



6560-50-P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 257

[EPA-HQ-OLEM-2017-0286; FRL-9981-18-OLEM]

RIN 2050-AG88

Hazardous and Solid Waste Management System: Disposal of Coal Combustion Residuals from Electric Utilities; Amendments to the National Minimum Criteria (Phase One, Part One)

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final 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. In March 2018, EPA proposed a number of revisions to the 2015 CCR rule and requested comment on additional issues. In this rulemaking EPA is acting to finalize certain revisions to those criteria. First, EPA is adopting two alternative performance standards that either Participating State Directors in states with approved CCR permit programs (participating states) or EPA where EPA is the permitting authority may apply to owners and operators of CCR units. Second, EPA is revising groundwater protection standards (GWPS) for four constituents which do not have an established Maximum Contaminant Level (MCL). Finally, the Agency is extending the deadline by which facilities must cease the placement of waste in CCR units closing for cause in two situations: Where the facility has detected a statistically significant increase above a GWPS from an unlined surface

impoundment; and where the unit is unable to comply with the aquifer location restriction. Provisions from the proposed rule that are not addressed in this rule will be addressed in a subsequent action.

DATES: This final rule is effective on **[INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE *FEDERAL REGISTER*]**.

ADDRESSES: The EPA has established a docket for this action under Docket ID No. EPA-HQ-OLEM-2017-0286. The EPA has previously established a docket for the April 17, 2015, CCR final rule under Docket ID No. EPA-HQ-RCRA-2009-0640. All documents in the docket are listed in the <https://www.regulations.gov> index. Although listed in the index, some information is not publicly available, e.g., Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, will be publicly available only in hard copy form. Publicly available docket materials are available either electronically at <https://www.regulations.gov> or in hard copy at the EPA Docket Center (EPA/DC), EPA WJC West Building, Room 3334, 1301 Constitution Ave. NW., Washington, DC. 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.

FOR FURTHER INFORMATION CONTACT: For information concerning this final rule, contact Kirsten Hillyer, Office of Resource Conservation and Recovery, Environmental Protection Agency, 5304P, Washington DC 20460; telephone number: (703) 347-0369; email address: hillyer.kirsten@epa.gov. For more information on this rulemaking please visit <https://www.epa.gov/coalash>.

SUPPLEMENTARY INFORMATION:

I. Executive Summary

A. Purpose of the Regulatory Action

EPA is finalizing certain revisions to the 2015 regulations for the disposal of CCR in landfills and surface impoundments to: (1) provide States with approved CCR permit programs under the Water Infrastructure Improvements for the Nation (WIIN) Act or EPA where EPA is the permitting authority the ability to use alternate performance standards; (2) revise the GWPS for four constituents in Appendix IV to part 257¹ for which maximum contaminant levels (MCLs) under the Safe Drinking Water Act have not been established; and (3) provide facilities which are triggered into closure by the regulations additional time to cease receiving waste and initiate closure. This additional time will, among other things, better align the CCR rule compliance dates with the upcoming Effluent Limitations Guidelines and Standards Rule for the Steam Electric Power Generating Point Source Category (ELG rule). The ELG rule is currently scheduled to be proposed in December 2018 and finalized in December 2019.

B. Summary of the Provisions of the Regulatory Action

EPA is finalizing certain revisions to the regulations at 40 CFR part 257, subpart D. In the March 2018 proposal, the Agency proposed six alternative performance standards which participating states (i.e., those which have an EPA-approved CCR permit program under the WIIN Act) may adopt and sought comment on additional alternatives. This action finalizes two of the proposed alternative performance standards. These final revisions will allow a Participating State Director or EPA where EPA is the permitting authority to: (1) suspend groundwater monitoring requirements if there is evidence that there is no potential for migration of hazardous constituents to the uppermost aquifer during the active life of the unit and post-

¹ Unless other specified, all references to part 257 in this preamble are to title 40 of the Code of Federal Regulations (CFR).

closure care; and (2) issue technical certifications in lieu of the current requirement to have professional engineers issue certifications. The Agency is also finalizing a revision of the GWPSs for the four constituents in Appendix IV to part 257 without MCLs, in place of background levels under § 257.95(h)(2).

In the March 2018 proposal, the Agency also took comment on revisions to several provisions of the 2015 CCR rule. Of those proposed changes, the Agency is now revising the deadline by which two categories of CCR units closing for cause must initiate closure: (1) where the facility has detected a statistically significant increase from an unlined surface impoundment above a GWPS; and (2) where the unit is unable to comply with the aquifer location restriction.

Of particular note, in the March 2018 action, the Agency proposed four changes from the 2015 CCR rule associated with the settlement agreement entered on April 18, 2016, which resolved four claims brought by two sets of plaintiffs against the final CCR rule. See *USWAG et al v EPA*, No. 15-1219 (D.C. Cir. 2015). In this action, Agency will not be taking final action on any of the proposed amendments. As explained previously, provisions from the proposed rule that are not addressed in this action will be addressed in a subsequent rule-making action.

1. Severability.

EPA intends that the provisions of this rule be severable. In the event any individual provision or part of this rule is invalidated, EPA intends that this would not render the entire rule invalid, and that any provision that can continue to operate will be left in place.

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 finalizing the following: (1) a provision that authorizes the Participating State Director to issue certifications in lieu of a professional engineer (PE); (2) a provision that authorizes the Participating State Director to approve the suspension of groundwater monitoring if a “no migration” demonstration can be made; and (3) a revision of the GWPSs for the four constituents in Appendix IV to part 257 without MCLs, in place of background levels under § 257.95(h)(2). In addition, the Agency is finalizing an extension to the deadline by which facilities must cease the placement of waste in CCR units closing for cause in two situations: (1) Where the facility has detected a statistically significant increase over the groundwater protection standard from an unlined surface impoundment; and (2) where the unit is unable to comply with the aquifer location restriction. Provisions from the proposed rule that are not addressed in this rule will be addressed in a subsequent rulemaking action.

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

These regulations are established under the authority of sections 1006(b)(1), 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. 6905(b)(1), 6907(a), 6912(a), 6944, and 6945(a) and (d). These authorities are discussed in more detail in Section III.C of this preamble.

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

This action is expected to result in net cost savings amounting to between \$27.8 million and \$31.4 million per year when discounting at 7 percent and annualized over 100 years. It is expected to result in net cost savings of between \$15.5 million and \$19.1 million per year when discounting at 3 percent and annualized over 100 years. Further information on the economic effects of this action can be found in Section V of this preamble.

III. Background

A. The "2015 CCR Rule" and the March 2018 Proposal

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) titled, "Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities," (80 FR 21302) (CCR rule). The CCR rule regulated 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. These criteria were designed to be self-implementing. The 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 retrofit or close, except in certain circumstances.

The rule was challenged by several parties, including a coalition of regulated entities and a coalition of environmental organizations. See, *USWAG et al. v EPA*, No. 15-1219 (D.C. Cir. 2015). Four of the claims, a subset of the provisions challenged by the industry and environmental Petitioners, were settled. The rest were briefed and are currently pending before the U.S. Court of Appeals for the D.C. Circuit, awaiting resolution. On November 7, 2017, EPA sought remand without vacatur of five additional subsections of the rule on the grounds that EPA intended to reconsider those provisions. That request is also pending before the court.

The WIIN Act, which amends Section 4005 of the Resource Conservation and Recovery Act (RCRA), was enacted in 2016 to provide EPA additional authorities including the authority to review and approve state CCR permit programs. It also requires EPA to establish and carry out a permit program for CCR units in Indian Country, and for units in nonparticipating States, to achieve compliance with the current CCR rule or successor regulations. The WIIN Act provided that EPA may use its information gathering and enforcement authorities under RCRA sections 3007 and 3008 to enforce the CCR rule or permit provisions.

On September 13, 2017, EPA granted petitions from the Utility Solid Waste Activities Group (USWAG) and AES Puerto Rico LLP, requesting the Agency initiate rulemaking to reconsider provisions of the 2015 final rule.² EPA determined that it was appropriate and in the

² A copy of both rulemaking petitions are included in the docket to this final rule.

public interest to reconsider provisions of the final rule addressed in the petitions, in light of the issues raised in the petitions as well as the new authorities in the WIIN Act.

In October 2017, the DC Circuit Court of Appeals directed EPA to file a status report with the court indicating its schedule for addressing issues contained in the petitions for reconsideration. In the status report filed in November 2017, EPA stated that it anticipated it would complete its reconsideration of all provisions in two phases. The first phase would be proposed in March 2018 and finalized no later than June 2019 and the second phase would be proposed no later than September 30, 2018 and finalized no later than December 2019. EPA indicated that in the first phase, the March 2018 proposal, EPA would continue its process with respect to those provisions which were remanded back to EPA in June 2016. These are: (1) requirements for use of vegetation as slope protection; (2) provisions to clarify the type and magnitude of non-groundwater releases that would require a facility to comply with some or all of the corrective action procedures set out in §§ 257.96 through 257.98; and (3) the addition of Boron to the list of constituents in Appendix IV of part 257, the detection of which triggers assessment monitoring and corrective action requirements. EPA's March 2018 action contained proposals covering these remanded provisions.

In March 2018, EPA also proposed certain provisions that would allow the approval of alternative performance standards by Participating State Directors. These proposed alternative performance standards would allow a state with an approved permit program or EPA to: (1) use an alternative risk-based GWPS for Appendix IV constituents where no MCL exists; (2) modify the corrective action remedy in certain cases; (3) suspend groundwater monitoring requirements if a "no migration" demonstration can be made; (4) establish an alternate period of time to demonstrate compliance with the corrective action remedy; (5) modify the post-closure care

period; and (6) allow Participating State Directors to issue technical certifications in lieu of the current requirement to have professional engineers issue certifications. For Tribal lands and in non-participating states where Congress has specifically provided appropriations for EPA, the proposal defined “State Director” to mean the “EPA Administrator or their designee”. EPA also requested comment on potential revisions to several other provisions of the CCR rule and on other issues.

One topic EPA took comment on in the March 2018 proposed rule was on the groundwater monitoring compliance dates and if 90-days was a sufficient amount of time. While the Agency is not taking any final action on this topic in this action, EPA wishes to ensure that all parties understand the current rule and the relevant implementation deadlines. The Agency responded to a letter from the Utility Solid Waste Activities Group clarifying the deadlines and timeframes related to detection monitoring and the necessary statistical analysis for the groundwater monitoring.³ EPA clarified that the alternate source demonstration in detection monitoring (§ 257.94(e)(2)) does not run concurrently with the 90-day time frame in § 257.94(e)(1) or § 257.95(b). EPA also clarified that, assuming a facility elected to take advantage of the 90-day option in § 257.94(e)(2) [to demonstrate that a source other than the CCR unit is the source of contamination], January 14, 2019 as the deadline for facilities to make their initial determination of whether there has been the detection of a statistically significant increase of an Appendix IV constituent above the relevant groundwater protection standard in the downgradient wells. EPA noted that conducting the statistical analysis on two sets of sampling occurs only in this first round of assessment monitoring. All other statistical analyses on subsequent rounds of

³ EPA responded to USWAG in letters dated January 26, 2018 and April 30, 2018.

on-going semi-annual or annual sampling under assessment monitoring must be conducted following the single set of samples obtained during that sampling event.

EPA is taking final action on certain provisions in this rulemaking: (1) allowing a Participating State Director to issue certifications in lieu of a professional engineer (PE); (2) allowing a Participating State Director to approve the suspension of groundwater monitoring if a demonstration of “no migration” can be made; and (3) establishing alternative GWPSs for four Appendix IV constituents without MCLs in place of the background levels required under § 257.95(h)(2). In addition, the Agency is extending the deadline by which facilities must cease the placement of waste in CCR units closing for cause in two situations: (1) Where the facility has detected a statistically significant increase over the GWPS from an unlined surface impoundment; and (2) where the unit is unable to comply with the aquifer location restriction. Provisions in the proposed rule that are not addressed in this rulemaking will be addressed in a subsequent rulemaking.

B. Comments Received on the Proposed Rule

The agency received over 160,000 comments on the proposed rule. The majority of commenters focused on the four provisions remanded back to the Agency in 2016, as well as the six provisions proposed in response to passage of the WIIN Act. A number of commenters argued that no revisions were necessary to the April 2015 final CCR rule.

The areas on which EPA received the most substantial industry and state comments were: support for the establishment of risk-based alternative GWPSs for constituents that do not have an MCL, support for the extension of compliance deadlines, support for modification of the alternative closure provisions, and allowing certifications by a Participating State Director in lieu of a PE. Most of the environmental organizations and individual citizens commented that the

proposals would decrease protection of human health and the environment, especially if the facilities allow CCR units to leak contaminants into groundwater. Other comments related to topics that will be discussed in future rulemaking actions. Discussions of the specific comments germane to this rulemaking are provided in the relevant sections of this rule.

1. Public Hearing.

EPA conducted a public hearing on April 24, 2018, in Arlington, VA. There were 79 speakers and a total of 120 registered attendees. Testimony at the public hearing focused generally on the proposed amendments of allowing the use of alternative performance standards. Several speakers commented on: allowing alternate performance standards for the groundwater protection standards where no MCL is established, allowing Participating State Directors to issue certifications in lieu of a PE, and the overall risks, especially health risks, related to CCR. In addition to the testimonies that were entered into the rulemaking record, over 25 additional documents were submitted in hard copy and entered into the docket (see EPA-HQ-OLEM-2017-0286).

C. Statutory Authority

RCRA section 1006(b)(1) directs EPA to integrate the provisions of RCRA for purposes of administration and enforcement and to avoid duplication, to the maximum extent practicable, with the appropriate provisions of other EPA statutes. Section 1006(b) conditions EPA's authority to reduce or eliminate RCRA requirements on the Agency's ability to demonstrate that the integration can be done in a manner consistent with the goals and policies expressed in the chapter and in the other acts referred to in this subsection. 42 U.S.C. 6005(b)(1). See *Chemical Waste Management v. EPA*, 976 F.2d 2, 23, 25 (D.C. Cir. 1992).

RCRA section 1008(a) authorizes EPA to publish “suggested guidelines for solid waste management.” 42 U.S.C. 6907(a). RCRA defines solid waste management as “the systematic administration of activities which provide for the collection, source separation, storage, transportation, transfer, processing, treatment, and disposal of solid waste.” 42 U.S.C. 6903(28).

Pursuant to section 1008(a)(3), the guidelines are to include the minimum criteria to be used by the states to define the solid waste management practices that constitute the open dumping of solid waste or hazardous waste and are prohibited as “open dumping” under section 4005. Only those requirements promulgated under the authority of section 1008(a)(3) are enforceable under section 7002 of RCRA.

RCRA section 4004(a) generally requires EPA to promulgate regulations containing criteria for determining which facilities shall be classified as sanitary landfills (and therefore not “open dumps”). The statute directs that, “at a minimum, the criteria are to ensure that units are classified as sanitary landfills only if there is no reasonable probability of adverse effects on health or the environment from disposal of solid wastes at such facility.” 42 U.S.C. 6944(a).

RCRA section 4005(a), entitled “Closing or upgrading of existing open dumps” generally establishes the key implementation and enforcement provisions applicable to EPA regulations issued under sections 1008(a) and 4004(a). Specifically, this section prohibits any solid waste management practices or disposal of solid waste that does not comply with EPA regulations issued under RCRA section 1008(a) and 4004(a). 42 U.S.C. 6944(a). See also 42 U.S.C. 6903(14) (definition of “open dump”). As a general matter, this means that facilities must be in compliance with any EPA rules issued under section 4004(a) or be subject to suit for “open dumping” 42 U.S.C. 6945. RCRA section 4005 also directs that open dumps, i.e., facilities out of compliance with EPA’s criteria, must be “closed or upgraded”.

RCRA section 4005(d) provides that States may submit a program to EPA for approval, and permits issued pursuant to the approved state permit program operate in lieu of the Federal requirements 42 U.S.C. 6945(d)(1)(A). To be approved, a State program must require each CCR unit to achieve compliance with the part 257 regulations (or successor regulations) or alternative State criteria that EPA has determined are “at least as protective as” the part 257 regulations (or successor regulations). State permitting programs may be approved in whole or in part [42 U.S.C. 6945(d)(1)(B)]. States with approved CCR permitting programs are considered “participating states”.

In states without an approved program, EPA is to issue permits, subject to the availability of appropriations specifically provided to carry out this requirement 42 U.S.C. 6945(d)(2)(B). The FY 2018 Omnibus Appropriations Act provided \$6 million to EPA for the purpose of developing and implementing a Federal permit program for the regulation of CCR in nonparticipating states. PL 115-141. In addition, EPA is the permitting authority for CCR units in Indian Country. The statute expressly provides that facilities are to continue to comply with the CCR rule or successor regulations until a permit (issued either by an approved state or by EPA) is in effect for that unit 42 U.S.C. 6945(d)(3), (6).

IV. What Amendments Is EPA Finalizing?

During the rulemaking process for the 2015 CCR rule, EPA received numerous comments requesting that EPA authorize state permit programs and adopt alternative performance standards that would allow state regulators or facilities to “tailor” the requirements to particular site-specific conditions. Many requested EPA adopt particular alternative performance standards found in EPA’s municipal solid waste landfill (MSWLF) regulations in

40 CFR part 258⁴. Although the CCR rule was largely modeled on the MSWLF regulations, as explained in both the 2010 proposed and 2015 final rules, under the statutory provisions relevant to the CCR rule, EPA lacked the authority to establish a program analogous to part 258, which relies on approved states to implement the federal criteria through a permitting program. See, e.g., 80 FR 21332-21334. In the absence of a state oversight mechanism to ensure that alternative standards would be appropriate, EPA concluded at that time it could not adopt many of the “more flexible” performance standards in part 258 that commenters requested. *Id.* at 21333.

However, in 2016, Congress, with the passage of the WIIN Act, amended RCRA to establish a permitting scheme, analogous to that established for MSWLFs. Under these new provisions, States may now apply to EPA for approval to operate a permit program to implement the CCR rule. As part of that process, a State program may also include alternative State standards, provided EPA has determined they are “at least as protective as” the CCR regulations in 40 CFR part 257. 42 U.S.C. 6945(d)(1)(B), 6945(d)(1)(C).

In light of the WIIN Act, EPA examined the existing 40 CFR part 258 regulations to evaluate the performance standards that rely on a state permitting authority, to determine whether any of them could now be incorporated into the part 257 CCR regulations. To develop the proposed rule, EPA evaluated whether there was sufficient evidence in the record for those regulations to support incorporating either the part 258 MSWLF provision or an analogue into the part 257 CCR regulations.

Based on the results of this evaluation, EPA proposed to adopt six alternative performance standards modeled after part 258, which would allow a Participating State Director to: (1) Establish alternative risk-based GWPS for constituents where no MCL exists; (2) Modify

⁴ Unless otherwise specified, all references to part 258 of this preamble are to title 40 of the Code of Federal Regulations (CFR).

the corrective action remedy in certain cases; (3) Suspend groundwater monitoring requirements if a “no migration” demonstration can be made; (4) Establish an alternate period of time to demonstrate compliance with the corrective action remedy; (5) Modify the post-closure care period; and (6) Issue technical certifications in lieu of a professional engineers. Under the proposal, EPA would have the same authority to establish alternative performance standards in non-participating states, subject to appropriations, and in Tribal Country, as a Participating State Director would. EPA explained that these alternative performance standards were modeled after part 258 provisions in the MSWLF regulations that appeared to have been adopted based solely on a finding that they would protect human health and the environment; EPA believed that the facts supporting those original determinations would also support a finding that the provisions met the standard under RCRA section 4004(a).

EPA received a number of comments on this overall approach. Several commenters agreed that the record supporting any of the current provisions under the part 258 regulations would support revisions to the part 257 regulations. EPA also received comments stating that the proposed alternative protection standards failed to satisfy the requirements of RCRA section 4004(a). These commenters claimed that the record on which the proposals had relied was inadequate. Specifically, the commenters argued that EPA had in fact considered facilities’ “practicable capability in developing every provision of the rule, and so none were based exclusively on addressing the risks to health and the environment. These commenters also criticized the risk assessment conducted to support the part 258 regulations, claiming that it failed to consider the risks to sensitive subpopulations, that the only impact it evaluated was the risk to human health from drinking MSWLF-contaminated groundwater, and only if drinking water wells were within one mile of the MSWLF, and that in any event the characteristics of

(and therefore the risks posed by) MSWLF and CCR units are very different. These commenters also argued that EPA could not rely on the 2014 risk assessment conducted for the CCR rule to support the proposals without first evaluating whether the assumptions in that assessment are consistent with the results of the recently conducted groundwater monitoring, which they claim shows that the groundwater at almost all facilities is contaminated by at least one of the constituents in Appendix IV.

EPA is continuing to evaluate a number of technical issues raised in the comments. At the same time, the Agency recognizes the need to begin to implement the WIIN Act and to facilitate the transition to regulation of CCR through permit programs in a timely manner in order to address the urgent concerns presented by facilities that are faced with criteria that may be subject to change through this and other rulemaking actions and quickly approaching compliance deadlines that may require substantial investments and impact operational decision-making. EPA is also mindful that States are in the process of considering whether to seek approval or their regulatory programs, and in some cases, are in the process of developing those programs; greater certainty regarding the kinds of provisions that EPA currently has the record to approve would consequently be highly desirable in order to effectuate the purpose behind the WIIN Act. Accordingly, while EPA continues to evaluate the concerns raised regarding the 1991 and 2014 risk assessments, the Agency is finalizing at this time a select number of provisions that either do not rely on those materials for support to meet the standard in RCRA section 4004(a) or rely on portions that are not implicated by the technical issues under consideration.

EPA is adopting two of the proposals modeled after the existing provisions in 40 CFR part 258: (1) The Participating State Director may suspend groundwater monitoring requirements if there is evidence that there is no potential for migration of hazardous constituents to the

uppermost aquifer during the active life of the unit and the post-closure care period; and (2) The Participating State Director may decide to certify that certain regulatory criteria have been met in lieu of the exclusive reliance on a qualified PE. EPA is also adopting revised GWPS for constituents without a MCL under § 257.95(h)(2). After consideration of comments received, EPA has set risk-based values using the methodology discussed in the proposal. In addition, the Agency is finalizing an extension to the deadline by which facilities must cease the placement of waste in CCR units closing for cause in two situations: (1) Where the facility has detected a statistically significant increase over the groundwater protection standard from an unlined surface impoundment; and (2) where the unit is unable to comply with the aquifer location restriction. Further discussion of these comments received on these provisions and the bases on which EPA is adopting them is in their respective sections of this preamble.

For any of the proposed performance standards, EPA requested comment on whether the facility or owner operator should be required to post the specific details of the modification of the performance standard to the facility's publicly accessible website or require any other recordkeeping options. Based on comments received, and to maintain transparency facilities with a site-specific performance standard, such as suspending groundwater monitoring in the event a no migration demonstration can be made, EPA is requiring posting of specific details of the modification to a publicly accessible website. This is discussed further below.

A. Extension to Certain Deadlines for the Closure or Retrofit of Existing CCR Surface

Impoundments

The CCR rule requires existing CCR surface impoundments and landfills to cease receiving waste and initiate closure under certain circumstances. For existing CCR surface impoundments, these situations include unlined CCR surface impoundments whose groundwater

monitoring shows an exceedance of a GWPS (§ 257.101(a)(1)); CCR surface impoundments that do not comply with the location criteria (§ 257.101(b)(1)); and CCR surface impoundments that are not designed and operated to achieve minimum safety factors (§ 257.101(b)(2)). The current CCR regulations also require existing CCR landfills that do not comply with the location criteria for unstable areas to close (§ 257.101(d)(1)). In all of these situations, also referred to as “closure for cause” in the preamble to 2015 CCR final rule, the current CCR regulations specify that the owner or operator of the unit must cease placing any waste into the CCR unit and initiate closure activities within six months of making the relevant determination that the CCR unit must close.

After considering comments received in response to the March 15, 2018 proposed rule, as well as information in the rulemaking petitions submitted by USWAG and AES Puerto Rico⁵, the agency finds it appropriate to finalize an extension to the deadline by when owners or operators must cease the placement of waste in existing CCR surface impoundments closing for cause in two situations. The two situations include the deadlines applicable to: (1) Existing CCR surface impoundments that are unable to comply with the location restriction regarding placement above the uppermost aquifer; and (2) Existing unlined CCR surface impoundments whose groundwater monitoring shows an exceedance of a groundwater protection standard. The agency is not at this time making any revisions to the other deadlines that apply to existing CCR surface impoundments or to any of the deadline requirements that apply to new and existing CCR landfills and new CCR surface impoundments. The two subunits below explain the approach and rationale for the amendments to certain deadlines for these two situations.

⁵ “Utility Solid Waste Activities Group Petition for Rulemaking to Reconsider Provisions of the Coal Combustion Residuals Rule, 80 FR 21302 (April 17, 2015), and Request to Hold in Abeyance Challenge to Coal Combustion Residual Rule, No. 15-1219, et al. (D.C. Cir.)” dated May 12, 2017; and “AES Puerto Rico LP’s Petition for Rulemaking to Reconsider Provisions of the Coal Combustion Residuals Rule, 80 FR 21302 (April 17, 2015), and Request to Hold in Abeyance Challenge to the Coal Combustion Residuals Rule, No. 15-1219, et al. (D.C. Cir.)” dated May 31, 2017.

1. Revision of § 257.101(b)(1) Regarding the Deadline for Waste Placement and Closure of Existing Surface Impoundments that Fail to Demonstrate Compliance with a Location Standard.

In the March 15, 2018 proposed rule, EPA solicited public comment on whether the deadlines to comply with the location restrictions at §§ 257.60 through 257.64 are appropriate in light of the WIIN Act (83 FR 11598). The Agency sought comment on whether an alternative deadline, either through a permit program established under the WIIN Act or one that applies directly to the facility itself during an interim period, would be more appropriate to facilitate implementation of the WIIN Act. Owners and operators of existing CCR surface impoundments must complete the required demonstrations for five location restrictions⁶ no later than October 17, 2018.⁷ An owner or operator that fails to complete any one of the demonstrations by the deadline would trigger the closure requirements of § 257.101(b)(1), which requires the owner or operator of the unit to cease placing CCR and non-CCR wastestreams into the impoundment and close the impoundment in accordance with the closure provisions of the regulations.

EPA received numerous comments regarding the current deadlines associated with the location restrictions. Many commenters stated their support for extending the current deadlines to complete the required demonstrations for the location restrictions and, in particular, the location restriction for placement above the uppermost aquifer. These commenters stated that deadline extensions would allow time for both the proper implementation of the WIIN Act and the finalization of other substantive CCR rule revisions contemplated in the March 15, 2018 proposal, and would be consistent with the standard in RCRA section 4004(a), while limiting

⁶ The five location restrictions are placement above the uppermost aquifer, wetlands, fault areas, seismic impact zones, and unstable areas.

⁷ Inactive CCR surface impoundments are subject to a different deadline as specified in § 257.100(e)(2).

facilities' expenditure of significant resources and avoiding the initiation of irreversible operational changes, including the forced closure of impoundments (and potentially the power plants themselves) under the current compliance deadlines. Commenters also stated that extensions of the location restriction deadlines is necessary to ensure alignment of key implementation and operational decisions under the CCR rule with EPA's schedule for issuing revisions to the effluent limitations guidelines (ELGs) and pretreatment standards for the Steam Electric Power Generating Point Source Category.⁸ Some commenters recommended that the deadline for determining whether existing impoundments meet the aquifer separation location restriction should be keyed to a specific time following EPA's issuance of a final rule allowing for an alternative risk-based option for meeting this location restriction. Other commenters supported extending deadlines until after EPA finalizes the amendments contemplated in the March 15, 2018 proposal and states have time to adopt the rule revisions into their state regulations. Some commenters suggested that deadlines be extended a specific amount of time following the effective date of a final rule or to specific dates. These commenters recommended extensions ranging from 120 days to 12 months from the final rule's effective date and, while other commenters suggested deadlines be extended until November 2020. At a minimum, these commenters stated that EPA should extend the timeline related to the obligation to enter into forced closure under § 257.101. Finally, commenters stated that it is common practice for an agency to extend regulatory deadlines in circumstances where a regulation is under reconsideration.

⁸ On May 2, 2018, EPA issued the Final 2016 Effluent Guidelines Program Plan (83 FR 19281), which identifies new or existing industrial categories selected for effluent guidelines rulemakings and provides a schedule for such rulemakings. This 2016 Program Plan discusses that, in August 2017, EPA announced a rulemaking to potentially revise certain standards for existing sources in the Steam Electric Power Generating Point Source Category. The 2016 Program Plan also projects a schedule for such rulemaking, including a proposed rule in December 2018 and a final rule in December 2019. See page 6-1 of 2016 Program Plan.

Other commenters opposed any extension of the compliance deadlines associated with the location restrictions. These commenters stated that an extension is unwarranted due to the long history of delays in setting federal standards and the adverse impacts to human health and the environment from improperly sited CCR units. Commenters stated that facilities have had several years to prepare for meeting the location restrictions and that an extension of the deadline is unnecessary because the facilities should already have sufficient information to determine whether their CCR units comply with the location restrictions. Finally, these commenters point out that several utilities have already sought approval from state regulators to close CCR units that are not in compliance with the location restrictions. A compliance extension would thus penalize companies that have made good-faith efforts to comply with the current rule, while rewarding companies that have not prepared properly to comply.

EPA first considered whether to extend the deadlines by which owners or operators of CCR surface impoundments must complete the location restrictions demonstrations in §§ 257.60 through 257.64. Such a rule revision would have the effect of delaying the date that facilities would need to determine whether its CCR units are in compliance with the location restrictions. Most of the commenters raised concern about the current deadlines based on the assumption that the technical performance standards would subsequently be revised, either because EPA was reconsidering those criteria or because States would revise them as part of their permit programs. The commenters provided no data or other information to suggest that compliance with the existing location restriction demonstration deadlines presents technical difficulties or is otherwise infeasible. Rather the primary technical concern raised by the comments was the need for more time to develop or find alternative capacity to replace any units that cannot comply with the location criteria. As one commenter explained, in a typical state, the process to modify a

major wastewater discharge permit as required to reroute non-CCR waste water streams can take more than a year to complete. This commenter also provided concrete examples to support their contention that it may take 18-36 months to find alternate capacity for their non-CCR wastes streams.

For a simple project—which the commenter described as a site that (1) does not provide base load generation, and thus there would be minimal impact to project timing due to planned unit outages to install the piping re-routes and associated mechanical and electrical connections; (2) has fewer streams to re-route, operates intermittently, and (3) has straightforward low volume waste streams (i.e., technically definable in terms of quantity and quality)—the overall duration (18 months) is three times the 6-month duration provided for by the existing regulations.

By contrast, a more complex site the overall duration is approximately 36 months – nearly six times longer in duration than currently provided for in the existing CCR rule. For a more complex site, the current water balance may indicate there are over 50 non-CCR individual waste streams which go to the CCR impoundment. Additionally, each unit utilizes an FGD that produces a waste stream, which also goes to the CCR impoundment. The FGD waste water stream has the most complex water chemistry and variability of any water stream in the plant. Complex project in terms of the number of streams to re-route, its more consistent operation (and scheduled outages), and its complex water chemistry associated with several of the non-CCR wastestreams. Additionally, the large number of streams to deal with, some of which only flow intermittently, further complicates the process design of what treatment system is needed. The water treatment process equipment alone requires a schedule of 13 months to procure, fabricate, and deliver to the plant site (excluding construction). When these efforts are properly stacked

and staggered consistent with accepted engineering and project management practice, the overall duration is approximately 36 months.

In both examples discussed previously, the commenter explained that the current regulation also provides inadequate time for proper start-up and commissioning. Reports from industry indicate that it can take several months to properly tune and commission a large water treatment plant. The commenter stated that the six months in the existing rule is, at best, barely adequate to properly tune a complex wastewater treatment plant to steady state operation accounting for quantity and quality variations in the non-CCR water streams.

After considering all of the comments, EPA considers that the potential for revisions to the technical criteria themselves is too speculative at this stage to form the basis for a regulatory revision. EPA received no concrete proposals or suggestions for possible modifications to the technical criteria themselves. Nor does EPA currently have any potential options under consideration. And none of the States that have submitted applications (or with whom EPA has had discussions) for program authorization included any alternative location criteria. Accordingly, EPA has determined not to revise the deadlines to complete the requisite demonstrations.⁹

However, EPA acknowledges that legitimate concerns have been raised about the feasibility of complying with the current closure timeframes. EPA considers that the issues discussed above are not unique to the commenter, but are shared by facilities across the industry. And these concerns are equally relevant in this context, as units that do not comply with the location requirements must close pursuant to § 257.101(b)(1).

⁹ These deadlines are codified in §§ 257.60(c)(1), 257.61(c)(1), 257.62(c)(1), 257.63(c)(1), and 257.64(d)(1).

EPA also takes very seriously the concern that facilities not be prematurely compelled to make potentially irreversible operational changes or otherwise be forced to invest in compliance measures that may subsequently need to be modified. This was part of the reason that EPA originally chose to align key implementation and operational decisions under the CCR rule with EPA's schedule for issuing the effluent limitations guidelines and pretreatment standards (ELGs) for the Steam Electric Power Generating Point Source Category to be appropriate. The ELG requirements will be highly relevant to facility's decisions regarding the development of alternative capacity to manage non-CCR wastestreams. EPA is currently in the process of rulemaking to consider revising certain standards for existing ELGs sources; that rulemaking is projected to be completed by December 2019. EPA recently changed the earliest ELG compliance date for FGD and bottom ash wastewater to October 2020 to account for these potential revisions. See 82 FR 43494. EPA's original concern thus continues to be highly relevant.

To address these concerns, EPA therefore considered whether an extension of the deadline in the closure for cause provisions in § 257.101(b)(1) that would better coordinate the compliance and implementation deadlines between the CCR and ELGs rules, as suggested by many of the commenters, was warranted. Such a rule revision would still require facilities to make the requisite location restriction demonstrations by the deadlines specified earlier (i.e., October 17, 2018), but would extend the timeframe during which the facility could continue to use the unit, and thereby provide the facility with more time to adjust its operations. This approach would allow facilities to better coordinate their engineering, financial and permitting activities under the two rules, and would account for EPA's on-going ELG rulemaking. Therefore, EPA is extending the closure for cause trigger from the six-month period currently

specified in the rule until October 31, 2020, which increases that time period by approximately 18 months. The agency selected the date to coordinate with the revised compliance date for the ELG requirements. The agency anticipates completing the ELGs rulemaking by December 2019 and providing nine months from the rule's likely publication in January 2020 would be sufficient for facilities to make informed decisions to meet the requirements of both rules. That 18-month period also corresponds with the lower end amount of time estimated to be needed to find alternative capacity for non-CCR wastestreams.

Finally, EPA considered whether to apply a time extension to all location restrictions, or a subset of them. Commenters consistently identified the placement above the uppermost aquifer location restriction as the critical standard, and so EPA has limited its revision to address this specific concern. This time extension does not affect other deadlines in the regulations, and facilities therefore are required to comply with all requirements of an operating facility (e.g., inspections), which are designed to ensure that the facility operations will meet the statutory standard during this extension period.

2. Revision of § 257.101(a)(1) Regarding the Deadline for Waste Placement and Closure or Retrofit of Existing Unlined CCR Surface Impoundments.

The agency solicited comment in the March 15, 2018, proposed rule on appropriate time frames for the assessment monitoring requirements (83 FR 11599). The 2015 regulation establishes a groundwater monitoring program consisting of detection monitoring, assessment monitoring and corrective action. Because the current assessment monitoring program includes a series of 90-day time periods in which an owner or operator is to perform the required analysis and demonstrations, EPA sought comment on whether 90 days is an appropriate time period for the assessment monitoring requirements in light of the WIIN Act. The agency specifically

requested comment on whether alternative time periods are necessary to perform the required analysis and demonstrations and whether such alternative time periods would be more appropriate to facilitate implementation of the WIIN Act and any amendments to the CCR regulations as a result of the March 15, 2018 proposed rule.

The groundwater monitoring program requires an owner or operator of a CCR unit to install a system of monitoring wells and specify procedures for sampling these wells, in addition to methods for analyzing the groundwater data collected, to detect the presence of specified constituents and other monitoring parameters released from the units. Among other requirements, the 2015 regulations required facilities to have installed the groundwater monitoring system and initiated detection monitoring no later than October 17, 2017.¹⁰ Some CCR units are currently operating under the assessment monitoring provisions of the regulations. Facilities monitoring groundwater under the assessment monitoring program are required to close or retrofit an unlined CCR surface impoundment if the monitoring results show that the concentrations of one or more of the constituents listed in Appendix IV to part 257 are detected at statistically significant levels above any GWPS. § 257.101(b)(1).

EPA received numerous comments on this issue. The general theme of those comments supportive of an extension was similar to that summarized in the previous subsection addressing location restrictions. Many commenters emphasized that an extension is needed to properly implement the objectives of the WIIN Act. Commenters stated that without an extension of the assessment monitoring deadlines, there would be little to no practical effect from the proposed revisions because facilities will have to make irreversible decisions and investments based on the 2015 rule. Many of these commenters identified two proposals of greatest concern: (1) the ability

¹⁰ Inactive CCR surface impoundments are subject to a different deadline as specified in § 257.100(e)(5).

of facilities to establish risk-based GWPSs for Appendix IV constituents without MCLs; and (2) the incorporation of risk-based flexibility into the corrective action program. These commenters stated that the current schedule of the assessment monitoring program does not provide time for these provisions to take effect before some facilities will be compelled to initiate corrective action and/or forced to close could qualify for the new alternative closure provision. Some commenters also argued that the existing deadline associated with implementing the GWPS, in particular those associated with assessment monitoring are too short to adequately identify the source and extent of an exceedance. Commenters urged the Agency to extend these deadlines or, at a minimum, to defer the obligation to establish groundwater protection standards until after EPA adopts these two proposals.

Commenters also stated that an extension is necessary to align key implementation and operational decisions under the CCR rule with EPA's schedule for revising the ELGs for the Steam Electric Power Generating Point Source Category. Other commenters suggested that deadlines be extended a specific amount of time following the effective date of a final rule. These commenters recommended extensions ranging from 120 days to 12 months from the final rule's effective date.

Other commenters opposed any extension of the deadlines associated with the assessment monitoring program. These commenters stated that an extension is unwarranted due to the long history of delays in setting federal standards and the adverse impacts to human health and the environment from improperly sited CCR units. Commenters stated their opposition to revising the regulations that would allow facilities to continue to CCR units that are unlined and already contaminating groundwater.

EPA first considered the request to extend the assessment monitoring deadlines to allow States the opportunity to establish alternate risk-based GWPS under § 257.95(h). Most of the commenters raised concern about the current deadlines based on the assumption that the GWPS would subsequently be revised as part of a State-approved permit program. But the requested extension would have delayed the initiation of closure under § 257.101(a)(1) and corrective action provisions of §§ 257.96 through 257.98 for all constituents, not merely for the four without MCLs that commenters believed were likely to be revised.

As discussed Unit IV.B of this preamble, EPA is establishing health-based GWPSs for all four of the constituents in Appendix IV without established MCLs. These revised standards, because they are health-based standards, are not expected to be affected by State programs, which alleviate the concern that facilities will be forced to take action in response to standards that are likely to be revised. EPA therefore has no basis to revise the assessment monitoring deadlines.

Nevertheless, as noted previously, numerous commenters raised concern that compliance with the current closure requirements is not technically feasible. These concerns, and the considerations motivating EPA to revise the deadlines for the aquifer location criterion, are equally relevant in this context, as unlined surface impoundments units that are leaking must close, in accordance with § 257.101(a)(1). EPA therefore considered whether an extension of the deadline in § 257.101(a)(1) to initiate the closure of unlined surface impoundments, similar to the extension of the deadlines for the location restrictions, would address the commenters' concerns. Such a provision would require facilities to follow the assessment monitoring procedures and determine whether any contaminants have been detected at statistically significant levels above the GWPS established under § 257.95(h). A facility that makes such a

determination would still be required to initiate corrective action to clean up the contamination in the aquifer, but could continue to use the unit for an extended period, which would provide the facility with more time to adjust their operations. This approach would allow facilities to better coordinate their engineering, financial and permitting activities under the two rules, and would align with EPA's recent and on-going ELG rulemakings. Therefore, EPA has extended the closure for cause trigger by the same 18-month period granted for the location restrictions. The agency selected the date October 31, 2020, to coordinate with the revised earliest compliance date for the ELG requirements. The Agency anticipates completing the ELG rulemaking by December 2019 and providing nine months from the rule's likely publication in January 2020, for facilities to make appropriate decisions knowing the requirements of both rules.

This time extension does not affect other deadlines or any other requirement in the regulations, and facilities therefore remain obligated to comply with all requirements of an operating facility (e.g., inspections), which are designed to ensure that the facility operations will meet the statutory standard during this extension period.

B. Alternative risk-based groundwater protection standards

The 2015 CCR rule required the CCR unit owner or operator to set the GWPS at the MCL or to background for all constituents in Appendix IV to part 257 that are detected at a statistically significant level above background. MCLs are levels of constituent concentrations promulgated under section 1412 of the Safe Drinking Water Act. If no MCL exists for a detected constituent, then the GWPS needed to be set at background. In cases where the background level is higher than the promulgated MCL for a constituent, the GWPS was to be set at the background level.

In March 2018, EPA proposed to amend the 2015 CCR rule to incorporate certain requirements from 40 CFR part 258 that would allow Participating State Directors, and EPA where it is the permitting authority, flexibility to approve an alternative GWPS, which was required to be derived in a manner consistent with Agency guidelines. Some of the risk guidelines used to support establishment of the part 258 regulations had since been replaced or supplemented, so the proposal referenced the updated versions. Specifically, EPA cited to the *Supplementary Guidance for Conducting Health Risk Assessment of Chemical Mixtures*,¹¹ which supplements 51 FR 34014 (September 24, 1986); the *Guidelines for Developmental Toxicity Risk Assessment*,¹² which amends 51 FR 34028 (September 24, 1986); and the *Guidelines for Carcinogen Risk Assessment*,¹³ which amends 51 FR 33992 (September 24, 1986). Also, EPA proposed to add guidance on deriving a reference dose, *Reference Dose (RfD): Description and Use in Health Risk Assessments*.¹⁴

EPA also proposed to incorporate the part 258 requirement that the alternative GWPS be based on scientifically valid studies conducted in accordance with the Toxic Substances Control Act Good Laboratory Practice Standards (40 CFR part 792) or the equivalent. For non-carcinogens, EPA proposed to require that States use a reference dose with a hazard quotient (HQ) of 1 as the upper bound on risk, to establish the alternative GWPS. This methodology was the same as that used to establish the technical criteria in the 2015 CCR regulation. EPA's proposal explained that reliance on this methodology was reasonable as it would ensure that this

¹¹ USEPA, "Supplementary Guidance for Conducting Health Risk Assessment of Chemical Mixtures", EPA/630/R-00/002, August 2000. This document can be accessed in the docket

¹² USEPA, "Guidelines for Developmental Toxicity Risk Assessment", EPA/600/FR-91/001, December 1991. This document can be accessed at <https://cfpub.epa.gov/ncea/risk/recordisplay.cfm?deid=23162>.

¹³ USEPA, "Guidelines for Carcinogen Risk Assessment", EPA/630/P-03/001F, March 2005. This document can be accessed at <https://www.epa.gov/risk/guidelines-carcinogen-risk-assessment>.

¹⁴ This document can be accessed at <https://www.epa.gov/iris/reference-dose-rfd-description-and-use-health-risk-assessments>.

provision (and any alternative GWPS eventually established under this provision) would meet the requisite statutory standard. Examples of groundwater values consistent with the proposed requirements were provided, including Action Levels promulgated under the Safe Drinking Water Act and the Regional Screening Levels for Chemical Contaminants at Superfund Sites.¹⁵ EPA solicited comment on the revised approach to establishing an alternative GWPS.

Significant comments were received in support of the proposal to allow States to approve an alternative GWPS. Commenters stated that States have robust regulatory frameworks to regulate groundwater protection, that allowing this flexibility is consistent with how requirements for MSWLFs are implemented under Subtitle D, and that the oversight and enforcement authorities provided in the WIIN Act allow EPA to ensure States will set protective standards. Commenters also stated that risk-based alternative GWPS would be more appropriate than the current requirement to use background levels where no MCL has been established for an Appendix IV constituent.

Comments were also received opposing the proposal to allow Participating State Directors to approve an alternative GWPS. Concerns raised included lack of resources or technical expertise at state agencies, and the failure to require any alternative GWPS to be protective of sensitive subgroups, which is included in the MSWLF regulations at 40 CFR 258.55(i). Commenters opposed to this proposal raised concerns that it would: establish vague, unenforceable guidelines; fail to address ecological risk or cancer risk; ignore health-based exposure concentrations that are already developed; and would ultimately allow states to increase risks to human health and the environment above the statutory standard. Commenters also called attention to that allowing Participating State Directors to set alternative standards could result in

¹⁵ This document can be accessed at <https://www.epa.gov/risk/regional-screening-levels-rsls>.

variability in regulatory standards for chemicals that present the same health risks, regardless of geography. Commenters also raised concerns about protectiveness of the proposed approach and EPA's ability to use the part 258 record to support providing discretion to Participating State Directors. One group of commenters maintained that it is arbitrary and insufficiently protective to let states establish GWPS where EPA has already established risk-based levels for Appendix IV constituents with no established MCL, also citing the Superfund program's "Regional Screening Levels" (RSLs).

Some comments requesting that EPA consider established, available health-protective benchmarks for Appendix IV constituents, such as RSLs, and well-established assessment methodology for developing more site-specific GWPS. One industry commenter maintained that "Of particular relevance to the CCR Rule are the risk-based policies and resources for the protection and remediation of impacted groundwater that U.S. EPA has developed. Specifically, U.S. EPA has established Regional Screening Levels (RSLs) to assess potential human health risks from chemicals in soil, water, and air.... These values assist risk assessors in determining whether levels of constituents at a site may warrant further investigation or cleanup, or whether no further investigation is required." The commenter goes on to explain that RSLs, while protective, are significantly higher than background concentrations of cobalt, lithium, and molybdenum collected by USGS. Using the RSLs instead of background would avoid corrective action costs of cleaning up to background levels without providing any health benefit. See EPA-HQ-OLEM-2017-0286-1314, Attachment 2, pp. 2. An environmental commenter, concerned about the potential for states to set their own standards, said, "In the case of EPA's coal ash regulations, not only is EPA in a better position to establish health-protective levels for each non-MCL constituent, but the Agency has already done so." The commenter goes on to say that "If

EPA chooses to allow groundwater protection standards other than background, those standards must be no less stringent than the EPA RSLs or health advisories.” See EPA-HQ-OLEM-2017-0286-2136 pp. 134-139.

In the proposal, EPA also solicited comment on whether an alternative risk-based GWPS could be established by an independent technical expert or experts where there is no approved permitting authority. Numerous commenters opposed this suggestion, for reasons including: (1) EPA previously rejected that approach in the 40 CFR part 258 regulations, which restricted this provision to Participating State Directors; (2) EPA does not provide an adequate record to support such a proposal; (3) Such a regulation, if finalized, would fail to satisfy the protectiveness standard in RCRA section 4004(a). Commenters in support of this primarily cited the pending compliance dates in the CCR rule as a reason to allow an alternative GWPS to be established under the self-implementing program. Commenters expressed concern that by the time States receive approval of permitting programs and EPA establishes its own permitting program, groundwater monitoring deadlines would have passed and it would be too late to establish alternative GWPSs. To illustrate this point, one industry commenter stated that half of its CCR units could be forced to initiate alternate source demonstrations or corrective action assessment based solely on having detected Appendix IV constituents with no MCLs above background levels. Commenters stated that the oversight and enforcement authorities provided to EPA by the WIIN Act would ensure that site-specific alternative GWPS established by independent experts are protective.

EPA agrees with commenters that State programs are unlikely to be developed and approved prior to the critical deadlines in the CCR rule. EPA continues to evaluate technical issues, and the various concerns raised by the commenters, but the Agency has developed the

alternative adopted today that does not rely on the part 258 record for support, and also balances commenters' concerns. EPA has developed a specific GWPS for each of the four constituents in Appendix IV without an MCL, to be used in place of the default background concentrations currently required under § 257.95(h)(2). Adopting national criteria will provide health-based standards available to facilities now to use to compare against monitored groundwater concentrations and develop cleanup goals. Note that a State Director may always seek approval for alternative State criteria as part of the process under the WIIN Act; this could, for example, include the establishment of alternative GWPS for the constituents listed in Appendix IV. See 42 U.S.C. 6945(d)(1)(B)(ii), (C), requiring the Administrator to approve a State permit program that allows a State to include technical standards for individual permits or conditions of approval that differ from the criteria under part 257 of title 40, Code of Federal Regulations if, based on site-specific conditions, the Administrator determines that the technical standards established pursuant to a State permit program are at least as protective as the criteria under that part.

Specifically, the Agency is adopting the following health-based levels as the GWPSs for the four Appendix IV constituents without a designated MCL: 6 micrograms per liter ($\mu\text{g/L}$) for cobalt; 40 $\mu\text{g/L}$ for lithium, and 100 $\mu\text{g/L}$ for molybdenum. EPA is adopting the alternative GWPS for lead at 15 $\mu\text{g/L}$. These levels were derived using the same methodology that EPA proposed to require States to use to establish alternative GWPS (See, 83 FR 11598-11599, 11613). The methodology follows Agency guidelines for assessment of human health risks of an environmental pollutant. This means that these GWPSs are expected to be concentrations to which the human population could be exposed to on a daily basis without an appreciable risk of deleterious effects during a lifetime.

Specifically, EPA used the equations in the Risk Assessment Guidance for Superfund (RAGS) Part B to calculate these revised GWPS.¹⁶ RAGS Part B provides guidance on using drinking water ingestion rates and toxicity values to derive risk-based remediation goals. The use of these methods, consistent with EPA risk assessment guidelines addresses commenters' concerns about protecting sensitive populations. EPA relied upon relevant exposure information from the 2008 *Child-Specific Exposure Factors Handbook*,¹⁷ the *Exposure Factors Handbook: 2011 Edition*¹⁸ and the 2014 *Human Health Evaluation Manual, Supplemental Guidance: Update of Standard*.¹⁹ Values based on residential receptors were used to capture the range of current and future potential receptors. EPA identified toxicity values according to the hierarchy established in the 2003 Office of Solid Waste and Emergency Response Directive 9285.7-53,²⁰ which encourages prioritization of values from sources that are current, transparent and publicly available, and that have been peer reviewed. Finally, EPA used the same toxicity values (reference doses) that were used in the risk assessment supporting the 2015 CCR Rule. Cancer slope factors (CSF) were not identified for any of the relevant constituents. The finalized GWPS

¹⁶ Risk Assessment Guidance for Superfund (RAGS) Part B can be accessed at <https://www.epa.gov/risk/risk-assessment-guidance-superfund-rags-part-b>

¹⁷ USEPA "Child-Specific Exposure Factors Handbook" can be accessed in the docket or at <https://cfpub.epa.gov/ncea/risk/recordisplay.cfm?deid=199243>

¹⁸ USEPA "Exposure Factors Handbook: 2011 Edition" can be accessed in the docket or at <https://cfpub.epa.gov/ncea/risk/recordisplay.cfm?deid=236252>

¹⁹ 2014 Human Health Evaluation Manual, Supplemental Guidance: Update of Standard can be accessed in the docket or at <https://www.epa.gov/risk/update-standard-default-exposure-factors>

²⁰ Office of Solid Waste and Emergency Response Directive 9285.7-53 can be accessed in the docket or at <https://nepis.epa.gov/Exe/ZyNET.exe/91015CKS.TXT?ZyActionD=ZyDocument&Client=EPA&Index=2000+Thru+2005&Docs=&Query=&Time=&EndTime=&SearchMethod=1&TocRestrict=n&Toc=&TocEntry=&QField=&QFieldYear=&QFieldMonth=&QFieldDay=&IntQFieldOp=0&ExtQFieldOp=0&XmlQuery=&File=D%3A%5Czyfiles%5CIndex%20Data%5C00thru05%5CTxt%5C00000030%5C91015CKS.txt&User=ANONYMOUS&Password=anonymous&SortMethod=h%7C-&MaximumDocuments=1&FuzzyDegree=0&ImageQuality=r75g8/r75g8/x150y150g16/i425&Display=hpfr&DefSeekPage=x&SearchBack=ZyActionL&Back=ZyActionS&BackDesc=Results%20page&MaximumPages=1&ZyEntry=1&SeekPage=x&ZyPURL>

for cobalt, lithium, and molybdenum were set using a target based on a HQ = 1 for Participating State Directors to follow.

Commenters noted that a reference dose (RfD) has not been established for lead because of the difficulty in identifying a "threshold" level, below which adverse effects are not known or anticipated to occur. EPA acknowledges the commenters' concern and has set the GWPS for lead at the Action Level established under section 1412 of the Safe Drinking Water Act, which addresses comments received supporting the use of existing EPA risk-based standards. Because transport through ground water is the primary risk pathway identified in the 2014 Risk Assessment, this revised GWPS is anticipated to be protective of human health at these sites.

C. Modification of groundwater monitoring requirements

The current regulations at § 257.90 require all CCR units, without exception, to comply with the groundwater monitoring and corrective action requirements of §§ 257.90 through 257.98. The final CCR rule at § 257.91(a)(2) requires the installation of groundwater monitoring wells at the waste boundary of the CCR unit.

EPA is adopting a final provision that incorporates only minimal revisions from the proposal. The Agency recognizes that certain hydrogeologic settings may preclude the migration of hazardous constituents from CCR disposal units to groundwater resources. Requiring groundwater monitoring in these settings would provide little or no additional protection to human health and the environment. EPA considers that the final criteria are sufficiently precise and determinate that they will ensure that waivers are granted only in those rare situations, and therefore, EPA is incorporating the revised provision into the part 257 regulations.

As proposed, the Participating State Director would be allowed to suspend the groundwater monitoring requirements under §§ 257.90 through 257.95 if the owner or operator

can demonstrate that there is no potential for migration of any CCR constituents from that CCR unit to the uppermost aquifer during the active life of the unit, closure, and the post-closure care period. The demonstration must be certified by a PE or approved by a Participating State Director or approved EPA where EPA is the permitting authority, and must be based upon:

- (1) Site-specific field collected measurements, sampling, and analysis of physical, chemical, and biological processes affecting contaminant fate and transport, and
- (2) Contaminant fate and transport predictions that maximize contaminant migration and consider impacts on human health and environment.

This would allow the Participating State Director or EPA where EPA is the permitting authority to suspend the groundwater monitoring requirements in §§ 257.91 through 257.95 for a CCR unit upon demonstration by the owner or operator that there is no potential for migration of hazardous constituents from the unit to the uppermost aquifer during the active life, closure, or post-closure periods. However, the requirements of §§ 257.96 through 257.98 would not be suspended. As discussed below, the provision being finalized for the part 257 regulations would be identical to that in the part 258 regulations with the exception for the requirement to periodically demonstrate that conditions have not changed, that is, there is still no migration of Appendix III or IV constituents from the CCR unit to the uppermost aquifer.

The proposal acknowledged the difficulties of meeting the “no potential for migration” standard (83 FR 11602). The suspension of monitoring requirements is intended only for those CCR units located in hydrogeologic settings in which the Appendix III and IV constituents will not migrate to groundwater during the active life of the unit, as well as closure and post-closure periods. The proposal also stressed that a “no migration” waiver from certain RCRA requirements has been a component of both the part 258 and the RCRA subtitle C groundwater

monitoring programs for many years, and, based on its experience under these programs, the Agency expects that cases where the “no migration” criteria are met will be rare.

There were many general comments supporting the suspension of groundwater monitoring requirements if it can be demonstrated that there is no potential for migration of hazardous constituents from the CCR unit to the uppermost aquifer. These commenters supported this provision because it allows for more site-specific flexibility and prevents burdensome monitoring requirements that are unnecessary for protection of human health and the environment. A commenter also stated that it is unnecessary to incur ongoing monitoring costs if a unit has no impact to groundwater.

Supporters of the “no migration” waiver also stated that it should not be limited to facilities operating under a state or EPA CCR permit program, and should be broadened so that a qualified technical expert can make the no migration determination under the self-implementing CCR program. Commenters stated that the potential for abuse no longer exists due to the public notification requirements and EPA’s inspection and enforcement authority provided by the WIIN Act.

Groundwater monitoring is one of the key provisions under the regulations that protect health and the environment, as it ensures that contamination is detected and remediated. If the unit does leak and contaminants migrate into the aquifer, without monitoring there is no guarantee that those contaminants will be detected quickly, or necessarily at all. The potential consequences of this provision are therefore significant. Moreover, the determinations required to support the waiver are highly technical, and thus not readily evaluated during an inspection, by an inspector who may be able to document that the supporting analyses exist but is unlikely to have the time or expertise necessary to evaluate their scientific adequacy. Consequently, this

provision requires the additional layer of protection associated with having review by a regulatory authority, which would have the necessary technical expertise on staff, evaluate the request prior to its adoption.

Some commenters did not support the “no migration” proposal. One commenter explained that groundwater monitoring for CCR units had just barely taken effect and the first round of groundwater monitoring data was first published on March 2, 2018. This commenter also stated that all CCR facilities should be required to do groundwater monitoring to establish a baseline. Another commenter stated that due to the nature of sedimentary geological formations, fractures and fissures may exist throughout a coal-mined site, mined areas may settle and surface impoundments may leak. Therefore, suspension of groundwater monitoring should not be allowed.

EPA has determined that if a facility meets the criteria to demonstrate that there is no potential for migration at the unit, then the groundwater monitoring requirements of §§ 257.90 through 257.96 would not be necessary. However, the regulation requires that demonstrations of no potential for migration must be supported by both predictions that maximize contaminant migration and actual field data collected at the site. Field sampling is necessary to establish the site’s hydrogeological characteristics and must include an evaluation of unsaturated and saturated zone characteristics to ascertain the flow rate and pathways by which contaminants may migrate to groundwater. Thus, facilities would be expected to collect site-specific data relating to conditions, geology, water levels, etc. as well as contaminant concentrations in the aquifer.

The proposal included four conditions that would be required for a facility to receive a waiver from groundwater monitoring. The first condition is that the suspension of groundwater

monitoring requirements in §§ 257.91 through 257.95 is available only for owners and operators of CCR units located in participating states. As discussed previously the Agency has limited the availability of the waiver because of the need to review a no-migration demonstration prior to granting a waiver from groundwater monitoring. However, in this final action, the Agency is expanding this provision to allow EPA the ability to review a no-migration demonstration to grant a waiver from groundwater monitoring where EPA is the permitting authority.

The second condition is that the rule requires demonstrations of no potential for migration to be supported by both predictions that maximize contaminant migration and actual field data collected at the site. The proposal explained in great detail how the different properties should be measured, building on guidance developed for part 258 (83 FR 11602). EPA explained in the proposal that the site-specific information called for under the proposed regulation to make the demonstration must include, at a minimum, the following information to evaluate or interpret the effects of the following properties or processes on contaminant fate and transport:

- (1) Aquifer Characteristics, including hydraulic conductivity, hydraulic gradient, effective porosity, aquifer thickness, degree of saturation, stratigraphy, degree of fracturing and secondary porosity of soils and bedrock, aquifer heterogeneity, groundwater discharge, and groundwater recharge areas;
- (2) Waste Characteristics, including quantity, type, and origin;
- (3) Climatic Conditions, including annual precipitation, leachate generation estimates, and effects on leachate quality;
- (4) Leachate Characteristics, including leachate composition, solubility, density, the presence of immiscible constituents, Eh, and pH;

- (5) Engineered Controls, including liners, cover systems, and aquifer controls (e.g., lowering the water table). These should be evaluated under design and failure conditions to estimate their long-term residual performance;
- (6) Attenuation of contaminants in the subsurface, including adsorption/ desorption reactions, ion exchange organic content of soil, soil water pH, and consideration of possible reactions causing chemical transformation or chelation; and
- (7) Microbiological Degradation, which may attenuate target compounds or cause transformations of compounds, potentially forming more toxic chemical species.

No migration petitions will vary considerably. The petition content will be strongly influenced by the type of unit for which a variance is sought and the methods chosen to demonstrate that there is no potential for migration. EPA believes the categories listed above and other site-specific information as required by the Participating State Director or EPA where EPA is the permitting authority will provide the necessary information, data, and analyses to determine the physical, chemical, and biological processes affecting the migration of CCR constituents. As discussed below, these criteria have largely been included in the final rule, with modifications to account for the differences between the Part 258 constituents, which include organics, and Appendix IV CCR constituents, which are metals.

The third condition is that demonstrations be certified by a qualified PE and approved by the Participating State Director or EPA where EPA is the permitting authority to ensure that there is a high degree of confidence that no contamination will reach the uppermost aquifer.

The fourth condition requires the owner or operator of the CCR unit to remake the demonstration every 10 years or sooner, if there is evidence migration has occurred, as determined by the Participating State Director or EPA where EPA is the permitting authority.

This new demonstration is required to be submitted to the Participating State Director or EPA where EPA is the permitting authority one year before the existing groundwater monitoring suspension is due to expire. If the suspension expires for any reason, the unit must begin groundwater monitoring according to §257.90(a) within 90 days.

EPA received several public comments both supporting and opposing this 10-year demonstration clause. A commenter stated that the provisions for the suspension of groundwater monitoring depart from the part 258 provisions on which they were modeled, by limiting any such suspension to a maximum 10-year term and requiring a re-demonstration for subsequent suspension approvals.

One commenter stated that if any breakthrough occurs in the CCR unit, 10 years is too long and would allow contamination to move toward adjacent discharge points, including pumping wells at nearby homes, farms and businesses, as well as streams, potentially endangering human health and the environment.

As discussed in more detail below, any site-specific demonstration to satisfy the “no migration” threshold involves several distinct criteria relating to site conditions. Because, as the commenter notes, engineered controls do fail facilities will be required to demonstrate that site conditions will collectively work to ensure there is no potential for migration. For example, the regulation also requires the evaluation of Climatic Conditions such as annual precipitation and leachate generation estimates. All of the regulatory factors together work to ensure that, when considering a “no migration” determination, in the event of a leak from a CCR unit, the constituents will not migrate to the uppermost aquifer during the lifetime of the unit and post-closure care.

Another comment received on the 10-year interval is that if the existing monitoring wells remain in place during the 10-year interval, those wells may be neglected and not usable for sampling at the end of the 10-year interval. If the existing monitoring wells are filled and sealed and new monitoring wells are installed, the ability to effectively compare data at the same location over time may be lost. The commenter stated that EPA should consider either removing the 10-year recurring demonstration requirement or add some minimum monitoring requirements at shorter intervals (e.g. groundwater elevations) to ensure maintenance of the monitoring wells.

EPA does not agree that monitoring wells will necessarily be unused during the 10-year interval. The proposal discussed how the “no migration” demonstration involves complying with rigorous requirements. Modeling may be useful for assessing and verifying the potential for migration of hazardous constituents. Models used should be based on actual field collected data to adequately predict potential groundwater contamination. When owners or operators prepare to re-certify a no migration demonstration, they must verify that the unit continues to meet the standard—i.e., that there is still no potential for migration of contaminants from the unit to the uppermost aquifer. To support this demonstration some type of field data, such as groundwater elevation measurements, would normally be collected during the 10-year period. The 10-year requirement to renew a waiver ensures that no dramatic changes have occurred that may cause contamination.

One commenter stated that EPA should adopt separate standards for the suspension of groundwater monitoring for CCR landfills and CCR surface impoundments. The commenter stated that CCR landfills should not be required to conduct a new demonstration once every 10 years to show that suspension of groundwater monitoring continues to be appropriate. EPA disagrees with this comment as the “no migration” waiver is dependent upon site-specific

hydrogeology, which can potentially change overtime, and the criteria for the waiver are not specific to either landfills or surface impoundments.

EPA considered the comments and is adopting the proposal with minor revisions to ensure that the regulatory language accurately reflects the principles reflected in the proposal. EPA discussed in the proposal why periodic renewals of “no migration” demonstrations were not required for MSW landfills. In part this is because the part 258 regulations apply only to landfills, while the CCR regulations apply to both landfills and surface impoundments. Surface impoundments by their very nature pose a potential for releases to groundwater that is different than landfills (e.g., presence of a hydraulic head). The risk assessment for the CCR rule found that, even when key variables are controlled (e.g., liner type, waste type) for the long-term risks from surface impoundments are greater than from landfills. Based on these factors, EPA is requiring an owner or operator to conduct a new demonstration once every 10 years to show that the suspension of groundwater monitoring continues to be appropriate. See § 257.90(g). This new demonstration must be submitted to the Participating State Director or EPA where EPA is the permitting authority one year before the existing groundwater monitoring suspension is due to expire. If the suspension expires for any reason, the unit must begin groundwater monitoring in accordance with § 257.90(a) within 90 days.

To address concerns that the proposed language was insufficiently prescriptive EPA has added the phrase, “based on the characteristics of the site in which the CCR unit is located,” to the regulatory text. This is intended to clarify that the site characteristics are the key component of any determination that a waiver can be granted, rather than unit characteristics, such as the type of liner, which can (and do) fail. This is consistent with both the proposal and the original part 258 regulation. See 83 FR 11602; 56 FR 51061. EPA provided examples of locations that

might be able to demonstrate no potential for migration in the preamble to the final MSWLF rule, such as extremely dry areas with little rainfall and great depths to groundwater, but acknowledged that these would be extremely rare. 56 FR 51061. EPA expects this to be the case with respect to CCR units as well.

For the same reason, EPA included in the regulation four of the seven categories of properties or processes on contaminant fate and transport that were discussed in the preamble to the proposed rule at 83 FR 11602. EPA omitted two categories from this original list to account for the differences between the Part 258 constituents and the Appendix IV CCR constituents. The part 258 constituents include organic compounds, and so factors, such as natural attenuation, are relevant to evaluating the potential for migration at the site. But the CCR constituents are metals or metalloid compounds, which will remain in the environment if released. The remaining factors have been a component of the MSWLF program since the regulations were first adopted in 1991. 56 FR 51061. See OSWER Solid Waste Disposal Facility Criteria Technical Manual for MSWLFs (EPA530-R-93-017, 1993)²¹.

The regulation does not include any consideration relating to current groundwater quality or potential future use of the aquifer EPA notes that, as with MSWLFs, this is not an appropriate factor for consideration under this provision. Further guidance for conducting these evaluations can be found in the OSWER Solid Waste Disposal Facility Criteria Technical Manual for MSWLFs (EPA530-R-93-017, 1993), the Ground-Water Monitoring Guidance Document for Owners and Operators of Interim Status Facilities (1983)²², and OSWER Preparing No-

²¹ USEPA OSWER “Solid Waste Disposal Facility Criteria Technical Manual for MSWLFs” (EPA530-R-93-017, 1993) can be found in the docket for this final rule.

²² USEPA “Ground-Water Monitoring Guidance for Owners and Operators of Interim Status Facilities” (1983) can be found in the docket for this final rule.

Migration Demonstration for Municipal Solid Waste Disposal Facilities: A Screening Tool
(EPA530-R-99-008 1999)²³.

D. Allow Participating State Directors or EPA where EPA is the permitting authority to issue certifications in lieu of requiring a PE certification

To ensure that the RCRA subtitle D requirements would achieve the statutory standard of "no reasonable probability of adverse effects on health and the environment" in the absence of regulatory oversight, the current CCR regulations require facilities to obtain third party certifications and to provide enhanced state and public notifications of actions taken to comply with the regulatory requirements. Specifically, in the final CCR rule EPA required numerous technical demonstrations made by the owner or operator be certified by a qualified professional engineer (PE) in order to provide verification of the facility's technical judgments and to otherwise ensure that the provisions of the rule were properly applied. While EPA acknowledged that relying upon a third-party certification was not the same as relying upon a state or federal regulatory authority and was not expected to provide the same level of independence as a state permit program, the availability of meaningful third-party verification provided critical support that the rule would achieve the statutory standard, as it would provide a degree of control over a facility's discretion in implementing the rule.

However, the situation has changed with the passage of the WIIN Act, which offers the opportunity for State oversight under an approved permit program. To reflect that, EPA proposed that the regulations allow a "State Director," the Director of a state with an approved CCR permit program (i.e., a "participating state"), to certify that the regulatory criteria have been met in lieu of the exclusive reliance on a qualified PE. EPA expects that states will generally rely

²³ USEPA OWER "Preparing No-Migration Demonstrations for Municipal Solid Waste Disposal facilities: A Screening Tool" (EPA530-R-99-008, 1999 can be found in the docket for this rule.

on the expertise of their own engineers to evaluate whether the technical criteria have been met. Alternatively, States might choose to retain the required certification by a qualified PE and use its own expertise to evaluate that certification. Finally, EPA noted that under the existing regulations, a facility may already rely on a certification provided by a qualified PE in a State agency, who reviews the facility actions as part of a purely State-law mandated process. Thus, EPA is confident that revising the regulation to authorize an approval from a Participating State Director will be at least as protective as the status quo under the existing regulations. To be clear an approved state may choose to provide certifications in lieu of a PE or may review and approve in addition to a PE. A participating state could also decide to solely rely on a certification by a facility's PE which would be the status quo based on the current regulations.

As a component of this proposal, EPA also proposed definitions of "State Director" and of a "participating state" in § 257.53. The definition made clear that these provisions were restricted to State Directors (or their delegates) with an approved CCR permit program. The definition also included EPA where EPA is the permitting authority (tribal lands and non-participating states). There are several changes to the proposed term of "State Director." First, we are finalizing the term as "Participating State Director." Currently there is a definition for *State Director* in 40 CFR 257.53 and EPA did not intend for our proposed definition to replace or amend the current definition. Therefore, we are finalizing the term "Participating State Director." This language is used throughout the preamble and regulatory text accordingly.

Furthermore, EPA received numerous comments on state directors issuing certifications. The majority of comments supported granting a State Director this authority. One comment received from ASTSWMO suggested removing EPA from the definition of State Director. ASTSWMO felt it was not appropriate to include EPA in the definition because intermingling

the State and EPA would lead to confusion on their implementation roles in CCR permit programs, and EPA agrees. EPA has therefore removed the sentence about EPA from the definition of Participating State Director and generally added “or approval from EPA where EPA is the permitting authority” after Participating State Director throughout the regulations.

The definition of Participating State Director has also been modified to reflect the statutory term of a “participating state” rather than the proposed term of “an approved state.” EPA has also adopted the proposed definition of a participating state, without modification. The final rule also incorporates the statutory definition of a non-participating state.

Finally, the regulatory text has been amended in 39 places to incorporate this change. These changes can be seen in the amended regulation text. Except for the regulations relating to structural stability, which continue to require the certification of a PE in all circumstances, the regulations have been modified to add the approval of Participating State Director or the approval from EPA where EPA is the permitting authority as an acceptable alternative. The structural stability evaluations, such as the periodic factors of safety assessment, require the specific expertise of a PE. As previously noted, EPA expects that a state will generally rely on the expertise of its own engineers to evaluate whether the technical criteria have been met, but to avoid any confusion, these regulations will continue to require certification by a PE. A state may, of course, require the facility to also obtain its approval as part of its own permit program.

E. Rationale for 30-day effective date

The effective date of this rule is 30 days after publication in the Federal Register. The Administrative Procedure Act (APA) provides that publication of a substantive rule shall be made not less than 30 days before its effective date and that this provision applies in the absence of a specific statutory provision establishing an effective date. See 5 U.S.C. 553(d) and 559. EPA

has determined there is no specific provision of RCRA addressing the effective date of regulations that would apply here, and thus the APA's 30-day effective date applies.

EPA has previously interpreted section 4004(c) of RCRA to generally establish a six-month effective date for rules issued under subtitle D. See 80 FR 37988, 37990. After further consideration, EPA interprets section 4004(c) to establish an effective date solely for the regulations that were required to be promulgated under subsection (a). Section 4004(c) is silent as to subsequent revisions to those regulations; EPA therefore believes section 4004(c) is ambiguous.

Section 4004(c) states that the prohibition in subsection (b) shall take effect six months after promulgation of regulations under subsection (a). Subsection (a), in turn provides that “[n]ot later than one year after October 21, 1976...[EPA] shall promulgate regulations containing criteria for determining which facilities shall be classified as sanitary landfills and which shall be classified as open dumps within the meaning of this chapter.” As noted, section 4004(c) is silent as to revisions to those regulations.

In response to Congress's mandate in section 4004(a), EPA promulgated regulations on September 13, 1979. 44 FR 53438. EPA interprets section 4004(c) to establish an effective date applicable only to that action, and not to future regulations the Agency might issue under this section. In the absence of a specific statutory provision establishing an effective date for this rule, APA section 553(d) applies.

EPA considers that its interpretation is reasonable because there is no indication in RCRA or its legislative history that Congress intended for the agency to have less discretion under RCRA subtitle D than it would have under the APA to establish a suitable effective date for subsequent rules issued under section 4004(c). Consistent with EPA's interpretation of the

express language of section 4004, EPA interprets statements in the legislative history explaining that section 4004(c) provides that the effective date is to be 6 months after the date of promulgate of regulations, as referring to the initial set of regulations required by Congress to be promulgated not later than 1 year after October 21, 1976, and does not mandate a 6 month effective date for every regulatory action that EPA takes under this section. This rule contains specific, targeted revisions to the 2015 rule and the legislative history regarding section 4004 speaks only to these initial 1976 mandated regulations.

This reading allows the agency to establish an effective date appropriate for the nature of the regulation promulgated, which is what EPA believes Congress intended. EPA further considers that the minimum 30-day effective date under the APA is reasonable in this circumstance where none of the provisions being finalized require an extended period of time for regulated entities to comply.

V. The Projected Economic Impacts of this Action

A. Introduction

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 costs and cost savings attributable to the provisions of this action against the baseline costs and cost savings of the 2015 CCR final rule. The RIA estimates that the net annualized impact of these five provisions over a 100-year period of analysis will be cost savings of between \$27.8 million and \$31.4 million when discounting at 7 percent and cost savings between \$15.5 million and \$19.1 million when discounting at 3 percent. This action is not considered an economically significant action under Executive Order 12866.

B. Affected Universe

The universe of affected entities for this rule consists of the same entities affected by EPA's 2015 CCR final rule. These entities are coal-fired electricity generating plants operated by the electric utility industry. They can be identified by their North American Industry Classification System (NAICS) designation 221112 "Fossil Fuel Electric Power Generation". The RIA estimates that there are 414 coal-fired electricity generating plants operating 922 CCR management units (landfills, disposal impoundments, and storage impoundments) that will be affected by this rule.

C. Baseline cost

The baseline costs for this rule are the costs of compliance with EPA's 2015 CCR final rule, as the provisions of this rule modify the provisions of the 2015 CCR final rule or modify the implementation of the 2015 CCR rule by WIIN Act participating states. The RIA for the 2015 CCR final rule estimated these costs at an annualized \$509 million when discounting at 7 percent and an annualized \$735 million when discounting at 3 percent.

D. Cost savings, other benefits, and adjustments to the baseline

The RIA estimates costs and costs savings for two proposals concerning the compliance deadlines for certain aspects of the 2015 CCR rule, as well as the two alternative performance standards that will apply in participating states under the WIIN Act, and the revision of the GWPSs for the four constituents in Appendix IV to part 257 without MCLs. The RIA estimates that the net annualized impact of these five provisions over a 100-year period of analysis will be an annualized cost savings of between \$27.8 million and \$31.4 million when discounting at 7 percent, and an annualized cost savings of between \$15.5 million and \$19.1 million when discounting at 3 percent. The majority of cost savings attributable to the rule come from the

provisions extending the date by which facilities must cease placing waste in CCR units. These provisions delay the large capital costs associated with ceasing to place waste in a unit. These capital costs include the cost of closure capping, post-closure monitoring, and converting to dry handling of CCR from wet handling.

The RIA also presents the adjustments to the baseline costs of the CCR final rule due to plant closures that occurred after the rule was published but before the effective date of the rule. The RIA accompanying the 2015 CCR final rule assigned compliance costs to these plants, which they are exempt from because they closed before the final rule's effective date. In all, 23 plants closed before the effective date of the final rule that were not accounted for in 2015 final rule RIA. The annualized compliance costs avoided for these plants equals between \$21.4 million and \$27.6 million per year when discounting at 7 percent and between \$21.7 million and \$32.4 million when discounting at 3 percent. This cost adjustment is detailed in the RIA that accompanies this rulemaking, however it is not factored into the baseline or the benefit estimates for this rule to keep comparisons with the 2015 CCR final rule straight forward. Also, the compliance costs not incurred by these plants would not be cost savings attributable to this rulemaking.

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 a 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 Regulatory Impact Analysis (RIA),

entitled *Regulatory Impact Analysis; EPA's 2018 RCRA Final Rule; Disposal of Coal Combustion Residuals from Electric Utilities; Amendments to the National Minimum Criteria (Phase One)*, is summarized in Unit V of this preamble and the RIA is available in the docket for this final rule.

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

This action is considered an Executive Order 13771 deregulatory action. Details on the estimated cost savings of this final 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 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 1189.28, OMB control number 2050-0053. This is an amendment to the ICR approved by OMB for the Final Rule: Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities published April 17, 2015 in the Federal Register at 80 FR 21302. You can find a copy of the ICR in the docket for this action, and it is briefly summarized here.

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: 414.

Frequency of response: The frequency of response varies.

Total estimated burden: EPA estimates the total annual burden to respondents to be a *reduction in burden* of approximately 16,690 hours from the currently approved burden. Burden is defined at 5 CFR 1320.3(b).

Total estimated cost: The total estimated annual cost of this rule is a *cost savings* of approximately \$4,752,588. This cost savings is composed of approximately \$1,045,091 in annualized avoided labor costs and \$3,707,497 in avoided capital or 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.

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 to result in net cost savings amounting to approximately \$27.8 million per year to \$31.4 million per year when discounting at 7 percent and annualized over 100 years. It is expected to result in net cost savings of between \$15.5 million and \$19.1 million when discounting at 3 percent and annualized over 100 years. Savings will accrue to all regulated entities, including small entities. Further information on the economic effects of this action can be found in Unit V of this preamble and in the Regulatory Impact

Analysis, which is available in the docket for this action. We have therefore concluded that this action will relieve regulatory burden for all directly regulated 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 does not have tribal implications as specified in Executive Order 13175. For the “Final Rule: Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities” published April 17, 2015 in the Federal Register at 80 FR 21302, EPA identified three of the 414 coal-fired electric utility plants (in operation as of 2012) which are located on tribal lands; however, they are not owned by tribal governments. These are: (1) Navajo Generating Station in Coconino County, Arizona, owned by the Arizona Salt River Project; (2) Bonanza Power Plant in Uintah County, Utah, owned by the Deseret Generation and Transmission Cooperative; and (3) Four Corners Power Plant in San Juan County, New Mexico owned by the Arizona Public Service Company. The Navajo Generating Station and the Four

Corners Power Plant are on lands belonging to the Navajo Nation, while the Bonanza Power Plant is located on the Uintah and Ouray Reservation of the Ute Indian Tribe. Under the WIIN Act, EPA is the permitting authority for CCR units located in Indian Country. Moreover, since this action is expected to result in net cost savings to affected entities amounting to approximately \$27.8 million per year to \$31.4 million per year when discounting at 7 percent and annualized over 100 years, or in net cost savings of between \$15.5 million per year and \$19.1 million per year when discounting at 3 percent and annualized over 100 years, it will not have substantial direct effects on one or more Indian tribes. Thus, Executive Order 13175 does not apply to this action.

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

This action is not subject to Executive Order 13045 because it is not economically significant as defined in Executive Order 12866, and because the EPA does not believe the environmental health 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 April 17, 2015 in the Federal Register at 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 90th 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 final 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. 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.

L. Congressional Review Act (CRA)

This action is subject to the CRA, and the EPA will submit a rule report to each House of the Congress and to the Comptroller General of the United States. This action is not a “major rule” as defined by 5 U.S.C. 804(2).

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: July 17, 2018.

Andrew R. Wheeler,
Acting Administrator.

For the reasons set out in the preamble, title 40, chapter I, of the Code of Federal Regulations is amended as follows:

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

1. The authority citation for part 257 is revised 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. Section 257.53 is amended by adding the definitions of “Nonparticipating State”, “Participating State”, and “Participating State Director” in alphabetical order to read as follows:

§ 257.53 Definitions.

* * * * *

Nonparticipating State means a State—

(1) For which the Administrator has not approved a State permit program or other system of prior approval and conditions under RCRA section 4005(d)(1)(B);

(2) The Governor of which has not submitted to the Administrator for approval evidence to operate a State permit program or other system of prior approval and conditions under RCRA section 4005(d)(1)(A);

(3) The Governor of which provides notice to the Administrator that, not fewer than 90 days after the date on which the Governor provides the notice to the Administrator, the State will relinquish an approval under RCRA section 4005(d)(1)(B) to operate a permit program or other system of prior approval and conditions; or

(4) For which the Administrator has withdrawn approval for a permit program or other system of prior approval and conditions under RCRA section 4005(d)(1)(E).

* * * * *

Participating State means a state with a state program for control of CCR that has been approved pursuant to RCRA section 4005(d).

Participating State Director means the chief administrative officer of any state agency operating the CCR permit program in a participating state or the delegated representative of the Participating State Director. If responsibility is divided among two or more state agencies, Participating State Director means the chief administrative officer of the state agency authorized to perform the particular function or procedure to which reference is made.

* * * * *

3. Section 257.60 is amended by revising paragraph (b) to read as follows:

§ 257.60 Placement above the uppermost aquifer.

* * * * *

(b) The owner or operator of the CCR unit must obtain a certification from a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority stating that the demonstration meets the requirements of paragraph (a) of this section.

* * * * *

4. Section 257.61 is amended by revising paragraph (b) to read as follows:

§ 257.61 Wetlands.

* * * * *

(b) The owner or operator of the CCR unit must obtain a certification from a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority stating that the demonstration meets the requirements of paragraph (a) of this section.

* * * * *

5. Section 257.62 is amended by revising paragraph (b) to read as follows:

§ 257.62 Fault areas.

* * * * *

(b) The owner or operator of the CCR unit must obtain a certification from a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority stating that the demonstration meets the requirements of paragraph (a) of this section.

* * * * *

6. Section 257.63 is amended by revising paragraph (b) to read as follows:

§ 257.63 Seismic impact zones.

* * * * *

(b) The owner or operator of the CCR unit must obtain a certification from a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority stating that the demonstration meets the requirements of paragraph (a) of this section.

* * * * *

7. Section 257.64 is amended by revising paragraph (c) to read as follows:

§ 257.64 Unstable areas.

* * * * *

(c) The owner or operator of the CCR unit must obtain a certification from a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority stating that the demonstration meets the requirements of paragraph (a) of this section.

* * * * *

8. Section 257.70 is amended by revising paragraphs (c)(2), (e), and (f) to read as follows:

§ 257.70 Design criteria for new CCR landfills and any lateral expansion of a CCR landfill.

* * * * *

(c) * * *

(2) The owner or operator must obtain certification from a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority that the liquid flow rate through the lower component of the alternative composite liner is no greater than the liquid flow rate through two feet of compacted soil with a hydraulic conductivity of 1×10^{-7} cm/sec. The hydraulic conductivity for the two feet of compacted soil used in the comparison shall be no greater than 1×10^{-7} cm/sec. The hydraulic conductivity of any alternative to the two feet of compacted soil must be determined using recognized and generally accepted methods. The liquid flow rate comparison must be made using Equation 1 of this section, which is derived from Darcy's Law for gravity flow through porous media.

(Eq. 1):

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

Where,

Q = flow rate (cubic centimeters/second);

A = surface area of the liner (squared centimeters);

q = flow rate per unit area (cubic centimeters/second/squared centimeter);

k = hydraulic conductivity of the liner (centimeters/second);

h = hydraulic head above the liner (centimeters); and

t = thickness of the liner (centimeters).

* * * * *

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

(f) Upon completion of construction of the CCR landfill or any lateral expansion of a CCR landfill, the owner or operator must obtain a certification from a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority that the design of the composite liner (or, if applicable, alternative composite liner) and the leachate collection and removal system have been constructed in accordance with the requirements of this section.

* * * * *

9. Section 257.71 is amended by revising paragraph (b) to read as follows:

§ 257.71 Liner design criteria for existing CCR surface impoundments.

* * * * *

(b) The owner or operator of the CCR unit must obtain a certification from a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority attesting that the documentation as to whether a CCR unit meets the requirements of paragraph (a) of this section is accurate.

* * * * *

10. Section 257.72 is amended by revising paragraphs (c) and (d) to read as follows:

§ 257.72 Liner design criteria for new CCR surface impoundments and any lateral expansion of a CCR surface impoundment.

* * * * *

(c) Prior to construction of the CCR surface impoundment or any lateral expansion of a CCR surface impoundment, the owner or operator must obtain certification from a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority that the design of the composite liner or, if applicable, the design of an alternative composite liner complies with the requirements of this section.

(d) Upon completion, the owner or operator must obtain certification from a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority that the composite liner or if applicable, the alternative composite liner has been constructed in accordance with the requirements of this section.

* * * * *

11. Section 257.80 is amended by revising paragraph (b)(7) to read as follows:

§ 257.80 Air criteria.

* * * * *

(b) * * *

(7) The owner or operator must obtain a certification from a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority that the initial CCR fugitive dust control plan, or any subsequent amendment of it, meets the requirements of this section.

* * * * *

12. Section 257.81 is amended by revising paragraph (c)(5) to read as follows:

§ 257.81 Run-on and run-off controls for CCR landfills.

* * * * *

(c) * * *

(5) The owner or operator must obtain a certification from a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority stating that the initial and periodic run-on and run-off control system plans meet the requirements of this section.

* * * * *

13. Section 257.82 is amended by revising paragraph (c)(5) to read as follows:

§ 257.82 Hydrologic and hydraulic capacity requirements for CCR surface impoundments.

* * * * *

(c) * * *

(5) The owner or operator must obtain a certification from a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority stating that the initial and periodic inflow design flood control system plans meet the requirements of this section.

* * * * *

14. Section 257.90 is amended by revising paragraph (a) and adding paragraph (g) to read as follows:

§ § 257.90 Applicability.

(a) All CCR landfills, CCR surface impoundments, and lateral expansions of CCR units are subject to the groundwater monitoring and corrective action requirements under §§ 257.90 through 257.99, except as provided in paragraph (g) of this section.

* * * * *

(g) *Suspension of groundwater monitoring requirements.* (1) The Participating State Director or EPA where EPA is the permitting authority may suspend the groundwater monitoring requirements under §§ 257.90 through 257.95 for a CCR unit for a period of up to ten years, if the owner or operator provides written documentation that, based on the characteristics of the site in which the CCR unit is located, there is no potential for migration of any of the constituents listed in appendices III and IV to this part from that CCR unit to the uppermost aquifer during the active life of the CCR unit and the post-closure care period. This demonstration must be certified by a qualified professional engineer and approved by the Participating State Director or EPA where EPA is the permitting authority, and must be based upon:

(i) Site-specific field collected measurements, sampling, and analysis of physical, chemical, and biological processes affecting contaminant fate and transport, including at a minimum, the information necessary to evaluate or interpret the effects of the following properties or processes on contaminant fate and transport:

(A) Aquifer Characteristics, including hydraulic conductivity, hydraulic gradient, effective porosity, aquifer thickness, degree of saturation, stratigraphy, degree of fracturing and secondary porosity of soils and bedrock, aquifer heterogeneity, groundwater discharge, and groundwater recharge areas;

(B) Waste Characteristics, including quantity, type, and origin;

(C) Climatic Conditions, including annual precipitation, leachate generation estimates, and effects on leachate quality;

(D) Leachate Characteristics, including leachate composition, solubility, density, the presence of immiscible constituents, Eh, and pH; and

(E) Engineered Controls, including liners, cover systems, and aquifer controls (e.g., lowering the water table). These must be evaluated under design and failure conditions to estimate their long-term residual performance.

(ii) Contaminant fate and transport predictions that maximize contaminant migration and consider impacts on human health and the environment.

(2) The owner or operator of the CCR unit may renew this suspension for additional ten year periods by submitting written documentation that the site characteristics continue to ensure there will be no potential for migration of any of the constituents listed in Appendices III and IV of this part. The documentation must include, at a minimum, the information specified in

paragraphs (g)(1)(i) and (g)(1)(ii) of this section and a certification by a qualified professional engineer and approved by the State Director or EPA where EPA is the permitting authority. The owner or operator must submit the documentation supporting their renewal request for the state's or EPA's review and approval of their extension one year before the groundwater monitoring suspension is due to expire. If the existing groundwater monitoring extension expires or is not approved, the owner or operator must begin groundwater monitoring according to paragraph (a) of this section within 90 days. The owner or operator may continue to renew the suspension for ten-year periods, provided the owner or operator demonstrate that the standard in paragraph (g)(1) of this section continues to be met for the unit. The owner or operator must place each completed demonstration in the facility's operating record.

(3) The owner or operator of the CCR unit must include in the annual groundwater monitoring and corrective action report required by § 257.90(e) or § 257.100(e)(5)(ii) any approved no migration demonstration.

15. Section 257.91 is amended by revising paragraph (f) to read as follows:

§ 257.91 Groundwater monitoring systems.

* * * * *

(f) The owner or operator must obtain a certification from a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority stating that the groundwater monitoring system has been designed and constructed to meet the requirements of this section. If the groundwater monitoring system includes the minimum number of monitoring wells specified in paragraph (c)(1) of this section, the certification must document the basis supporting this determination.

* * * * *

16. Section 257.93 is amended by revising paragraph (f)(6) to read as follows:

§ 257.93 Groundwater sampling and analysis requirements.

* * * * *

(f) * * *

(6) The owner or operator of the CCR unit must obtain a certification from a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority stating that the selected statistical method is appropriate for evaluating the groundwater monitoring data for the CCR management area. The certification must include a narrative description of the statistical method selected to evaluate the groundwater monitoring data.

* * * * *

17. Section 257.94 is amended by revising paragraphs (d)(3) and (e)(2) to read as follows:

§ 257.94 Detection monitoring program.

* * * * *

(d) * * *

(3) The owner or operator must obtain a certification from a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority stating that the demonstration for an alternative groundwater sampling and analysis frequency meets the requirements of this section. The owner or operator must include the demonstration providing the basis for the alternative monitoring frequency and the certification by a qualified professional engineer or the approval from the Participating State

Director or approval from EPA where EPA is the permitting authority in the annual groundwater monitoring and corrective action report required by § 257.90(e).

(e) * * *

(2) The owner or operator may demonstrate that a source other than the CCR unit caused the statistically significant increase over background levels for a constituent or that the statistically significant increase resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. The owner or operator must complete the written demonstration within 90 days of detecting a statistically significant increase over background levels to include obtaining a certification from a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority verifying the accuracy of the information in the report. If a successful demonstration is completed within the 90-day period, the owner or operator of the CCR unit may continue with a detection monitoring program under this section. If a successful demonstration is not completed within the 90-day period, the owner or operator of the CCR unit must initiate an assessment monitoring program as required under § 257.95. The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by § 257.90(e), in addition to the certification by a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority.

* * * * *

18. Section 257.95 is amended by revising paragraphs (c)(3), (g)(3)(ii), (h)(2) and (3) to read as follows:

§ 257.95 Assessment monitoring program.

* * * * *

(c) * * *

(3) The owner or operator must obtain a certification from a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority stating that the demonstration for an alternative groundwater sampling and analysis frequency meets the requirements of this section. The owner or operator must include the demonstration providing the basis for the alternative monitoring frequency and 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 in the annual groundwater monitoring and corrective action report required by § 257.90(e).

* * * * *

(g) * * *

(3) * * *

(ii) Demonstrate that a source other than the CCR unit caused the contamination, or that the statistically significant increase resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. Any such demonstration must be supported by a report that includes the factual or evidentiary basis for any conclusions and must be certified to be accurate by a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority. If a successful demonstration is made, the owner or operator must continue monitoring in accordance with the assessment monitoring program pursuant to this section, and may return to detection monitoring if the constituents in Appendix III and Appendix IV of this part are at or below background as specified in paragraph (e) of this section. The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by §

257.90(e), in addition to 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.

* * * * *

(h) * * *

(2) For the following constituents:

(i) Cobalt 6 micrograms per liter ($\mu\text{g/l}$);

(ii) Lead 15 $\mu\text{g/l}$;

(iii) Lithium 40 $\mu\text{g/l}$; and

(iv) Molybdenum 100 $\mu\text{g/l}$.

(3) For constituents for which the background level is higher than the levels identified under paragraphs (h)(1) and (h)(2) of this section, the background concentration.

* * * * *

19. Section 257.96 is amended by revising paragraph (a) to read as follows:

§ 257.96 Assessment of corrective measures.

(a) Within 90 days of finding that any constituent listed in Appendix IV to this part has been detected at a statistically significant level exceeding the groundwater protection standard defined under § 257.95(h), or immediately upon detection of a release from a CCR unit, the owner or operator must initiate an assessment of corrective measures to prevent further releases, to remediate any releases and to restore affected area to original conditions. The assessment of corrective measures must be completed within 90 days, unless the owner or operator demonstrates the need for additional time to complete the assessment of corrective measures due to site-specific conditions or circumstances. The owner or operator must obtain a

certification from a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority attesting that the demonstration is accurate. The 90-day deadline to complete the assessment of corrective measures may be extended for no longer than 60 days. The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by § 257.90(e), in addition to 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.

* * * * *

20. Section 257.97 is amended by revising paragraph (a) to read as follows:

§ 257.97 Selection of remedy.

(a) Based on the results of the corrective measures assessment conducted under § 257.96, the owner or operator must, as soon as feasible, select a remedy that, at a minimum, meets the standards listed in paragraph (b) of this section. This requirement applies in addition to, not in place of, any applicable standards under the Occupational Safety and Health Act. The owner or operator must prepare a semiannual report describing the progress in selecting and designing the remedy. Upon selection of a remedy, the owner or operator must prepare a final report describing the selected remedy and how it meets the standards specified in paragraph (b) of this section. The owner or operator must obtain a certification from a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority that the remedy selected meets the requirements of this section. The report has been completed when it is placed in the operating record as required by § 257.105(h)(12).

* * * * *

21. Section 257.98 is amended by revising paragraph (e) to read as follows:

§ 257.98 Implementation of the corrective action program.

* * * * *

(e) Upon completion of the remedy, the owner or operator must prepare a notification stating that the remedy has been completed. The owner or operator must obtain a certification from a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority attesting that the remedy has been completed in compliance with the requirements of paragraph (c) of this section. The report has been completed when it is placed in the operating record as required by § 257.105(h)(13).

* * * * *

22. Section 257.101 is amended by revising paragraphs (a)(1) and (b)(1) to read as follows:

§ 257.101 Closure or retrofit of CCR units.

(a) * * *

(1) Except as provided by paragraph (a)(3) of this section, if at any time after October 19, 2015, an owner or operator of an existing unlined CCR surface impoundment determines in any sampling event that the concentrations of one or more constituents listed in appendix IV of this part are detected at statistically significant levels above the groundwater protection standard established under § 257.95(h) for such CCR unit, within six months of making such determination or no later than October 31, 2020, whichever date is later, the owner or operator of the existing unlined CCR surface impoundment must cease placing CCR and non-CCR

wastestreams into such CCR surface impoundment and either retrofit or close the CCR unit in accordance with the requirements of § 257.102.

* * * * *

(b) * * *

(1)(i) *Location standard under § 257.60.* Except as provided by paragraph (b)(4) of this section, the owner or operator of an existing CCR surface impoundment that has not demonstrated compliance with the location standard specified in § 257.60(a) must cease placing CCR and non-CCR wastestreams into such CCR unit no later than October 31, 2020, and close the CCR unit in accordance with the requirements of § 257.102.

(ii) *Location standards under §§ 257.61 through 257.64.* Except as provided by paragraph (b)(4) of this section, within six months of determining that an existing CCR surface impoundment has not demonstrated compliance with any location standard specified in §§ 257.61(a), 257.62(a), 257.63(a), and 257.64(a), the owner or operator of the CCR surface impoundment must cease placing CCR and non-CCR wastestreams into such CCR unit and close the CCR unit in accordance with the requirements of § 257.102.

* * * * *

23. Section 257.102 is amended by revising paragraphs (b)(4), (d)(3)(iii), (f)(3), (g), (h), (k)(2)(iv), (k)(4) and (k)(6) to read as follows:

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

* * * * *

(b) * * *

(4) The owner or operator of the CCR unit must obtain a written certification from a qualified professional engineer or approval from the Participating State Director or approval from

EPA where EPA is the permitting authority that the initial and any amendment of the written closure plan meets the requirements of this section.

* * * * *

(d) * * *

(3) * * *

(iii) The owner or operator of the CCR unit must obtain a written certification from a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority that the design of the final cover system meets the requirements of this section.

* * * * *

(f) * * *

(3) Upon completion, the owner or operator of the CCR unit must obtain a certification from a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority verifying that closure has been completed in accordance with the closure plan specified in paragraph (b) of this section and the requirements of this section.

(g) No later than the date the owner or operator initiates closure of a CCR unit, the owner or operator must prepare a notification of intent to close a CCR unit. The notification must include the certification by a qualified professional engineer 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).

(h) Within 30 days of completion of closure of the CCR unit, the owner or operator must prepare a notification of closure of a CCR unit. The notification must include the certification by a qualified professional engineer or the approval from the Participating State Director or the approval from EPA where EPA is the permitting authority as required by § 257.102(f)(3). 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)(8).

(k) * * *

(2) * * *

(iv) The owner or operator of the CCR unit must obtain a written certification from a qualified professional engineer or an approval from the Participating State Director or an approval from EPA where EPA is the permitting authority that the activities outlined in the written retrofit plan, including any amendment of the plan, meet the requirements of this section.

* * * * *

(4) Upon completion, the owner or operator must obtain a written certification from a qualified professional engineer or an approval from the Participating State Director or an approval from EPA where EPA is the permitting authority verifying that the retrofit activities have been completed in accordance with the retrofit plan specified in paragraph (k)(2) of this section and the requirements of this section.

* * * * *

(6) Within 30 days of completing the retrofit activities specified in paragraph (k)(1) of this section, the owner or operator must prepare a notification of completion of retrofit activities. The notification must include the certification from a qualified professional engineer or an approval from the Participating State Director or an approval from EPA where EPA is the

permitting authority has is required by paragraph (k)(4) of this section. The owner or operator has completed the notification when it has been placed in the facility's operating record as required by § 257.105(j)(6).

* * * * *

24. Section 257.104 is amended by revising paragraphs (d)(1)(iii), (d)(4) and (e) to read as follows:

§ 257.104 Post-closure care requirements.

* * * * *

(d) * * *

(1) * * *

(iii) A description of the planned uses of the property during the post-closure period.

Post-closure use of the property shall not disturb the integrity of the final cover, liner(s), or any other component of the containment system, or the function of the monitoring systems unless necessary to comply with the requirements in this subpart. Any other disturbance is allowed if the owner or operator of the CCR unit demonstrates that disturbance of the final cover, liner, or other component of the containment system, including any removal of CCR, will not increase the potential threat to human health or the environment. The demonstration must be certified by a qualified professional engineer or approved by the Participating State Director or approved from EPA where EPA is the permitting authority, and notification shall be provided to the State Director that the demonstration has been placed in the operating record and on the owners or operator's publicly accessible internet site.

* * * * *

(4) The owner or operator of the CCR unit must obtain a written certification from a qualified professional engineer or an approval from the Participating State Director or an approval from EPA where EPA is the permitting authority that the initial and any amendment of the written post-closure plan meets the requirements of this section.

(e) *Notification of completion of post-closure care period.* No later than 60 days following the completion of the post-closure care period, the owner or operator of the CCR unit must prepare a notification verifying that post-closure care has been completed. The notification must include the certification by a qualified professional engineer or the approval from the Participating State Director or the approval from EPA where EPA is the permitting authority verifying that post-closure care has been completed in accordance with the closure plan specified in paragraph (d) of this section and the requirements of this section. 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)(13).

* * * * *

25. Section 257.105 is amended by adding paragraph (h)(14) to read as follows:

§ 257.105 Recordkeeping requirements.

* * * * *

(h) * * *

(14) The demonstration, including long-term performance data, supporting the suspension of groundwater monitoring requirements as required by § 257.90(g).

* * * * *

26. Section 257.106 is amended by adding paragraph (h)(11) to read as follows:

§ 257.106 Notification requirements.

* * * * *

(h) * * *

(11) Provide the demonstration supporting the suspension of groundwater monitoring requirements specified under § 257.105(h)(14).

* * * * *

27. Section 257.107 is amended by adding paragraph (h)(11) to read as follows:

§ 257.107 Publicly accessible Internet site requirements.

* * * * *

(h) * * *

(11) The demonstration supporting the suspension of groundwater monitoring requirements specified under § 257.105(h)(14).

* * * * *

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