



## FEDERAL CCR RULE UPDATE

### SUMMARY OF EPA'S 19 DECEMBER 2014 PRE-PUBLICATION RULE

On 19 December 2014, the United States Environmental Protection Agency (EPA) signed the Final Rule for regulation of coal combustion residuals (CCR) as solid waste under Subtitle D of the Resource Conservation and Recovery Act (RCRA). The Final Rule is expected to be published in the Federal Register sometime in January 2015, which will become the “publication date of the rule” from which all compliance timelines will be measured. It represents the “Subtitle D” option that was introduced in the Draft CCR Rule that was proposed in 2010, but with significant differences.

### OVERVIEW OF FINAL CCR RULE: SOME KEY CONSIDERATIONS FOR OWNERS

**Regulatory Framework.** The Final Rule is self-implementing, meaning that Owners are responsible for compliance regardless of any state or federal involvement. States are not required to adopt these rules. States and citizens may take actions to enforce the rule through the courts. EPA is encouraging States to revise their Solid Waste Management Plans (SWMPs) and submit them to EPA for approval; EPA’s approval of the revised SWMP would represent EPA’s opinion that the State SWMP meets the minimum federal criteria. EPA expects this process to streamline implementation of the CCR Rule by the States.

**Requirements for Closure of Existing CCR Units.** Under the Final Rule, existing CCR Surface Impoundments (SI’s) may continue to operate if they have a composite liner or a 2-ft thick clay liner (see §257.71(a)) and if they meet groundwater protection requirements, whereas the 2010 draft proposed rule required all SI’s to close within five years if they did not meet the composite liner requirement. All existing CCR Landfills may remain in operation, regardless of their liner type.

**Overfills on Existing CCR Landfills and SI’s.** The Final Rule specifically allows construction of new CCR units over existing CCR landfills and SI’s. If the existing unit is a SI, it must be dewatered and closed before being overfilled. The 2010 proposed rule prohibited such overfills. In the Final Rule, overfills over SI’s are considered to be new CCR units; for these overfills, both the closure requirements for the existing SI and the design requirements for the overlying landfill must be complied with.

**Structural Integrity Requirements for CCR Surface Impoundments.** Under the Final Rule, all CCR SI’s must satisfy several structural integrity requirements (including (i) design verification, and (ii) assessment of hazard potential classification, structural stability, and safety factor) or close within six months of either failing to

perform the required assessments, or meeting the minimum safety requirements of the rule. Emergency Action Plans are required for high or significant potential hazards SI’s, and required factors of safety range from 1.50 for long-term conditions to 1.00 for seismic conditions.

**Groundwater Protection Requirements.** The Final Rule requires monitoring of groundwater at all CCR units, including completion of a monitoring network and testing of groundwater quality within 30 months after the publication date of the rule. Corrective Actions must meet a “restoration” standard for groundwater quality, including removing the maximum feasible amount of contaminants. Cost is not listed as a screening criterion for remedy selection in the Final Rule.

**Inactive CCR Unit Requirements.** The Final Rule requires inactive CCR SI’s (i.e., units that no longer receive CCR’s but still contain free liquids and are not yet closed) to meet the SI liner requirements of §257.71(a) or begin closure within six months of completing the liner compliance evaluation. This requirement applies even if the station is still generating electricity (i.e., using means other than coal-fired boilers). There is no similar requirement for closed CCR landfills.

**Beneficial Uses of CCRs.** The Final Rule retains the exemption of CCRs from regulation as a hazardous waste and allows a number of beneficial uses, including un-encapsulated applications (e.g., flowable fill, agricultural soil amendments, waste solidification, aggregates, highway and road construction projects). Un-encapsulated uses in quantities greater than 12,400 tons in non-roadway applications are only allowed if it is demonstrated that environmental releases will be comparable to or lower than those from analogous non-CCR products or regulatory benchmarks. Un-encapsulated placement of CCRs in quarries and surface mines is prohibited.

## THINGS TO CONSIDER NOW

The Final Rule imposes a number of new CCR management obligations on utilities. Many of these obligations will have an impact on generating operations, and many of them must be implemented within the first six to nine months of the date of publication, which means during the first three quarters of 2015. Utility managers should consider the following early-stage activities to comply with the CCR Rule:

- Assess the need to value and report new Asset Retirement Obligations (ARO's) and other financial liabilities that will be required as a result of the CCR Rule.
- Begin collecting the data that will be needed to make the Recordkeeping demonstrations of §257.105 and the Internet Posting requirements of §257.107, and begin planning to make the Notifications required under §257.106. All of these demonstrations and notifications are required within the first 6 months after the publication date of the rule.
- Initiate weekly inspections of CCR Units within 6 months, monthly monitoring of CCR unit instrumentation within 6 months, and annual inspection of CCR units within 9 months of the publication date of the rule per §257.83-.84.
- Prepare a fugitive dust control plan, which is required within 6 months of the publication date of the rule per .80.
- Conduct initial structural stability and safety factor assessments per §257.73-.74.

## HOW GEOSYNTEC CAN HELP

We realize that most of our electric power-generating utility clients are currently beginning to work through the details of the Final Rule and its implications on their facilities. Geosyntec professionals are standing by and can assist with implementation of the items listed above, as well as:

- Development and implementation of compliance strategies
- Engineering feasibility evaluations and detailed engineering studies/designs
- Project management
- Cost estimation and long-term cash-flow projections for CCR-related capital and O&M obligations
- Performing analyses and assessments needed to demonstrate compliance with the Final Rule

### GEOSYNTEC'S REPRESENTATIVE UTILITY CLIENTS

Alabama Power Company  
 American Electric Power  
 Consumers Energy  
 DTE Energy  
 Duke Energy  
 Electric Power Research Institute (EPRI)  
 Exelon  
 FirstEnergy  
 Georgia Power Company  
 Jacksonville Electric Authority  
 LGE/KU  
 Lower Colorado River Authority  
 NRG Energy  
 Pennsylvania Power and Light  
 Puget Sound Energy  
 San Diego Gas & Electric  
 Santee Cooper Power Authority  
 South Carolina Electric & Gas  
 Tampa Electric Company  
 Tennessee Valley Authority  
 We Energies

### GEOSYNTEC'S CCR MANAGEMENT RELATED SERVICES

Master Facility Development Planning | Siting | Feasibility Analysis | Site investigation and Geotechnical Evaluation | Groundwater Monitoring System Design | Capacity Optimization, including MSE Embankments | Leachate and Water Quality Management System Design and Permitting | Air Quality Permitting | Site Civil Design | Construction Quality Assurance | Construction Management | Public Participation | Closure and Post-Closure Care



# SUMMARY OF EPA'S 19 DECEMBER PRE-PUBLICATION RULE

	Requirement	Timeline for Implementation from the date of Publication
Location Restrictions (\$257.60-.64)	<ul style="list-style-type: none"> <li>All CCR Units (except existing CCR Landfills) must be 5-ft above the limit of <b>uppermost aquifer</b> or demonstrate no intermittent, recurring, or sustained hydraulic connection between groundwater and the liner; otherwise the unit must close.</li> <li>All CCR Units (except existing CCR Landfills) must not be located in <b>wetlands</b> or must demonstrate no significant wetland degradation.</li> <li>All CCR Units (except existing CCR Landfills) must not be within 200 feet of the outermost zone of damage of a <b>fault</b> having displacement in Holocene time or must demonstrate no damage to the liner.</li> <li>All CCR Units (except existing CCR Landfills) must not be within a <b>seismic impact zone</b>, or demonstrate that structural components are designed to resist the maximum horizontal acceleration in earth materials at the site.</li> <li>All CCR Units must not be located in <b>unstable areas</b> that are susceptible to natural or human-induced events or forces capable of impairing the integrity of some or all of the structural components responsible for preventing releases from a CCR unit.</li> </ul>	<ul style="list-style-type: none"> <li><b>42 Months</b> to complete demonstrations for placement above the high groundwater table, wetlands, fault areas, seismic impact zones, and fault areas.</li> <li><b>48 Months</b> to initiate closure of SI's that cannot meet the minimum requirements for placement above the uppermost aquifer (i.e., 6 months after determining that this location standard cannot be met).</li> </ul>
Design Requirements (\$257.70-.74)	<ul style="list-style-type: none"> <li>Composite liners (geomembrane over compacted clay) are required for all new SI's and landfills, but alternative liners are allowed if equivalent performance can be demonstrated.</li> <li>Existing SI's that do not have a liner meeting the demonstration requirements of §257.71(a) and do not meet groundwater protection standards must close in 6 months.</li> <li>Periodic Structural Integrity testing is required for all SI's that are not incised.</li> <li>Emergency Action Plans (EAPs) are required for "High" or "Significant" Hazard Potential SI's).</li> <li>Certification by 'qualified professional engineer' that the design and construction of any CCR unit meets the requirements of the Rule is required.</li> </ul>	<ul style="list-style-type: none"> <li><b>18 months</b> to document whether CCR unit is either a lined or an unlined CCR impoundment.</li> <li><b>8 months</b> to install permanent marker locating the CCR unit.</li> <li><b>18 months</b> to compile history of construction [§257.73(c)(1)], complete hazard potential classification [§257(a)(2)], conduct initial structural stability assessment [ §257(d)], and conduct initial safety factor assessment [§257.73(e)].</li> </ul>
Operating Requirements (\$257.80-84)	<ul style="list-style-type: none"> <li>All CCR Units must prepare and implement fugitive dust control plans</li> <li>CCR Landfills must develop run-on and run-off controls for 24-hour, 25-year storm event; CCR SI's must demonstrate hydrologic and hydraulic capacity for the design flood (which is the probable maximum flood for high hazard potential CCR SI's, less for lower hazard SI's.</li> <li>Weekly visual inspections, monthly instrumentation inspections, and annual inspection reports are required for CCR Landfills and SI's. Structural integrity requirements must be met for all SI's.</li> </ul>	<ul style="list-style-type: none"> <li><b>6 months</b> to prepare initial CCR fugitive dust control plan, <b>20 months</b> to prepare initial annual CCR fugitive dust control report.</li> <li><b>18 months</b> to prepare initial run-on and run-off control plan for CCR landfills and initial inflow design flood control system plan for CCR SI's.</li> <li><b>6 months</b> to initiate inspections and <b>9 months</b> to complete initial inspections.</li> </ul>
Groundwater Monitoring and Corrective Action (\$257.90-98)	<ul style="list-style-type: none"> <li>Active, existing SI's and landfills must develop groundwater monitoring systems that will "...ensure detection of groundwater contamination in the upper aquifer" and have results reported annually by 31 January.</li> <li>Inactive SI's that close within 36 months of the publication date are exempt from all other closure requirements.</li> <li>A public meeting is required prior to remedy selection for CCR units in corrective action.</li> <li>Sites that have exceeded groundwater protection standards must perform assessment monitoring and, if needed, implement corrective action.</li> </ul>	<ul style="list-style-type: none"> <li><b>30 months</b> to install groundwater monitoring system, develop sampling and analysis plan, initiate detection monitoring, and begin evaluating groundwater monitoring data for statistically significant increases over background.</li> <li>For existing CCR units, initial groundwater monitoring and corrective action report due no later than <b>January 31, 2018</b></li> </ul>
Closure Requirements and Post-Closure Care (\$257.100-.104)	<ul style="list-style-type: none"> <li>Existing, unlined SI's not meeting groundwater protection requirements must close within 6 months of such determination, per §257.101(a)(1).</li> <li>Inactive SI's (i.e., which impound water) that dewater and close within 36 months of the publication date are exempt from all other requirements of subpart §257.100.</li> <li>Extensions of the closure duration requirements are available for sites that demonstrate need, in two-year increments up to a maximum of 10 years.</li> <li>Alternative closure durations are available for facilities that cannot obtain alternate disposal capacity, or if the coal-fired boilers at the generating station will be closed within 72 months (if a CCR landfill) or 102 or 162 months (if a &lt;40 acre SI, or a &gt;40 acre SI respectively).</li> <li>Post-closure care is required for 30 years for all CCR units, except clean-closed units and inactive SI's closed under §257.101(a).</li> </ul>	<ul style="list-style-type: none"> <li><b>18 months</b> to prepare written closure and post-closure care plans.</li> <li><b>36 months</b> to dewater and close existing, inactive SI's that impound water.</li> <li>6 months to close existing unlined SI's not meeting groundwater protection requirements.</li> </ul>
Recordkeeping, Notifications, Internet (\$257.105-107)	<ul style="list-style-type: none"> <li>Owners must maintain files of all information required to demonstrate compliance with the CCR Rule for 5 years following the date of each required demonstration.</li> <li>Notifications are required to the State Director for the demonstrations required under the rule.</li> <li>Owners and operators of CCR units must maintain a publicly accessible internet site (CCR website) containing the information specified in §257.107, which includes most of the demonstrations required to show compliance with the CCR Rule.</li> </ul>	<ul style="list-style-type: none"> <li><b>6 months</b> to assemble records required for maintenance at sites.</li> <li><b>6 months</b> to provide the required notifications.</li> <li><b>6 months</b> to establish and populate CCR Website on the owner's publicly accessible website.</li> </ul>

## ABOUT GEOSYNTEC'S CCR EXPERTISE

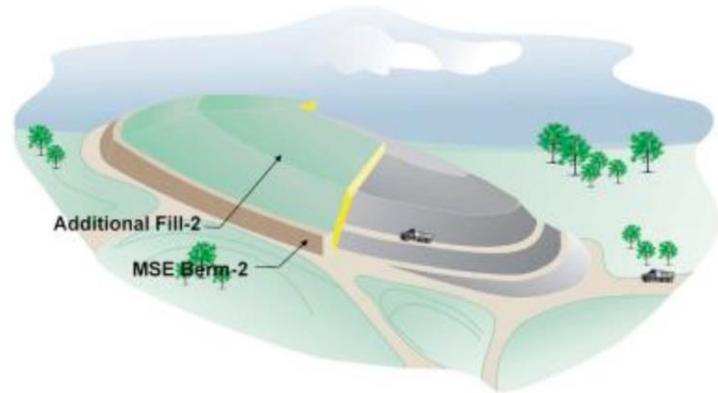
Geosyntec specializes in CCR facility planning, permitting, and design, and has more than 25 years of experience in providing these services to our coal-fired electric power generating sector clients. Over the past year, we have been helping our clients prepare to make the demonstrations needed under the Final CCR Rule and to estimate Asset Retirement Obligations that will result from the rule. We have also been helping our clients make plans for systematic, programmatic transfer of operations from pre-CCR Rule standards to post-CCR Rule standards. We have a reputation for solving problems at the most challenging sites, earned by:

- Providing pioneering design, construction, closure/post-closure, and redevelopment services on more than 2,500 waste management facility projects since 1983;
- Developing innovative closure, overfill, and remediation designs at over 60 different CCR impoundments in the past 5 years;
- Delivering step-change innovations through the entire cycle of CCR generation, management, and disposal that help our clients' bottom line, as well as the quality of the environment; and
- Developing practice-leadership expertise at transforming CCR management sites for new beneficial uses.

For assistance in meeting your planning, compliance, permitting, and design/construction needs resulting from the CCR Rule, contact us.

## CONTACT INFORMATION

For your current and future CCR needs, contact **Neil Davies** 404.307.2681, **John Seymour** 312.416.3919, **Robby White** 864.283.4755, or **Mike Houlihan** 410.707.8550 or any of our 80 Geosyntec offices on four continents.



## USEFUL LINKS

### EPA prepublication:

[http://www2.epa.gov/sites/production/files/2014-12/documents/ccr\\_finalrule\\_prepub.pdf](http://www2.epa.gov/sites/production/files/2014-12/documents/ccr_finalrule_prepub.pdf)

### Utility Solid Waste Group Resources:

<http://www.uswag.org/About/Pages/Resources.aspx>

### EPA's Steam Electric Power Generating Effluent Guidelines:

<http://water.epa.gov/scitech/wastetech/guide/steam-electric/proposed.cfm>

### General Information from USEPA on Coal Ash Surface Impoundment Assessments, Beneficial Reuse, and Cleanups.

<http://www2.epa.gov/coalash%20>

## COME TALK WITH US

### World of Coal Ash Conference (WOCA)

Nashville, Tennessee  
4-7 May 2015

### ACAA Winter Meeting

Savannah, Georgia  
10-11 February 2015

### USWAG Policy Meetings

Phoenix, Arizona  
19 May 2015

Portland, Oregon  
23 July 2015

Chicago, Illinois  
15 October 2015