



## **ENVIRONMENTAL PROTECTION AGENCY**

### **40 CFR Part 257**

**[EPA–HQ–OLEM–2019–0173; FRL–10005-81-OLEM]**

**RIN 2050-AH11**

### **Hazardous and Solid Waste Management System: Disposal of CCR; A Holistic Approach to Closure Part B: Alternate Demonstration for Unlined Surface Impoundments; Implementation of Closure**

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Proposed rule.

**SUMMARY:** On April 17, 2015, the Environmental Protection Agency (EPA or the Agency) promulgated national minimum criteria for existing and new coal combustion residuals (CCR) landfills and existing and new CCR surface impoundments pursuant to the Resource Conservation and Recovery Act of 1976 (RCRA), as amended. In this action, EPA is proposing procedures to allow facilities to request approval to operate with an alternate liner for existing CCR surface impoundments, two co-proposed options to allow the use of CCR during unit closure, an additional closure option for CCR units being closed by removal of CCR, and requirements for annual closure progress reports. Regarding the options to allow the use of CCR during unit closure, this action serves as a supplemental proposal to a proposed rule issued on March 15, 2018. In that March 2018 proposal, the Agency proposed to allow the continued placement of CCR in units triggered for closure to construct final cover systems provided certain conditions were met.

**DATES:** *Comments.* Comments must be received on or before **[INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**. Under the Paperwork Reduction Act (PRA), comments on the information collection provisions are best assured of consideration if the Office of Management and Budget (OMB) receives a copy of your comments on or before **[INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**. *Public Hearing.* EPA will hold a public hearing on April 9, 2020. Please refer to the **SUPPLEMENTARY INFORMATION** section for additional information on the public hearing.

**ADDRESSES:** You may send comments, identified by Docket ID. No. EPA-HQ-OLEM-2019-0173, by any of the following methods:

- Federal eRulemaking Portal: <https://www.regulations.gov> (our preferred method). Follow the online instructions for submitting comments.
- Mail: U.S. Environmental Protection Agency, EPA Docket Center, Docket ID No. EPA-HQ-OLEM-2019-0173, Mail Code 28221T, 1200 Pennsylvania Avenue NW, Washington, DC 20460.
- Hand Delivery / Courier: EPA Docket Center, WJC West Building, Room 3334, 1301 Constitution Avenue NW, Washington, DC 20004. The Docket Center's hours of operations are 8:30 a.m. – 4:30 p.m., Monday – Friday (except Federal Holidays).

*Instructions:* All submissions received must include the Docket ID No. for this rulemaking. Comments received may be posted without change to <https://www.regulations.gov>, including any personal information provided. For detailed instructions on sending comments and additional information on the rulemaking process, see the “Public Participation” heading of the **SUPPLEMENTARY INFORMATION** section of this document.

EPA will hold a virtual public hearing. EPA will announce further details on the public hearing website (<https://www.epa.gov/coalash>) in advance of the hearing. The hearing will convene at 9:00 a.m. (EST) and conclude at 6:00 p.m. (EST). If necessary, the hearing may go later to accommodate all those wishing to speak. For additional information on the public hearing see the “Public Participation” heading of the **SUPPLEMENTARY INFORMATION** section of this document.

Please note that if this hearing is held at a U.S. government facility, individuals planning to attend the hearing should be prepared to show valid picture identification to the security staff in order to gain access to the meeting room. Please note that the REAL ID Act, passed by Congress in 2005, established new requirements for entering federal facilities. For purposes of the REAL ID Act, EPA will accept government-issued IDs, including drivers’ licenses, from the District of Columbia and all states and territories except from American Samoa. If your identification is issued by American Samoa, you must present an additional form of identification to enter the federal building where the public hearing will be held. Acceptable alternative forms of identification include: federal employee badges, passports, enhanced driver’s licenses, and military identification cards. For additional information for the status of your state regarding REAL ID, go to: <https://www.dhs.gov/real-id-enforcement-briefrequently-asked-questions>. Any objects brought into the building need to fit through the security screening system, such as a purse, laptop bag, or small backpack. Demonstrations will not be allowed on federal property for security reasons.

**FOR FURTHER INFORMATION CONTACT:** For questions concerning this proposed rule, contact Jesse Miller, Office of Resource Conservation and Recovery, Materials Recovery and Waste Management Division, Environmental Protection Agency, 1200 Pennsylvania Avenue

NW, MC: 5304P, Washington, DC 20460; telephone number: (703) 308-1180; email address: Miller.Jesse@epa.gov. For more information on this rulemaking please visit <https://www.epa.gov/coalash>.

## **SUPPLEMENTAL INFORMATION:**

### **I. Public Participation**

#### *A. Public hearing*

The EPA will begin pre-registering speakers for the hearing upon publication of this document in the **Federal Register**. To register to speak at the hearing, please use the online registration form available on EPA's CCR website (<https://www.epa.gov/coalash>) or contact the person listed in the **FOR FURTHER INFORMATION CONTACT** section to register to speak at the hearing. The last day to pre-register to speak at the hearing will be April 7, 2020. On April 6, 2020, the EPA will post a general agenda for the hearing on EPA's CCR website (<https://www.epa.gov/coalash>).

The EPA will make every effort to follow the schedule as closely as possible on the day of the hearing; however, please plan for the hearings to run either ahead of schedule or behind schedule. Additionally, requests to speak will be taken the day of the hearing according to the procedures specified on EPA's CCR website (<https://www.epa.gov/coalash>) for this hearing. The Agency will make every effort to accommodate all speakers who arrive and register, although preferences on speaking times may not be able to be fulfilled.

Each commenter will have 5 minutes to provide oral testimony. The EPA encourages commenters to provide the EPA with a copy of their oral testimony electronically (via email) to the person listed in the **FOR FURTHER INFORMATION CONTACT** section. If EPA is anticipating a high attendance, the time allotment per testimony may be shortened to no shorter

than 3 minutes per person to accommodate all those wishing to provide testimony and have pre-registered. While EPA will make every effort to accommodate all speakers who do not preregister, opportunities to speak may be limited based upon the number of preregistered speakers. Therefore, EPA strongly encourages anyone wishing to speak to preregister. Participation in the virtual public hearing does not preclude any entity or individual from submitting a written comment.

The EPA may ask clarifying questions during the oral presentations but will not respond to the presentations at that time. Written statements and supporting information submitted during the comment period will be considered with the same weight as oral comments and supporting information presented at the public hearing. Verbatim transcripts of the hearings and written statements will be included in the docket for the rulemaking.

Please note that any updates made to any aspect of the hearing is posted online on EPA's CCR website at <https://www.epa.gov/coalash>. While the EPA expects the hearing to go forward as set forth above, please monitor our website or contact person listed in the **FOR FURTHER INFORMATION CONTACT** section to determine if there are any updates. The EPA does not intend to publish a document in the **Federal Register** announcing updates.

If you require the service of a translator, please pre-register for the hearing and describe your needs by March 26, 2020. If you require special accommodations such as audio description or closed captioning, please pre-register for the hearing and describe your needs by April 2, 2020. We may not be able to arrange accommodations without advanced notice. Registrants should notify the person listed in the **FOR FURTHER INFORMATION CONTACT** section and indicate on the registration form of any such needs when they pre-register to speak.

*B. Docket*

The EPA has established a docket for this action under Docket ID No. EPA-HQ-OLEM-2019-0173. The EPA has previously established a docket for the April 17, 2015, CCR final rule (80 FR 21302) under Docket ID No. EPA-HQ-RCRA-2009-0640, and a docket for proposed amendments to the 2015 CCR rule (also known as the Phase One proposed rule) under Docket ID No. EPA-HQ-OLEM-2017-0286. All documents in the docket are listed in the <https://www.regulations.gov> index. Publicly available docket materials are available either electronically at <https://www.regulations.gov> or in hard copy at the EPA Docket Center. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding holidays. The telephone number for the Public Reading Room is (202) 566-1744, and the telephone number for the EPA Docket Center is (202) 566-1742.

*C. Written comments*

Submit your comments, identified by Docket ID No. EPA-HQ-OLEM-2019-0173, at <https://www.regulations.gov> (our preferred method), or the other methods identified in the **ADDRESSES** section. Once submitted, comments cannot be edited or removed from the docket. The EPA may publish any comment received to its public docket. Do not submit electronically any information you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. The EPA will generally not consider comments or comment contents located outside of the primary submission (i.e., on the web, cloud, or other file sharing system). For additional submission methods, the full EPA public comment policy, information about CBI or multimedia submissions, and general

guidance on making effective comments, please visit <https://www.epa.gov/dockets/commenting-epa-dockets>.

#### *D. Submitting CBI*

Do not submit information that you consider to be CBI electronically through <https://www.regulations.gov> or email. Send or deliver information identified as CBI to only the following address: ORCR Document Control Officer, Mail Code 5305-P, Environmental Protection Agency, 1200 Pennsylvania Avenue, NW, Washington, DC 20460; Attn: Docket ID No. EPA-HQ-OLEM-2019-0173.

Clearly mark the part or all of the information that you claim to be CBI. For CBI information in a disk or DC-ROM that you mail to the EPA, mark the outside of the disk or CD-ROM as CBI and then identify electronically within the disk or CD-ROM the specific information that is claimed as CBI. In addition to one complete version of the comment that includes information claimed as CBI, a copy of the comment that does not contain the information claimed as CBI must be submitted for inclusion in the public docket. If you submit a CD-ROM or disk that does not contain CBI, mark the outside of the disk or CD-ROM clearly that it does not contain CBI. Information marked as CBI will not be disclosed except in accordance with procedures set forth in 40 Code of Federal Regulations (CFR) part 2.

## **II. General Information**

### *A. Does this action apply to me?*

This rule applies to all CCR generated by electric utilities and independent power producers that fall within the North American Industry Classification System (NAICS) code 221112 and may affect the following entities: electric utility facilities and independent power producers that fall under the NAICS code 221112. This discussion is not intended to be

exhaustive, but rather provides a guide for readers regarding entities likely to be regulated by this action. This discussion lists the types of entities that EPA is now aware could potentially be regulated by this action. Other types of entities not described here could also be regulated. To determine whether your entity is regulated by this action, you should carefully examine the applicability criteria found in § 257.50 of title 40 of the Code of Federal Regulations. If you have questions regarding the applicability of this action to a particular entity, consult the person listed in the **FOR FURTHER INFORMATION CONTACT** section.

*B. What action is the agency taking?*

EPA is proposing to amend the regulations governing the disposal of CCR in landfills and surface impoundments finalized in the April 15, 2015 publication of the CCR rule (2015 CCR rule). Specifically, the Agency is proposing revisions to the 2015 CCR rule, including: procedures to allow facilities to request approval to use an alternate liner for CCR surface impoundments; two co-proposed options to allow the use of CCR during unit closure; an additional closure option for CCR units being closed by removal of CCR; and requirements for annual closure progress reports.

In this proposal, EPA is not reconsidering, proposing to reopen, or otherwise soliciting comment on any other provisions of the final CCR rule beyond those specifically identified in this proposal. The EPA will not respond to comments submitted on any issues other than those specifically identified in this proposal and they will not be considered part of the rulemaking record.

*C. What is the EPA's authority for taking this action?*

These regulations are established under the authority of sections 1008(a), 2002(a), 4004, and 4005(a) and (d) of the Solid Waste Disposal Act of 1970, as amended by the Resource

Conservation and Recovery Act of 1976 (RCRA), as amended by the Hazardous and Solid Waste Amendments of 1984 (HSWA) and the Water Infrastructure Improvements for the Nation (WIIN) Act of 2016, 42 U.S.C. 6907(a), 6912(a), 6944, and 6945(a) and (d).

*D. What are the incremental costs and benefits of this action?*

This action is expected to result in net cost savings amounting to between \$ 41 million and \$ 138 million per year when discounting at 7%. Further information on the economic effects of this action can be found in Unit V of this preamble.

### **III. Background**

On April 17, 2015, EPA finalized national minimum criteria for the disposal of CCR as solid waste under Subtitle D of the Resource Conservation and Recovery Act (RCRA) in a final rule entitled “Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities” (80 FR 21302) (2015 CCR rule). The 2015 CCR rule regulates existing and new CCR landfills and existing and new CCR surface impoundments and all lateral expansions of CCR units. It is codified in subpart D of part 257 of Title 40 of the Code of Federal Regulations. The criteria consist of location restrictions, design and operating criteria, groundwater monitoring and corrective action requirements, closure and post-closure care requirements, and record keeping, notification and internet posting requirements. The 2015 CCR rule also required any existing unlined CCR surface impoundment that is contaminating groundwater above a regulated constituent’s groundwater protection standard to stop receiving wastes and either close or retrofit, except in certain circumstances. This closure requirement applied only to “unlined” CCR surface impoundments, while units with either a composite liner, an alternative composite liner, or a compacted soil liner (typically a clay liner) that met the requirements of § 257.71(a) were allowed to operate indefinitely.

The rule was challenged by several parties, including a coalition of regulated entities and a coalition of environmental organizations (“Environmental Petitioners”). Environmental Petitioners raised one challenge that is relevant to this proposed rule: they challenged the provision that allowed existing, unlined surface impoundments to continue to operate until they exceeded the groundwater protection standard. 40 CFR § 257.101(a)(1). They contended that EPA failed to show how continued operation of unlined impoundments met RCRA’s baseline requirement that any solid waste disposal site pose “no reasonable probability of adverse effects on health or the environment.” 42 U.S.C. § 6944(a).

The U.S. Court of Appeals for the D.C. Circuit issued its decision on August 21, 2018. The Court upheld most of the rule but ruled for the environmental petitioners on this claim. The court held that EPA acted “arbitrarily and capriciously and contrary to RCRA” in failing to require the closure of unlined surface impoundments and in classifying so-called “clay-lined” impoundments as lined. The court ordered that these provisions be vacated and remanded back to the Agency. *Utility Solid Waste Activities Group, et al. v. EPA*, 901 F.3d 414, 449 (D.C. Cir. 2018). This decision is referred to as the ‘USWAG decision’ in this proposal.

#### **IV. What Is EPA Proposing to Amend?**

This action proposes to create a process for EPA or the Participating State Director to approve an alternate liner for CCR surface impoundments, to allow the use of CCR during closure of a CCR unit, to establish an additional closure option for CCR units being closed by removal of CCR, and to establish requirements for annual closure progress reports.

##### *A. Alternate liner demonstration*

The 2015 CCR rule required that all existing unlined CCR surface impoundments that caused groundwater concentrations to exceed associated groundwater protection standards

(GWPS) must stop receiving waste and either retrofit or close. In the 2015 CCR rule, the term “unlined” CCR surface impoundment included any unit not constructed with one of the following types of liners: (1) composite liner; (2) alternative composite liner; or (3) liner consisting of a minimum of two feet of compacted soil with a hydraulic conductivity of no more than  $1 \times 10^{-7}$  cm/s.<sup>1</sup> See § 257.71(a). On the other hand, lined CCR surface impoundments (as defined in the CCR regulations) that impact groundwater above the specified GWPS are not required to close and could continue operations while corrective action was performed, and the source of the leak was addressed.

On August 21, 2018, the U.S. Court of Appeals for the District of Columbia Circuit found in the *USWAG* decision that the rulemaking record did not support the conclusion that the 2015 CCR rule would adequately address the adverse effects posed by clay-lined CCR surface impoundments. Therefore, the court vacated the provisions that treated clay-lined surface impoundments differently than unlined impoundments, with the result that such units are now required to either retrofit or close. *USWAG*, 901 F.3d at 449 . In response to this ruling, EPA received reports from industry groups and individual companies claiming that some surface impoundments that would now be required to retrofit or close have an engineered liner or underlying soils that are equivalent or even superior to the performance of the liners required by the 2015 CCR rule.<sup>2</sup> EPA agrees it is possible for individual impoundments that are not lined with either a composite liner or alternative composite liner (as those terms are defined in the CCR regulations) to still be protective of human health and the environment. This is possible if the effective hydraulic conductivity of the liner and underlying soil is so low that, even if leachate migrates from the unit, the volume of leachate that can be transmitted to the underlying aquifer

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<sup>1</sup> The liner terms “compacted soil” and “clay-lined” are used interchangeably in this preamble discussion.

<sup>2</sup> These reports are available in the docket to this rulemaking.

over time is so small that it will not adversely affect ground water. Therefore, EPA is proposing procedures at § 257.71(d) to allow facilities to submit an alternate liner demonstration to EPA that would provide a sufficient record to support the continued operation of individual unlined surface impoundments that can be demonstrated to pose no reasonable probability of adverse effects on human health or the environment.

The current self-implementing regulations limit the ability of owners and operators to make a site-specific demonstration that the design of a particular impoundment is equivalent to the composite liner system in §§ 257.71(c) and 257.72 (c); consequently, a regulatory revision would be necessary. However, the Agency's current record would not support conclusions on whether any individual impoundment has a low enough effective hydraulic conductivity to be protective of human health and the environment, were the unit allowed to continue operations. This would require site-specific data, such as liner performance and surrounding hydrogeologic characterization information. The data available for the 2014 Risk Assessment consisted of distributions compiled at various geographic scales (e.g., local, regional, national). These data were sufficient for that assessment because the purpose was to identify the potential for risk at a national scale; however, the same data could not be used to draw conclusions about any individual impoundment. While reports submitted to EPA by industry since finalization of the 2015 CCR rule have provided valuable information about the characteristics of impoundments anticipated to perform equivalent to the liner system required by the 2015 CCR Rule, these reports generally did not include the type or specificity of data needed to support conclusions about individual impoundments.

Therefore, owners and operators who believe individual surface impoundments meet the § 4004(a) standard and should be allowed to continue operation as designed must provide EPA

or a Participating State Director with the site-specific data and analysis necessary to demonstrate this fact. EPA is proposing a process for those facilities to notify and submit the required information and technical data to make such a demonstration. Based on the available groundwater monitoring and location restriction data posted on facilities' websites, EPA believes that it is likely only a small fraction of non-composite lined surface impoundments currently in operation will be able to apply successfully for this demonstration.

EPA is proposing to establish a two-step process: requiring an initial application and then the submission of the alternative liner demonstration. The application step is designed to ensure that a unit meets minimum requirements before embarking on a comprehensive alternate liner demonstration. The owner or operator must first submit a letter to EPA, no later than 30 days after the effective date of a final rule, declaring their intention to submit a demonstration under this provision. Along with the letter, the owner or operator must submit information to EPA documenting that the facility is in compliance with applicable requirements in 40 CFR part 257 subpart D, including the location restrictions. A copy of the letter and all associated documentation must be simultaneously posted to the facility's CCR public website.

Furthermore, the facility must show that the existing network of monitoring wells is sufficient to capture any releases based on direction of flow, well location, screening depth and other relevant factors, including well construction logs and a sufficient number of diagrams to depict depth to groundwater, the potentiometric surface, and the anticipated direction(s) of groundwater flow across the site (multiple diagrams may be necessary if the direction of flow is affected by seasonal, tidal or other influences)<sup>3</sup>, and that there is no indication from groundwater monitoring data that the unit has or will adversely affect groundwater (i.e., no statistically

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<sup>3</sup> This diagram should also include all the water table measurements reported from a standard datum, a map scale, and a legend of any important map symbols.

significant increases (SSI) of Appendix IV constituents above relevant GWPS), including documentation of the most recent statistical tests conducted and the rationale for the methods used in these comparisons. Facilities that have improperly placed groundwater monitoring wells or conducted improper statistical analysis of groundwater monitoring results would not be eligible to apply or submit a demonstration. Failure to remain in compliance with all provisions of 40 CFR part 257 subpart D (or any subsequent revisions or permits issued) may be cause to deny the facility's demonstration. EPA will evaluate the information submitted and determine whether or not the surface impoundment is eligible to submit an alternate liner demonstration. EPA will notify the facility of its determination as expeditiously as possible. The facility must also post EPA's determination to its CCR public website. If the application is found by EPA to lack necessary information or specificity, the facility may have an opportunity to resubmit with the required information. However, no resubmissions will be accepted after the initial application deadline, which is the date 30 days after the effective date of a final rule.

In order for an unlined surface impoundment to continue to operate, EPA is proposing that the owner or operator demonstrate that continued operation of the unit would pose no reasonable probability of adverse effects to human health or the environment in the future. This would require that, at a minimum, the owner or operator demonstrate that the surface impoundment has not and will not result in groundwater concentrations above relevant GWPS at the unit boundary (health-based or background, whichever is higher). This is the standard used to trigger corrective action for lined surface impoundments and is considered equally appropriate in this context. The function of the liner system beneath a surface impoundment is to contain the impounded liquid and prevent it from migrating through the subsurface and into the groundwater at a rate that would adversely affect groundwater quality. As designed, the geosynthetic liners

required by the 2015 CCR rule would prevent any release of leachate to the subsurface. In contrast, soil-based liners and the underlying soil are permeable by nature and so may have greater potential for leachate to migrate from the unit over time. Thus, if these alternate units together with the surrounding subsurface environment cannot be reasonably anticipated to prevent leakage to a degree that prevent adverse effects to groundwater (i.e., trigger corrective action), then the design and environmental setting of these units cannot be considered equivalent to a lined unit.

#### *Required Lines of Evidence*

Both the amount of site-specific data and the complexity of the analyses necessary for a demonstration will vary based on the size of the unit, the type of engineered liner present (or lack thereof), heterogeneity of site geology, and other site-specific factors. Yet there are certain lines of evidence that would need to be incorporated into any demonstration. EPA identified these lines of evidence based on the understanding that the low effective hydraulic conductivity of the liner and surrounding soils is the primary mechanism that will limit release and transport of contaminants. These are characterization of site hydrogeology and characterization of potential infiltration through the liner and underlying soils. However, the more site-specific data that can be incorporated into a demonstration and the greater the characterization of the associated uncertainties, the greater the confidence in the ultimate conclusions and the greater likelihood of approval.

#### *Line of Evidence #1: Characterization of Site Hydrogeology*

The first line of evidence that EPA is proposing to require as part of any demonstration is a characterization of the site-specific hydrogeology that surrounds the surface impoundment. Some surface impoundments are located on soils that are expected to have extremely low

hydraulic conductivity. However, there are concerns that heterogeneity within these soils may result in preferential flow pathways that effectively negate the low conductivity of the remaining soil. For example, many electric utilities are located in close proximity to bodies of water. The flow path of these water bodies are likely to have shifted over geologic time, which could result in complex depositional environments with interconnected lenses of sand. Therefore, the purpose of this line of evidence is to define the variability of the soil around the impoundment and to ensure that this variability is reflected in any analysis of contaminant fate and transport.

Traditional geologic mapping that relies primarily on the Unified Soil Classification System (USCS) has been found to underestimate the interconnectedness of such deposits, as the USCS was developed for engineering or geotechnical purposes with little emphasis on the identification of depositional environments and the resulting distribution of different types of sediments. In 2017, EPA compiled a practical guide on the use of sequence stratigraphy and facies models to better characterize subsurface heterogeneity.<sup>4</sup> The cited guide is intended to help facilities better define groundwater flow paths and preferential contaminant migration pathways, identify data gaps in the site characterization, determine appropriate locations for wells, and determine appropriate well construction design (e.g., screen intervals).

At a minimum, documentation for this line of evidence would need to include measurements of the hydraulic conductivity in the uppermost aquifer measured from existing monitoring wells and discussion of the methods used to obtain these measurements; conceptual site models with cross-sectional depictions of site stratigraphy that include the relative location of the impoundment (with depth of ponded water noted), monitoring wells (with screening depths noted), and all other subsurface samples used in the development of the conceptual

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<sup>4</sup> Best Practices for Environmental Site Management: A Practical Guide for Applying Environmental Sequence Stratigraphy to Improve Conceptual Site Models (EPA/600/R-17/293)

models;<sup>5</sup> a narrative description of the site geological history (e.g., the conditions under which nearby soil layers formed; the potential for any features that may result in preferential flow, such as buried stream beds; the potential location and size of such features); and all of the data used in the conceptual site model summarized into easily readable graphs or tables (e.g., grain size logs, gamma logs). The types and amount of data necessary to adequately characterize site stratigraphy will vary based on the size of the impoundment, the complexity of the subsurface environment, and whether the soil underlying the impoundment will be relied upon to limit contaminant release and migration.<sup>6</sup> There are a number of methods available that can provide useful data at the necessary spatial resolution, such as direct-push logging (e.g., cone penetration test) and borehole geophysical logging. Some data may already be available from previous investigations, such as the installation of monitoring wells or other subsurface evaluations, but it is likely that additional data will be necessary to provide adequate coverage of the subsurface. Samples must be located around the perimeter of the impoundment at a spatial resolution sufficient to ensure that any regions of substantially higher conductivity have been identified. EPA recommends that initial samples be collected at distances no greater than 200 ft apart in low-conductivity soils.<sup>7</sup> If there is indication from the site history, collected soil samples, or other sources that high-conductivity deposits may be present at widths narrower than 200 ft, then even finer sample spacing may be warranted. EPA also recommends that samples extend down to the top of the natural water table or at least 20 ft beneath the bottom of the nearest water body

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<sup>5</sup> This diagram should also include a scale and a legend of any important symbols, such as different soil types and the top of the water table.

<sup>6</sup> If an engineered liner is the primary mechanism intended to limit contaminant release and migration (i.e., the soil beneath the impoundment has substantially higher hydraulic conductivity), then variability within the underlying soil will not exert as great an influence on long-term transport.

<sup>7</sup> This distance reflects recommendations by the U.S. Department of Transportation for the characterization of unknown subsurface environments in Geotechnical Aspects of Pavements (FHWA NHI-05-037).

(to identify potential for upwelling), whichever is greater, to ensure that any potential preferential flow pathways have been identified. The demonstration must substantiate why the number and types of samples collected are sufficient to capture any heterogeneity in the subsurface and why the data used to estimate contaminant fate and transport through the subsurface are representative of the variability identified. If regions of higher conductivity are present around the site, the potential impacts of preferential flow on groundwater concentrations will need to be considered in the demonstration. Furthermore, if regions of preferential flow are identified in otherwise low-conductivity soils that are not adequately captured by the existing monitoring well network, then re-evaluation of the placement of monitoring wells around the unit boundary would be warranted to address these gaps.

*Line of Evidence #2: Potential for Infiltration*

The second line of evidence that EPA is proposing to require as part of any demonstration is a characterization of the potential for infiltration through liners and underlying soils that control release and transport of leachate. The purpose of this line of evidence is to provide a reasonable estimate of the rate at which contaminants may be released and transported to groundwater over time. One approach would be to measure actual infiltration from underneath the unit. However, reliable collection of in-situ data may be difficult in low-conductivity soils or may disturb the integrity of the impoundment. Therefore, it may be more practical to rely on analysis conducted in a laboratory setting for soil-based liners and underlying soil, but it is critical that any laboratory tests are designed to reflect the conditions at the specific site in order to provide useful data. For example:

- Tests used to estimate hydraulic conductivity (e.g., ASTM D 5084) need to use a permeant liquid that reflects the composition of the infiltrating impoundment porewater.

CCR porewater can have both extreme pH and high salinity.<sup>8</sup> Extreme pH may dissolve key components of the soil structure, while high salinity may result in interlayer shrinkage of clays, both of which can result in higher hydraulic conductivity. Use of a non-representative liquid (e.g., deionized water) as the permeant liquid or pre-hydrating the clay may actually decrease the conductivity of clay through swelling and result in a lower measured conductivity than would actually occur in the field.

- Preparation of samples intended to reflect compacted soil liners for testing may result in the soil becoming temporarily less permeable as a result of thixotropic behavior.

Thixotropic materials, such as certain clays, become more fluid when agitated and the resulting dispersed structure can make it more difficult for water to infiltrate. However, the material will gradually become more solid and permeable as it is allowed to rest.

Failure to allow such samples to rest for sufficient periods prior to testing could result in a lower measured conductivity than would actually occur in the field.

- Preparation for samples intended to reflect soils beneath the impoundment for testing may result in the soil becoming permanently less permeable by disturbing the natural structure of the soil and eliminating voids and other features that may act as conduits for infiltration in the field. Methods have been developed to obtain undisturbed soil samples for testing (e.g., ASTM Method #D1587-74). Failure to preserve the structural integrity of such samples could result in a lower measured conductivity than would actually occur in the field.

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<sup>8</sup> The pH of CCR wastes can range from around 3 to 13. Although the total pH range is wide, the majority of wastes are more basic, with a median value somewhere between 10 and 11. CCR wastes managed with coal refuse can be substantially more acidic. US EPA, “Human and Ecological Risk Assessment of Coal Combustion Residuals”, December 2014.

- The timeframe over which samples are tested would need to be adequate to capture long-term behavior of the liner. Some tests for hydraulic conductivity stop after the inflow and outflow rates equilibrate or after a specified volume of water has passed through the soil. However, these metrics may not be sufficient to capture the reactions that can occur between the soil and liquid (e.g., exchange of adsorbed cations). Some metrics that more directly address the chemistry of the soil-leachate interactions include equilibration of electrical conductivity and pH. Failure to run the test on a timeframe relevant to the chemical reactions of interest may result in a lower measured conductivity than would actually occur in the field.

Even when site conditions are reflected in the design of laboratory tests, the resulting data are an approximation of real-world performance. Therefore, the demonstration would need to include a thorough discussion of how the laboratory tests were designed and why the data relied upon in the demonstration are believed to be representative of both long-term leaching conditions and natural variability at the site.

In instances where a non-soil liner is present that does not meet specifications in the 2015 CCR Rule (e.g., 30 mil geomembrane), the liner may not be as sensitive to the chemical composition of the leachate present and performance may depend more on the quality of production and installation. These types of liners are designed to prevent migration of leachate from the unit, but may be more prone to damage during construction and operation. In these instances, laboratory tests of liner samples may not provide representative data. Leakage rates from these types of liners might be better captured through predictive modeling that considers the range of possible construction quality and leakage scenarios based on empirical performance

data, similar to the approach outlined by EPRI.<sup>9</sup> However, the demonstration would need to include documentation to support the range of leakage rates used (e.g., a liner construction quality assurance report that demonstrates the liner was installed with good soil contact). Any soil-based components of the liner system would require the same considerations previously described.

#### *Incorporation of Lines of Evidence into Demonstration*

The required lines of evidence will be incorporated into the final demonstration because each one provides different site-specific data that is necessary to conclude whether exceedances of GWPS have occurred or may occur at some point in the future. Depending on the complexity of a particular site, the data may be applied to a probabilistic fate and transport model similar to that used in the *2014 Human and Ecological Risk Assessment of Coal Combustion Residuals*<sup>10</sup> or 2019 EPRI *Model Evaluation of the Relative Performance of Alternative Liners*.<sup>11</sup> If a site is less complex (e.g., homogenous low-conductivity soil), then more deterministic calculations may be sufficient to demonstrate that no adverse effects will occur. Regardless of the approach used, all of the data incorporated into the calculations must be documented and justified.

In some instances, direct infiltration to groundwater may not be the sole mechanism by which unpermitted release of leachate from an impoundment occurs. It is possible that additional, site-specific release pathways may exist for some unlined units. In particular, if an unlined impoundment extends above grade, is adjacent to a water body and is underlain by a low-conductivity soil, there may be lateral transport from the impoundment directly into the

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<sup>9</sup> Electric Power Research Relative Liner Performance for Coal Combustion Product Management Sites: Conceptual Review and Model Evaluation for Surface Impoundments. EPRI, Palo Alto, CA: 2019. 3002016498.

<sup>10</sup> US EPA, “Human and Ecological Risk Assessment of Coal Combustion Residuals”, December 2014.

<sup>11</sup> EPA reviewed the analyses described in this document and provided a summary of additional considerations that may affect model results in a separate memo titled, *Review of Analyses in EPRI White Paper: Model Evaluation of Relative Performance of Alternative Liners*, included in the docket to this proposed rule.

water body driven in part by the hydrostatic head within the impoundment. If such conditions are present at a site, then the demonstration would also need to address whether such releases may occur and the potential adverse effects on health or the environment associated with these pathways. The same types of data collected to evaluate releases to groundwater should also support evaluation of such pathways. However, incorporation of other lines of evidence may also be warranted.

#### *Submission of Alternate Liner Demonstration and Approval Process*

EPA is proposing that the owner or operator must submit the facility's alternate liner demonstration to EPA no later than one year after the deadline for submission of the initial application (i.e., 13 months after the effective date of a final rule), with all the data, analyses and conclusions certified by a professional engineer. If the demonstration is found by EPA to lack necessary information or specificity, EPA will notify the facility as expeditiously as possible and the facility may have an opportunity to resubmit with the required information. However, no resubmissions will be accepted after the deadline. The owner or operator must post the alternate liner demonstration to the facility's CCR public website one month after submittal to EPA. The proposed timeframe for completion of the demonstrations is considered appropriate because 1) there is currently no evidence that units that can clear the initial application are leaking or have adversely affected surrounding media, 2) it can take some time to collect and analyze samples to provide the types of detailed data required for the demonstration and 3) the data collected in support of these demonstrations will improve the understanding of site hydrogeology and help to identify any gaps that currently exist in the monitoring and remedial framework at these sites (e.g., preferential flow pathways). Therefore, it is possible that these demonstrations can identify leaks that might have been missed for some time and result in greater long-term protection at the

site. It is possible that analysis of some low conductivity soils may take a considerable amount of time.<sup>12</sup> If it is not feasible to complete the demonstration within the timeframe specified above because of analytical limitations, the facility must submit a request for an extension no later than 90 days before the deadline for submission of the demonstration that includes a summary of the data that has been analyzed to date for the samples responsible for the delay and an alternate timeline for completion that has been certified by the laboratory. EPA will evaluate the information submitted and determine whether or not the duration of the requested extension is acceptable.

EPA will review each submitted demonstration and post a tentative approval or denial for public comment on EPA's website. After reviewing the comments, EPA will then take final action on each submitted demonstration. If a demonstration is denied, the owner or operator must cease receipt of waste and initiate closure within six months of the denial. If a facility needs to build alternate capacity, they may do so in accordance with the provisions in § 257.103, which have been proposed in a separate rulemaking.<sup>13</sup> If at any point in the process, it is clear that all conditions have not been met, EPA can without further notice or process deny the owner or operator's request; this may include any noncompliance with the CCR regulations, such as improper groundwater well placement

#### *Duration of Alternate Liner Demonstration*

The approved demonstration will be effective for the remaining active life of the unit since the demonstration must show that the design of the surface impoundment would not result

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<sup>12</sup> Laboratory analysis of the hydraulic conductivity of some clay have taken nearly 400 days to reach equilibrium, as discussed in *Hydraulic Conductivity of Compacted Soil Liners Permeated with Coal Combustion Product Leachates* (Benson, 2018).

<sup>13</sup> See proposed rule titled "Hazardous and Solid Waste Management System: Disposal of Coal Combustion Residuals from Electric Utilities; A Holistic Approach to Closure Part A: Deadline to Initiate Closure"; 84 FR 65941 (December 2, 2019).

in exceedances of the GWPS at any point in the future. Groundwater monitoring will continue at the site as required by part 257 to ensure that the unit continues to perform as expected. If groundwater monitoring detects an SSI of any Appendix III constituents, the facility must either complete an alternate source demonstration or initiate assessment monitoring pursuant to §257.95. To ensure that no exceedances of GWPS will occur in the future, facilities that trigger assessment monitoring must also conduct intra-well analyses on each downgradient well as part of subsequent groundwater monitoring reports to identify any trends of increasing concentrations. If there is evidence that the unit may exceed GWPS before source control measures will be put in place (e.g., dewatering, impermeable cap, clean closure), then the authorization would be reconsidered.

EPA solicits comment on the appropriateness of the requirements included in this proposal. EPA also solicits comment on whether there are any additional lines of evidence or specific types of data that should be included as part of any demonstration.

*B. Use of CCR in units subject to closure for cause*

The CCR regulations require certain CCR surface impoundments and CCR landfills to cease placing CCR and non-CCR wastestreams into the unit and initiate closure<sup>14</sup> of the unit under specified time frames. See § 257.101. On March 15, 2018, EPA proposed to revise the current regulations to allow the use of CCR during certain closure situations for CCR units closing for cause pursuant to § 257.101. 83 FR 11584, 11605. The March 2018 proposed approach would have allowed the continued placement of CCR in units triggered for closure to construct final cover systems under four conditions: (1) Only CCR generated on-site may be

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<sup>14</sup> The CCR regulations provide the owner or operator the option to retrofit a CCR unit in certain situations in lieu of closing the unit. See § 257.101(a). The retrofit provisions are codified in § 257.102(k). This action would not be applicable to CCR units that are retrofitted.

used in the construction of the cover system; (2) CCR may be used exclusively for the purposes of grading and contouring of the final cover system; (3) CCR must be placed within the vertical plane of the boundary of the unit; and (4) CCR must be placed at either no steeper than a 5 percent grade or at a steeper grade, as determined by the Director of an approved program based on a stability analysis. As stated in the March 2018 proposal, the Agency expected that facilities taking advantage of the proposed revision would complete closure more quickly and accordingly realize reduced risks more quickly. *Id.*

The Agency also explained in March 2018 proposal that the current CCR regulations expressly prohibit “placing CCR” in a CCR unit required to close for cause pursuant to § 257.101 after dates established in the CCR regulations.<sup>15</sup> EPA further explained that the CCR regulations do not distinguish between placement that might be considered beneficial use and placement that might be considered disposal. All further placement of CCR into the unit—whether for beneficial use or disposal—is prohibited once the provisions of § 257.101 are triggered. *Id.*

In response to the March 2018 proposal, EPA received comments in three general areas. First, the Agency received comments generally opposing continued placement of CCR in units subject to closure for cause. Several commenters expressed concern regarding the potential risks associated with continued placement of large volumes of CCR in a unit determined to be deficient because the proposal placed no limits on the volumes of CCR that could be used. These commenters also expressed concern that the proposed approach would not prevent contact between the placed CCR and water, which would lead to leaching of contaminants from the unit. In addition, these commenters stated that the proposal placed no limitations on where units using

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<sup>15</sup> As EPA stated in the March 2018 proposal, the CCR regulations do not restrict further placement or use of CCR when the unit is not subject to closure for cause pursuant to § 257.101. 83 FR at 11605.

CCR for grading and contouring could be located (i.e., no location restrictions on the CCR unit itself). The second area of comments were from entities that generally supported the proposed approach to allow continued placement of CCR for purposes of grading and contouring, but they recommended modifications to the proposed approach. These commenters stated that the proposed conditions of the exemption were too restrictive and therefore should be removed from any final action because the conditions are unnecessary and actually will impede the rapid closure of CCR units. The final area of comments concerned EPA's statements in the March 2018 proposed rule about further placement of CCR in a unit after the waste placement prohibition deadline in § 257.101 is triggered. These commenters objected to EPA's interpretation that the current CCR regulations prohibit placement of CCR for beneficial use in a unit closing pursuant to § 257.101.

After considering the issues raised by these commenters, the Agency is considering two additional options to allow use of CCR in surface impoundments and landfills closing for cause and is co-proposing both alternatives. Under the first proposal, the Agency would retain the prohibition on any further addition of CCR in a closing unit after the deadline in § 257.101 except as authorized under the following procedures to allow facilities to place CCR in a closing unit for the purpose of supporting closure of the CCR unit. These procedures would require the owner or operator of the unit to submit the written closure plan to the Administrator or Participating State Director for review and approval demonstrating that such CCR placement would pose no reasonable probability of adverse effects during the period that the unit is being closed and during the post-closure care period. This proposal discusses the information that must be included in the written closure plan and lays out the review and approval process of the closure plan. Under the second proposal, EPA would allow the use of CCR in a unit closing for

cause for the purpose of supporting closure of the CCR unit, provided that such use is beneficial use as defined in the CCR regulations. Finally, this Unit of the preamble also solicits comment on a proposed revision to the alternative final cover system provisions to correct a typographical error.

1. Co-Proposed Option One – Use of CCR during closure of a unit subject to closure for cause under an approved closure plan.

The first co-proposed option would allow the addition of CCR to a CCR surface impoundment closing for cause after the waste placement prohibition deadline provided such placement is conducted under an approved closure plan. This proposed alternative would be implemented as an exemption to the waste placement prohibition deadline specified in § 257.101 and the owner or operator of the CCR unit would need to submit the written closure plan required under § 257.102(b) to the Administrator or Participating State Director for review and approval showing that the use of CCR during closure of unit would pose no reasonable probability of adverse effects during the closure and post-closure care periods. Under this co-proposed option, the approved closure plan would need to demonstrate that: (1) the volume of CCR that would be placed during closure would not exceed the volume of soil or borrow material that otherwise would be used to achieve the subgrade elevations necessary to support the final cover system, thus ensuring such CCR use is not a guise for continued operation of the unit; (2) the time needed to complete closure of the unit when using CCR would not exceed the time needed to close the unit with soil or borrow material, thus ensuring that the unit will be closed no slower than if this CCR placement exemption was not available; (3) the placed CCR would only be used in a unit in compliance with the location restriction for unstable areas at §257.64, thus ensuring any placed CCR will remain in place (i.e., not likely to move, shift, or be

released after placement); (4) the placed CCR would be used in a unit that is in compliance with the closure performance standards applicable to units closing with CCR in place, and that would remain in compliance with those standards even after the additional placement of CCR; (5) the placed CCR would be protected by a final cover system designed and constructed to be no more permeable than the CCR placed in the unit as part of closure, thus preventing lateral releases of CCR leachate from the unit during the post-closure care period; and (6) the additional placement of CCR will not adversely affect compliance with the corrective action remedy requirements, thus ensuring the groundwater cleanup goals are not slowed or delayed.

EPA believes there can be benefits associated with closing units under the conditions prescribed in this proposal. For example, a facility could consolidate the CCR from one or more units into a single unit, even though the receiving unit was subject to closure for cause under § 257.101. Consolidating multiple units into a single unit would result in an overall smaller CCR unit footprint. Closing two 10-acre impoundments by removal of CCR and using the removed CCR for the purpose of achieving subgrade elevations necessary to support the closure and final cover system of a third 35-acre CCR unit is an example of consolidation resulting in a smaller CCR disposal footprint. One environmental benefit of this closure scenario would be the elimination of any long-term threat of impact to groundwater and surface water from 20 acres of land (two 10-acre units) as well as concerns about the long-term performance of a final cover system had these units been closed alternatively with CCR in place. In addition, upon closure of the two 10-acre impoundments, a total of 20 acres of land would become available for other uses. Finally, there may be benefits to allowing an owner or operator to focus their long-term monitoring, care and cleanup obligations on a single unit rather than multiple units.

Under this co-proposed Option One, owners and operators of CCR landfills would not be eligible to place CCR in the unit after the waste placement prohibition deadline. Under § 257.101, CCR landfills are subject to closure for cause only in one situation: when the unit is not able to comply with the location criteria for unstable areas under § 257.64(a). Under the unstable area provisions, the owner or operator must demonstrate 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, or the landfill must close. Given that the owner or operator of the unit is unable to document that the integrity of the structural components (e.g., bottom liners, leachate collection and removal systems, final cover systems) of the unit cannot be ensured due to where it is sited, EPA is proposing that CCR landfills would not be allowed to place additional CCR after the waste placement prohibition date.

a. Contents of the Closure Plan. The Agency is proposing that the owner or operator of the CCR unit would need to submit to the Administrator or Participating State Director a written closure plan for review and approval. The written closure plan would need to demonstrate that the use of CCR during closure (after the waste placement prohibition deadline) would pose no reasonable risk of adverse effects during the closure and post-closure care periods by showing that the placed CCR will remain contained (i.e., isolated) in the unit closed in accordance with the closure performance standards under § 257.102(d) so as to limit contact of the CCR in the unit with water and to prevent releases to the environment, including releases through surface transport by precipitation runoff, releases to soil and groundwater, wind-blown dust, and catastrophic unit failures. EPA believes that units closed consistent with these proposed requirements, which also include volumetric and temporal limits on CCR placement, under a

closure plan approved by the Administrator or Participating State Director would meet the RCRA section 4004(a) protectiveness standard, as explained below.

The Agency has long viewed the placement of liners beneath the waste as a key element in its liquids management strategy.<sup>16</sup> This is because a liner is a barrier technology that prevents or greatly restricts migration of liquids into the ground and groundwater, thereby providing greater assurance of long-term protection during the active life<sup>17</sup> of the unit. After closure of a unit is completed, EPA's stated view is that a properly designed and constructed final cover system becomes the most important feature of the liquids management strategy. This is because the closure requirements require that the final cover system be designed and constructed to provide long-term minimization of the movement of water (e.g., resulting from precipitation) through the final cover system and into the closed unit. The Agency has previously found in the RCRA hazardous waste program for landfills and surface impoundments that where the waste mass lies entirely above the zone of groundwater saturation, a properly designed and maintained final cover system can prevent, for all practical purposes, the entry of water into the closed unit, and thus minimize the formation and migration of leachate from the unit.<sup>18</sup>

In the case of CCR surface impoundments, the Agency recognizes that many of the units that would likely make use of this proposal will be unlined CCR surface impoundments and still in operation, thus raising protectiveness concerns about the continued operation of units not using a barrier technology capable of preventing or greatly restricting the migration of liquids

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<sup>16</sup> For example, under the RCRA subtitle C program for hazardous waste landfills and surface impoundments: 47 FR 32274, 32283 (July 26, 1982).

<sup>17</sup> The "active life" (or "in operation") of a CCR unit is defined in § 253.53 as 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 § 257.102.

<sup>18</sup> US EPA, "Technical Guidance Document: Final Covers on Hazardous Waste Landfills and Surface Impoundments", EPA 530-SW-89-047, July 1989.

into the ground and groundwater. Some operating unlined CCR surface impoundments may also be in contact with the groundwater table. First, this proposal (discussed in Unit IV.B.1 of the preamble) would not change or impact the current requirement that all unlined CCR surface impoundments initiate closure of the surface impoundment by a date certain.<sup>19</sup> Thus, these unlined CCR surface impoundments are on a set path to initiating closure. Second, this proposal would not prolong or extend the time provided in the CCR regulations to complete closure of the unit (i.e., the amount of time the facility is provided to install the final cover system). This is because the proposal would require the owner or operator of the unit to demonstrate in its written closure plan (submitted to EPA or Participating State Director for approval) that the time needed to complete closure of the unit when using CCR as part of closure would not exceed the time needed to close the unit without the proposed exemption (e.g., if the unit was closed alternatively with borrow material). Finally, CCR used to support closure will serve to achieve the subgrade elevations needed to support the final cover system (while also meeting all prescribed closure performance standards specified in § 257.102(d)) and such CCR will not be managed with water or under a hydraulic head, which can promote rapid leaching of contaminants into the ground and groundwater from an unlined unit.

The CCR regulations currently include protective design requirements for final cover systems and closure performance standards when closing a unit with waste in place. As stated in the 2015 CCR final rule, EPA modeled the closure and post-closure care requirements for CCR unit on current requirements that apply to interim status hazardous waste surface impoundments, which are codified in part 265, and on current regulations that apply to municipal solid waste

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<sup>19</sup> In a separate action, EPA is proposing to establish a revised date by which unlined CCR surface impoundments must cease placing CCR and non-CCR wastestreams into the unit and either retrofit or close the unit. This separate proposal was taken following its reconsideration of certain deadlines in the CCR regulations in light of the *USWAG* decision in 2018. See 84 FR 65941 (December 2, 2019).

landfills, which are codified in part 258. See 80 FR 21409 (April 17, 2015). Similar to other RCRA waste program requirements, the CCR regulations currently include detailed technical standards for final cover systems in § 257.102(d)(3) that would apply to units closing under this proposal. In addition, the CCR regulations include several performance standards that are relevant here, including a general performance standard that a facility must meet—i.e., that it has “controlled, minimized or eliminated, 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;...” § 257.102(d)(1)(i). A CCR surface impoundment that extends into the groundwater table will need to include measures to comply with this and other closure performance standards. How any particular unit or facility will meet the performance standards is a site-specific determination that will depend on a number of factual and engineering considerations, such as the hydrogeology of the site, then engineering of the unit, and the kinds of engineering measures available that could be implemented to achieve the closure performance standards. Given the concerns about unlined CCR surface impoundments that may be currently in contact with the groundwater table, the Agency is specifically proposing to require facilities document in the closure plan how the unit will achieve the closure performance standards specified in § 257.102(d). This is discussed in Unit IV.B.1.a.(3) of this preamble.

At a minimum the submittal would need to include the following additional analyses and documentation in the written closure plan required under § 257.102(b).

(1) *Volumetric and temporal limits on CCR placement.* The Agency is proposing limits on the amount of CCR (as volume) that could be placed in the CCR unit after the waste placement prohibition deadline and a limit on the maximum duration over which this volume of CCR can be placed into the unit. The proposed approach would require the owner or operator

first to estimate the amount of soil or borrow material that would be needed to close the unit under the current regulatory provisions (i.e., no exemption from the waste placement prohibition for the use of CCR is available). This volume should represent the minimum volume of soil or borrow material needed to properly achieve the subgrade elevations needed to support the final cover system while also meeting all prescribed performance standards specified in § 257.102. The owner or operator must also document the time required to close the unit with this volume of material. Upon review and approval, the use of CCR after the waste placement prohibition deadline would be limited to these volumetric and temporal amounts. By limiting the volume of CCR that could be placed in the unit and the length of time to place the CCR to amounts that would otherwise be needed to complete closure of the unit, this approach would be consistent with the timely closure of the unit.

Under this approach, the owner or operator would need to include the volumetric and temporal analysis in the written closure plan that is submitted to the Administrator or Participating State Director for review and approval. The analysis would need to document the basis of the volumetric and temporal estimates, including an explanation of all assumptions used in the analysis. The analysis should also be supported by additional technical information, such as maps, drawings, figures, plans, schedules, engineering calculations, or other visual information. The analysis would need to be sufficiently detailed and presented in a manner that is organized and clearly labeled so that it can be understood by the reviewing authority.

(2) *Unstable areas.* The Agency is proposing that if the closing unit is located in an unstable area, the owner or operator must document in the written closure plan that the unit receiving the CCR is in compliance with the location restriction requirements under § 257.64 for unstable areas. The Agency is proposing this requirement because environmental releases may

result from the shifting of additional CCR (e.g., slumping and sliding of CCR if slope stability is not maintained) or potential structural failure of the unit's engineering controls (e.g., bottom liners, final cover systems). Therefore, continued CCR placement in units where the integrity of the structural components of the CCR unit cannot be demonstrated would not be protective of human health and the environment.

The unstable area provision requires the owner or operator to demonstrate 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. The current CCR regulations define an "unstable area" as 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 at the unit. The regulations also provide examples of unstable areas that include poor foundation conditions, areas susceptible to mass movements, and karst terrains. The regulations further provide that CCR units that cannot make the demonstration required by § 257.64(a) must cease further placement of CCR by a specified date; however, these units are allowed to close by leaving CCR in place provided that the requisite performance standards are met (i.e., these units are not required to close by removal of CCR). While the current federal regulations allow a unit in an unstable area to be closed with CCR in place, EPA is proposing that CCR units that cannot make the unstable area demonstration would not be eligible for the proposed exemption to allow the use of CCR during closure. This is because the integrity of the structural components of the unit can be ensured in the future and thus additional CCR placement under this exemption may not be protective of human health and the environment. The Agency specifically solicits comment on whether CCR units in unstable areas should be eligible for this proposed exemption.

EPA also requests comment on whether it would be appropriate to consider CCR units located in seismic impact zones and fault areas similarly to unstable areas under this proposed exemption (i.e., units that failed the location restrictions for seismic impact zones or fault areas would not be eligible for the proposed exemption).

The Agency is also proposing that the owner or operator may use the demonstration for unstable areas completed under the requirements of § 257.64 in lieu of conducting the demonstration a second time. EPA believes this is a reasonable approach given that the demonstrations under § 257.64 were conducted recently and therefore represent current conditions of the unit.<sup>20</sup> However, the Agency is proposing that the owner or operator would need to incorporate (or otherwise include) the unstable area demonstration into the closure plan submitted to the approving authority.

The Agency is aware that some owners and operators of existing units did not conduct the unstable areas demonstration under § 257.64 by the deadlines specified in the CCR regulations because closure of the unit had already been initiated. Because the regulatory consequence of not demonstrating compliance with any applicable location restriction requirement, including for unstable areas, is for the owner or operator to close the unit, an action already being taken, these owners and operators reasoned it made no sense to conduct the demonstrations. For purposes of this proposal, an owner or operator who has not prepared the demonstration previously would need to complete the required demonstration and incorporate it into the closure plan in order to be eligible to place CCR after the waste placement prohibition deadline.

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<sup>20</sup> Most existing CCR units were required to complete these demonstrations by October 17, 2018. For eligible inactive CCR surface impoundments, the deadline to prepare these demonstrations is April 16, 2020. For more information on eligible inactive CCR surface impoundments, see the preamble to the direct final rule published on August 5, 2016 (81 FR 51802).

(3) *Closure performance standards and requirements.* To ensure that units receiving CCR under this exemption would be in compliance with the closure requirements, EPA is proposing to require owners and operators to document in the closure plan how the unit will achieve the closure performance standards specified in § 257.102(d). Units for which the demonstration cannot be made would not be eligible for the proposed exemption to the waste placement prohibition.

The closure performance standard under § 257.102(d)(1) requires that the CCR unit be 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.

The provisions under § 257.102(d)(2) establish requirements for the drainage and stabilization of CCR surface impoundments. Prior to installing a final cover system, free liquids must be eliminated by removing liquid wastes or solidifying the remaining waste and waste residues and remaining wastes must be stabilized sufficient to support the final cover system.

(4) *Design of the final cover system.* The Agency is proposing that owners and operators of closing units demonstrate in the closure plan that the design and construction of the final cover system will not be more permeable than the CCR placed during closure. This would be an additional final cover system design requirement. Under the current CCR regulations, final cover

systems must include an infiltration (or barrier) layer no more permeable than  $1 \times 10^{-5}$  cm/sec or no more permeable than the bottom liner, whichever is less (i.e., more impermeable).<sup>21</sup> See § 257.102(d)(3)(i). However, the current regulations impose no requirement that the final cover system be more impermeable than the CCR in the unit. By design, the infiltration layer functions to limit percolation of water (e.g., precipitation) through the final cover system. The rule requirement that the final cover system be more impermeable than the bottom liner (or natural subsoils present) is to prevent the “bathtub effect” from occurring within the unit, whereby liquids that infiltrate through the overlying final cover system are contained by a less permeable underlying liner system in the unit.<sup>22</sup>

EPA is proposing to require this demonstration to prevent the “bathtub” effect from occurring above a compacted CCR layer in the unit. This can occur when the compacted CCR layer is more impermeable than the final cover system because a well-compacted CCR can be more impermeable than  $1 \times 10^{-5}$  cm/s (the maximum permeability of a final cover system under § 257.102(d)(3)(i)).<sup>23</sup> Said another way, there is a possibility of a situation where the final cover system is more permeable than a compacted CCR layer within the unit resulting in the potential for the bathtub effect above the CCR layer. An example situation would be one where the final cover is designed with a permeability of  $1 \times 10^{-5}$  cm/s, a compacted CCR layer in the unit at  $1 \times 10^{-6}$  cm/s, and the liner at  $1 \times 10^{-4}$  cm/s. In this situation, accumulation of leachate on top of a compacted CCR layer could result in the lateral release of leachate from the unit. Under this

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<sup>21</sup> For example, if a CCR unit had a bottom liner system with a hydraulic conductivity of  $4 \times 10^{-4}$  cm/s, then it would be acceptable if the final cover system was designed and constructed to be no more permeable than  $1 \times 10^{-5}$  cm/s, because  $1 \times 10^{-5}$  cm/s is less than  $4 \times 10^{-4}$  cm/s.

<sup>22</sup> For example, see 57 FR at 28627 (June 26, 1992).

<sup>23</sup> US Department of Transportation, “Federal Highway Administration Research and Technology: Coordinating, Developing, and Delivering Highway Transportation Innovations.” Publication Number: FHWA-RD-97-148.

proposal, the owner or operator would demonstrate that the design and construction of the final cover system will not be more permeable than the CCR placed during closure.

EPA believes this demonstration is needed due to new information learned since the promulgation of the 2015 CCR rule. Information posted to CCR websites by electric utilities with impoundments shows that approximately 70 percent of all surface impoundments are known not to be lined with a composite liner or alternative composite liner (see § 257.70(b) and (c) for a description of these liner types).<sup>24</sup> In addition, over 70 percent of surface impoundments have detected impacts to the groundwater whereby the unit is operating pursuant to the assessment monitoring program requirements and nearly 50 percent of all surface impoundments are now operating under the corrective action program provisions of the CCR regulations. Based on this new information, many surface impoundments appear to have been designed and constructed without an effective bottom liner system. To prevent the potential lateral release of leachate from the unit from occurring, the Agency is proposing that the owner or operator not only demonstrate that the design and construction of the final cover system will not be more permeable than any bottom liner, but also than the placed CCR within the unit. This proposed requirement would be in addition to the current requirements specified in § 257.102(d)(3) for final cover systems and alternative final cover systems.

(5) *Corrective action requirements.* For units that have triggered the corrective action requirements of the CCR regulations, the Agency is proposing that the owner or operator demonstrate in the closure plan that the additional placement of CCR will not adversely affect compliance with the corrective action remedy requirements. For CCR units, the corrective action program is triggered when it is determined that any constituent listed in appendix IV to part 257

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<sup>24</sup> In addition, approximately 20 percent of surface impoundments did not post a liner demonstration to their CCR website indicating the type of liner system used, if any. Thus, how these impoundments are lined is unknown.

has been detected at a statistically significant level exceeding a groundwater protection standard defined under § 257.95(h), Once the exceedance of a groundwater protection standard is determined, the owner or operator must conduct an assessment of corrective measures followed by the selection of a remedy, which is specified in § 257.97(b). One of the requirements of a remedy is that it must “Control the source(s) of releases so as to reduce or eliminate, to the maximum extent feasible, further releases of constituents in appendix IV to this part into the environment.” Source control refers to a range of actions (e.g., removal, containment) designed to protect human health and the environment by eliminating or minimizing migration of, or exposure to, significant contamination. To ensure the groundwater cleanup goals are not slowed or delayed, this proposal requires the owner or operator to demonstrate in the closure plan that the additional placement of CCR (i.e., source material) will not adversely affect compliance with the corrective action remedy requirements.

b. Review and approval of closure plan under co-proposed Option One. EPA is proposing that the owner or operator of the unit submit the written closure plan to the Administrator or Participating State Director for review and approval. The written closure plan required by § 257.102(b) would also need to contain the information listed in proposed § 257.102(d)(4) and also discussed above in Unit V.B.1.a of the preamble. The Agency is proposing that the closure plan must be submitted to the Administrator or Participating State Director for review and approval in advance of the anticipated date that the CCR would be needed for closure activities to provide EPA or the Participating State Director adequate time to review and approve the plan.

EPA or the Participating State Director should notify the owner or operator of approval or intent to disapprove the submitted closure plan within 3 months after receipt of the original closure plan, and within 2 months after receipt of any supplemental information submitted. A

notice of intent to disapprove the written closure plan will identify incomplete or inaccurate information or noncompliance with prescribed procedures and specify how much time the owner or operator will have to submit additional information. If EPA or the Participating State Director has not approved the closure plan by the date CCR would be needed for closure activities, the owner or operator would not be allowed to use CCR to support closure of the unit.

Finally, as discussed in greater detail in the next section, EPA received comments objecting to EPA's interpretation that the prohibition on "placing CCR" in any units subject to closure for cause pursuant to § 257.101 prohibited both placement that might be considered beneficial use and placement that might be considered disposal. These commenters criticized the Agency's reading of the word "placement" is at odds with RCRA's text and EPA's historical use of that term, as well as the existing provision in § 257.50(g), which provides that the CCR regulations do not apply to practices that meet the definition of a beneficial use of CCR. To avoid any future confusion under this option, EPA requests comment on whether substituting the word "receipt" or "addition" for the term "placing" or "placement" would better communicate EPA's intent to prohibit both disposal and beneficial use. EPA also requests comment on whether conforming amendments to § 257.50(g) would also be helpful.

2. Co-Proposed Option Two – Beneficially using CCR during closure of a unit subject to closure for cause.

The CCR regulations include a "beneficial use of CCR" definition to distinguish between legitimate beneficial uses of CCR and the disposal of CCR. The beneficial use definition is comprised of four criteria: (1) the CCR must provide a functional benefit; (2) 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; (3) the use of the CCR must meet relevant

product specifications, regulatory standards, or design standards, when available, and where such specifications or standards have not been established, CCR may not be used in excess quantities; and (4) 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. See, § 257.53 and 80 FR 21349-54 (April 15, 2015).

EPA's current regulations at § 257.53 require that to be considered a "beneficial use," when unencapsulated CCR is placed on the land in amounts greater than 12,400 tons, in non-roadway applications, the user must demonstrate that releases to environmental media (i.e., groundwater, surface water, soil, air) are comparable to or lower than those from analogous products made without CCR or that releases to environmental media will be at or below relevant regulatory and health-based benchmarks for human and ecological receptors during use. The Agency established this environmental criterion to ensure that unencapsulated uses of CCR would be conducted in an environmentally protective manner. This fourth criterion was designed to address both the concern that large-scale fills were effectively operating as landfills and the potential effects associated with the placement of unencapsulated CCR in or near water sources. See, 80 FR 21351-52 (April 15, 2015).

The Agency recently issued a proposed rule in which EPA proposed to revise criterion four of the "beneficial use of CCR" definition. In that proposed rule, EPA proposed to eliminate the mass-based numerical threshold of 12,400 tons and replace it with specific location-based

criteria, which were largely derived from the current location criteria for CCR units, to trigger an environmental demonstration. See 84 FR 40353 (August 14, 2019). Thus, under the August 2019 proposal, before the placement of any amount of unencapsulated CCR could occur in areas not meeting the location-based criteria, the owner or operator of the unit would need to make an affirmative demonstration that releases to environmental media (i.e., groundwater, surface water, soil, and air) would be comparable to or lower than those from analogous products made without CCR, or releases to environmental media would be at or below relevant regulatory and health-based benchmarks for human health and ecological receptors during use. The Agency also did not propose in the August 2019 action any revisions to criteria one through three of the definition of beneficial use of CCR. When preparing comments on co-proposed Option Two, commenters should take into account the potential revisions to the beneficial use definition's fourth criterion put forth in the August 2019 proposed rule. The Agency is not reopening for comment any aspects of the August 2019 proposal or underlying support documents and will not consider comments pertaining to the proposals included in the August 2019 action.

As discussed earlier in this section, EPA received comments concerning statements made in a 2018 proposal regarding further placement of CCR into a unit triggered into closure. See 83 FR at 11605 (March 15, 2018). As part of that proposal, EPA explained that the current regulation expressly prohibits “placing CCR” in any unit subject to closure for cause pursuant to § 257.101. EPA further explained in the proposal that the CCR regulations do not distinguish between placement that might be considered beneficial use and placement that might be considered disposal. All further placement of CCR into the unit is prohibited once the provisions of § 257.101 are triggered. *Id.*

In response to this March 2018 proposal, EPA received comments objecting to this interpretation of the regulations. For example, several commenters state that the Agency's broad reading of the word "placement" is at odds with RCRA statutory text and EPA's historical use of that term. These commenters point out that the definition of the RCRA term "disposal" encompasses the term "placing" meaning that placement is disposal. Put another way, these commenters state while disposal can be (and is) broader than just placement of waste, placement can never be broader than the term disposal. Commenters also state that EPA's interpretation of the CCR regulations is not contrary to the plain language of the regulations. These commenters point to the existing provision in § 257.50(g) which provides that the CCR regulations do not apply to practices that meet the definition of a beneficial use of CCR. Thus, the commenters state the current rule exempts all beneficial uses from all provisions of the CCR rule, irrespective of whether such uses can be viewed as placement. As a result, if the use of CCR meets all applicable conditions in the definition of beneficial use of CCR, the prohibition on further placement under § 257.101 would not apply.

After considering these comments, the Agency is soliciting comment on a second approach to allow the use of CCR in a unit subject to closure for cause under § 257.101. Under co-proposed Option Two, an owner or operator would be allowed to use CCR to support closure of the unit provided such use meets the rule's definition of beneficial use of CCR. A potential example of CCR beneficially used is CCR fill placed beneath the final cover system to achieve the needed subgrade elevations to ensure that precipitation will drain off the closed unit. This option is based on the regulatory reading put forward by commenters that the CCR regulations are clear in that the CCR minimum national criteria do not apply "to practices that meet the definition of a beneficial use of CCR." See § 257.50(g). Under this co-proposed option, CCR

used beneficially would not be subject to the waste placement prohibition date provided in § 257.101. However, the prohibition on waste placement would continue to apply to any CCR that does not meet the definition of “beneficial use of CCR,” as well as any other non-CCR waste. This is because the definition of “beneficial use of CCR” only applies to CCR, and not to other non-CCR wastes.

Under this co-proposed option, the CCR minimum national criteria codified in subpart D of part 257 would not apply to the practice of using CCR to support closure of the CCR unit provided its use meets the conditions prescribed in the definition of a “beneficial use of CCR.” However, beneficially using CCR in a unit subject to closure for cause would not change the regulatory status of or the requirements that apply to the CCR unit itself. Thus, a CCR unit in which CCR is used beneficially remains subject to all applicable CCR rule requirements, such as the closure performance standards. For example, the CCR regulations require that a CCR unit must be closed in a manner that will “preclude the probability of future impoundment of water, sediment, or slurry.” See § 257.102(d)(1)(ii). While CCR could be beneficially used (provided such use meets the definition of beneficial use of CCR) as subgrade fill beneath the final cover system, such use would not relieve the owner or operator from designing the final cover system in a manner that would promote positive drainage of precipitation as required by the CCR regulations to preclude such future impoundment.

In addition, owners and operators of the CCR unit would need to revise the written closure plan and document how the CCR would be used to support closure of the unit. The beneficial use of CCR in a unit does not affect the requirement that the owner or operator prepare a written closure plan describing how the closure performance standards and requirements will be achieved. Under the current definition of beneficial use of CCR, owners or operators

beneficially using CCR when unencapsulated use of CCR involves placement on the land of 12,400 tons or more in non-roadway applications are required to provide the environmental demonstration to anybody upon request. Given that the CCR unit is a regulated unit, EPA is proposing under this option to add a new provision to § 257.102(b)(1) requiring the owner or operator to document in the written closure plan how the use of CCR in the closing unit achieves the conditions specified in the beneficial use definition. Specifically, the Agency is proposing to add a new paragraph (b)(1)(vii) to § 257.102: “If CCR is placed for beneficial use in the unit after the applicable waste placement prohibition deadline specified under § 257.101, the owner or operator must document in the written closure plan how the conditions specified in the definition of “Beneficial use of CCR” under § 257.53 will be achieved.”<sup>25</sup> EPA is proposing this requirement to provide appropriate transparency to the closure process.

The Agency also recognizes that the environmental demonstration under the fourth criterion of the definition of “beneficial use of CCR” may not be required in all situations, e.g., current regulations only require that the environmental demonstration be done when unencapsulated use of CCR involves placement on the land of 12,400 tons or more in non-roadway applications. EPA solicits comment on whether the rule under Option Two should require the owner or operator to conduct the environmental demonstration in all circumstances (e.g., regardless of the mass of CCR to be used) where CCR is placed in the closing unit after the waste placement prohibition date given that such placement would be occurring in a CCR unit subject to closure for cause (e.g., the unit is unlined and groundwater monitoring may show an exceedance of a groundwater protection standard).

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<sup>25</sup> For purposes of limiting potential confusion regarding the proposed regulatory changes to § 257.102 under the two co-proposed options, the Agency is presenting the proposed regulatory language supporting co-proposed Option Two only in the preamble to this action, Therefore, the reader will not find the proposed language in the “regulatory text” portion of this action.

3. Proposed correction to § 257.102(d)(3)(ii) for alternative final cover systems.

EPA is proposing to revise the alternative final cover system requirements under § 257.102(d)(3)(ii) to correct a typographical error. In the introductory text to § 257.102(d)(3)(ii), the regulation currently states that 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 paragraphs (f)(3)(ii)(A) through (D)...” This is an incorrect cross-reference that was recently brought to our attention by a State interested in permit program approval. The correct cross-reference should be to the criteria in paragraphs (d)(3)(ii)(A) through (C) and the Agency is proposing to revise the introductory text in § 257.102(d)(3)(ii) to correct this error.

*C. Closure of CCR units by removal of CCR*

Closure by removal of CCR is one of two options provided in the CCR regulations to close a CCR surface impoundment or landfill.<sup>26</sup> The closure by removal approach consists of two performance standards. First, the owner or operator must remove all CCR from the unit and decontaminate all areas affected by releases from the CCR unit. Second, the regulations specify that closure is complete when all CCR in the unit and any areas affected by releases from the CCR unit have been removed and groundwater monitoring demonstrates that there are no exceedances of any groundwater protection standard. See § 257.102(c). Importantly, the second performance standard requires groundwater corrective action of a unit to be completed before the owner or operator can assert that closure of the unit has been completed.

The CCR regulations also establish deadlines to initiate and complete closure activities.<sup>27</sup> For example, the regulations generally require owners and operators of CCR surface

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<sup>26</sup> The other alternative provided to close a CCR unit is to leave CCR in place. For a discussion of both closure alternatives, see 80 FR 21411-14 (April 17, 2015) and § 257.102(c) and (d).

<sup>27</sup> The closure deadlines are the same whether closing by removal of CCR or by closing by leaving CCR in place.

impoundments to complete closure activities within five years of commencing closure activities, while closure of CCR landfills must be completed within six months. See § 257.102(f)(1). Notwithstanding these deadlines to complete closure, the CCR regulations also allow for additional time to be obtained provided the owner or operator can make the prescribed demonstrations that are based on site-specific circumstances beyond the facility's control. For CCR surface impoundments, the amount of additional time beyond the five years varies based on the demonstrated need and the surface area acreage of the impoundment. For impoundments 40 acres or smaller, the maximum time extension that can be obtained is two years. For impoundments greater than 40 acres, the maximum time extension is five two-year extensions (for a total extension of ten years). For CCR landfills, the amount of additional time beyond the six months does not vary according to the size of the landfill, rather the maximum time extension is two one-year extensions (for a total extension of two years). To obtain additional time, owners or operators of CCR units must substantiate the factual circumstances demonstrating the need for the extension. See § 257.102(f)(2). In all instances the number of time extensions is capped to a certain number of years.

The CCR regulations also require the owner or operator of the CCR unit to obtain a certification from a qualified professional engineer or approval from the Participating State Director (or EPA where EPA is the permitting authority) verifying that closure has been completed in accordance with the written closure plan and all applicable closure requirements of § 257.102. See § 257.102(f)(3). In addition, the owner or operator must prepare a notification stating that closure of the unit has been completed. This notification must be completed within 30 days of completion of unit closure and must include the certification required by § 257.102(f)(3). See § 257.102(h). As the CCR regulations are currently structured for units

closing by removal of CCR, the closure certification and notification cannot be completed until all CCR removal and decontamination activities, including groundwater corrective action,<sup>28</sup> are completed. Finally, owners and operators that complete closure of a unit by removal of CCR are exempt from any other post-closure care requirements for the unit (see § 257.104(a)(2)) and are also exempt from the deed notation requirements upon certification that closure by removal of CCR has been completed (see § 257.102(i)(4)).

Through EPA's recent work with States on permit programs,<sup>29</sup> State representatives expressed concern that the requirement to complete groundwater corrective action of a CCR unit may not be feasible in the timeframes provided by the CCR regulations. These State representatives conveyed that groundwater corrective action can take years or decades to complete and that the actual cleanup time will depend on several factors, which would vary from site to site.

After evaluating this issue and recognizing that groundwater corrective action can take longer to complete than the closure timeframes provided in the CCR regulations, EPA is proposing an additional closure option for CCR units being closed by removal of CCR. Under this new closure option, an owner or operator that cannot complete groundwater corrective action by the time all other closure by removal activities have been completed (i.e., during the active life<sup>30</sup> of the CCR unit) may complete groundwater corrective action during a post-closure care period. Under this option, the owner or operator must first complete all other removal and

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<sup>28</sup> For purposes of this preamble discussion, the term "groundwater corrective action" includes those actions taken to implement the selected remedy specified in § 257.98(c) to attain the groundwater protection standards in § 257.95(h).

<sup>29</sup> In December 2016, Congress amended RCRA to establish a federal permitting program similar to other environmental statutes. Under these new provisions, States may now apply to EPA for approval to operate a permit program to implement the CCR regulations codified under part 257, subpart D.

<sup>30</sup> The "active life" of a CCR unit is defined in § 253.53 as 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 § 257.102.

decontamination activities within the timeframes provided for completing closure. In addition, the owner or operator must have implemented the remedy selected under § 257.97 such that all components of the remedy are in place and operating as intended. Upon completion of all removal and decontamination activities (except for completion of groundwater corrective action) and implementation of the selected remedy, the owner or operator would be allowed to certify that the CCR unit has been closed. Thereafter, the CCR unit would be subject to the existing post-closure care requirements in § 257.104 until completion of groundwater corrective action. EPA is not proposing any substantive revisions to the current closure standard when closing by removal of CCR under § 257.102(c) and is not reopening those requirements to comment in this action. EPA is, however, proposing to present the current closure standard in a slightly revised format to accommodate the proposed action. See proposed § 257.102(c)(1).

EPA is proposing this additional option of closing by removal of CCR because the Agency has new information indicating that the closure of CCR units will likely be more complex than EPA envisioned at the time the 2015 CCR rule was published. The Agency generally believed that most CCR units would be closed with CCR in place, not by removal of CCR due to the “expense and difficulty of such an operation.” 80 FR at 21412 (April 17, 2015). However, information reported on publicly accessible CCR Rule Compliance Data and Information websites (CCR websites) by facilities with CCR units since the 2015 CCR rule was published indicates that greater than 40 percent of existing CCR surface impoundments subject to the CCR regulations are planned to be closed by removal of CCR. In addition, EPA has new information on how existing CCR surface impoundments are lined. Information posted to CCR websites by facilities shows that the majority of surface impoundments are not lined with a composite liner or alternative composite liner (as defined in § 257.70(b) and (c)). Available

information indicates that more than 70 percent of all CCR surface impoundments subject to the CCR regulations currently have neither type of composite liner system. Given the number of unlined CCR units, many of which have already reported exceedances of groundwater protection standards, it is now evident that many CCR units have released CCR constituents into the surrounding soils and groundwater. This means that the closure activity is simply not a matter of removing CCR from the unit, but instead will likely require a significant undertaking to remediate impacted soil and groundwater in order to achieve the current CCR removal and decontamination standards. With this new information, the Agency believes that the existing timelines to complete closure by removal of CCR were not designed to also provide sufficient time to complete groundwater corrective action. Furthermore, the Agency is concerned that the current CCR regulations may create a disincentive to close a unit by removal of CCR and as discussed in Unit IV.B.1 of this preamble, there can be environmental benefits to closing a unit by CCR removal.

As discussed, this proposal would establish a second alternative when closing a CCR unit by removal of CCR. Under this new option, the owner or operator would be able to close the CCR unit by completing all removal and decontamination activities, except for groundwater corrective action, during the active life of the CCR unit and completing groundwater corrective action during post-closure care. Thus, groundwater corrective action would begin during the active life of the CCR unit and finish during the post-closure care period. The owner or operator would need to meet the following requirements when closing a CCR unit under this option. First, the owner or operator must complete all removal and decontamination activities, except groundwater corrective action, within the current timeframes for closure. Second, the owner or operator must have begun implementation of the selected remedy to achieve compliance with the

groundwater protection standards. Third, groundwater corrective action must be completed as a post-closure care requirement. Fourth, the owner or operator must amend the written closure and post-closure plans to reflect this approach to close the unit. Fifth, the owner or operator must obtain the certification or approval of closure completion within the current timeframes for closure. Finally, the owner or operator must record the notation on the deed to the property that the land has been used as a CCR unit prior to the start of the post-closure care period. Each of these proposed requirements is discussed further below and the proposed regulatory text is presented in § 257.102(c)(2).

*Removal and decontamination activities.* These activities include removing or decontaminating all CCR and CCR residues, containment system components, contaminated subsoils, contaminated groundwater, and CCR unit structures and ancillary equipment. To qualify for the new closure by CCR removal option, EPA is proposing that owners and operators would need to complete all removal and decontamination activities, except for groundwater corrective action, which would be completed under the post-closure care provisions at § 257.104. To demonstrate that all CCR has been removed from the unit, the owner or operator would need to remove the entire contents of the CCR unit, including all CCR and any CCR residues. This would include, for example, the removal of any fugitive dust (CCR) discovered outside the waste unit boundary. In addition, any containment system components such as a bottom liner, contaminated subsoils, and unit structures and equipment (e.g., concrete outlet structures and ancillary piping) would have to be removed prior to closure of the unit. Finally, any areas affected by releases from the CCR unit must have been removed (e.g., impacted soils beneath the bottom liner system). The intent of this requirement is for the owner or operator to complete all

CCR removal activities during closure prior to transitioning to the post-closure care period which will largely be a groundwater cleanup activity.

*Implementation of selected remedy.* Under the current regulations, if one or more constituents in appendix IV to part 257 are detected at statistically significant levels above the groundwater protection standard in any sampling event, the owner or operator must, among other requirements, initiate a corrective action program. See § 257.95(g). The corrective action program includes initiating an assessment of corrective measures to prevent further releases, to remediate any releases, and to restore affected areas to original conditions, as specified in § 257.96(a). After the assessment of corrective measures has been completed, the owner or operator must select a remedy that meets prescribed standards, including a requirement that the remedy attain the groundwater protection standards. See § 257.97(a) and (b). Finally, the corrective action program requires the owner or operator of the CCR unit to initiate remedial activities within 90 days of selecting a remedy. See § 257.98(a). The Agency is proposing that the owner or operator must have begun implementation of the selected remedy as required by § 257.98(a) in order to be eligible for this proposed closure alternative. This requirement would help ensure that impacted groundwater is returned to original conditions as soon as is practicable.

*Groundwater corrective action.* For owners and operators that close a unit under this new alternative, EPA is proposing that the CCR unit would remain subject to the post-closure care requirements under § 257.104 until groundwater corrective action has been completed. Specifically, EPA is proposing that these units would not be subject to the requirement to conduct post-closure care for 30 years; rather, these units would remain in post-closure care until all groundwater monitoring and corrective action requirements are achieved. See proposed revisions to § 257.104(c). Groundwater corrective action is complete when the groundwater

monitoring concentrations do not exceed the groundwater protection standards for constituents listed in Appendix IV to part 257. This corrective action requirement is the same standard as currently specified in the closure by CCR removal provisions under § 257.102(c). This proposal does not change any requirements of the groundwater monitoring and corrective action program. Under this proposal, the owner or operator would need to conduct groundwater monitoring and corrective action in accordance with the requirements of §§ 257.90 through 257.98.

*Closure and post-closure care plans.* EPA is proposing that owners and operators closing a CCR unit under this new closure alternative would need to revise their written closure plan. The closure plan describes the closure of the unit and provides a schedule for implementation of the plan. Under this proposal, the owner or operator would need to revise the current plan and describe how the CCR unit would be closed in accordance with the proposed requirements. The current CCR regulations already include procedures to amend written plans under certain circumstances, including when there is a change in the operation of a CCR unit that would substantially affect the current written plan or when unanticipated events necessitate a revision of the plan. See §§ 257.102(b)(3)(ii). EPA expects that owners and operators would revise the current closure plan according to these existing procedures.

The Agency is also proposing that owners or operators would need to prepare an initial post-closure care plan within 6 months of the effective date of this provision. The post-closure care plan describes how the CCR unit would be maintained after closure of the unit is completed. Currently, CCR units closed by removal of CCR are exempt from any post-closure care requirements (see § 257.104(a)(2)), so the preparation of a post-closure care plan would be a new requirement for owners and operators. EPA believes that 6 months from the effective date of the provision, or one year from publication of a final action, would be a reasonable amount of time

to prepare the post-closure care plan because the owner or operator has already prepared the closure plan for the unit and begun implementation of the corrective measures remedy. EPA is aware that some facilities that planned to close a unit by removal of CCR nonetheless completed a post-closure care plan. In this situation, the current CCR regulations already include requirements to amend written plans under certain circumstances, including when there is a change in the operation of a CCR unit that would substantially affect the current written plan or when unanticipated events necessitate a revision of the plan. See §§ 257.104(d)(3). EPA expects that these owners or operators would revise the existing post-closure care plan according to these existing procedures.

*Notation on the deed to the property.* Under the current regulations, following the closure of a CCR unit that will be subject to post-closure care, 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, notifying any potential purchaser of the property in perpetuity that the land has been used as a CCR unit, and its use is restricted under the post-closure care requirements. See § 257.102(i). The rationale for this requirement is to ensure that prospective and subsequent owners are aware of the presence of a closed unit on the property and of the need for continued maintenance of the cover or of any on-going corrective actions. Following that same logic, units that have closed by removal in accordance with § 257.102(c) are exempt from the deed notation requirement, both because all waste and associated contamination have been removed, and because there is no continuing post closure care that needs to be maintained. See § 257.102(i)(4).

Under these existing regulations, units that fall within the current proposal would be required to record a deed notation because they would not have closed by removal in accordance with § 257.102(c) (as corrective action would not have been completed) and because post-

closure care would be required. See § 257.102(i)(4). But these units are not wholly analogous to the other units subject to a deed notation—i.e., those closing with waste in place. Units falling within the current proposal will have already had all waste removed in its entirety and so would require no continued maintenance. However, groundwater remediation actions would be continuing, raising concern about potential exposures.

EPA is therefore proposing to retain a modified requirement that the owner or operator record a notation on the deed to the property (or some other instrument normally examined during a title search) until all groundwater corrective action has been completed – i.e., when groundwater monitoring concentrations do not exceed the groundwater protection standard established pursuant to § 257.95(h) for constituents listed in appendix IV to part 257. EPA is proposing to retain a deed notation because all removal and decontamination actions have not been completed. Given that groundwater corrective action will be ongoing and may continue for years or decades, the deed restrictions are a practical way of limiting human exposure during a period when contamination is still present, and thereby ensuring that the statutory standard under § 4004(a) of RCRA continues to be met.

But because no waste will remain in place, the Agency is also proposing as part of the post-closure care provisions under § 257.104 to allow removal of the deed notation, or the addition of a second notation reflecting the inapplicability of the first notation, as may be applicable under existing state or local law, when groundwater corrective action is completed for the CCR unit. Here, completion of groundwater corrective action would indicate that all removal and decontamination actions have been completed. To remove the deed notation (or add a second notation), the owner or operator would need to complete two actions. First, the owner or operator would need to demonstrate that groundwater monitoring concentrations no longer exceed any

groundwater protection standard established pursuant to § 257.95(h) for constituents listed in Appendix IV to part 257. Second, the owner or operator would need to complete the notification stating the post-closure care requirements have been met as required in § 257.104(e). Removing the deed notation upon completion of all removal and decontamination activities would be consistent with the current procedures for CCR units that close by removing CCR under § 257.102(i)(4). See proposed § 257.104(h).

The use of deed restrictions is one type of institutional control that can be used when CCR is left onsite. Institutional controls are non-engineered instruments such as administrative and legal controls that help minimize the potential for human exposure to contamination and/or protect the integrity of the closed unit (e.g., prevent disturbance of the final cover system). Another example of an institutional control that could be used is property use restrictions based on private property law, such as environmental (or restrictive) covenants. Currently, the CCR regulations require a specific type of control (i.e., deed notices) to communicate use limitations to present and future users of the land with the closed CCR unit. The Agency solicits comments on whether the use of deed restriction controls is too narrow and whether the CCR regulations should allow for the use of different legal mechanisms and controls to communicate limits to the activities that can safely take place at the site.

*Closure certification or approval.* EPA is proposing that the owner or operator be subject to the same certification or approval requirement that is currently applicable to all CCR units as specified in § 257.102(f)(3). Under this requirement, the owner or operator must obtain a certification from a qualified professional engineer or approval from the Participating State Director (or EPA where EPA is the permitting authority) verifying that closure has been completed in accordance with the written closure plan and all applicable closure requirements of

§ 257.102. Under this proposal, the certification or approval would reflect that all removal and decontamination activities, except for groundwater corrective action, have been completed. The certification or approval would not address the remediation of the impacted groundwater because groundwater corrective action will be completed during the post-closure care period, including applicable post-closure care certification and approval requirements.

*D. Annual closure progress reports and notice of intent to close.*

EPA reviewed the data posted on the facilities' CCR websites to gain a better understanding of the current operating and compliance status of each unit covered by the CCR rule. During this review the Agency identified the potential for a significant time gap in reported information between when the facilities post the notice of intent to close a unit (§ 257.102(g)) and the notification certifying that closure of the unit has been completed (§ 257.102(h)). Therefore, EPA is proposing to amend the notification of intent to close requirements and proposing to require annual closure progress reports. The proposed notification revisions and progress report requirements would provide necessary information to the public, states and EPA and increase transparency of the CCR unit closure process.

*Notification of intent to close a CCR unit.* EPA is proposing to require owners and operators to include the actual date the facility commenced closure of the unit in the notification of intent to close required under § 257.102(g). This notification's purpose is to inform EPA, participating states, and the public that the facility will begin or has started the closure process. Under the current CCR regulations, owners and operators are required to prepare this notification "no later than the date the owner or operator initiates closure" of the unit and are not explicitly required to document when unit closure was or will be initiated. In addition, the CCR regulations do not limit how far in advance of closure commencement this notification can be prepared, thus

injecting further uncertainty into determining whether closure has initiated. EPA's review of CCR websites confirms that facilities often post a notice of intent to close a CCR unit, as required by § 257.102(g), but provide no indication of when the unit will actually begin closure activities. This was found to be particularly common with respect for posted notifications for inactive surface impoundments. Therefore, EPA is proposing to require that the notification of intent to close include the actual date on which the facility commenced closure activities. This date is important to know so the public can determine when CCR units must complete closure of the unit.

The Agency is proposing tailored requirements based on whether a notification of intent to close was previously completed for the CCR unit. EPA is proposing that if an owner or operator has prepared a notification of intent to close in accordance with § 257.102(g) prior to the effective date of a rule finalizing this proposal that does not contain the date on which the owner or operator commenced closure, then no later than two months following the effective date of a rule finalizing this proposal, the owner or operator would need to prepare and place in the facility's operating record an updated notification of intent to close that includes the date on which the owner or operator commenced closure of the unit. However, notifications of intent to close posted to a CCR website prior to the effective date of a rule finalizing this proposal, that meet the proposed requirements (e.g., the notification includes the date of closure initiation) would not be required to be updated. Nor would notifications for CCR units that have completed closure, provided the owner or operator prepared the completion of closure notification in accordance with § 257.102(h).

For owners and operators that have not previously prepared a notification of intent to close prior to the effective date of a rule finalizing this proposal, the Agency is proposing to

require an owner or operator to complete the notification of intent to close a unit no later than two weeks after the date closure of the CCR unit has been initiated. In addition to the current requirements codified under § 257.102(g), the notification would need to include the date that closure of the CCR unit was initiated. To ensure that these notifications document the actual date that closure was initiated, the Agency is proposing to revise the regulatory language in § 257.102(g) to allow owners and operators to complete the notification soon after closure is initiated (i.e., within two weeks) instead of prior to the initiation of closure. See proposed regulatory language in § 257.102(g).

*Annual closure progress reports.* EPA is proposing new requirements for annual closure progress reports, which would be codified in § 257.102(1). In this report, the owner or operator would be required to provide an update on the progress the facility has made in closing the CCR unit. Under this proposal, the annual closure progress report would be required to contain: 1) Discussion on which stage of closure the unit is currently undergoing, 2) Discussion of the closure schedule, and 3) Discussion of any problems that were experienced. See example closure progress reports in the docket.

The first section of the closure progress report would discuss the current stage of closure the CCR unit is undergoing. For example, if the unit is a CCR surface impoundment and is closing by removal of CCR, the various stages of closure could include: dewatering of the unit, CCR removal, testing soil and sediments for complete removal of the CCR, groundwater monitoring and clean up, filling the excavated surface impoundment, etc. This section of the report would also discuss the major milestones achieved in the past year since the previous report. If it is the first report, then it would include the major milestones achieved since the initiation of closure.

The second section of the closure progress report would discuss the closure schedule. In this section of the report the owner or operator would discuss the overall schedule for closing the CCR unit. This discussion would include dates for any major milestones expected for the next year. Some major milestones may include: date on which dewatering was complete, date on which CCR removal is complete, etc. This section of the report should also discuss any changes to the closure schedule and describe the basis for the change and impact to the overall schedule. If the facility anticipates requesting an extension to the closure deadline, that should be discussed in this section.

The last section of the closure progress report discusses any problems that occurred in the past year that affected the closure of the CCR unit and the actions taken to resolve the problems. This section could potentially tie in to the previous discussion of whether closure is progressing on schedule. Problems that arose and caused a delay in schedule should be discussed in this section. Such problems could be a delay of equipment, severe weather, delay of a permit, etc. There should be a discussion of what caused the problem, the effects of the problem, and the plan to resolve the problem.

EPA is proposing owners and operators prepare the annual progress report by placing it into the facility's operating record no later than January 31 of each year. The first annual progress report would be due the first January 31 following the effective date of a rule finalizing this proposal or the first January 31 following the year that closure activities for the unit were commenced, whichever date is later. EPA selected January 31 as the deadline to prepare the annual progress report because a winter deadline allows all closure-related activities during a construction season to be captured into a single annual report. The progress reports are required

to be completed annually no later than January 31 until closure is completed, as required by § 257.102(f) and (h). See proposed § 257.102(l)(1) and (2).

As a result of the new annual progress report requirements, EPA is also proposing to update the respective recordkeeping requirements, notification requirements, and publicly accessible internet site requirements under §§ 257.105-257.107, respectively. Upon evaluating where to place the proposed requirements in these sections, EPA discovered certain recordkeeping requirements under § 257.105(i) were not updated in 2016 with the direct final rule that extended certain compliance deadlines for eligible inactive CCR surface impoundments.<sup>31</sup> Therefore, EPA is proposing to update those requirements as well to properly reflect current requirements in the CCR rule. Prior to the 2016 direct final rule, the 2015 CCR rule required annual closure progress reports and a notification for inactive units and those requirements were codified under § 257.105(i)(2) and (3). Since those requirements no longer exist for inactive CCR surface impoundments, EPA is proposing to remove and reserve those paragraphs. The Agency is proposing to place the new proposed annual closure progress report requirements in §§ 257.105(i)(14), 257.106(i)(14), and 257.107(i)(14). Finally, EPA is proposing to revise the citation in § 257.105(i)(1) to reference § 257.100(e)(1)(i) rather than the vacated § 257.100(c)(1).

## **V. The Projected Economic Impacts of this Action**

### *A. Introduction*

The EPA estimated the costs and benefits of this action in a Regulatory Impact Analysis (RIA) which is available in the docket for this action. The RIA estimates that the net annualized impact of this proposed regulatory action over a 100-year period of analysis will be annual cost

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<sup>31</sup> For more information on eligible inactive CCR surface impoundments, see the preamble to the direct final rule published on August 5, 2016 (81 FR 51802).

savings of between \$ 41 million and \$ 138 million when discounting at 7%. This action is considered an economically significant action under Executive Order 12866.

### *B. Affected Universe*

The proposed rule potentially affects coal fired electric utility plants (assigned to the utility sector North American Industry Classification System (NAICS) code 221112) that dispose of their waste onsite in surface impoundments or landfills. The universe consists of approximately 768 units at 300 facilities.

### *C. Baseline Costs*

The RIA estimates the incremental costs and costs savings attributable to the provisions of this rule against the baseline costs and practices in place as a result of the 2015 CCR final rule (80 FR 21302 (April 17, 2015)) and the 2018 CCR Phase 1, Part One final rule (83 FR 36435 (July 30, 2018)). Baseline costs against which the effects of the proposed rule can be compared are available for Provisions One, Three, and Four in the RIA. Robust baseline costs are not available for key elements of Provision Two, therefor incremental costs and cost savings are estimated instead. For a comprehensive discussion of the baseline for this proposed rulemaking action see Chapter 2, Section 3 of the RIA. In a supplemental analysis the RIA also estimates the incremental costs and costs savings of this rule assuming the provisions of the companion Part A proposed rule<sup>32</sup> are in place.

### *D. Costs and Benefits of the Proposed Rule*

The RIA estimates costs and cost savings of the proposed provisions in this action. The RIA discusses the incremental effects on benefits as well. The remainder of this section will

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<sup>32</sup> “Hazardous and Solid Waste Management System: Disposal of Coal Combustion Residuals from Electric Utilities; A Holistic Approach to Closure Part A: Deadline to Initiate Closure”; 84 FR 65941 (December 2, 2019).

briefly summarize the first four provisions of the rule and describe their effect on the regulated universe. A comprehensive discussion of the cost or cost savings impact of each provision, and of the rule overall, can be found in the RIA which is available in the docket for this action.

The Alternative Liner Demonstration, called Provision One in the RIA, results in paperwork costs associated with submitting an application for demonstration and, if approved, the required demonstration. Provision One also results in cost savings associated with delays in closure of units (i.e., time value of money savings). Overall the RIA estimates that the time value of money cost savings will be greater than the paperwork costs, making this a net cost savings provision of approximately \$ 4 million to \$ 9 million per year when annualizing at 7%.

The Use of CCR in Closure provision, called Provision Two in the RIA, consists of two co-proposed options. Option One requires paperwork which result in costs; but it also results in cost savings from avoided disposal costs of CCRs that are used as fill and subsequently do not need to be disposed of elsewhere; and from the avoided cost of fill materials (e.g., soil) that have been replaced with CCRs. Option Two consists of broadly similar components. Paperwork, which results in costs, and the avoided costs of disposal of CCR and the avoided costs of virgin fill material, which cause cost savings. Overall both Provision Two, Option One and Provision Two, Option Two result in net cost savings of approximately \$ 41 million to \$ 65 million per year for Option One and \$ 85 million to \$ 140 million per year for Option Two when annualizing at 7%.

The Closure of CCR units by Removal of CCR provision, called Provision Three in the RIA consists of paperwork costs associated with amending closure and post-closure plans; and avoided paperwork costs that result from units closing earlier and therefor avoiding certain

documentations under this provision. Overall this provision results in net costs of approximately \$ 0.2 million per year when annualizing at 7%.

The Annual Closure Progress Reports and Notice of Intent to Close provision, called Provision Four in the RIA causes paperwork costs associated with new documentation of approximately \$ 0.1 million per year when annualizing at 7%.

The RIA also qualitatively describes the potential effects of the proposed rule's provisions on two categories of benefits from the 2015 CCR final rule. Benefits from the beneficial use of CCRs may be impacted by the diversion of eligible CCRs from higher valued beneficial use, such as in concrete, to lower valued use as fill under Provision Two, Option 2 of the proposed rule. Provision One and Provision Two of the proposed rule may impact human health and environmental benefits from the 2015 CCR final rule. Under Provision One, facilities that successfully apply for an alternative liner demonstration, but whose demonstrations are ultimately rejected by EPA will be able to continue operating their impoundments for the duration of the demonstration process. This period is expected to be brief, and the resulting impacts expected to be minimal.

In the case of Provision Two, under both options, existing units may be closed with greater volumes of CCR than they would have been otherwise. However these additional volumes of CCR are expected to come from the consolidation of multiple units into a single unit at a facility, which may provide benefits by decreasing the footprint of the remaining CCR disposal units. Additionally, CCRs will be added during the closure of the receiving unit and after the unit has been dewatered and thus will more closely resemble dry placement in a landfill than a surface impoundment still containing water.

Units closing under Co-Proposed Option 1 of Provision Two must demonstrate in a closure plan submitted to EPA (or a Participating State Director) that the unit will be closed in accordance with the closure performance standards under § 257.102(d) and must limit CCR in the unit coming into contact with water and prevent releases to the environment, including releases through surface transport by precipitation runoff, releases to soil and groundwater, and wind-blown dust.

Units closing under Co-Proposed Option 2 of Provision Two would also need to be closed in accordance with the closure performance standards and consistent with the conditions specified in the definition of “beneficial use of CCR.” The fourth criterion of this definition requires that at the volumes of CCR anticipated to be used in closure, users must demonstrate that environmental releases to groundwater, surface water, soil, and air are comparable to or lower than those from analogous products made without CCR.

A comprehensive discussion of the qualitative impacts to benefits is available in Chapter 4 of the RIA, which is available in the docket for this rulemaking.

The net effect of these four provisions is an annualized cost savings of between \$ 41 million and \$ 138 million when discounting at 7%.

Finally, EPA requests comment on the assumptions, methodology, data used, and estimates presented in the RIA.

## **VI. Statutory and Executive Order (EO) Reviews**

### *A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563:*

#### *Improving Regulation and Regulatory Review*

This action is an economically significant regulatory action that was submitted to the Office of Management and Budget (OMB) for review. Any changes made in response to OMB

recommendations have been documented in the docket. The EPA prepared an analysis of the potential costs and benefits associated with this action. This analysis, “Regulatory Impact Analysis: Hazardous and Solid Waste Management System: Disposal of CCR; A Holistic Approach to Closure Part B: Alternate Demonstration for Unlined Surface Impoundments; Implementation of Closure”, is available in the docket and is summarized in Section V of this preamble.

*B. Executive Order 13771: Reducing Regulation and Controlling Regulatory Costs*

This action is expected to be an Executive Order 13771 deregulatory action. Details on the estimated costs of this proposed rule can be found in EPA’s analysis of the potential costs and benefits associated with this action.

*C. Paperwork Reduction Act (PRA)*

The information collection activities in this proposed rule have been submitted for approval to the Office of Management and Budget (OMB) under the PRA. The Information Collection Request (ICR) document that the EPA prepared has been assigned EPA ICR number 2609.01. You can find a copy of the ICR in the docket for this rule, and it is briefly summarized here.

The information collection includes mandatory reporting by facilities with respect to the closure of their units. It also includes documentation that must be submitted to EPA to take advantage of the alternate liner demonstration provision and the use of CCR in closure provision.

*Respondents/affected entities:* Coal-fired electric utility plants that will be affected by the rule.

*Respondent's obligation to respond:* The recordkeeping, notification, and posting are mandatory as part of the minimum national criteria being promulgated under Sections 1008, 4004, and 4005(a) of RCRA.

*Estimated number of respondents:* 300.

*Frequency of response:* The frequency of response varies.

*Total estimated burden:* 17,301 hours (per year with Co-Proposed Option 1 of Provision Two) and 20,170 hours (per year with Co-Proposed Option 2 of Provision Two). Burden is defined at 5 CFR 1320.3(b).

*Total estimated cost:* \$5.06 million (per year with Co-Proposed Option 1 of Provision Two), includes \$4.01 million annualized operation & maintenance costs. \$5.86 million (per year with Co-Proposed Option 2 of Provision Two), includes annualized 4.64 million operation and maintenance costs.

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for the EPA's regulations in 40 CFR are listed in 40 CFR part 9.

Submit your comments on the Agency's need for this information, the accuracy of the provided burden estimates and any suggested methods for minimizing respondent burden to the EPA using the docket identified at the beginning of this rule. You may also send your ICR-related comments to OMB's Office of Information and Regulatory Affairs via email to [OIRA\\_submission@omb.eop.gov](mailto:OIRA_submission@omb.eop.gov), Attention: Desk Officer for the EPA. Since OMB is required to make a decision concerning the ICR between 30 and 60 days after receipt, OMB must receive comments no later than **[INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN**

**THE FEDERAL REGISTER**]. The EPA will respond to any ICR-related comments in the final rule.

*D. Regulatory Flexibility Act (RFA)*

I certify that this action will not have a significant economic impact on a substantial number of small entities under the RFA. In making this determination, the impact of concern is any significant adverse economic impact on small entities. An agency may certify that a rule will not have a significant economic impact on a substantial number of small entities if the rule relieves regulatory burden, has no net burden or otherwise has a positive economic effect on the small entities subject to the rule. This action is expected impact 6 affected small entities' annual revenue by more than 1%; and just 1 entity by more than 3%. This results in a total of 7 of 81 (8.64%) of affected small entities to be significantly affected. We have determined that 8.4% of affected small entities is not a substantial number small entities, and have therefore concluded that this action will not have a significant economic impact on a substantial number of small entities.

*E. Unfunded Mandates Reform Act (UMRA)*

This action does not contain any unfunded mandate of \$100 million or more as described in UMRA, 2 U.S.C. 1531–1538, and does not significantly or uniquely affect small governments. This action imposes no enforceable duty on any state, local or tribal governments or the private sector. The costs involved in this action are imposed only by participation in a voluntary federal program. UMRA generally excludes from the definition of “federal intergovernmental mandate” duties that arise from participation in a voluntary federal program.

*F. Executive Order 13132: Federalism*

This action does not have federalism implications. It will not have substantial direct effects on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various levels of government.

*G. Executive Order 13175: Consultation and Coordination with Indian Tribal Governments*

This action has tribal implications because it would impose requirements on facilities located in Indian country. However, it will neither impose substantial direct compliance costs on federally recognized tribal governments, nor preempt tribal law.

The EPA will engage with tribal officials under the EPA Policy on Consultation and Coordination with Indian Tribes concurrent with the public comment process for this regulation to permit them to have meaningful and timely input into its development.

EPA has identified that three of the 414 coal-fired electric utility plants (in operation as of 2012) are located on tribal lands. The three facilities are: (1) the Navajo Generating Station in Coconino County, Arizona, which is operated by the Arizona Salt River Project and owned by the Navajo Nation; (2) the Bonanza Power Plant in Uintah County, Utah, which is operated by the Deseret Generation and Transmission Cooperative and owned by the Ute Indian Tribe; and (3) the Four Corners Power Plant in San Juan County, New Mexico, which is operated by the Arizona Public Service Company and owned by the Navajo Nation. The Navajo Generating Station and the Four Corners Power Plant are on tribal trust lands belonging to the Navajo Nation, while the Bonanza Power Plant is located on tribal trust lands within the Uintah and Ouray Reservation of the Ute Indian Tribe. Because CCR units are land-based units, the fact that these CCR facilities are located on tribal trust land means that the facility owners within the meaning of the CCR Rule are the tribal trust beneficial landowner tribes. The Agency continues

to believe that the facility operators will bear all direct compliance costs associated with the above-mentioned rules and proposed rules. However, to the extent that an operator fails to comply with a federal CCR requirement, CCR facility owners may also be held liable.

*H. Executive Order 13045: Protection of Children from Environmental Health Risk and Safety Risks*

This action is not subject to Executive Order 13045 because the EPA does not believe the environmental health risks or safety risks addressed by this action present a disproportionate risk to children. This action's health and risk assessments are contained in the document titled "Human and Ecological Risk Assessment of Coal Combustion Residuals" which is available in the docket for the final rule as docket item EPA-HQ-RCRA-2009-0640-11993.

As ordered by EO 13045 Section 1-101(a), for the "Final Rule: Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities" published on April 17, 2015 (80 FR 21302), EPA identified and assessed environmental health risks and safety risks that may disproportionately affect children in the revised risk assessment. The results of the screening assessment found that risks fell below the criteria when wetting and run-on/runoff controls required by the rule are considered. Under the full probabilistic analysis, composite liners required by the rule for new waste management units showed the ability to reduce the 90<sup>th</sup> percentile child cancer and non-cancer risks for the groundwater to drinking water pathway to well below EPA's criteria. Additionally, the groundwater monitoring and corrective action required by the rule reduced risks from current waste management units.

*I. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution or Use*

This action is not a “significant energy action” because it is not likely to have a significant adverse effect on the supply, distribution or use of energy. For the 2015 CCR rule, EPA analyzed the potential impact on electricity prices relative to the “in excess of one percent” threshold. Using the Integrated Planning Model (IPM), EPA concluded that the 2015 CCR Rule may increase the weighted average nationwide wholesale price of electricity between 0.18 percent and 0.19 percent in the years 2020 and 2030, respectively. As the final rule represents a cost savings rule relative to the 2015 CCR rule, this analysis concludes that any potential impact on wholesale electricity prices will be lower than the potential impact estimated of the 2015 CCR rule; therefore, this final rule is not expected to meet the criteria of a “significant adverse effect” on the electricity markets as defined by Executive Order 13211.

*J. National Technology Transfer and Advancement Act (NTTAA)*

This rulemaking does not involve technical standards.

*K. Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*

The EPA believes that this action does not have disproportionately high and adverse human health or environmental effects on minority populations, low-income populations and/or indigenous peoples, as specified in Executive Order 12898 (59 FR 7629, February 16, 1994).

The documentation for this decision is contained in EPA’s Regulatory Impact Analysis (RIA) for the CCR rule which is available in the docket for the 2015 CCR rule as docket item EPA-HQ-RCRA-2009-0640-12034.

EPA's risk assessment did not separately evaluate either minority or low-income populations. However, to evaluate the demographic characteristics of communities that may be affected by the CCR rule, the RIA compares the demographic characteristics of populations surrounding coal-fired electric utility plants with broader population data for two geographic areas: (1) one-mile radius from CCR management units (i.e., landfills and impoundments) likely to be affected by groundwater releases from both landfills and impoundments; and (2) watershed catchment areas downstream of surface impoundments that receive surface water run-off and releases from CCR impoundments and are at risk of being contaminated from CCR impoundment discharges (e.g., unintentional overflows, structural failures, and intentional periodic discharges).

For the population as a whole 24.8 percent belong to a minority group and 11.3 percent falls below the Federal Poverty Level. For the population living within one mile of plants with surface impoundments 16.1 percent belong to a minority group and 13.2 percent live below the Federal Poverty Level. These minority and low-income populations are not disproportionately high compared to the general population. However, the percentage of minority residents of the entire population living within the catchment areas downstream of surface impoundments is disproportionately high relative to the general population, i.e., 28.7 percent, versus 24.8 percent for the national population. Also, the percentage of the population within the catchment areas of surface impoundments that is below the Federal Poverty Level is disproportionately high compared with the general population, i.e., 18.6 percent versus 11.3 percent nationally.

Comparing the population percentages of minority and low income residents within one mile of landfills to those percentages in the general population, EPA found that minority and low-income residents make up a smaller percentage of the populations near landfills than they do

in the general population, i.e., minorities comprised 16.6 percent of the population near landfills versus 24.8 percent nationwide and low-income residents comprised 8.6 percent of the population near landfills versus 11.3 percent nationwide. In summary, although populations within the catchment areas of plants with surface impoundments appear to have disproportionately high percentages of minority and low-income residents relative to the nationwide average, populations surrounding plants with landfills do not. Because landfills are less likely than impoundments to experience surface water run-off and releases, catchment areas were not considered for landfills.

The CCR rule is risk-reducing with reductions in risk occurring largely within the surface water catchment zones around, and groundwater beneath, coal-fired electric utility plants. Since the CCR rule is risk-reducing and this action does not add to risks, this action will not result in new disproportionate risks to minority or low-income populations.

**List of Subjects in 40 CFR Part 257**

Environmental protection, Beneficial use, Coal combustion products, Coal combustion residuals, Coal combustion waste, Disposal, Hazardous waste, Landfill, Surface impoundment.

Dated: February 19, 2020.

Andrew R. Wheeler,

Administrator.

For the reasons set out in the preamble, EPA proposes to amend 40 CFR part 257 as follows:

**PART 257—CRITERIA FOR CLASSIFICATION OF SOLID WASTE DISPOSAL FACILITIES AND PRACTICES**

1. The authority citation for part 257 continues to read as follows:

Authority: 42 U.S.C. 6907(a)(3), 6912(a)(1), 6944(a), 6945(d); 33 U.S.C. 1345(d) and (e).

2. Amend § 257.53 by adding the definition of “Borrow material” to read as follows:

**§ 257.53 Definitions.**

\* \* \* \* \*

*Borrow material* means materials that are dug from a pit or area for use as fill and include such materials as soil, sand, silt, clay, and gravel.

\* \* \* \* \*

3. Amend § 257.71 by adding paragraph (d) to read as follows:

**§ 257.71 Liner design criteria for existing CCR surface impoundments.**

\* \* \* \* \*

(d) *Alternate Liner Demonstration.* An owner or operator of a CCR surface impoundment constructed without a composite liner or alternate composite liner as defined in § 257.70(b) or (c), may submit an Alternate Liner Demonstration to the Administrator or the Participating State Director to demonstrate that the design of the current liner system or the naturally occurring media present performs equivalent to a composite liner as defined in § 257.70(b). To be granted, the owner or operator must demonstrate, with a reasonable degree of certainty, that based on the construction of the unit and surrounding site conditions, operation of the surface impoundment

will not result in groundwater concentrations above the relevant groundwater protection standard at the unit boundary. Prior to the submission of the alternate liner demonstration, the facility must submit an alternate liner demonstration application documenting the unit's eligibility to submit a demonstration. The application and demonstration must be submitted to the Administrator or the Participating State Director no later than the relevant deadline in paragraph (d)(2) of this section. The Administrator or the Participating State Director will act on the submissions in accordance with the procedures in paragraph (d)(2) of this section.

(1) To obtain approval under this paragraph, the owner or operator of the CCR surface impoundment must submit the following:

(i) *Application.* The owner or operator of the CCR surface impoundment must submit a letter to the Administrator or the Participating State Director, announcing their intention to submit a demonstration under this paragraph. The application must include the location of the facility and identify the specific CCR surface impoundment for which the demonstration will be made. The written demonstration must include information proving all of the following:

(A) The unit is in full compliance with this subpart except for § 257.71 (a)(1)(ii) and (iii),

(B) That the existing network of monitoring wells is sufficient to capture any releases, based on direction of flow, well location, screening depth and other relevant factors, including well construction logs and a sufficient number of diagrams to depict depth to groundwater, the potentiometric surface, and the anticipated direction(s) of groundwater flow across the site (multiple diagrams may be necessary if the direction of flow is affected by seasonal, tidal or other influences);

(C) That there is no indication from groundwater monitoring data that the unit has or will adversely affect groundwater (i.e., no statistically significant increases (SSI) of Appendix IV to

this part constituents above relevant GWPS), including documentation of the most recent statistical tests conducted and the rationale for the methods used in these comparisons, and

(D) That the unit meets the location restrictions under §§ 257.60 through 257.64.

(ii) *Alternate Liner Demonstration Package*. The completed alternate liner demonstration package must be certified by a professional engineer. The package must present evidence to demonstrate, with a reasonable degree of certainty, that based on the construction of the unit and surrounding site conditions, operation of the surface impoundment will not result in groundwater concentrations above the relevant groundwater protection standard at the unit boundary. For each line of evidence, as well as any other data and assumptions incorporated into the determination, the facility must include documentation on how the data were collected and why these data and assumptions are believed to adequately reflect potential contaminant transport at and around that specific impoundment. The alternate liner demonstration at a minimum must contain all of the following lines of evidence:

(A) *Characterization of site hydrogeology*. A characterization of the site-specific hydrogeology that surrounds the surface impoundment that defines the variability of the soil around the impoundment. The characterization must include all of the following:

(1) Measurements of the hydraulic conductivity in the uppermost aquifer measured from existing monitoring wells and discussion of the methods used to obtain these measurements.

(2) Subsurface samples collected to characterize site hydrogeology must be located around the perimeter of the impoundment at a spatial resolution sufficient to ensure that any regions of substantially higher conductivity have been identified;

(3) Conceptual site models with cross-sectional depictions of site stratigraphy that include the relative location of the impoundment (with depth of ponded water noted), monitoring

wells (with screening depths noted), and all other subsurface samples used in the development of the models;

(4) A narrative description of site geological history; and

(5) All of the data used in the conceptual site model summarized into easily readable graphs or tables.

(B) *Potential for infiltration.* This report must evaluate the potential for infiltration through any liners and underlying soils that control release and transport of leachate by either in-situ sampling, or by conducting an analysis of the soil-based liner and underlying soil of the unit through laboratory testing.

(2) *Procedures for Adjudicating Requests.* (i) *Deadlines for Submission.* The owner or operator must submit the application under paragraph (d)(1)(A) of this section to EPA or the Participating State Director for approval no later than [DATE 30 DAYS AFTER EFFECTIVE DATE OF FINAL RULE IN THE FEDERAL REGISTER]. The owner or operator must submit the demonstration required under paragraph (d)(1)(B) of this section to EPA for approval no later than one year after the deadline for the initial application. If the owner or operator cannot meet this second deadline due to analytical limitations, the owner or operator must submit a request for an extension no later than 90 days prior to the deadline for submission of the demonstration that includes a summary of the data that have been analyzed for the samples responsible for the delay and an alternate timeline for completion that has been certified by the laboratory.

(ii) *Application Review.* EPA or the Participating State Director will evaluate the application and may request additional information as necessary to complete its review. Submission of a complete application will toll the facility's deadline to cease receipt of waste into that unit until issuance of a final decision on the unit's eligibility. Incomplete submissions

will not toll the facility's deadline. Within sixty days of receiving a complete application, EPA or the Participating State Director will notify the owner or operator of its determination on the eligibility of their surface impoundment.

(iii) *Demonstration Review.* EPA or the Participating State Director will evaluate the demonstration package and may request additional information as necessary to complete its review. Submission of a complete demonstration package will toll the facility's deadline to cease receipt of waste into that unit until issuance of a final decision under paragraph (d)(2)(v) of this section. Incomplete submissions will not toll the facility's deadline.

(iv) EPA or the Participating State Director will publish a proposed decision on the alternate liner demonstration package on EPA's or the Participating State Director's website for a 30-day comment period.

(v) After consideration of the comments, EPA or the Participating State Director will issue its decision on the alternate liner demonstration package within 4 months of receiving a complete alternate liner demonstration package. If no substantive comments are received, the proposed decision will become effective 5 days from the close of the comment period.

(vi) *Effect of Denial.* If EPA or the Participating State Director determines that the unit is not eligible under paragraph (d)(1)(i) of this section, the owner or operator must cease receipt of waste and initiate closure within six months of the denial or by the deadline in § 257.101(a), whichever is later. If EPA or the Participating State Director determines that the unit's alternate liner does not meet the standard for approval in paragraph (d) of this section, the owner or operator must cease receipt of waste and initiate closure within six months of the denial. If a facility needs to obtain alternate capacity, they may do so in accordance with the procedures in § 257.103.

(vii) *Loss of authorization.* (A) If at any time assessment monitoring pursuant to § 257.95 is triggered for the unit, the facility must conduct intra-well analyses on each well as part of subsequent groundwater monitoring reports to identify any trends of increasing concentrations. If there is evidence that the unit may exceed the groundwater protection standard for any constituent within the operational life of the unit, EPA or the Participating State Director will reevaluate the authorization, and may revoke it if source control measures cannot be put in place while the unit continues to operate.

(B) The onus remains on the facility at all times to demonstrate that the unit meets the conditions for authorization under this section. If at any point, any condition for qualification under this section has not been met, EPA or the Participating State Director can without further notice or process deny or revoke the owner or operator's authorization under paragraph (d)(2)(vii).

4. Amend § 257.102 by:

- a. Revising paragraphs (c) and introductory text (d)(3)(ii);
- b. Adding paragraph (d)(4);
- c. Revising paragraphs (g) and (i)(4);
- d. Adding paragraph (l).

The additions and revisions read as follows:

**§ 257.102 Criteria for conducting the closure or retrofit of CCR units.**

\* \* \* \* \*

(c) *Closure by removal of CCR.* An owner or operator closing a CCR unit by removal of CCR must follow the procedures specified in either paragraph (c)(1) or (c)(2) of this section. Closure by removal activities include removing or decontaminating all CCR and CCR residues,

containment system components such as the unit liner, contaminated subsoils, contaminated groundwater, and CCR unit structures and ancillary equipment.

(1) *Complete all removal and decontamination activities during the active life of the CCR unit.* Within the timeframes specified in paragraph (f) of this section the owner or operator must do all of the following:

(i) Complete removal and decontamination of all areas affected by releases from the CCR unit;

(ii) Document that 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 standards established pursuant to § 257.95(h) for constituents listed in appendix IV to this part; and

(iii) Obtain the completion of closure certification or approval required by paragraph (f)(3) of this section.

(2) *Complete removal and decontamination activities during the active life and post-closure care period of the CCR unit.* The owner or operator may close the CCR unit by completing all removal and decontamination activities, except for groundwater corrective action, during the active life of the CCR unit and by completing groundwater corrective action during the post-closure care period pursuant to the following procedures:

(i) Within the timeframes specified in paragraph (f) of this section, complete all removal and decontamination activities except for groundwater corrective action;

(ii) Within the timeframes specified in paragraph (f) of this section, begin implementation of the remedy selected under § 257.97 such that all components of the remedy are in place and operating as intended;

(iii) Complete groundwater corrective action as a post-closure care requirement as specified in § 257.104(g);

(iv) Amend the written closure plan required by paragraph (b) of this section and the written post-closure care plan required by § 257.104(d), if necessary;

(v) Within the timeframes specified in paragraph (f) of this section, obtain the completion of closure certification or approval required by paragraph (f)(3) of this section; and

(vi) Within the timeframes specified in paragraph (f) of this section, record the notation on the deed to the property required by paragraph (i) of this section.

(d) \* \* \*

(3) \* \* \*

(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 paragraphs (d)(3)(ii)(A) through (C) of this section. The design of the final cover system must be included in the written closure plan required by paragraph (b) of this section.

\* \* \* \* \*

(4) *Exemption for the use of CCR in a CCR surface impoundment closing for cause.* (i)

This paragraph specifies the conditions under which CCR may be used in the closure of CCR surface impoundments closing pursuant to § 257.101. Notwithstanding the prohibition on further placement in § 257.101, CCR may be used in a CCR unit provided the written closure plan is approved by the Administrator or a Participating State Director. The approved closure plan must demonstrate that the use of CCR during closure would pose no reasonable risk of adverse effects during the closure and post-closure care periods by showing that the placed CCR will remain contained (i.e., isolated) in the unit closed in accordance with the closure performance standards

under § 257.102(d) so as to limit contact of the CCR in the unit with water and to prevent releases to the environment, including releases through surface transport by precipitation runoff, releases to soil and groundwater, wind-blown dust, and catastrophic unit failures. The following analyses and documentation must be included in the written closure plan:

(A) The volume of CCR that would be placed during closure would not exceed the volume of borrow material that otherwise would be used to achieve the subgrade elevations necessary to support the final cover system;

(B) The time needed to complete closure of the unit when using CCR would not exceed the time needed to close with soil or borrow material;

(C) The CCR unit meets the requirements of §257.64;

(D) The CCR unit is and will remain in compliance with the closure performance standards and requirements specified in § 257.102, even after the further placement of CCR;

(E) In addition to the requirements specified in § 257.102(d)(3), the design and construction of the final cover system must ensure the final cover system is no more permeable than the CCR placed in the unit as part of closure; and

(F) If the owner or operator of the unit has determined that any constituent listed in appendix IV to this part has been detected at a statistically significant level exceeding a groundwater detection standard defined under § 257.95(h), the additional placement of CCR will not adversely affect compliance with the corrective action remedy requirements under § 257.97(b).

(ii) *Review and approval.* (A) The owner or operator must submit the closure plan for the unit that includes the demonstrations specified in paragraph (d)(4)(i) of this section to the Administrator or Participating State Director for review and approval in advance of the

anticipated date of CCR use. The owner or operator must not make use of the exemption under this paragraph (d) until EPA or the Participating State Director has approved the closure plan.

(B) The approving authority should notify the owner or operator of approval or intent to disapprove the use of CCR in closure within 3 months after receipt of the initial closure plan or within 2 months after receipt of any supplemental information submitted.

\* \* \* \* \*

(g)(1) Except as provided by paragraph (g)(2) of this section, no later than two weeks from 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 date that closure of the CCR unit was initiated. The notification must also include the certification by a qualified professional engineer or the approval from the Participating State Director or the approval from EPA where EPA is the permitting authority for the design of the final cover system as required by § 257.102(d)(3)(iii), if applicable. The owner or operator has completed the notification when it has been placed in the facility's operating record as required by § 257.105(i)(7).

(2) If the owner or operator previously completed a notification of intent to close a CCR unit prior to the effective date of a rule finalizing this proposal that does not contain the date that closure of the unit was initiated, and if the owner or operator has not yet completed closure of the CCR unit by completing the completion of closure notification in accordance with paragraph (h) of this section, then no later than two months following the effective date of a rule finalizing this proposal, the owner or operator must prepare and place in the facility's operating record an updated notification of intent to close that includes the of date on which the owner or operator commenced closure of the unit.

\* \* \* \* \*

(i) \* \* \*

(4) An owner or operator that closes a CCR unit in accordance with paragraph (c)(1) of this section is not subject to the requirements of paragraphs (i)(1) through (3) of this section.

\* \* \* \* \*

(1) *Annual Closure Progress Reports.* Owners and operators of any CCR landfill, CCR surface impoundment, or any lateral expansion of a CCR unit that is closed in accordance with paragraph (c) or (d) of this section must complete the notices and progress reports specified in paragraphs (1)(1) and (2) of this section.

(1) The owner or operator must prepare annual closure progress reports summarizing the progress of closure implementation. The report must include the following information:

- (i) Discussion on which stage of closure the unit is currently undergoing;
- (ii) Discussion of the closure schedule; and
- (iii) Discussion of any problems that were experienced.

(2) The owner or operator of a CCR unit must prepare the initial closure progress report no later than the first January 31 following the effective date of a rule finalizing this proposal or the first January 31 following the year that closure activities for the unit were commenced, whichever date is later. An annual closure progress report must be completed for the unit until closure of the unit is completed in accordance with paragraphs (f) and (h) of this section.

5. Amend § 257.104 by:

- a. Revising paragraphs (a)(2) and (c)(1); and
- b. Adding paragraphs (c)(3), (g) and (h).

The additions and revisions read as follows:

**§ 257.104 Post-closure care requirements.**

(a) \* \* \*

(2) An owner or operator of a CCR unit that elects to close a CCR unit by removing CCR as provided by § 257.102(c)(1) is not subject to the post-closure care criteria under this section.

\* \* \* \* \*

(c) \* \* \* (1) Except as provided by paragraph (c)(2) and (c)(3) of this section, the owner or operator of the CCR unit must conduct post-closure care for 30 years.

\* \* \* \* \*

(3) An owner or operator closing a unit pursuant to § 257.102(c)(2) must conduct post-closure care pursuant to paragraph (g) of this section.

\* \* \* \* \*

(g) *Completion of removal and decontamination activities.* For a CCR unit closing pursuant to § 257.102(c)(2), the owner or operator must complete groundwater corrective action by demonstrating that any areas affected by releases from the CCR unit do not exceed the groundwater protection standards established pursuant to § 257.95(h) for constituents listed in appendix IV to this part.

(h) *Removal of a deed notation.* The owner or operator of a CCR unit closed pursuant to §§ 257.102(c)(2) and 257.104 may remove the notation from the deed specified in § 257.102(i) upon:

(1) Completion of groundwater corrective action demonstrating that any areas affected by releases from the CCR unit do not exceed the groundwater protection standards established pursuant to § 257.95(h) for constituents listed in appendix IV to this part; and

(2) Completion of the notification of completion of post-closure care period required by paragraph (e) of this section.

6. Amend § 257.105 by:

- a. Revising paragraph (i)(1);
- b. Removing and reserving paragraphs (i)(2) and (i)(3); and
- c. Adding paragraph (i)(14).

The additions and revisions read as follows:

**§ 257.105 Recordkeeping requirements.**

\* \* \* \* \*

(i) \* \* \*

(1) The notification of intent to initiate closure of the CCR unit as required by § 257.100(e)(1)(i).

\* \* \* \* \*

(14) The annual progress reports of closure implementation as required by § 257.102(l)(2) and (3).

\* \* \* \* \*

7. Amend § 257.106 by:

- a. Removing and reserving paragraphs (i)(2) and (i)(3); and
- b. Adding paragraph (i)(14).

The additions and revisions read as follows:

**§ 257.106 Notification requirements.**

\* \* \* \* \*

(i) \* \* \*

(14) The annual progress reports of closure implementation as required by § 257.105(i)(14).

\* \* \* \* \*

8. Amend § 257.107 by:

- a. Removing and reserving paragraphs (i)(2) and (i)(3); and
- b. Adding paragraph (i)(14).

The additions and revisions read as follows:

**§ 257.107 Publicly accessible Internet site requirements.**

\* \* \* \* \*

(i) \* \* \*

(14) The annual progress reports of closure implementation as required by § 257.105(i)(14).

\* \* \* \* \*

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