

**GUIDANCE DOCUMENT FOR  
COAL COMBUSTION RESIDUALS (CCR) MANAGEMENT PLANS**

**December 22, 2016**

**APPLICABILITY**

Effective November 22, 2016, the disposal of Coal Combustion Residuals (CCR) or the use of CCR as a daily cover at a Municipal Solid Waste Landfill (MSWL) or Commercial Industrial Landfill requires that a CCR Management Plan be submitted to EPD for review. In accordance with Solid Waste Management Rule 391-3-4-.07(5), an owner or operator must incorporate a CCR Management Plan into the facility's Design and Operational Plan before the initial receipt of CCR. Facilities that accepted CCR before the effective date of the Rule and will continue to accept CCR after the effective date must incorporate a CCR Management Plan into the facility's Design and Operational Plan with an EPD-approved modification by May 21, 2017 (within 180 days from the effective date of this Rule).

**OBJECTIVE**

The CCR Management Plan must describe the procedures by which the owner or operator of a facility will evaluate the physical and chemical characteristics of the CCR received or to be received, as well as demonstrate that the facility's Design and Operational Plan has been updated to ensure that CCR will be managed safely. The Plan shall include the precautions necessary, as determined by proper engineering analyses, to maintain structural integrity of the landfill and to avoid compromising the gas, leachate collection, and stormwater control systems. Additionally, the CCR Management Plan shall address how the operator will avoid chemical incompatibility with other wastes, as applicable, and fugitive dust generation, so that human health and the environment continue to be protected.

In addition, § 40 CFR 258.24(a) requires that owners or operators of all MSWLs must ensure that the units do not violate any applicable requirements developed under a State Implementation Plan (SIP) approved or promulgated by the Administrator pursuant to section 110 of the Clean Air Act.

**GENERAL REQUIREMENTS**

1. The CCR Management Plan shall be submitted as a request for modification to the facility's Design and Operational (D&O) Plan. Modifications which substantially alter the design of the facility, management practices, the types of wastes being handled, or the method of waste handling, and due to the nature of the changes would likely have an impact on the ability of the facility to adequately protect human health and the environment will require a major modification.
2. CCR Management Plans will be approved for a duration of one year. Facilities must submit a sealed professional engineer's Annual CCR Management and Dust Control Review describing activities, issues and any non-compliance from the prior year (for more on Fugitive Dust Control requirements, see below). Based on the annual review, Georgia EPD will either issue written approval to continue CCR management under the existing plan or will request the facility to amend their Plan. Amendments to the plan shall include any changes necessitated by the prior year's operations. The facility shall place the written EPD approval in the facility operating

record. Facilities requested to amend their CCR Management Plan must obtain an approved amended Plan within 30 days of EPD's request or cease receipt of CCR until such approval is granted.

3. Plan sheets should be the same size (24"x30" to 24"x36") and have a standard title block.
4. A professional engineer registered to practice in Georgia must stamp and sign all sheets.

### **CCR MANAGEMENT PLAN COMPONENTS**

The CCR Management Plan additions to the facility's D&O Plan shall include at a minimum the information listed below.

1. Volume and daily CCR receipt

The estimated total amount of CCR to be accepted on annual basis and the daily maximum amount of CCR to be accepted must be listed in the Plan.

For sites that will dispose of comingled CCR and MSW, the amount of MSW received and the maximum ratio of CCR to MSW for placement in the landfill must be listed in the Plan. The facility must be designed to address Section 4, Design Consistency, for comingling waste up to this maximum ratio. The facility may not dispose of comingled waste at a ratio that exceeds the maximum considered in the design calculations. Dedicated CCR cells that were previously approved for MSW disposal must also be redesigned to address the requirements of section 4. Design Consistency.

2. Procedures for waste placement, cover, and recovery

The CCR Management Plan must include the following:

- a) A description of how the working face will be managed at facilities where CCR and other wastes will be comingled, or identification of proposed CCR monofill cells.
- b) Description of waste placement procedures including (but not limited to):
  - the initial layer placement of CCR above the liner and leachate collection system,
  - placement and compaction requirements of CCR lifts to maintain stability,
  - placement and compaction procedures for comingled wastes.
- c) Procedures and criteria for daily cover of comingled CCR and MSW.
- d) The working face must be maintained at a size that is compatible with the facility's available equipment for spreading and compacting waste, and for suppressing dust. Describe the proposed maximum working face area and the equipment needed to manage a working face of this area.
- e) Operator inspection procedures for maintaining and documenting compliance with the CCR Management Plan must be given.
- f) If applicable, procedures for onsite liquid waste solidification operations using CCR.
- g) If applicable, procedures must be given for recovery of previously disposed CCR for beneficial reuse. EPD must be notified prior to disturbing and excavating previously disposed CCR for beneficial reuse.

3. Fugitive Dust Control

The CCR Management Plan must include measures that will minimize CCR from becoming airborne at the facility. Potential CCR fugitive dust emissions originating from CCR disposal units, roads, conditioning areas, and other CCR management and material handling activities must be minimized.

- a) Performance Standard: The percent opacity from CCR and any other fugitive dust source listed in Air Quality Rule 391-3-1-.02(2)(n)1 shall not exceed the limits set therein.

- b) The Dust Control Plan must describe measures that the owner or operator will use to minimize CCR from becoming airborne, such as the following:
  - locating CCR inside an enclosure/partial enclosure
  - operating a water spray or fogging system
  - reducing fall distances at material drop points
  - using wind barriers, compaction, or vegetative covers
  - establishing vehicle speed limits
  - paving and sweeping roads
  - covering trucks transporting CCR
  - reducing or halting operations during high wind events
  - applying daily cover or more frequent cover as needed
- c) The Dust Control Plan must provide an explanation of how the selected measures are applicable and appropriate for the existing site conditions.
- d) The Dust Control Plan must provide procedures to emplace CCR with adequate moisture content or other suppressants added to minimize dust.
- e) Citizen Complaints: Procedures to log citizen complaints received by the owner or operator must be described in the Plan.
- f) An “Annual Fugitive Dust Control Report” report will be due 12 months after the approval of the CCR Management Plan, and one year later for each subsequent report. The report shall include a description of the actions taken to control fugitive dust, a record of all citizen complaints, a summary of any corrective measures taken and, if applicable, recommendations to improve the dust control measures in the future.

#### 4. Design Consistency

- I) The CCR Management Plan must address the following landfill design considerations:
  - a) A demonstration that the design grades of the landfill are stable (i.e., for short operations and long-term static and seismic conditions).
  - b) A demonstration that the liner system is designed to account for chemical exposure to CCR-generated leachate.
  - c) The cell floor grading and construction plans shall account for settlement caused by the weight of the CCR or the comingled waste. Cell floor subsidence and leachate collection pipe crushing shall be evaluated, and a demonstration of adequate post-settlement cell floor grades, leachate pipe grades, and resistance to crushing shall be provided in the design calculations.
  - d) The Leachate Collection and Removal System (LCRS) shall continue to maintain its functionality and limit the head of leachate on the liner system to a maximum of 30 centimeters. Drainage nets, filter fabrics, and other features of the LCRS must be demonstrated to be compatible with CCR. Pipes must be able to support the weight of the CCR without damage.
  - e) The landfill gas collection system design shall account for comingling of MSW and CCR waste.
  - f) Construction, operation, and maintenance of waste units to be used for CCR disposal shall remain consistent with recognized and generally accepted good engineering practices for the maximum volume of CCR to be disposed.
  - g) The plan must define any events or circumstances 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.
  - h) The plan must provide a detailed description of leachate and contact water management that demonstrates surface water contacting MSW or CCR will not be discharged into the

stormwater management system. Describe or provide details for any required structures (such as chimney drains) and any management practices such as placement of diversion berms between the working face or exposed CCR and the stormwater collection ditches.

i) Design calculations supporting the CCR Management Plan are to be performed by or be done under the direction of a Professional Engineer and shall be submitted as auxiliary materials to the Plan.

II) CCR shall not be placed in any previously constructed cell, either comingled or as a monofill, without a demonstration that the cell, as constructed, was designed or can be retrofitted (e.g., lowering of final grades) to accommodate CCR disposal.

#### 5. Waste Compatibility Analysis

The Plan must show that CCR waste is compatible (non-reactive) with MSW or industrial waste streams received at the facility, and that different CCR waste streams received are compatible with one another. In demonstrating compatibility, the plan shall contain at a minimum the following components:

- List of source(s) of CCR waste streams
- Chemical analyses of CCR waste streams
- Documentation of compatibility analyses for use in a solidification process, if applicable

The chemical analyses may be submitted as auxiliary materials to the Plan. If a new type of CCR is proposed for disposal a plan modification application must be submitted if, based on the above analyses, acceptance of the new CCR material necessitates changes to the facility's design or operations.

#### 6. Closure and Post-Closure Care Impacts

The CCR Management Plan shall evaluate impacts to the landfill's closure and post-closure care cost estimates. If CCR management changes either or both of these estimates, these plan sections must be revised to comply with 391-3-4-.11 or 391-3-4-.12. Groundwater monitoring costs should be updated to reflect the additional constituents monitored for landfills that have accepted CCR. If the largest open waste-accepting area increases due to CCR acceptance, closure cost estimates must be updated accordingly.

#### 7. Groundwater Monitoring

Appendix III and IV constituents (including boron) must be incorporated into the facility's groundwater monitoring plan in accordance with 391-3-4-.14(21)(c) and 391-3-4-.14(25).

#### 8. Modification Procedures

The CCR Management Plan must be modified and submitted for EPD's approval if changes in either operating procedures or the facility design are necessary to comply with the requirements for CCR management.

#### 9. Documentation of Notification to Local Governments

The owner or operator shall notify the local governing authorities of the county, and any city within the county, in which the landfill is located upon the initial submittal of a CCR Management Plan or upon submittal of an amended Plan to EPD. Copies of the correspondence to local governing authorities must be provided to EPD with the Plan submittal.