintained until the CCR unit completes closure of the unit in accordance with 335-13-15-.07(3).

(g) Operating criteria. The owner or operator of a CCR unit subject to this chapter must place the following information, as it becomes available, in the facility's operating record:

1. The CCR fugitive dust control plan, and any subsequent amendment of the plan, required by 335-13-15-.05(1)(b), except that only the most recent control plan must be maintained in the facility's operating record irrespective of the time requirement specified in 335-13-15-.08(1)(b).

2. The annual CCR fugitive dust control report required by 335-13-15-.05(1)(c).

3. The initial and periodic run-on and run-off control system plans as

required by 335-13-15-.05(2)(c).

4. The initial and periodic inflow design flood control system plan as required by 335-13-15-.05(3)(c).

5. Documentation recording the results of each inspection and instrumentation monitoring by a qualified person as required by 335-13-15-.05(4)(a).

6. The periodic inspection report as required by 335-13-15-.05(4)(b)2.

7. Documentation detailing the corrective measures taken to remedy the deficiency or release as required by 335-13-15-.05(4)(b)5. and 335-13-15-.05(5)(b)5.

8. Documentation recording the results of the weekly inspection by a qualified person as required by 335-13-15-.05(5)(a)1.(ii).

9. The periodic inspection report as required by 335-13-15-.05(5)(b)2.

(h) Groundwater monitoring and corrective action. The owner or operator of a CCR unit subject to this chapter must place the following information, as it becomes available, in the facility's operating record:

1. The annual groundwater monitoring and corrective action report as required by 335-13-15-.06(1)(~~f~~e).

2. Documentation of the design, installation, development, and decommissioning of any monitoring wells, piezometers and other measurement, sampling, and analytical devices as required by 335-13-15-.06(2)(e)4.

3. The groundwater monitoring system certification as required by 335-13-15-.06(2)(f).

4. The selection of a statistical method certification as required by 335-13-15-.06(4)(f)6.

5. Within 30 days of establishing an assessment monitoring program, the notification as required by 335-13-15-.06(5)(e)3.

6. The results of Appendices III and IV constituent concentrations as required by 335-13-15-.06(6)(d)2.

7. Within 30 days of returning to a detection monitoring program, the notification as required by 335-13-15-.06(6)(e).

8. Within 30 days of detecting one or more constituents in Appendix

IV at statistically significant levels above the groundwater protection standard, the notifications as required by 335-13-15-.06(6)(g).

9. Within 30 days of initiating the assessment of corrective measures requirements, the notification as required by 335-13-15-.06(6)(g)6.

10. The completed assessment of corrective measures as required by 335-13-15-.06(7)(d).

11. Documentation prepared by the owner or operator recording the public meeting for the corrective measures assessment as required by 335-13-15-.06(7)(e).

12. The semiannual report describing the progress in selecting and designing the remedy and the selection of remedy report as required by 335-13-15-.06(8)(a), except that the selection of remedy report must be maintained until the remedy has been completed.

13. Within 30 days of completing the remedy, the notification as required by 335-13-15-.06(9)(~~f~~e).

14. The semi-annual groundwater monitoring report as required by 335-13-15-.06(1)(f).

(i) Closure and post-closure care. The owner or operator of a CCR unit subject to this chapter must place the following information, as it becomes available, in the facility's operating record:

1. The notification of intent to initiate closure of the CCR unit as required by 335-13-15-.07(1)(e)1.(i).

2. [Reserved]

3. [Reserved]

4. The written closure plan, and any amendment of the plan, as required by 335-13-15-.07(3)(b), except that only the most recent closure plan must be maintained in the facility's operating record irrespective of the time requirement specified in 335-13-15-.08(1)(b).

5. The written demonstration(s), including the certification required by 335-13-15-.07(3)(e)2.(iii), for a time extension for initiating closure as required by 335-13-15-.07(3)(e)2.(ii).

6. The written demonstration(s), including the certification required by 335-13-15-.07(3)(f)2.(iii), for a time extension for completing closure as required by 335-13-15-.07(3)(f)2.(i).

7. The notification of intent to close a CCR unit as required by 335-13-15-.07(3)(g).

8. The notification of completion of closure of a CCR unit as required by 335-13-15-.07(3)(h).

9. The notification recording a notation on the deed as required by 335-13-15-.07(3)(i).

10. The notification recording an environmental covenant as required by 335-13-15-.07(3)(j).

11. The notification of intent to comply with the alternative closure requirements as required by 335-13-15-.07(4)(~~d~~c)1.

12. The annual progress reports under the alternative closure requirements as required by 335-13-15-.07(4)(~~d~~c)2.

13. The written post-closure plan, and any amendment of the plan, as required by 335-13-15-.07(5)(d), except that only the most recent closure plan must be maintained in the facility's operating record irrespective of the time requirement specified in 335-13-15-.08(1)(b).

14. The notification of completion of post-closure care period as required by 335-13-15-.07(5)(e).

15. The notification of intent to comply with the site-specific alternative to initiation of closure due to the development of alternative capacity being technically infeasible as required by 335-13-15-.07(4)(f)1.(ix)(I).

16. The approved or denied demonstration for the site-specific alternative to initiation of closure due to the development of alternative capacity being technically infeasible as required by 335-13-15-.07(4)(f)1.(ix)(II).

17. The notification for requesting additional time to the alternative cease receipt of waste deadline as required by 335-13-15-.07(4)(f)1.(ix)(III).

18. The semi-annual progress reports for the site-specific alternative to initiation of closure due to the development of alternative capacity being technically infeasible as required by 335-13-15-.07(4)(f)1.(xi).

19. The notification of intent to comply with the site-specific alternative to initiation of closure due to permanent cessation of a coal-fired boiler(s) by a date certain as required by 335-13-15-.07(4)(f)2.(viii).

20. The approved or denied demonstration for the site-specific alternative

to initiation of closure due to permanent cessation of a coal-fired boiler(s) by a date certain as required by 335-13-15-.07(4)(f)2.(ix).

21. The annual progress report for the site-specific alternative to initiation of closure due to permanent cessation of a coal-fired boiler(s) by a date certain as required by 335-13-15-.07(4)(f)2.(x).

(j) Retrofit criteria. The owner or operator of a CCR unit subject to this chapter must place the following information, as it becomes available, in the facility's operating record:

1. The written retrofit plan, and any amendment of the plan, as required by 335-13-15-.07(3)(l)2., except that only the most recent retrofit plan must be maintained in the facility's operating record irrespective of the time requirement specified in 335-13-15-.08(1)(b).

2. The notification of intent that the retrofit activities will proceed in accordance with the alternative procedures in 335-13-15-.07(4).

3. The annual progress reports required under the alternative requirements as required by 335-13-15-.07(4).

4. The written demonstration(s), including the certification in 335-13-15-.07(3)(f)2.(iii), for a time extension for completing retrofit activities as required by 335-13-15-.07(3)(l)3.

5. The notification of intent to initiate retrofit of a CCR unit as required by 335-13-15-.07(3)(l)5.

6. The notification of completion of retrofit activities as required by 335-13-15-.07(3)(l)6.

(2) Notification requirements.

(a) The notifications required under 335-13-15-.08(2)(e) through (i) must be sent to the Director –before the close of business on the day the notification is required to be completed. For purposes of this section, before the close of business means the notification must be postmarked or sent by electronic mail (email). If a notification deadline falls on a weekend or state holiday, the notification deadline is automatically extended to the next business day.

(b) If any CCR unit is located in its entirety within Indian Country, the notifications of this section must be sent to the appropriate Tribal authority. If any CCR unit is located in part within Indian Country, the notifications of this section must be sent both to the Director and Tribal authority.

(c) Notifications may be combined as long as the deadline requirement for each notification is met.

(d) Unless otherwise required in this section, the notifications specified in this section must be sent to the Director within 30 days of placing in the operating record the information required by 335-13-15-.08(1).

(e) Location restrictions. The owner or operator of a CCR unit subject to the requirements of this chapter must notify the Director that each demonstration specified under 335-13-15-.08(1)(e) has been placed in the operating record and on the owner or operator's publicly accessible internet site.

(f) Design criteria. The owner or operator of a CCR unit subject to this chapter must notify the Director when information has been placed in the operating record and on the owner or operator's publicly accessible internet site. The owner or operator must:

1. Within 60 days of commencing construction of a new CCR unit, provide notification of the availability of the design certification specified under 335-13-15-.08(1)(f)1. or 3. If the owner or operator of the CCR unit elects to install an alternative composite liner, the owner or operator must also submit to the Director a copy of the alternative composite liner design.

2. No later than the date of initial receipt of CCR by a new CCR unit, provide notification of the availability of the construction certification specified under 335-13-15-.08(1)(f)1. or 3.

3. Provide notification of the availability of the documentation of liner type specified under 335-13-15-.08(1)(f)2.

4. Provide notification of the availability of the initial and periodic hazard potential classification assessments specified under 335-13-15-.08(1)(f)5.

5. Provide notification of the availability of Emergency Action Plan (EAP), and any revisions of the EAP, specified under 335-13-15-.08(1)(f)6.

6. Provide notification of the availability of documentation prepared by the owner or operator recording the annual face-to-face meeting or exercise between representatives of the owner or operator of the CCR unit and the local emergency responders specified under 335-13-15-.08(1)(f)7.

7. Provide notification of documentation prepared by the owner or operator recording all activations of the Emergency Action Plan (EAP) specified under 335-13-15-.08(1)(f)8.

8. Provide notification of the availability of the history of construction,

and any revision of it, specified under 335-13-15-.08(1)(f)9.

9. Provide notification of the availability of the initial and periodic structural stability assessments specified under 335-13-15-.08(1)(f)10.

10. Provide notification of the availability of the documentation detailing the corrective measures taken to remedy the deficiency or release specified under 335-13-15-.08(1)(f)11.

11. Provide notification of the availability of the initial and periodic safety factor assessments specified under 335-13-15-.08(1)(f)12.

12. Provide notification of the availability of the design and construction plans, and any revision of them, specified under 335-13-15-.08(1)(f)13.

(g) Operating criteria. The owner or operator of a CCR unit subject to this chapter must notify the Director when information has been placed in the operating record. The owner or operator must:

1. Provide notification of the availability of the CCR fugitive dust control plan, or any subsequent amendment of the plan, specified under 335-13-15-.08(1)(g)1.

2. Provide notification of the availability of the annual CCR fugitive dust control report specified under 335-13-15-.08(1)(g)2.

3. Provide notification of the availability of the initial and periodic run-on and run-off control system plans specified under 335-13-15-.08(1)(g)3.

4. Provide notification of the availability of the initial and periodic inflow design flood control system plans specified under 335-13-15-.08(1)(g)4.

5. Provide notification of the availability of the periodic inspection reports specified under 335-13-15-.08(1)(g)6.

6. Provide notification of the availability of the documentation detailing the corrective measures taken to remedy the deficiency or release specified under 335-13-15-.08(1)(g)7.

7. Provide notification of the availability of the periodic inspection reports specified under 335-13-15-.08(1)(g)9.

(h) Groundwater monitoring and corrective action. The owner or operator of a CCR unit subject to this chapter must notify the Director when information has been placed in the operating record and on the owner or operator's publicly accessible internet site. The owner or operator must:

1. Provide notification of the availability of the annual groundwater monitoring and corrective action report specified under 335-13-15-.08(1)(h)1.

2. Provide notification of the availability of the groundwater monitoring system certification specified under 335-13-15-.08(1)(h)3.

3. Provide notification of the availability of the selection of a statistical method certification specified under 335-13-15-.08(1)(h)4.

4. Provide notification that an assessment monitoring program has been established as specified under 335-13-15-.08(1)(h)5.

5. Provide notification that the CCR unit is returning to a detection monitoring program as specified under 335-13-15-.08(1)(h)7.

6. Provide notification that one or more constituents in Appendix IV have been detected at statistically significant levels above the groundwater protection standard and the notifications to land owners as specified under 335-13-15-.08(1)(h)8.

7. Provide notification that an assessment of corrective measures has been initiated as specified under 335-13-15-.08(1)(h)9.

8. Provide notification of the availability of assessment of corrective measures as specified under 335-13-15-.08(1)(h)10.

9. Provide notification of the availability of the semiannual report describing the progress in selecting and designing the remedy and the selection of remedy report specified under 335-13-15-.08(1)(h)12.

10. Provide notification of the completion of the remedy specified under 335-13-15-.08(1)(h)13.

(i) Closure and post-closure care. The owner or operator of a CCR unit subject to this chapter must notify the Director when information has been placed in the operating record and on the owner or operator's publicly accessible internet site. The owner or operator must:

1. Provide notification of the intent to initiate closure of the CCR unit specified under 335-13-15-.08(1)(i)1.

2. [Reserved]

3. [Reserved]

4. Provide notification of the availability of the written closure plan, and any amendment of the plan, specified under 335-13-15-.08(1)(i)4.

5. Provide notification of the availability of the demonstration(s) for a time extension for initiating closure specified under 335-13-15-.08(1)(i)5.

6. Provide notification of the availability of the demonstration(s) for a time extension for completing closure specified under 335-13-15-.08(1)(i)6.

7. Provide notification of intent to close a CCR unit specified under 335-13-15-.08(1)(i)7.

8. Provide notification of completion of closure of a CCR unit specified under 335-13-15-.08(1)(i)8.

9. Provide notification of the deed notation as required by 335-13-15-.08(1)(i)9.

10. Provide notification of the environmental covenant as required by 335-13-15-.08(1)(i)10.

11. Provide notification of intent to comply with the alternative closure requirements specified under 335-13-15-.08(1)(i)11.

12. The annual progress reports under the alternative closure requirements as required by 335-13-15-.08(1)(i)12.

13. Provide notification of the availability of the written post-closure plan, and any amendment of the plan, specified under 335-13-15-.08(1)(i)13.

14. Provide notification of completion of post-closure care as specified under 335-13-15-.08(1)(i)14.

15. Provide the notification of intent to comply with the site-specific alternative to initiation of closure due to the development of alternative capacity being technically infeasible as specified under 335-13-15-.08(1)(i)15.

16. Provide the approved or denied demonstration for the site-specific alternative to initiation of closure due to the development of alternative capacity being technically infeasible as specified under 335-13-15-.08(1)(i)16.

17. Provide the notification for requesting additional time to the alternative cease receipt of waste deadline as required by 335-13-15-.08(1)(i)17.

18. The semi-annual progress reports for the site-specific alternative to initiation of closure due to the development of alternative capacity being technically infeasible as specified under 335-13-15-.08(1)(i)18.

19. Provide the notification of intent to comply with the site-specific alternative to initiation of closure due to permanent cessation of a coal-fired boiler(s) by a date certain as specified under 335-13-15-.08(1)(i)19.

20. Provide the approved or denied demonstration for the site-specific alternative to initiation of closure due to permanent cessation of a coal-fired boiler(s) by a date certain as required by 335-13-15-.08(1)(i)20.

21. The annual progress report for the site-specific alternative to initiation of closure due to permanent cessation of a coal-fired boiler(s) by a date certain as required by 335-13-15-.08(1)(i)(21).

(j) Retrofit criteria. The owner or operator of a CCR unit subject to this chapter must notify the Director when information has been placed in the operating record and on the owner or operator's publicly accessible internet site. The owner or operator must:

1. Provide notification of the availability of the written retrofit plan, and any amendment of the plan, specified under 335-13-15-.08(1)(j)1.

2. Provide notification of intent to comply with the alternative retrofit requirements specified under 335-13-15-.08(1)(j)2.

3. The annual progress reports under the alternative retrofit requirements as required by 335-13-15-.08(1)(j)3.

4. Provide notification of the availability of the demonstration(s) for a time extension for completing retrofit activities specified under 335-13-15-.08(1)(j)4.

5. Provide notification of intent to initiate retrofit of a CCR unit specified under 335-13-15-.08(1)(j)5.

6. Provide notification of completion of retrofit activities specified under 335-13-15-.08(1)(j)6.

(3) Publicly accessible internet site requirements.

(a) Each owner or operator of a CCR unit subject to the requirements of this chapter must maintain a publicly accessible internet site (CCR web-site) containing the information specified in this section. The owner or operator's web–site must be titled "CCR Rule Compliance Data and Information." The website must ensure that all information required to be posted is immediately available to anyone visiting the site, without requiring any prerequisite, such as registration or a requirement to submit a document request. All required information must be clearly identifiable and must be able to be immediately

printed and downloaded by anyone accessing the site. If the owner/operator changes the web address (i.e., Uniform Resource Locator (URL)) at any point, they must notify Director within 14 days of making the change. The facility's CCR website must also have a "contact us" form or a specific email address posted on the website for the public to use to submit questions and issues relating to the availability of information on the website.

(b) An owner or operator of more than one CCR unit subject to the provisions of this chapter may comply with the requirements of this section by using the same internet site for multiple CCR units provided the CCR web–site clearly delineates information by the name or identification number of each unit.

(c) Unless otherwise required in this section, the information required to be posted to the CCR web–site must be made available to the public for at least five years following the date on which the information was first posted to the CCR web–site.

(d) Unless otherwise required in this section, the information must be posted to the CCR web–site within 30 days of placing the pertinent information required by 335-13-15-.08(1) in the operating record.

(e) Location restrictions. The owner or operator of a CCR unit subject to this chapter must place each demonstration specified under 335-13-15-.08(1)(e) on the owner or operator's CCR web–site.

(f) Design criteria. The owner or operator of a CCR unit subject to this chapter must place the following information on the owner or operator's CCR web–site:

1. Within 60 days of commencing construction of a new unit, the design certification specified under 335-13-15-.08(1)(f)1. or 3.

2. No later than the date of initial receipt of CCR by a new CCR unit, the construction certification specified under 335-13-15-.08(1)(f)1. or 3.

3. The documentation of liner type specified under 335-13-15-.08(1)(f)2.

4. The initial and periodic hazard potential classification assessments specified under 335-13-15-.08(1)(f)5.

5. The Emergency Action Plan (EAP) specified under 335-13-15-.08(1)(f)6., except that only the most recent EAP must be maintained on the CCR web–site irrespective of the time requirement specified in 335-13-15-.08(3)(c).

6. Documentation prepared by the owner or operator recording the

annual face-to-face meeting or exercise between representatives of the owner or operator of the CCR unit and the local emergency responders specified under 335-13-15-.08(1)(f)7.

7. Documentation prepared by the owner or operator recording any activation of the Emergency Action Plan (EAP) specified under 335-13-15-.08(1)(f)8.

8. The history of construction, and any revisions of it, specified under 335-13-15-.08(1)(f)9.

9. The initial and periodic structural stability assessments specified under 335-13-15-.08(1)(f)10.

10. The documentation detailing the corrective measures taken to remedy the deficiency or release specified under 335-13-15-.08(1)(f)11.

11. The initial and periodic safety factor assessments specified under 335-13-15-.08(1)(f)12.

12. The design and construction plans, and any revisions of them, specified under 335-13-15-.08(1)(f)13.

(g) Operating criteria. The owner or operator of a CCR unit subject to this chapter must place the following information on the owner or operator's CCR web–site:

1. The CCR fugitive dust control plan, or any subsequent amendment of the plan, specified under 335-13-15-.08(1)(g)1. except that only the most recent plan must be maintained on the CCR web–site irrespective of the time requirement specified in 335-13-15-.08(3)(c).

2. The annual CCR fugitive dust control report specified under 335-13-15-.08(1)(g)2.

3. The initial and periodic run-on and run-off control system plans specified under 335-13-15-.08(1)(g)3.

4. The initial and periodic inflow design flood control system plans specified under 335-13-15-.08(1)(g)4.

5. The periodic inspection reports specified under 335-13-15-.08(1)(g)6.

6. The documentation detailing the corrective measures taken to remedy the deficiency or release specified under 335-13-15-.08(1)(g)7.

7. The periodic inspection reports specified under 335-13-15-.08(1)(g)9.

(h) Groundwater monitoring and corrective action. The owner or operator of a CCR unit subject to this chapter must place the following information on the owner or operator's CCR web-site:

1. The annual groundwater monitoring and corrective action report specified under 335-13-15-.08(1)(h)1.

2. The groundwater monitoring system certification specified under 335-13-15-.08(1)(h)3.

3. The selection of a statistical method certification specified under 335-13-15-.08(1)(h)4.

4. The notification that an assessment monitoring program has been established as specified under 335-13-15-.08(1)(h)5.

5. The notification that the CCR unit is returning to a detection monitoring program as specified under 335-13-15-.08(1)(h)7.

6. The notification that one or more constituents in Appendix IV have been detected at statistically significant levels above the groundwater protection standard and the notifications to land owners specified under 335-13-15-.08(1)(h)8.

7. The notification that an assessment of corrective measures has been initiated specified under 335-13-15-.08(1)(h)9.

8. The assessment of corrective measures specified under 335-13-15-.08(1)(h)10.

9. The semiannual reports describing the progress in selecting and designing the remedy and the selection of remedy report specified under 335-13-15-.08(1)(h)12., except that the selection of the remedy report must be maintained until the remedy has been completed.

10. The notification that the remedy has been completed specified under 335-13-15-.08(1)(h)13.

11. The semi-annual groundwater monitoring report specified under 335-13-15-.08(1)(h)14.

(i) Closure and post-closure care. The owner or operator of a CCR unit subject to this chapter must place the following information on the owner or operator's CCR web-site:

1. The notification of intent to initiate closure of the CCR unit specified under 335-13-15-.08(1)(i)1.

2. [Reserved]

3. [Reserved]

4. The written closure plan, and any amendment of the plan, specified under 335-13-15-.08(1)(i)4.

5. The demonstration(s) for a time extension for initiating closure specified under 335-13-15-.08(1)(i)5.

6. The demonstration(s) for a time extension for completing closure specified under 335-13-15-.08(1)(i)6.

7. The notification of intent to close a CCR unit specified under 335-13-15-.08(1)(i)7.

8. The notification of completion of closure of a CCR unit specified under 335-13-15-.08(1)(i)8.

9. The notification recording a notation on the deed as required by 335-13-15-.08(1)(i)9.

10. The notification recording an environmental covenant as required by 335-13-15-.08(1)(i)10.

11. The notification of intent to comply with the alternative closure requirements as required by 335-13-15-.08(1)(i)11.

12. The annual progress reports under the alternative closure requirements as required by 335-13-15-.08(1)(i)12.

13. The written post-closure plan, and any amendment of the plan, specified under 335-13-15-.08(1)(i)13.

14. The notification of completion of post-closure care specified under 335-13-15-.08(1)(i)14.

15. The notification of intent to comply with the site-specific alternative to initiation of closure due to the development of alternative capacity being technically infeasible as specified under 335-13-15-.08(1)(i)15.

16. The approved or denied demonstration for the site-specific alternative to initiation of closure due to the development of alternative capacity being technically

infeasible as required by as specified under 335-13-15-.08(1)(i)16.

17. The notification for requesting additional time to the alternative cease receipt of waste deadline as required by 335-13-15-.08(1)(i)17.

18. The semi-annual progress reports for the site-specific alternative to initiation of closure due to the development of alternative capacity being technically infeasible as specified under 335-13-15-.08(1)(i)18.

19. The notification of intent to comply with the site-specific alternative to initiation of closure due to permanent cessation of a coal-fired boiler(s) by a date certain as specified under 335-13-15-.08(1)(i)19.

20. The approved or denied demonstration for the site-specific alternative to initiation of closure due to permanent cessation of a coal-fired boiler(s) by a date certain as required by 335-13-15-.08(1)(i)20.

21. The annual progress report for the site-specific alternative to initiation of closure due to permanent cessation of a coal-fired boiler(s) by a date certain as required by 335-13-15-.08(1)(i)21.

(j) Retrofit criteria. The owner or operator of a CCR unit subject to this chapter must place the following information on the owner or operator's CCR web–site:

1. The written retrofit plan, and any amendment of the plan, specified under 335-13-15-.08(1)(j)1.

2. The notification of intent to comply with the alternative retrofit requirements as required by 335-13-15-.08(1)(j)2.

3. The annual progress reports under the alternative retrofit requirements as required by 335-13-15-.08(1)(j)3.

4. The demonstration(s) for a time extension for completing retrofit activities specified under 335-13-15-.08(1)(j)4.

5. The notification of intent to retrofit a CCR unit specified under 335-13-15-.08(1)(j)5.

6. The notification of completion of retrofit activities specified under 335-13-15-.08(1)(j)6.

Author: S. Scott Story, Heather M. Jones
Statutory Authority: Code of Alabama 1975, §§ 22-27-3 and 22-27-7
History: Filed: April 24, 2018; Effective: June 8, 2018. **Amended:** Proposed: September 21, 2020.

335-13-15-.09 Permit Application. A11 solid waste management of CCR generated from the combustion of coal at electrical utilities and independent power producers shall take place in a CCR unit permitted by the Department. ADEM Admin. Code 335-13-5 outlines the procedures for obtaining a Solid Waste Disposal Permit for new and existing CCR Landfills, including lateral expansions of such units. The following section establishes the minimum requirements and procedures for obtaining a permit for new and existing surface impoundments, including any lateral expansions of such units. New and existing CCR surface impoundments shall obtain permits for construction, operation, closure and/or post-closure in accordance with the following:

(1) Application Requirements.

(a) Existing CCR Surface Impoundments. Except as provided in 335-13-15-.09(1)(c), for existing CCR surface impoundments, the owner or operator shall submit the following in order to request a permit:

1. A completed form designated by the Department.

2. Boundary plat and legal property description prepared, signed, and sealed by a land surveyor of the proposed boundary of the facility and disposal area of the CCR unit.

3. Technical data and reports documenting compliance with the following location requirements:

(i) Five foot separation of the base of the CCR unit and the uppermost aquifer~~highest measured groundwater level~~ in compliance with 335-13-15-.03(1).

(ii) Wetland and endangered species requirements under 335-13-15-.03(2).

(iii) Fault area requirements under 335-13-15-.03(3).

(iv) Seismic impact zones requirements under 335-13-15-.03(4).

(v) Unstable area requirements under 335-13-15-.03(5)

4. Detailed presentation of geological and hydrogeological units within the disposal site, with typical sections of disposal method and plan and profile sheets on all areas or trenches.

5. Technical report of the determination of the liner design and type as required by 335-13-15-.04(2).

6. Technical report for the hazardous potential classification as outlined in 335-13-15-.04(4)(a)2. and the Emergency Action Plan (EAP), if necessary, developed under 335-13-15-.04(4)(a)3.

7. For existing CCR surface impoundments that have a height of five feet or more and a storage volume of 20 acre-feet or more, or an existing surface impoundment with a height of 20 feet or more, the application shall include the following:

(i) All the information required by 335-13-15-.04(4)(c)1.(i) through (xii).

(ii) Results of the structural stability assessment as required by 335-13-15-.04(4)(d).

(iii) Results of the safety factor assessment as required by 335-13-15-.04(4)(e).

8. Sufficient control points on-site to provide for accurate horizontal and vertical control for facility construction, operation and closure and post-closure.

9. Topographical maps at contour intervals of not more than five feet for the existing ground surface elevation, initial disposal area elevation, and final disposal area elevation. The maps shall also show buffer zones.

10. Quality assurance/quality control (QA/QC) plan for all components of the final cover system.

11. An operation plan that includes at a minimum:

(i) A CCR fugitive dust control plan developed in accordance with 335-13-15-.05(1).

(ii) An inflow design flood control system developed in accordance with 335-13-15-.05(3).

(ii) A detailed description of the groundwater monitoring and analysis program developed in accordance with 335-13-15-.06.

(iii) Procedures for compliance with recordkeeping and notification as required under 335-13-15-.08.

(iv) Procedures for updating all plans and assessments periodically as required by this chapter.

12. The written closure and post-closure plan developed in accordance with 335-13-15-.07.

13. Any additional information that may be required by the Department.

14. The name and mailing address of all property owners whose property is adjacent to the CCR surface impoundment.

15. Plans, specifications, operational procedures, letters of final construction certification and other technical data required as part of the application, except as provided in 335-13-15-.09(1)(a)2. and 14., shall be certified by a professional engineer. The seal or signature and registration number of the design engineer shall be affixed to the plans, specifications and reports.

(b) New CCR surface impoundments and any lateral expansion of a CCR surface impoundment. For new CCR surface impoundments and any lateral expansion of a CCR surface impoundment, the owner or operator shall submit the following in order to request a permit:

1. Except for the requirements of 335-13-15-.09(1)(a)5., 6., and 7., the requirements for an existing CCR surface impoundment in 335-13-15-.09(1)(a).

2. Technical report for the hazardous potential classification as outlined in 335-13-15-.04(5)(a)2. and the Emergency Action Plan (EAP), if necessary, under 335-13-15-.04(5)(a)3.

3. For new CCR surface impoundments that has a height of five feet or more and a storage volume of 20 acre-feet or more, or a surface impoundment with a height of 20 feet or more, the application shall include the following:

(i) All the information contained in 335-13-15-.04(5)(c)1.(i) through (xii).

(ii) Structural stability assessment as required by 335-13-15-.04(5)(d).

(iii) Safety factor assessment as required by 335-13-15-.04(5)(e).

4. Design for the liner and leachate collection and removal system as required by 335-13-15-.04(3).

5. Quality assurance/quality control (QA/QC) plan for all components of the liner and leachate collection system.

6. Plans, specifications, operational procedures, letters of final construction certification and other technical data required as part of the application, except as provided in 335-13-15-.09(1)(a)2. and 14., shall be certified by a professional engineer. The seal or signature and registration number of the design engineer shall be affixed to the plans, specifications and reports.

(c) For existing CCR surface impoundments that have initiated closure or are otherwise subject to the closure requirements of 335-13-15-.07(2), the owner or operator shall submit all the information as required for an existing CCR surface impoundment in 335-13-15-.09(1)(a), except for the requirements of 335-13-15-.09(1)(a)3., 4. and 5., to request a closure or post-closure permit or a permit for such operations as may be authorized by 335-13-15-.07(4).

(2) In addition to the requirements listed in 335-13-15-.09(1), the permit application shall also include statements signed by a professional engineer and a representative of the facility owner/operator certifying that the information being submitted is accurate and correct The submittal of false or inaccurate information shall result in the permit application being suspended or denied.

(3) Permit Duration. CCR surface impoundment permits obtained in compliance with this chapter shall be valid for the design life of the facility or as otherwise determined by the Department, but no longer than a period of ten years. Permits, however, are subject to revocation under 335-13-15-.12.

(4) Filing Deadline. Requests for an initial permit for an existing surface impoundment shall be filed with the Department within 180 days after the effective date of these rules. Requests for extension, renewal or a new permit for any CCR surface impoundment shall be filed with the Department by the operating agency at least 180 days prior to the expiration date for existing permits or proposed construction date for new facilities.

(5) Modifications. Prior to any change listed in 335-13-15-.13(1) and (2), the permittee shall request a modification of the permit as described in 335-13-15-.13(3). A modification request described in 335-13-15-.13(1) and (2) must be filed with the Department at least 90 days prior to the anticipated change and shall receive approval from the Department prior to the implementation of the proposed change.

(6) Effect of non-compliance.

(a) As determined by the Director, substantial non-compliance with Department regulations or permits at any facility owned or operated by the applicant, including any facility for which the pending permit application is requested, will be grounds for denial of the application, or alternatively, for suspension of further consideration of the application until such non- compliance is corrected.

(b) In addition to the foregoing, the Director may deny a permit application if:

1. The Director determines that a permit could not be issued that would result in compliance with applicable solid waste standards; or

2. The applicant could not comply with the permit as issued.

Author: Eric L. Sanderson; S. Scott Story, Heather M. Jones.
Statutory Authority: Code of Alabama 1975, §§ 22-27-3, 22-27-7, and 22-27-12
History: Filed: April 24, 2018; Effective: June 8, 2018. **Amended:** Filed: June 25, 2019; Effective: August 9, 2019. **Amended:** Proposed: September 21, 2020.

335-13-15-Appendix IV CCR Constituents for Assessment Monitoring

Common name [1]
Antimony
Arsenic
Barium
Beryllium
~~Boron~~
Cadmium
Chromium
Cobalt
Fluoride
Lead
Lithium
Mercury
Molybdenum
Selenium
Thallium
Radium 226 and 228 combined

[1] Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

Author: Heather M. Jones
Statutory Authority: Code of Alabama 1975, §§ 22-27-3 and 22-27-7
History: Filed: April 24, 2018; Effective: June 8, 2018. **Amended:** Proposed: September 21, 2020.