



# Analysis of Recent Proposals to Amend the Resource Conservation and Recovery Act (RCRA) to Create a Coal Combustion Residuals Permit Program

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## Summary

In the 112<sup>th</sup> Congress, the House passed two bills to address the long-standing regulatory impasse over coal combustion residuals (CCRs). The impasse originated in 1980, when an amendment to the Resource Conservation and Recovery Act (RCRA) excluded CCRs from regulation as a hazardous waste, pending further study by the Environmental Protection Agency (EPA). That study was required to identify adverse effects on human health and the environment, if any, of CCR disposal and use before determining whether the materials should be subject to hazardous waste requirements.

For over 30 years, EPA has gathered information, conducted studies, solicited input from state agencies, industry, and the public, and evaluated existing state and federal regulatory programs to determine whether the management of CCRs warranted regulation as a hazardous waste. In June 2010, EPA proposed its most recent regulatory determination for public comment. In that proposal, EPA included two options to regulate CCRs, which were immediately controversial. In the wake of EPA's proposal, the House passed two CCR bills that embodied a new approach to creating state programs to regulate a solid waste under RCRA. Similar legislation was introduced in the Senate, but the chamber took no action. The 113<sup>th</sup> Congress may consider legislation patterned after the bills considered in the 112<sup>th</sup> Congress.

This report identifies key elements of that new approach and compares it to existing RCRA solid waste management programs. The report concludes that there are significant differences between the two. Under the new approach, EPA would have no formal role in creating state programs to regulate CCRs (though an informal one may evolve). Further, in contrast to existing RCRA programs, EPA would not be directed to establish regulations applicable to disposal facilities or to approve of state programs to implement those regulations. Instead, states that opt to implement a CCR Permit Program would be expected to establish regulations applicable to "CCR structures" based on program specifications included in the bills. In contrast to existing state waste management programs created under RCRA, such an approach would

- Allow individual states to define key terms (e.g., "CCR structures"). Hence, program applicability could vary from state to state, depending on how each state defines those terms. For example, a "CCR landfill" could be defined to include only land disposal units that receive CCRs or may include large-scale fill operations at construction sites (a common use of CCRs that may pose risks similar to landfilling).
- Establish no explicit deadlines for the issuance of permits or for facility compliance with applicable regulations, allowing individual states to establish such deadlines—although a court might impose deadlines if it determines a state has unreasonably delayed.
- Require EPA to identify any deficiencies in a state's CCR Permit Program. However, it cannot be predicted what program elements EPA would regard as a "deficiency," or when EPA would make such an evaluation.
- Require EPA to implement a CCR Permit Program for any state that chooses not to do so or fails to remedy a program deficiency identified by EPA.

State regulations adopted under RCRA (e.g., municipal solid waste landfill regulations) have been required by Congress to be those necessary to meet a national "standard of protection" (e.g.,

“protect human health and the environment”). In contrast, state regulations applicable to CCR structures that would be applied by a CCR Permit Program created under this new approach would not explicitly be required to do so. Each state arguably could apply its own standard of protection. The absence of an explicit statement in the bills has implications for how EPA might exercise its authority in the event of absent or deficient state action.

Given the potential for similar legislation to be proposed in the 113<sup>th</sup> Congress, and as a result of the complexities inherent in creating a regulatory program using a new legislative approach (that specifies new roles for states and EPA), this report provides additional background information and expands on an earlier CRS analysis.

## Contents

Introduction.....	1
Background.....	3
Using Permit Programs to Implement and Enforce Regulations.....	3
Permit Programs Created Under RCRA.....	4
A New Approach to Creating a Permit Program.....	6
Administrative and Legislative Proposals to Regulate CCRs.....	9
EPA Proposals to Regulate the Disposal of CCRs.....	10
Overview of Proposals to Amend RCRA.....	14
Existing Standards Relevant to a CCR Permit Program.....	17
The Federal-State Program to Regulate MSW Landfills.....	17
The MSW Landfill Criteria.....	19
State Programs to Implement the MSW Landfill Criteria.....	20
Proposed EPA Standards to Address Risks Specific to CCR Management.....	22
Proposed CCR Legislation Amending RCRA.....	28
Provisions Relevant to Potential State CCR Permit Programs.....	29
EPA’s Potential Role in Program Oversight and Implementation.....	32
A “CCR Permit Program” Compared to State Programs to Regulate MSW Landfills.....	35
Flexibility.....	36
Standard of Protection.....	38
EPA’s Role.....	41
Conclusion.....	43

## Tables

Table 1. Selected Elements of CCR Regulations Proposed by EPA.....	13
Table 2. EPA’s Role in State Permit Program Development and Implementation.....	41
Table A-1. RCRA Authorities and Directives Relevant to CCR Management.....	47
Table A-2. Standards for MSW Landfills and CCR Disposal Units.....	54
Table A-3. EPA’s Proposed Design Criteria for Existing Surface Impoundments.....	61
Table B-1. Comparison of State Programs to Regulate MSW Landfills and CCR Structures.....	64
Table C-1. Legislative and Administration Action Relevant to CCR Management.....	76

## Appendixes

Appendix A. Selected Authorities and Directives in RCRA Relevant to CCR Management.....	46
Appendix B. Requirements in 40 C.F.R. Part 239 and Comparable Program Elements in the Amendment to RCRA Proposed in the 112 <sup>th</sup> Congress.....	63
Appendix C. RCRA Provisions and EPA Responses Related to Directives in the “Bevill Amendment”.....	75

## **Contacts**

Author Contact Information..... 81

## Introduction

On October 14, 2011, the House passed the Coal Residuals Reuse and Management Act (H.R. 2273). On August 2, 2012, the Coal Ash Recycling and Oversight Act of 2012 (S. 3512) was introduced in the Senate.<sup>1</sup> Each bill would have amended the Solid Waste Disposal Act—more commonly referred to as the Resource Conservation and Recovery Act of 1976 (RCRA; 42 U.S.C. §6901 et seq.). The House subsequently incorporated the provisions of the Senate bill in Title IV of H.R. 3409, the Stop the War on Coal Act, passed in the House on September 12, 2012. The bills would have created a framework that states could use to create permit programs for the “management and disposal”<sup>2</sup> of coal combustion residuals (CCRs, also referred to generally as “coal ash”). In states that did not create a program that met program specifications included in the proposed amendment, or in other specified circumstances, the Environmental Protection Agency (EPA) would have been required to implement a program.

Each bill would have added to Subtitle D of RCRA a new Section 4011, Management and Disposal of Coal Combustion Residuals. Compared to H.R. 2273, the Senate-introduced bill (S. 3512 and Title IV of H.R. 3409) included more detailed provisions applicable to the program. However, *the approach* to creating state permit programs was largely the same in each bill. That approach is unique within RCRA. As a result, state permit programs implementing regulations applicable to CCR disposal, created in accordance with statutory permit program specifications, would differ from other permit programs created in RCRA.

Legislation addressing CCRs may be considered in the 113<sup>th</sup> Congress. Analysis of selected elements of the legislation considered during the 112<sup>th</sup> Congress is provided in this report as background for future legislation that may take a similar approach. That approach, proposed in the 112<sup>th</sup> Congress, was to create state programs to regulate a particular type of waste (CCRs) using as its framework existing federal-state programs to regulate municipal solid waste (MSW) landfills. For that existing program, pursuant to directives in Subtitle D of RCRA, EPA promulgated federal regulatory criteria applicable to owners and operators of MSW landfills; states adopted those federal criteria and implemented them using a permit program; and EPA approved each state permit program, based on EPA’s determination of whether each program was adequate to ensure facility compliance with baseline federal regulatory criteria. Further, as explicitly required by Congress, the federal criteria promulgated by EPA, applicable to MSW landfills, were required to be those necessary to “protect human health and the environment.”<sup>3</sup>

The approach used in the 112<sup>th</sup> Congress bills would not have provided an explicit mandate that EPA or the states promulgate regulations applicable to CCR disposal facilities. Instead, the

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<sup>1</sup> A bill with provisions that are largely identical to H.R. 2273 was introduced in the Senate (S. 1751) on October 20, 2011. This report refers to S. 3512, not S. 1751.

<sup>2</sup> A program created pursuant to the proposed amendment to RCRA would be defined, in part, as one implemented by or for a state to “regulate the management and disposal” of CCRs (see proposed Section 4011(k)(2)). In RCRA, the term “solid waste management” is broadly defined as “the systematic administration of activities which provide for the collection, source separation, storage, transportation, transfer, processing, treatment, and disposal of solid waste.” The term “disposal” is defined, in part, as the discharge, deposit, dumping, or placing of any solid waste or hazardous waste into or on any land or water so that the waste or any constituent in that waste may enter the environment or be emitted into the air or discharged into any waters, including groundwaters (see definitions at RCRA Section 1004(3) and (28); 42 U.S.C. §§6903(3) and (28)). That is, disposal is one of several activities that may be referred to as waste management.

<sup>3</sup> 42 U.S.C. §6949a(c)(1).

proposed Section 4011 would itself list Permit Program Specifications<sup>4</sup> that individual states would be required to apply to “CCR structures.”<sup>5</sup> Using this approach to creating largely state-based programs, it is difficult to determine in advance how such statutory specifications may be interpreted by each state.

The proposed amendment would also have provided no explicit authority for EPA to directly *enforce* regulatory criteria applicable to CCR disposal units (short of EPA running a CCR Permit Program for a state). Such authority provided to EPA in other parts of RCRA (and in some other pollution control laws) has generally served as an incentive to states to adopt and implement federal regulatory criteria. The absence of such authority makes it difficult to anticipate the degree to which EPA may encourage states to adopt and implement a program to regulate CCRs that would comply with the Permit Program Specifications and other relevant provisions in the proposed Section 4011.

The bills considered in the 112<sup>th</sup> Congress were proposed in the wake of a June 2010 proposal by EPA to regulate CCRs. This report provides background and selected information regarding that EPA proposal, including EPA’s determination that CCRs should be regulated according to national waste management standards, rather than standards determined by individual states—as they are regulated currently. The report also describes selected elements of RCRA Subtitles C and D, relevant to both EPA’s proposal to regulate CCRs and the legislative proposals to create state programs to regulate CCRs.

This report looks primarily at how state programs to regulate CCRs may be developed and implemented by a state according to directives in the bills proposed in the 112<sup>th</sup> Congress; it does not attempt to identify detailed requirements that may be applied by a state regulatory program. Accordingly, the report does not compare provisions in House and Senate bills proposed in the 112<sup>th</sup> Congress or provide detailed analysis of provisions in those bills, except to the extent that individual provisions may be relevant to the regulatory program a state may develop and implement to regulate CCRs.

Federal criteria applicable to MSW landfills were promulgated in 1991.<sup>6</sup> State efforts to adopt the federal criteria and implement them according to an EPA-approved permit program have been largely complete for more than 15 years. In comparing the proposed approach to regulate CCRs to the now-mature and already EPA-approved state programs to regulate MSW landfills, where relevant, this report provides information regarding those existing programs as they have been implemented (e.g., with regard to enforcement authorities that EPA could have exercised, but did not). Also, to simplify the discussion in this report, potential programs to regulate CCRs are discussed in the present tense (e.g., references to programs that “may be” or “could be” created and implemented by states refer to programs that may or could *have been* created pursuant to bills proposed in the 112<sup>th</sup> Congress).

Since the most recent bill passed by the House adopted provisions in the Senate bill, unless otherwise noted, any reference to “the bills,” “the proposed amendment to RCRA,” or “Section 4011” refers to S. 3512/Title IV of H.R. 3409, proposed in the 112<sup>th</sup> Congress.<sup>7</sup> Provisions

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<sup>4</sup> In proposed Section 4011(c).

<sup>5</sup> Defined in proposed Section 4011(k).

<sup>6</sup> 40 C.F.R. Part 258.

<sup>7</sup> To the extent that detail regarding the bills is discussed, provisions in the Senate-proposed bill will be cited. Since (continued...)

included throughout the bills use the term “CCR permit program” to refer to state programs to regulate CCRs. The proposed amendments to RCRA would not create a “permit program,” per se (see discussion in “Provisions Relevant to Potential State CCR Permit Programs”). Instead, selected provisions in the bills would form a framework that states could use to create programs to regulate CCR management (i.e., its use or disposal). To distinguish between “permit programs” as they have been previously created in RCRA and programs that could be created pursuant to the approach taken in the proposed bills, use of the phrase “CCR Permit Program” will mean a program that could be developed, adopted, or implemented by or for a state according to provisions in proposed Section 4011. Further, since the bills were designed to result in a state-based regulatory program, discussion of CCR Permit Programs focuses primarily on the programs that may be created by states, as opposed to a program to regulate CCRs that could potentially be implemented by EPA for a state.<sup>8</sup>

## **Background**

### **Using Permit Programs to Implement and Enforce Regulations**

State solid waste management agencies commonly require owners and operators of certain waste disposal facilities to obtain a permit as part of that state’s program to ensure that those facilities will comply with applicable waste management requirements. Such permits are legally enforceable documents detailing requirements applicable to the permittee (owners and operators of a specifically regulated solid waste disposal facility) and conditions the permittee must meet to demonstrate compliance with those requirements. Requirements applicable to solid waste disposal facilities are generally promulgated by states pursuant to state laws applicable to solid waste management. State regulations applicable to waste disposal facilities may vary depending on the issues specific to the type of waste received at that facility. For example, requirements applicable to a landfill that receives construction and demolition debris would be tailored to address waste management issues that may be different from requirements applicable to a landfill that accepts industrial solid waste.

A state permit “program” is the body of authorities, activities, and procedures that the permitting authority uses to implement and enforce regulations applicable to a solid waste disposal facility. Permit programs may include, among other elements, state laws that

- specify the types of facilities required to obtain a permit;
- provide a state agency with authority to implement the regulatory program applicable to those facilities; and
- authorize the permitting authority to conduct compliance inspections and to take enforcement action necessary to remedy violations of program requirements.

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there is no legislative history available for S. 3512 or Title IV of H.R. 3409, available legislative history for H.R. 2273 is cited, if it involves an issue involving a comparable provision in S. 3512.

<sup>8</sup> For example, under specific conditions when EPA would have been required to implement a CCR Permit Program for a state, as proposed in Section 4011(e), “Implementation by Administrator.”



Exactly how state solid waste management programs have been created varies from state to state. Since all states currently have waste management laws in place, a new permit program may be created by amending existing laws to specify the entity required to operate using a permit and authorize the appropriate state agency to promulgate regulations applicable to the permittee. Once the regulations are promulgated, the authorized state agency would generally be required to take measures necessary to ensure that the newly regulated waste disposal facility operates in compliance with applicable requirements. The permit would specify those compliance requirements (e.g., daily operating procedures, facility design requirements), as well as documentation that must be maintained to prove facility compliance (e.g., inspections records, groundwater monitoring data).

## **Permit Programs Created Under RCRA**

Under Subtitle C of RCRA, EPA has primary authority to regulate hazardous wastes from the time it is generated until its ultimate disposal.<sup>9</sup> Under RCRA Subtitle D, however, states have primary authority to regulate nonhazardous solid wastes. EPA's role in the regulation of solid waste under Subtitle D has largely been to promulgate criteria applicable to sanitary landfills as necessary to identify and eliminate open dumps, prohibited under RCRA.<sup>10</sup> Amendments to RCRA in 1984 required EPA to revise the sanitary landfill criteria to apply to facilities that may receive hazardous household wastes.<sup>11</sup> EPA subsequently defined these facilities in regulation as municipal solid waste, or MSW, landfills.

The creation of state programs to regulate MSW landfills involved two different but related elements—the promulgation of federal regulatory criteria applicable to owners and operators of MSW landfills (at 49 C.F.R. Part 258); and a requirement that EPA approve state permit programs implementing the federal criteria. In RCRA, directives from Congress to EPA to promulgate regulations have included a broad directive that those regulations must meet a minimum “standard of protection.” The standard of protection has been “to protect human health and the environment.”<sup>12</sup> Permit programs created under RCRA, adopted and implemented by a state, have been expected to ensure that waste disposal facilities, operating in compliance with the federal regulatory criteria, will not pose a risk to human health.<sup>13</sup>

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<sup>9</sup> Pursuant to “Requirements for Authorization of State Hazardous Waste Programs,” at 40 C.F.R. Part 271 (promulgated by EPA pursuant to authorities in RCRA Section 3006; 42 U.S.C. §6926), EPA has authorized most states to implement a basic Subtitle C program—that is, a program that meets relevant statutory and regulatory requirements established under RCRA Subtitle C. For information about how states become authorized to implement the federal hazardous waste program, see EPA's “RCRA State Authorization” web page at <http://www.epa.gov/osw/laws-regs/state/index.htm>.

<sup>10</sup> 42 U.S.C. §6945(a).

<sup>11</sup> 42 U.S.C. §6949a(c)(1).

<sup>12</sup> In this report, the phrase “standard of protection” is used in its generally accepted sense to mean the performance standards to be achieved by compliance with regulations. See, for example, the directive to EPA, included in RCRA Subtitle C, pertaining to “Standards applicable to owners and operators of hazardous waste treatment, storage, and disposal facilities,” at 42 U.S.C. §6924; and the directive to EPA with regard to the “Adequacy of certain guidelines and criteria: Revisions of guidelines and criteria,” at 42 U.S.C. §6949a(c).

<sup>13</sup> In the context of regulating solid waste facilities in RCRA, the goal of protecting human health and the environment is focused primarily on human health. Reference to “protection of human health” throughout this report is used in the same manner as adopted by EPA in its documents, to indicate protection of human health and the environment.

When states began to implement the federal MSW landfill criteria, states had a certain degree of flexibility in adopting the regulations according to state-specific conditions. However, EPA approval of a state permit program to implement the MSW landfill criteria was dependent on whether EPA determined that the state's program was "adequate" to ensure MSW landfill compliance with regulations that met the baseline federal standard of protection.<sup>14</sup> The ultimate objective of the regulatory program was the same nationwide (i.e., to achieve a baseline standard of protection), but details regarding how each state may achieve that objective varied from state to state.<sup>15</sup>

Under the Constitution, Congress has no power to compel states to exercise their sovereign authority.<sup>16</sup> Thus, pursuant to pollution control laws administered by EPA (or any other laws), Congress may not require states to adopt federal regulations or require states to implement certain requirements using a permit program.<sup>17</sup> However, Congress has authorized EPA to promulgate and enforce certain regulations, while simultaneously providing for conditions under which a state may be authorized or approved to adopt and enforce those regulations. Given the options of allowing EPA to enforce a federal standard at facilities in the state or adopting and enforcing the regulations themselves, states generally choose the latter.

To provide states with an incentive to adopt the federal criteria and implement them using a permit program, Subtitle D included provisions that specified narrow conditions under which EPA could directly enforce the federal regulatory criteria.<sup>18</sup> More specifically, EPA was authorized to enforce the federal standards from 18 months after the MSW landfill criteria were finalized to the point at which a state adopted a program approved by EPA as adequate to enforce the federal criteria. For this purpose, EPA was explicitly authorized to use its inspection and federal enforcement authorities under Subtitle C, Sections 3006 and 3007.<sup>19</sup> (EPA and state authorities to enforce the open dumping prohibition, as well as other Subtitle D authorities, provisions, and resulting regulations established under Subtitle D, are discussed in "The Federal-State Program to Regulate MSW Landfills" and in **Appendix A.**)

EPA promulgated the MSW landfill criteria in October 1991, but did not promulgate requirements that delineated elements of an "adequate" permit program until October 1998 (at 40 C.F.R. Part 239). Over that period EPA worked with states to develop programs that could be deemed "adequate" pursuant to RCRA. EPA could have directly enforced the MSW landfill criteria at any

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<sup>14</sup> EPA was required to determine the adequacy of a state permit program pursuant to RCRA Section 4005(c)(1)(C); 42 U.S.C. §6945(c)(1)(C). The basis of EPA's adequacy determination is specified at RCRA Section 4005(c)(1)(B); 42 U.S.C. §6945(c)(1)(B).

<sup>15</sup> For example, risks associated with precipitation run-on/runoff across a disposal site may be different in desert regions or where the water table is not close to the land surface, compared to a state with higher rates of precipitation and a water table close to the surface, near the disposal site.

<sup>16</sup> *New York v. United States*, 505 U.S. 144 (1992); *Printz v. United States*, 521 U.S. 898 (1997); for legal analysis, contact the Congressional Research Service, American Law Division, at 7-.....

<sup>17</sup> The term "require" is used in this report because the term is commonly used to describe state obligations under federal environmental statutes. Nonetheless, the constitutional inability of the federal government to compel state exercises of their sovereignty should be understood. See CRS Report RL34384, *Federal Pollution Control Laws: How Are They Enforced?*, by (name redacted), and CRS Report RL30798, *Environmental Laws: Summaries of Major Statutes Administered by the Environmental Protection Agency*, coordinated by (name redacted).

<sup>18</sup> At 40 C.F.R. §258.1, the MSW landfill criteria are referred to as minimum national criteria to ensure the protection of human health and the environment.

<sup>19</sup> As allowed at 42 U.S.C. §6945(c)(2).

point after April 1993 in any state that did not yet have an EPA-approved program in place. EPA never stepped in to directly enforce the federal criteria, however.

All states now have programs determined by EPA to be adequate to implement the MSW landfill criteria. As a result, EPA authority to directly enforce the criteria may not currently be invoked by the agency since that authority is limited to states found by EPA to have an inadequate program to implement the MSW program.

Under Subtitle C, EPA has primary authority to implement and enforce the federal requirements applicable to hazardous waste treatment, storage, and disposal facilities (TSDFs). In lieu of the federal program, states can be authorized by EPA to implement regulations applicable to those facilities, including permitting those facilities.<sup>20</sup> Most states have requested and received such authorization. While under certain conditions, EPA could rescind state authority to implement a previously authorized state hazardous waste management program, EPA has never done so. However, as authorized under Subtitle C, EPA has taken enforcement actions against individual TSDFs in states authorized to implement federal Subtitle C requirements.

In contrast to such programs where EPA has primary oversight and enforcement authority, EPA's authority to directly enforce the MSW landfill criteria was framed narrowly. Now that all states have approved permit programs to implement the MSW landfill criteria, EPA has no effective authority to step in and enforce federal regulatory criteria at an individual MSW landfill. EPA's only available method to directly enforce the federal landfill criteria (arguably) would be to first rescind its earlier approval of a state Subtitle D program, which the agency has never done.

## **A New Approach to Creating a Permit Program**

CCR Permit Programs established pursuant to bills proposed in the 112<sup>th</sup> Congress would use as their framework the existing program created under Subtitle D to regulate MSW landfills. The available legislative history accompanying the bills indicates that CCR Permit Programs are intended to be similar to existing state programs to regulate MSW landfills.<sup>21</sup>

In comparing these permit programs, several differences can be identified. A unique element of the proposed amendment to RCRA would be the creation of a permit program absent a directive to EPA to promulgate standards applicable to the entity potentially regulated pursuant to the program. That is, the proposed bills include no *explicit* directive (to states or to EPA) to promulgate regulatory criteria or standards that would apply directly to owners and operators of disposal facilities that receive CCRs. Instead, minimum program requirements<sup>22</sup> specify that the CCR Permit Program “shall apply” selected MSW landfill criteria to owners and operators of structures. According to that precondition, it is arguably implied that states that choose to adopt and implement a permit program would promulgate regulations applicable to “CCR structures.”<sup>23</sup>

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<sup>20</sup> Under Subtitle C (in 42 U.S.C. §6926) a state may request from EPA authority to implement its own program, in lieu of the federal program, to regulate owners and operators of treatment, storage, and disposal facilities that receive hazardous waste and to issue and enforce permits for those facilities. See CRS Report RL34384, *Federal Pollution Control Laws: How Are They Enforced?*, by (name redacted). Also, for information about the process that states must complete to become authorized to implement federal programs established under RCRA Subtitle C, see EPA's “RCRA State Authorization” web page at <http://www.epa.gov/osw/laws-regs/state/index.htm>.

<sup>21</sup> See statements included in the “Purpose and Summary” section of H.Rept. 112-226.

<sup>22</sup> At proposed Section 4011(c)(1)(A).

<sup>23</sup> Defined in proposed Section 4011(k)(6) as a landfill, surface impoundment, or other land-based unit that may receive (continued...)

Regulations that would ultimately apply to owners and operators of CCR structures would depend on each state's interpretation of the criteria listed among the proposed Permit Program Specifications.

Although the purpose of the proposed amendment to RCRA was the creation of state permit programs to implement regulations applicable to CCR disposal, apart from using MSW landfill criteria and selected other minimum requirements that must be applied *by* the CCR Permit Program, there were few requirements applicable *to* the permit program itself. (For comparison, requirements used by EPA to determine whether state programs were adequate to enforce the MSW landfill criteria, included under 40 C.F.R. Part 239, and explicitly required elements of a CCR Permit Program, are listed in **Appendix B**.)

Under this structure, statutory provisions listed in the proposed Permit Program Specifications would serve as both the framework states may use to create regulations applicable to the entity required to obtain a permit, and any required elements of the permit program itself. Compared to other programs created under federal pollution control laws, this is an approach—possibly complex in practice—to creating a regulatory program that does not clearly distinguish the purpose of federal regulations that meet a minimum standard of protection from permit programs used to implement and enforce those regulations.

Creation of a state program to regulate a particular type of waste, according to statutory provisions in federal law, without detailed federal regulations or guidance, would be a novel approach in RCRA. That a RCRA program has never been authorized or established by Congress using such an approach does not mean that this new approach would not meet a particular objective. The proposed bills, however, did not include a specific statement of the objective of a CCR Permit Program—with the exception of the broad statement in the bill's preamble that it is to “facilitate recovery and beneficial use and provide for the proper management and disposal” of CCRs.

This report compares state programs to regulate CCR disposal, created pursuant to program specifications included in the proposed amendment to RCRA, to existing federal-state programs to regulate MSW landfills. Since the proposed program to regulate CCRs was intended to be state-implemented, this report focuses primarily on elements of a regulatory program that may be created, adopted, and implemented by a state according to program specifications included in the proposed amendment. In comparing that proposed program to the existing program to regulate MSW landfills, there are various ways the programs could differ—with regard to implementation and enforcement. The report compares three program elements: (1) the flexibility provided to states in implementing the proposed Permit Program Specifications; (2) the standard of protection state regulations may provide; and (3) EPA's potential role in program implementation. This report explains existing federal-state programs to regulate MSW landfills, as well as risks EPA has identified as specific to the management of CCRs.

With regard to potential state regulations applicable to CCR structures, as noted above, a CCR Permit Program created pursuant to the proposed bills would be required to apply several minimum requirements and selected MSW landfill criteria to CCR structures. A state may

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CCRs.

promulgate regulations according to its interpretation of those statutory provisions and how those criteria cited should be applied to CCR structures in the state.

In federal pollution control laws, ambiguities are subject to EPA (and potentially court) interpretation. In contrast, any ambiguities or requirements not specified in the proposed CCR bills would be subject to state (and potentially court) interpretation. For example, criteria that must be applied to CCR structures using a CCR Permit Program include selected MSW landfill criteria—primarily the technical criteria such as operational and design criteria and groundwater monitoring requirements. However, program specifications do not include criteria comparable to “general” standards in the MSW landfill criteria.<sup>24</sup> Those general standards define “applicability” (to whom the regulations apply), specify deadlines for facility compliance, and clarify requirements applicable to existing versus new facilities, among other elements. Since those standards are necessary to implement a program, states would likely include them in their own CCR Permit Program. State inclusion of those criteria would likely vary from state to state.

Decisions regarding the applicability of state regulations and compliance deadlines that existing facilities would be required to meet would be particularly relevant in determining the degree to which a state program may protect human health from risks specific to CCR disposal. In listing Permit Program Specifications, however, the bills did not explicitly require a CCR Permit Program to apply criteria to CCR structures that would be intended to achieve a specific standard of protection. If promulgated in accordance with existing state solid waste management laws, regulations applicable to CCR structures may meet standards of protection determined by each state, in accordance with that state’s interpretation of potential risk to human health from CCR disposal. Such an approach to regulating a waste differs from existing state programs to regulate MSW landfills—programs adopted and implemented by each state to assure that each regulated MSW landfill will comply with regulations designed to meet a baseline level of protection.<sup>25</sup>

EPA’s oversight role in state implementation of a CCR Permit Program, pursuant to the approach in the proposed bills, would be substantially different from EPA’s typical role in the oversight of permit programs created in federal pollution control law. Pursuant to the bills, in a state that chooses to implement a CCR Permit Program, EPA would be required to provide notice to a state regarding “deficiencies” in its program, with regard to certain program elements. For example, EPA would be required to notify and provide states with an opportunity to remedy deficiencies if, at any time, EPA determines the state is not implementing a CCR Permit Program that meets Permit Program Specifications delineated in the bills.<sup>26</sup> Since those specifications do not include an explicit deadline for fully implementing the program (e.g., issuing permits and assuring facility compliance with applicable regulations), it cannot, as a practical matter, be determined in advance when EPA might evaluate state programs for deficiencies.<sup>27</sup> However, once a state began implementing a CCR Permit Program, EPA could review that state’s program at any time; could potentially find certain program elements deficient; and, within a narrow range of conditions specified in the bills, would then be required to implement a CCR Permit Program.

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<sup>24</sup> See 40 C.F.R. Part 258, Subpart A, also see **Table A-2** in **Appendix A**.

<sup>25</sup> See 42 U.S.C. §§6945(c)(1)(B) and 6949a(c)(1).

<sup>26</sup> See proposed Section 4011(d)(1)(D)(i) and 4011(d)(3)(A)(iv).

<sup>27</sup> Although the bills would include no explicit deadline for compliance with most requirements potentially applicable to CCR structures or for states to begin issuing permits, EPA and the courts have legal basis to impose reasonableness bounds on state discretion as to deadlines. For more information, contact the Congressional Research Service, American Law Division, at 7-.....

The bills' requirement that EPA identify certain state program elements that may be "deficient" involves the use of a term not found in the RCRA statute, and thus lacking a history of interpretation. As a result, it is difficult to anticipate how EPA would respond to such a mandate. In contrast, with regard to existing state programs to regulate MSW landfills, Congress required EPA to determine whether each state program was "adequate."<sup>28</sup> EPA subsequently interpreted that mandate to mean that it was required to determine whether each state program was adequate to ensure that regulated facilities would operate in compliance with regulatory criteria that met a baseline level of protection.<sup>29</sup> Unlike "deficient," the term "adequate" now has decades of agency interpretation providing a mature understanding of its precise meaning for evaluating state programs.

Some have argued that by requiring EPA to implement a CCR Permit Program for a state under specific conditions, the bills would provide EPA with authority to backstop state programs. Under current law, the term "backstop authority" is not formally defined in statute or regulation, and whether EPA is said to have backstop authority or not has no legal consequence. Nonetheless, the term has been widely used to refer to explicit authority provided to EPA to enforce standards at individual facilities in a state authorized by EPA to implement and enforce federal standards. Reference to EPA backstop authority has been made with regard to RCRA, the Clean Air Act, and the Clean Water Act. For example, under RCRA Subtitle C (42 U.S.C. §6928(a)), EPA is authorized to enforce standards of performance at individual facilities in a state even after the agency has authorized the state to implement and enforce such standards. Section 111(c) of the Clean Air Act (42 U.S.C. §7411(c)) provides EPA with comparable enforcement authority. In this sense of the term, the bills would not provide EPA with authority to backstop state programs to regulate CCR facilities.

## **Administrative and Legislative Proposals to Regulate CCRs**

Despite its recent decline in demand, coal remains the dominant fuel for electricity generation in the United States, and is expected to continue to be well into the future.<sup>30</sup> In 2011, electricity generating units in the United States burned more than 900 million tons of coal. CCRs are the inorganic material remaining after pulverized coal is burned at electric utilities and independent power producers.<sup>31</sup> According to industry estimates, in 2011, as much as 130 million tons were generated, making CCRs one of the largest waste streams in the United States.<sup>32</sup>

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<sup>28</sup> 42 U.S.C. §6945(c)(1)(C).

<sup>29</sup> See "Requirements for State Permit Program Determination of Adequacy," at 40 C.F.R. Part 239, particularly information included in the sections regarding "Purpose" (§239.1), "Scope and definitions" (§239.2), and "Components of a program application" (§239.3).

<sup>30</sup> According to the Department of Energy's Energy Information Administration (EIA), coal accounted for 42% of total U.S. energy generation in 2011, compared to 45% in 2010. In 2020 and 2035, EIA projects that its share will be 39% and 38%, respectively. For more information, see EIA's "Annual Energy Outlook 2012: with Projections to 2035," June 2012, p. 87, available at <http://www.eia.gov/forecasts/aeo/pdf/0383%282012%29.pdf>; or CRS Report R42950, *Prospects for Coal in Electric Power and Industry*, by (name redacted), (name redacted), and (name redacted).

<sup>31</sup> The substance is also commonly referred to as coal combustion *waste*, *product*, or *byproduct*; it may also be referred to as fossil fuel combustion waste (FFC waste). How it is referred to depends on the context in which it is being discussed. For example, coal combustion *wastes* or *residuals* are materials destined for disposal, while coal combustion *products* or *byproducts* are destined for some use such as a component in gypsum wallboard or cement. Regardless of what it is called, these terms refer to the same material—coal ash (when referred to broadly) or fly ash, bottom ash, boiler slag, and flue gas desulfurization materials (when referred to with specific regard to its origin in a coal-fired power plant). This report generally refers to the substance as coal combustion *residuals* (CCRs) since that term is used (continued...)

Disposal of CCRs on site at individual power plants may involve decades-long accumulation of waste—with hundreds of thousands, if not millions, of tons of dry ash (in a landfill) or wet ash slurry (in a surface impoundment) deposited at the site. On December 22, 2008, national attention was turned to risks associated with managing such large volumes of CCRs when a breach in a surface impoundment pond at the Tennessee Valley Authority's (TVA's) Kingston, TN, plant released 1.1 billion gallons of coal fly ash slurry, covering more than 300 acres, damaging or destroying homes and property. TVA estimates that cleanup will continue into at least 2014 and will cost \$1.2 billion.<sup>33</sup>

The incident at Kingston drew attention to the potential for a sudden, catastrophic release related to the structural failure of a surface impoundment. However, EPA has determined that a more common threat associated with CCR management is the leaching of contaminants likely present in the waste, primarily heavy metals, resulting in surface or groundwater contamination. The Kingston release also brought attention to the fact that the management of CCRs is essentially unregulated at the federal level.

EPA found that many state solid waste management programs adequately regulate CCR landfills, but identified gaps in those programs with respect to the regulation of CCR surface impoundments (particularly existing surface impoundments). EPA determined that national standards applicable to the management of CCRs destined for disposal are needed. In June 2010, EPA proposed two options to regulate CCRs pursuant to its current authorities under RCRA Subtitles C and D.<sup>34</sup> In reaction to concern over the potential impacts of implementing either EPA regulatory option, the proposals to amend RCRA were introduced in the 112<sup>th</sup> Congress.

## **EPA Proposals to Regulate the Disposal of CCRs**

According to industry estimates, almost 80% of CCRs generated in 2011 was managed in a way that involved land application of the material. Such management practices included CCR *disposal* in landfills, surface impoundments, or mines (as minefill);<sup>35</sup> and *use* as structural and embankment fill and as a soil amendment, among others.<sup>36</sup> EPA has identified a number of conditions under which such land applications of CCRs may pose a threat to human health.

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(...continued)

in the administrative and legislative proposals discussed in this report. As used by EPA, CCRs are materials destined for disposal. Under the legislative proposals, the term refers broadly to the residuals, but not their destination (e.g., disposal or recycling).

<sup>32</sup> See American Coal Ash Association (ACAA) survey data, "2011 Coal Combustion Product (CCP) Production & Use Survey Report," at [http://acaa.affiniscape.com/associations/8003/files/2010\\_CCP\\_Survey\\_FINAL\\_102011.pdf](http://acaa.affiniscape.com/associations/8003/files/2010_CCP_Survey_FINAL_102011.pdf).

<sup>33</sup> Tennessee Valley Authority, "Form 10-Q: Quarterly Report," filed with the United States Securities and Exchange Commission on May 4, 2012, for the period ending March 31, 2012, p. 19.

<sup>34</sup> U.S. EPA, "Hazardous and Solid Waste Management System; Identification and Listing of Special Wastes; Disposal of Coal Combustion Residuals From Electric Utilities," 75 *Federal Register* 35128-35264, June 21, 2010.

<sup>35</sup> EPA explicitly excluded CCR placement in mines as minefill in its June 2010 proposals to regulate CCRs. Its use as minefill would be subject to regulation by the Department of the Interior's Office of Surface Mining Reclamation and Enforcement (OSM), not EPA. For information, see OSM's Advance Notice of Proposed Rulemaking, "Placement of Coal Combustion Byproducts in Active and Abandoned Coal Mines," March 14, 2007, 72 *Federal Register* 12026.

<sup>36</sup> Various uses of CCRs, including those not likely to involve land application (e.g., its use as a component in products like wallboard and cement), are listed in the ACAA survey data referred to in footnote 32.

EPA also identified certain protective measures that may be implemented that would minimize or largely eliminate risks from CCR disposal. Many of the measures reduce risks that may be broadly applicable to the operation or design of other types of waste disposal facilities, such as MSW landfills. However, EPA identified other protective measures that would address risks specific to the management of CCRs. In particular, EPA found that surface impoundments pose a significant risk of contaminant leaching when CCRs are placed in an unlined unit, but that risk can be largely eliminated through the use of a composite liner system. Surface impoundments also pose a risk of structural failure. Given the potentially large volume of liquid waste impoundments may contain, structural failure could result in a catastrophic release of coal ash slurry. The potential for structural failure could be minimized by various means, including ensuring that the units meet certain design standards and are inspected regularly.

CCR disposal facilities are currently subject to limited federal regulation. Instead, they are regulated by individual states.<sup>37</sup> In a continuing effort to determine whether CCRs should be subject to federal requirements established under RCRA, EPA has gathered data on CCR use and disposal for more than 30 years. In the past 10 years, EPA has found that states appear to be regulating CCR landfills to a greater extent than they had in the past. However, based on available data, EPA determined that a majority of states with CCR surface impoundments did not appear to require facility owner/operators to implement protective measures typically deemed necessary to protect human health from risks associated with contaminant migration. As a result of potential risks tied to CCR management, documented cases of damages attributed to improper disposal practices, and concern over potential gaps in state regulatory programs to regulate CCRs, particularly surface impoundments, EPA determined that national standards were needed to protect human health from risks specific to CCR management (i.e., its disposal and certain uses).

EPA options to regulate CCRs, however, are limited under its current authorities in Subtitles C and D. Pursuant to the Bevill exclusion,<sup>38</sup> CCRs are explicitly excluded from the Subtitle C requirements, unless or until EPA determines that such requirements are warranted (EPA efforts with regard to directives included in the Bevill Amendment are summarized in **Appendix C**). Accordingly, EPA has two options: (1) it could determine, reversing previous rulings, that hazardous waste regulation is warranted for CCRs, and promulgate regulations under Subtitle C, or (2) it could promulgate standards applicable to CCR landfills and surface impoundments under its Subtitle D authority (as necessary to allow states to enforce the prohibition on open dumping under RCRA Subtitle D).

On June 21, 2010, EPA proposed for public comment two options to regulate CCRs pursuant to those Subtitle C and D authorities.<sup>39</sup> Under the Subtitle C option, EPA would reverse a previous

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<sup>37</sup> The fact that a state does not regulate surface impoundments or landfills according to federal solid waste management regulations does not mean that those units are not regulated under other federal programs implemented by authorized states—such as the regulation of surface impoundments according to federal requirements established under the Clean Water Act (33 U.S.C. §1251 et seq.).

<sup>38</sup> The exclusion of CCRs from Subtitle C requirements was established under RCRA pursuant to provisions in the 1980 Solid Waste Disposal Act Amendments, referred to commonly as the Bevill Amendment or the Bevill Exclusion (primarily at RCRA Section 3001(b)(3)(A); 42 U.S.C. §6921(b)(3)(A)). Since 1980, EPA analysis of risks specific to the disposal and use of CCRs has been conducted according to the directive included in Bevill Amendment provisions. Information about Bevill Amendment provisions, EPA study criteria established in statute, and EPA actions in response to directives in the Bevill Amendment is provided in **Appendix C**. Included among EPA actions were determinations to leave the Bevill exclusion in place, most recently in May 2000.

<sup>39</sup> For information about EPA's June 2010 proposal, see CRS Report R41341, *EPA's Proposal to Regulate Coal Combustion Waste Disposal: Issues for Congress*, by (name redacted).



regulatory determination to exempt CCRs from the hazardous waste requirements and, instead, list the material as a “special waste.” Subtitle C requirements applicable to CCR management would include strict standards applicable to CCR land disposal. EPA assumed that power plants that dispose of CCRs on-site would continue to do so, but would upgrade their facilities as necessary to ensure compliance with land disposal standards applicable to owners and operators of TSDFs—standards that EPA tailored to address issues specific to CCRs. Pursuant to its existing authorities under Subtitle D, EPA’s second regulatory option would be to promulgate national standards applicable to landfills and surface impoundments that receive CCRs. The proposed standards are structured similarly to regulatory requirements applicable to MSW landfills, supplemented to reflect requirements specific to the management of CCRs (discussed in “Proposed EPA Standards to Address Risks Specific to CCR Management”).

According to EPA, if implemented as proposed, each regulatory option would result in a similar level of protection. However, each option would result in regulatory programs with a substantially different scope and potential for enforcement. Adoption and enforcement of the Subtitle C “cradle to grave” regulations would involve stricter waste management standards implemented at a higher cost to both industry and state waste management agencies. Implementing the Subtitle D option would establish standards applicable only to owners and operators of CCR landfills and surface impoundments (i.e., it would create a regulatory program applicable only to the CCR “grave,” not every stage of CCR management). In contrast to its broad authority to enforce Subtitle C requirements, EPA could promulgate the Subtitle D standards, but would have limited authority to enforce them. If finalized, EPA could encourage states to adopt and enforce the Subtitle D standards, but would have no authority to enforce the standards directly.<sup>40</sup>

Selected elements of EPA’s proposed Subtitle C and D requirements, applicable specifically to waste disposal units that may receive CCRs, are summarized in **Table 1**.

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<sup>40</sup> Under Subtitle D, EPA was required to promulgate regulations necessary to assist states in distinguishing between open dumps (prohibited under RCRA) and sanitary landfills. EPA is not, however, authorized to directly enforce those federal criteria. EPA and state authorities to enforce the open dumping prohibition, as well as other Subtitle D authorities, provisions, and resulting regulations established under Subtitle D, are discussed in “The Federal-State Program to Regulate MSW Landfills” and in **Appendix A.**)

**Table I. Selected Elements of CCR Regulations Proposed by EPA**

Requirements Relevant to Waste Disposal Facilities

Regulation	Under the Subtitle C Option	Under the Subtitle D Option
<b>Federal regulatory standards</b>	Existing “Standards Applicable to Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities” (TSDFs) would be amended to add “Special Requirements for Coal Combustion Residual Wastes.”	Existing “Criteria for Classification of Solid Waste Disposal Facilities and Practices” (at 40 C.F.R. Part 257) would be amended to add “Standards for the Receipt of Coal Combustion Residuals in Landfills and Surface Impoundments, applicable to owners and operators of those units.”
<b>Permits requirements</b>	Owners and operators of TSDFs that receive CCRs would be required to obtain a permit.	Not required.
<b>Implementation and enforcement</b>	In a state authorized by EPA to administer its own hazardous waste programs, the state would implement the new requirements. The new regulations would become enforceable once that state adopts the regulations, modifies its programs, and receives authorization from EPA.	The standards were written to be self-implemented by facility owner/operators. They would be enforced primarily pursuant to RCRA’s citizen suit authority. States may adopt and implement the standards, but would not be required to do so. States could also enforce the federal standards at individual facilities, using citizen suit authority.

**Source:** Congressional Research Service, based on a review of EPA’s “Hazardous and Solid Waste Management System; Identification and Listing of Special Wastes; Disposal of Coal Combustion Residuals From Electric Utilities,” 75 *Federal Register* 35128, June 21, 2010—particularly, EPA’s summary of selected elements of the regulatory options proposed under RCRA Subtitles C and D on pp. 35133-35134 and 35159.

EPA’s proposal drew comments from industry groups, environmental and citizen groups, state agency representatives, individual citizens, and some Members of Congress. Although public comments varied, opposition to the Subtitle C option was largely due to concerns that it would be costly to implement to both states and industry; be too restrictive; stigmatize the material by labeling it “hazardous,” adversely affecting its potential for reuse; and restrict uses of the material that involve land-based applications of CCRs, due to the land disposal restrictions applicable to hazardous wastes.

Opposition to the Subtitle D option stemmed from various concerns, many of which were centered on EPA’s lack of authority to directly enforce the standards—authority that would likely be necessary to encourage states to adopt and enforce them. Given the argument by many states that the material is being managed sufficiently under current state regulatory programs, environmental and citizen groups have expressed doubts over the degree to which states would adopt new standards, resulting in the promulgation but not the implementation of any new requirements to ensure protection of human health.

This report provides information regarding EPA’s proposals to regulate CCRs only insofar as such detail is helpful to clarify risks associated with CCR management. The report does not provide a comprehensive discussion of EPA’s authority to regulate CCRs, why EPA determined that national standards were necessary, details of EPA’s proposals, or opposition to them. That information is provided separately in CRS Report R41341, *EPA’s Proposal to Regulate Coal Combustion Waste Disposal: Issues for Congress*, by (name redacted).

## Overview of Proposals to Amend RCRA

As noted, the approach to creating the permit program in the bills considered in the 112<sup>th</sup> Congress differs from what is typical in federal pollution control laws administered by EPA. That it would be created using a new approach does not mean that it cannot achieve its intended purpose. Its purpose is broadly stated as “to facilitate recovery and beneficial use, and provide for the proper management and disposal” of CCRs.<sup>41</sup> In accordance with that purpose, it would appear that CCR Permit Programs would be intended to result in the “proper management” of CCRs, but not restrict beneficial uses of CCRs. The bills would establish a framework that states could use to create programs to regulate CCR disposal, allow states flexibility to develop and implement the program, and specify some level of EPA oversight after states are implementing the program. Such a program would be comparable to existing state programs to implement and enforce standards necessary to ensure facility compliance with RCRA’s open dumping prohibition.<sup>42</sup>

Based on the construction of the proposed amendment (e.g., listing specific MSW landfill criteria that CCR Permit Programs must apply) and statements available in the legislative history, it may be assumed that state adoption and implementation of a CCR Permit Program, created pursuant to the proposed bills, are intended to result in state programs to regulate CCR disposal similarly to existing state programs to regulate MSW landfills. The creation of the latter involved a somewhat complex evolution of RCRA.<sup>43</sup> In particular, federal-state programs to regulate MSW landfills were created pursuant to the 1984 amendments to RCRA Subtitle D that revised existing requirements applicable to RCRA’s prohibition on open dumping.

Under Section 4011 in the proposed bills, states would create CCR Permit Programs using statutory criteria drawn from regulatory criteria previously created pursuant to RCRA. However, proposed Section 4011 includes no provisions that would explicitly require either EPA or states to promulgate regulations directly applicable to owners and operators of disposal facilities that receive CCRs (regulations the permit program would be expected to implement). Instead, the Permit Program Specifications<sup>44</sup> would cite selected existing federal regulatory criteria applicable to MSW landfills (in 40 C.F.R. Part 258) and five requirements drawn from EPA’s June 2010 Subtitle D proposal that a CCR Permit Program would be required to apply.<sup>45</sup> According to that precondition, it is arguably implied that states choosing to adopt and implement a CCR Permit Program would promulgate regulations applicable to “CCR structures.”<sup>46</sup> Regulations promulgated by a state that would ultimately apply to owners and operators of CCR structures would depend on each state’s interpretation of the criteria listed among the proposed Permit Program Specifications (though EPA and possibly court review would impose a check on unreasonable state interpretations).

As proposed, apart from the potential for EPA to issue guidance or technical assistance, state CCR Permit Programs would likely be *created* with no involvement from EPA—with regard to either

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<sup>41</sup> See preamble to S. 3512.

<sup>42</sup> RCRA Section 4005; 42 U.S.C. §6945. For background regarding the open dumping prohibition, including state and federal roles in enforcing it, see **Appendix A**.

<sup>43</sup> See discussion in **Appendix A**.

<sup>44</sup> Provisions in proposed Section 4011(c).

<sup>45</sup> Proposed Section 4011(c)(1)(A).

<sup>46</sup> See footnote 23.

required elements of the program itself or the regulations that would be implemented by the permit program.<sup>47</sup> In contrast to other RCRA permit programs, EPA would have a substantially different role in program implementation and enforcement.

By way of comparison, existing state programs to regulate landfills that receive MSW involved the following actions by EPA and states with regard to program creation, implementation, and enforcement:

- EPA revised existing regulatory criteria applicable to sanitary landfills to apply to owners and operators of MSW landfills. In the regulations promulgated by EPA, they are defined as minimum national criteria to ensure protection of human health and the environment.<sup>48</sup> Owner/operators of MSW landfills were required to comply with the criteria within two years.
- Within 18 months after EPA promulgated the MSW landfill criteria, states were required to adopt and implement a permit program to implement the criteria or risk EPA enforcement of the criteria at facilities in the state. States either adopted the federal criteria exactly or used them as a model to create their own requirements applicable to MSW landfills.
- EPA determined whether state programs were adequate to ensure facility compliance with the federal criteria. That is, state regulations applicable to MSW landfill owner/operators and their programs to enforce those standards were required to be adequate to ensure that owner/operator compliance with the state requirements would not pose a threat to human health from risks common to waste disposal (e.g., contamination of groundwater above levels determined to be safe for humans).
- From the deadline for a state to adopt and implement a permit program (18 months after EPA promulgated the MSW landfill criteria) until that state had an approved (“adequate”) permit program in place, EPA was authorized to directly enforce the federal regulatory criteria at facilities in the state. By providing EPA with authority to enforce federal criteria, states were encouraged to adopt, implement, and enforce the federal criteria. Once a program was approved by EPA, states had primary authority to implement and enforce their own program to regulate MSW landfills. EPA had limited authority to intervene.

A CCR Permit Program would draw from selected elements of existing state programs to regulate MSW landfills, but with different roles for states and EPA and a different timetable for program implementation (the required elements of the CCR Permit Program are discussed in “Proposed CCR Legislation Amending RCRA,” below). Not later than six months after bill enactment, each state would be required to notify EPA whether it will adopt and implement a CCR Permit Program. Not later than three years after bill enactment, participating states would be required to submit to EPA certification that their CCR Permit Programs meet the Permit Program

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<sup>47</sup> Granted, RCRA provides EPA with broad authority to prescribe regulations as necessary to carry out its functions under the law (42 U.S.C. §6912(a)(1)). However, since the proposed amendment to RCRA would explicitly provide no new function to EPA with regard to program development (beyond the requirement to identify potential program deficiencies, discussed in “EPA’s Potential Role in Program Oversight and Implementation”), EPA arguably would lack authority to promulgate regulations that may be implemented via state CCR Permit Programs.

<sup>48</sup> See 40 C.F.R. §258.1(a).

Specifications delineated in proposed Section 4011(c).<sup>49</sup> Based on both explicit and implicit directives in the proposed amendment to RCRA, EPA<sup>50</sup> and state roles and authorities to create, implement, and enforce requirements applicable to CCR structures appear to be as follows:

- Participating states would interpret provisions in Section 4011, particularly the Permit Program Specifications, and develop regulations based on their interpretation. There is no explicit directive in the bills that the requirements applied via the permit program be those necessary to protect human health (i.e., meet a federal standard of protection). Requirements adopted by the state would likely meet a state-determined standard of protection. States would determine when owner/operators would be required to comply with the requirements implemented via the permit program and when they would issue permits.
- Participating states would certify that they have a program in place within three years of enactment of proposed Section 4011, including a legal certification that the state has “fully effective statutes or regulations necessary to implement a coal combustion residuals permit program that meets the [statutory] specifications.” States would presumably promulgate regulations applicable to CCR structures. Deadlines for compliance and details regarding program applicability would not be known until states promulgate regulations that would be implemented by the permit program.
- EPA would be required to notify states if they did not meet the deadlines to notify the agency whether they intended to implement a program, or to submit to EPA their program certification. At any time after a state is implementing a CCR Permit Program (e.g., is issuing permits and enforcing permit conditions), EPA would be required to identify and notify a state of any deficiencies in meeting the Permit Program Specifications. EPA would not be explicitly required to identify as a program “deficiency” program elements outside the required Permit Program Specifications (e.g., compliance deadlines or details regarding program applicability that may be included in state regulations or in state procedures to implement those regulations), and arguably could not.
- If a state fails to remedy program deficiencies identified by EPA within the time frame negotiated between the state and EPA, the agency would be required to implement a permit program for a state. The time frame for that could vary depending on the compliance deadlines established by the state. If EPA did implement a CCR Permit Program in a state, it is not clear whether the agency would be obligated to implement and enforce state requirements or EPA would promulgate federal criteria necessary to implement the CCR Permit Program, in accordance with its broad authority to promulgate regulations necessary to carry out its functions under RCRA.<sup>51</sup>

Under this construct, EPA and state roles would be substantially different in developing, implementing, and enforcing requirements applicable to CCR structures compared to their

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<sup>49</sup> That program certification would be required to provide information specified in the “State Actions” provisions in proposed Section 4011(b)(2).

<sup>50</sup> EPA would likely retain some latitude to interpret Section 4011 in a way that it views as necessary to ensure the viability of the state programs. How EPA might use this latitude cannot be determined in advance.

<sup>51</sup> Specified at 42 U.S.C. §6912(a)(1).

respective roles and authorities to implement and enforce requirements applicable to MSW landfills. Also, CCR Permit Programs created pursuant to proposed Section 4011 would be implemented in accordance with program definitions (e.g., “deficiencies”), procedures (e.g., EPA review of state programs to identify program deficiencies at any time after states are implementing the program, rather than determining program adequacy to ensure compliance with a federal standard), and standards of protection (e.g., a presumption that states would develop programs according to a state-determined standard) that differ from other permit programs implemented by states under RCRA.

Congress may create a permit program for any constitutionally authorized purpose. By drawing primarily from the existing federal regulations applicable to MSW landfills, state adoption of a CCR Permit Program appears to be intended to result in state implementation of programs to regulate CCRs comparable to existing state programs to regulate MSW landfills. Given that potential purpose, a direct comparison of key elements of each program is helpful.

## **Existing Standards Relevant to a CCR Permit Program**

A CCR Permit Program, created pursuant to the proposed bills, would draw from certain existing federal regulations and requirements, and proposed federal standards. In particular, required elements of a CCR Permit Program would draw from existing federal regulatory criteria applicable to owners and operators of MSW landfills (at 40 C.F.R. Part 258); selected EPA requirements for state permit programs implementing the MSW landfill criteria (at 40 C.F.R. Part 229); and selected standards applicable to CCR landfills and surface impoundments included in EPA’s June 2010 proposal to regulate CCRs, under its Subtitle D option. To determine the degree to which a CCR Permit Program created under Section 4011 may resemble state programs to regulate MSW landfills, it is helpful to outline how those state programs to regulate MSW landfills were created and implemented and to recognize the purpose of selected details of those regulations.

## **The Federal-State Program to Regulate MSW Landfills**

One of RCRA’s key goals is to prevent contamination associated with waste disposal, if at all practicable, rather than simply remedy it after discovery.<sup>52</sup> Consistent with that goal, Congress has required EPA to promulgate regulations applicable, among other things, to facilities that may receive hazardous household wastes (subsequently defined in regulations as MSW landfills) under Subtitle D.<sup>53</sup> Provisions in RCRA that required EPA to promulgate those regulations included certain minimum requirements that EPA was to include in the final regulations, as well as a broad standard of protection the regulations were required to achieve.

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<sup>52</sup> See 42 U.S.C. §6902(a)(3)-(5).

<sup>53</sup> See the directive to EPA to promulgate “standards applicable to owners and operators of hazardous waste treatment, storage, and disposal facilities” at 42 U.S.C. §6924, and a directive to EPA to revise criteria applicable to sanitary landfills to apply to solid waste disposal facilities that may receive hazardous household waste included in the “Adequacy of certain guidelines and criteria: Revisions of guidelines and criteria” at 42 U.S.C. §6949a(c).

The Hazardous and Solid Waste Amendments of 1984 (HSWA; P.L. 98-616) amended RCRA Subtitle D to address an issue almost identical to the one currently applicable to CCRs—that is, the need to regulate a waste excluded from Subtitle C requirements. In developing the amendments, Congress recognized that an explicit exemption from the Subtitle C requirements did not mean that disposal of those wastes did not pose potential risks to human health and the environment. For example, household waste is exempt from Subtitle C requirements. However, in its amendments to RCRA, Congress recognized that disposal facilities that accept such waste may need to comply with standards that were more detailed than the broad criteria applicable to sanitary landfills.<sup>54</sup> Rather than subject household waste to the full gamut of “cradle to grave” Subtitle C regulations, Congress took an approach that could be implemented under Subtitle D. That approach resulted in more detailed regulations than those applicable to sanitary landfills, and included a stronger enforcement mechanism to ensure consistent state conformance with the national standards.

HSWA amended Subtitle D to add Section 4010,<sup>55</sup> in which Congress directed EPA to study the extent to which the Subtitle D guidelines and criteria applicable to solid waste management and disposal facilities, including landfills and surface impoundments, were adequate to protect human health and the environment from groundwater contamination. Within three years, EPA was required to report the results of its study to Congress, as well as any recommendations the agency made based on the study findings. Further, EPA was required to revise the sanitary landfill criteria to apply to facilities that may receive hazardous household wastes. Congress explicitly required EPA to revise the existing sanitary landfill criteria to be

those necessary to protect human health and the environment and may take into account the practicable capability of such facilities. At a minimum such revisions for facilities potentially receiving such wastes should require ground water monitoring as necessary to detect contamination, establish criteria for the acceptable location of new or existing facilities, and provide for corrective action as appropriate.<sup>56</sup>

Once EPA promulgated the revised criteria, each state was required to “adopt and implement a permit program or other system of prior approval and conditions, to assure that each solid waste management facility within such state which may receive hazardous household waste ... will comply with the [the newly revised] criteria.”<sup>57</sup>

EPA was required to determine whether each state developed an adequate permit program.<sup>58</sup> As a result of those directives, EPA promulgated the “Criteria for Municipal Solid Waste Landfills,” in 49 C.F.R. Part 258,<sup>59</sup> and “Requirements for State Permit Program Determination of Adequacy,” in 40 C.F.R. Part 239. The landfill criteria and required elements of an “adequate” permit program were developed and implemented using data and information gathered over a more than 20-year period. Over that time, working cooperatively with states, EPA has identified risks to human

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<sup>54</sup> Sanitary landfill standards refer to the broad “Criteria for Classification of Solid Waste Disposal Facilities and Practices,” at 40 C.F.R. Part 257, promulgated by EPA to determine whether solid waste disposal facilities and practices pose a reasonable probability of adverse effects on human health or the environment (i.e., open dumps).

<sup>55</sup> See “Adequacy of Certain Guidelines and Criteria” at 42 U.S.C. §6949a.

<sup>56</sup> 42 U.S.C. §6949a(c)(1).

<sup>57</sup> 42 U.S.C. §6945(c)(1)(B).

<sup>58</sup> 42 U.S.C. §6945(c)(1)(C).

<sup>59</sup> Final rules were promulgated October 9, 1991, in 56 *Federal Register* 51016.

health from waste management, regulatory criteria that effectively address those risks, and regulatory programs adequate to ensure facility compliance with those regulatory criteria.

## **The MSW Landfill Criteria**

In cooperation with individual states, among others, EPA established minimum national criteria applicable to MSW landfills. The criteria are those necessary to protect human health and the environment from risks associated with the disposal of MSW in a landfill.<sup>60</sup> Generally, risks to human health from waste management activities pertain to the potential for hazardous contaminants (e.g., toxic constituents) in that waste to be released from the site of deposition and to migrate off-site.<sup>61</sup>

To identify risks specific to the management of MSW in a landfill, during the public rulemaking process, EPA gathered data regarding the types of waste common to those landfills, the contaminants likely present in MSW, and protective measures to control human exposure to those contaminants, among other factors. In 1991, the agency promulgated the following requirements applicable to MSW landfills:

- General standards—delineated the purpose of the regulations; detailed compliance deadlines and specific regulatory criteria applicable to existing facilities (generally within two years of the rules being finalized); and detailed definitions of terms used in the regulations. Included in those general standards, it is specified that the criteria apply directly to owners and operators of facilities that meet the regulatory definition of an MSW landfill.
- Location restrictions—applicable primarily to new units and lateral expansions of existing units. Existing units located in certain restricted locations were required to close.
- Operating criteria—daily requirements applicable to both new and existing units.
- Design criteria—applicable primarily to new units.
- Groundwater monitoring and corrective action requirements—applicable to all units, but also intended to ensure that existing units that did not meet necessary design criteria would identify and respond to contaminant migration within a certain time frame.
- Closure/post-closure care—applicable to any unit upon closure.
- Financial assurance criteria—applicable to any unit, to ensure the owner/operator is able to clean up contamination, if necessary.

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<sup>60</sup> See 40 C.F.R. §258.1.

<sup>61</sup> More specifically, EPA considers risk to be the chance of harmful effects to human health or ecological systems resulting from exposure to an environmental stressor. A stressor is any physical, chemical, or biological entity that can induce an adverse response. Stressors may adversely affect specific natural resources or entire ecosystems, including plants and animals, as well as the environment with which they interact. EPA uses risk assessments to characterize the nature and magnitude of health risks to humans (e.g., residents, workers, recreational visitors) and ecological receptors (e.g., birds, fish, wildlife) from chemical contaminants and other stressors that may be present in the environment. See EPA's "Risk Assessment" web page, particularly its "Basic Information" page at <http://epa.gov/riskassessment/basicinformation.htm#risk> and its "Human Health Risk Assessment" page at <http://epa.gov/riskassessment/health-risk.htm>.



As finalized by EPA, the MSW landfill criteria are intended to apply to facilities that dispose of largely “dry” waste. That is, they do not address issues specific to liquid waste accumulation in surface impoundment ponds. New MSW landfills were required to ensure compliance with the standards before they began operation. Owner/operators of existing facilities that did not comply with applicable criteria by deadlines specified by EPA would be in violation of RCRA’s prohibition on open dumping.<sup>62</sup>

As required by Congress, the MSW landfill criteria establish minimum federal standards that take into account the practical capability of owners and operators and ensure that MSW landfills are designed and managed in a manner that is protective of human health. Each standard in the MSW landfill criteria is designed to be implemented by the owner or operator, with or without oversight or participation by a regulatory agency (e.g., an approved state permit program). That is, owner/operators of regulated disposal units were required to comply with applicable criteria by the applicable deadlines, regardless of whether a state had adopted the federal criteria or had a program in place to implement and enforce those criteria.

States were not precluded from adopting regulations more stringent than the federal criteria. However, in requiring the criteria to meet a specific standard of protection, facility compliance with the minimum national standard was intended to achieve a consistent level of protection from threats specific to improper management of MSW.

### **State Programs to Implement the MSW Landfill Criteria**

Congress intended states to be the primary entities to implement and enforce federal standards applicable to waste management activities subject to the open dumping prohibition established under Subtitle D. However, amendments to Subtitle D in HSWA created a role for EPA in state adoption and implementation of the MSW landfill criteria. HSWA added a paragraph applicable to “Control of Hazardous Disposal” in Section 4005.<sup>63</sup> That paragraph includes provisions that directed states to adopt a permit program to implement the MSW landfill criteria, and required EPA to assess each state program. In particular, the 1984 amendments to Section 4005 required

- each state, within 18 months of EPA promulgating the MSW landfill criteria, to adopt and implement a permit program or “other system or prior approval and conditions” to assure that each solid waste management facility within the state that may receive MSW will comply with the MSW landfill criteria (or risk EPA enforcement of the criteria, as discussed below); and<sup>64</sup>
- EPA to determine whether each state “developed an adequate program” (i.e., a program adequate to assure facility compliance with the MSW landfill criteria); that determination could be made in conjunction with EPA’s decisions to approve, disapprove, or partially approve state solid waste management plans.<sup>65</sup>

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<sup>62</sup> See “Upgrading of open dumps: Closing or upgrading of existing open dumps” at 42 U.S.C. §6945(a), and MSW landfill criteria at 40 C.F.R. §§258.1(g) and (h).

<sup>63</sup> 42 U.S.C. §6945(c).

<sup>64</sup> 42 U.S.C. §6945(c)(1)(B).

<sup>65</sup> 42 U.S.C. §6945(c)(1)(C).

EPA subsequently promulgated “Requirements for State Permit Program Determination of Adequacy,” in 40 C.F.R. Part 239, also referred to as the State Implementation Rule (SIR). The SIR includes the following four subparts:

- **General**—specifies the purpose and scope of the program and defines key program terms.
- **State Program Application**—lists required components of program application, including detailed information that must be provided by a state in the narrative description of its program and required components of the state’s legal certification of program requirements.
- **Requirements for Adequate Permit Programs**—details minimum permitting requirements, compliance monitoring authority, and enforcement authority a state would need to demonstrate to EPA before the program could be deemed adequate by EPA; and requires state programs to provide for citizen action in the state civil enforcement process.
- **Adequacy Determination Procedures**—includes criteria EPA would use to make its adequacy determination or to partially approve state programs, procedures states must follow if they needed to modify their programs, and criteria and procedures EPA may use to withdraw its determination of adequacy.

(Individual criteria included in the SIR and provisions in Section 4011 comparable to required elements of the SIR are listed in **Table B-1**.) The resulting state permit programs were the body of laws, authorities, and procedures that comprise the state’s system for regulating the location, design, operation, groundwater monitoring, closure, post-closure care, corrective action, and financial assurance of regulated MSW landfills. A state program that met the requirements in the SIR would be expected to be adequate to assure facility compliance with the MSW landfill criteria.

EPA did not intend the SIR to be a rigid set of criteria. States could regulate MSW landfills based on the federal MSW landfill criteria exactly, or could allow owners and operators to use site-specific alternative approaches to meet the federal performance standards (i.e., to protect human health and the environment). In providing a certain degree of flexibility, the SIR allowed states to adopt regulations that may not have been identical to the MSW landfill criteria. All state programs approved by EPA, however, were determined to be adequate to assure facility compliance with standards protective of human health and the environment.<sup>66</sup>

EPA’s determination of state program adequacy was also relevant to the agency’s potential to directly enforce the MSW landfill criteria. Specifically, HSWA’s new Section 4005(c) added the following provisions that specify the narrow set of conditions under which EPA would be authorized to directly enforce the open dumping prohibition at facilities subject to the MSW landfill criteria:

- In any state that EPA determined did not adopt a program adequate to assure facility compliance with the MSW landfill criteria, EPA could use authorities available in Sections 3007 and 3008 in Subtitle C (“Inspection” and “Federal

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<sup>66</sup> See preamble section pertaining to “Authority” in EPA’s “Subtitle D Regulated Facilities; State Permit Program Determination of Adequacy; State Implementation Rule: Final Rule,” 63 *Federal Register* 57026, at 57027.

Enforcement” provisions in 42 U.S.C. §§6927 and 6928) to directly enforce the open dumping prohibition at MSW landfills in that state.<sup>67</sup>

- Since the inspection and federal enforcement authorities cited apply explicitly to the management of hazardous waste, an additional provision specifies that, when drawing upon the federal enforcement authorities (§6928), the term “requirements of this subchapter” in Subtitle C would be deemed to include criteria “promulgated by the Administrator under Sections 6907(a)(3) and 6944(a)” of RCRA (i.e., the MSW landfill criteria), and the term “hazardous wastes” in the inspection provisions (§6927) would be deemed to include “solid waste at facilities that may handle hazardous household wastes” (i.e., MSW landfills).<sup>68</sup>

Absent the above provisions, EPA has no authority to directly enforce the federal MSW landfill criteria or, likely, provide states with incentive to adopt and enforce the federal criteria. EPA has since approved all state programs, deeming them adequate to enforce the federal regulatory criteria. Once state programs to implement the MSW landfill criteria were approved by EPA, states have primary authority to implement and enforce their own MSW landfill criteria applicable to owners and operators of MSW landfills. States “implement” those regulations by issuing permits to owners and operators of regulated landfills that specify compliance obligations applicable to that facility.

When the SIR was finalized in 1998, EPA intended states to continue their lead role in implementing the federal MSW landfill criteria. At that point, seven years after the MSW landfill criteria had been promulgated, 40 states and one U.S. territory had already obtained full EPA approval of their permit programs. Legally, EPA could have directly enforced the federal MSW landfill criteria at any MSW landfill in a state without an EPA-approved program. However, EPA never did so. Currently, given that all states have EPA-approved permit programs, EPA has no authority to directly enforce the MSW landfill criteria (i.e., to enforce the Subtitle D open dumping prohibition at facilities subject to the MSW landfill criteria).<sup>69</sup>

## **Proposed EPA Standards to Address Risks Specific to CCR Management**

As discussed above, current state programs to regulate MSW landfills began with the promulgation of federal regulatory criteria identified by EPA as those necessary to address risks specific to the management of MSW in landfills. States then adopted those federal criteria and currently implement them using an EPA-approved permit program. MSW landfill owner/operator compliance with a permit is, hence, intended to achieve a baseline level of protection.<sup>70</sup>

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<sup>67</sup> See 42 U.S.C. §6945(c)(2)(A).

<sup>68</sup> See 42 U.S.C. §6945(c)(2)(B).

<sup>69</sup> EPA may take action at a waste disposal site classified as an “open dump” pursuant to its “imminent and substantial endangerment” authority under RCRA Section 7003 (42 U.S.C. §6973). However, that authority may or may not be comparable to the ability to directly implement and enforce regulations intended to prevent the spread of contamination from a waste disposal site.

<sup>70</sup> See 42 U.S.C. §6945(c)(1)(B).

If state programs to regulate CCRs were intended to be similar to state programs to regulate MSW landfills, regulations or other requirements established by individual states would be designed to protect human health from risks specific to CCR disposal and use. The degree to which state regulations implemented by a CCR Permit Program may protect human health from risks specific to CCR management would then depend on

- risks specific to the management of CCRs and
- protective measures (in the form of regulations applicable to CCR management) that could address those risks.

EPA's June 2010 proposals to regulate CCRs reflect EPA's effort to determine those risks and protective measure to address them. As discussed, EPA proposed two alternative regulations based on its existing statutory authorities in RCRA under Subtitles C and D. EPA's determination to regulate CCRs under either subtitle stems from directives included in the Solid Waste Disposal Act Amendments of 1980 (P.L. 96-482). That amendment to RCRA includes provisions commonly referred to as the Bevill Amendment or Bevill Exclusion, which are found in several RCRA subtitles, but primarily under Subtitle C. (As noted, information regarding the Bevill amendment provisions and EPA's response to directives in those amendments is provided in **Appendix C.**)

Under the Bevill provisions, "fly ash waste, bottom ash waste, slag waste, flue gas emission control waste, and other byproduct materials generated primarily from the combustion of coal or other fossil fuels" (i.e., CCRs) were explicitly excluded from the Subtitle C requirements, pending a determination by EPA of whether such regulation was warranted.<sup>71</sup> EPA's June 2010 proposal was part of the agency's ongoing effort to gather data necessary to determining whether regulating CCRs under Subtitle C is warranted. To make that determination, included among the Bevill amendment provisions, EPA was directed to prepare a detailed and comprehensive study on the adverse effects on human health and the environment, if any, of the disposal and use of CCRs.<sup>72</sup> Among the study criteria, EPA was required to identify

- the source and volumes of CCRs generated annually,
- methods of disposal and use,
- the potential danger, if any, to human health and the environment from those methods, and
- documented cases in which danger to human health or the environment from surface runoff or leachate has been proved.

In determining whether CCRs should be subject to Subtitle C requirements, EPA also used federal regulatory criteria applicable to the identification and listing of hazardous waste. Of relevance to CCRs would be whether the waste could be identified and specifically listed by EPA as hazardous waste based on its toxicity.<sup>73</sup> When making that determination, EPA must consider a range of factors, some of which are similar to the study data included in the Bevill amendment. Additional factors include data regarding the nature and concentration of toxic constituents present in the waste; plausible types of improper management to which the waste could be subjected; the

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<sup>71</sup> The exclusion is specified under 42 U.S.C. §6921(b)(3).

<sup>72</sup> Study criteria are specified at 42 U.S.C. §6982(n).

<sup>73</sup> 40 C.F.R. §261.11.

potential for toxic constituents to degrade and migrate from the point of deposition under plausible management conditions; and regulation by other government agencies or regulatory programs intended to address health or environmental hazards posed by a waste or toxic constituent in that waste.

Using those various criteria, EPA determined that the material is generated in large volumes annually (e.g., approximately 130 million tons in 2011);<sup>74</sup> that it contains more than 40 toxic constituents, including antimony, arsenic, barium, beryllium, cadmium, chromium, lead, mercury, and selenium; and that those constituents can degrade and migrate from the point of deposition under certain conditions.<sup>75</sup>

EPA identified common methods of disposal and use, potentially regulated under RCRA, that resulted in documented cases of damages that could cause human health concerns. Those management methods include disposal in landfills, accumulation in surface impoundment ponds, and use in land applications equivalent to landfill disposal such as the placement of large volumes of CCRs on land for use as structural or embankment fill (e.g., to contour the land at a construction site or raise a roadbed).<sup>76</sup> Using EPA's quantifiable groundwater risk assessment data<sup>77</sup> and information from documented CCR damage cases,<sup>78</sup> EPA identified various pathways in which humans may be exposed to toxic constituents in CCRs at levels high enough to cause health concerns. The pathways under which exposure would most likely occur include the following:

- contaminant leaching and migration off-site when CCRs are deposited in an unlined unit (e.g., a landfill, surface impoundment, sand pit, quarry, construction site);

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<sup>74</sup> See the American Coal Ash Association's "2011 Coal Combustion Product (CCP) Production & Use Survey Report" at <http://www.acaa-usa.org/associations/8003/files/Final2011CCPSurvey.pdf>.

<sup>75</sup> See EPA's June 2010 proposal at 75 *Federal Register* 35128, at 35138.

<sup>76</sup> The placement of CCRs in mines as minefill has been identified by EPA as disposal. However, that disposal method is not subject to RCRA. Instead, potential regulations applicable to the placement of CCRs in mines as minefill are currently being considered by the Department of the Interior's Office of Surface Mining Reclamation and Enforcement in accordance with directives to the agency in the Surface Mining Control and Reclamation Act of 1977 (SMCRA).

<sup>77</sup> EPA's revised risk assessment, "Human and Ecological Risk Assessment of Coal Combustion Wastes," is discussed in its June 2010 proposal at 75 *Federal Register* 35128, at 35144-35146. This April 2010 draft risk assessment is included among the "Supporting & Related Materials" associated with the proposed rule. It is available through the "regulations.gov" website at <http://www.regulations.gov>, under Docket ID EPA-HQ-RCRA-2009-0640.

<sup>78</sup> "CCR damage cases" identified by EPA have been either "proven" or "potential" damages cases. *Proven* damages are those cases with (1) primary maximum contaminant levels (MCLs) or other health-based standards measured in groundwater at sufficient distance from the CCR management unit to indicate that hazardous constituents have migrated to the extent that they could cause human health concerns, and/or (2) where a scientific study provides documented evidence of another type of damage to human health or the environment (e.g., ecological damage), and/or (3) where there has been an administrative ruling or court decision with an explicit finding of specific damage to human health or the environment. In cases of co-management of CCRs with other industrial waste types, CCRs must be clearly implicated in the reported damage. *Potential* damages are cases with documented MCL exceedances measured in groundwater beneath or close to the waste source. In these cases, the association with CCRs has been established, but the documented exceedances had not been demonstrated at a sufficient distance from the CCR management unit to indicate that constituents in the CCRs had migrated to the extent that they could result in an exposure and cause human health concerns. EPA noted that documented evidence of proven damages to groundwater and surface water from 27 disposal sites and potential damages at 40 sites resulted from CCR constituents migrating into groundwater at rates that were generally the same with those predicted in the risk assessment with respect to constituents that migrated—primarily arsenic, cadmium, lead, and selenium. See discussion at 75 *Federal Register* 35128, at 35155, 35172-35173, 35230-35239.

- direct, uncontrolled discharge or release of liquid waste to surface water, as in the structural failure of a surface impoundment (e.g., the Kingston release) or as a result of run-on/runoff across the deposition site during rain/flood events; and
- fugitive dust emissions, when fine particulates in dried ash become airborne, as at landfills or large-scale fill operations.

Of those pathways, risk to human health was highest from contaminant leaching and migration to surface and groundwater. EPA found that risk was largely eliminated through the use of a composite liner.

Leading up to its 2010 proposal, EPA attempted to determine the extent to which

- owners and operators of individual facilities may have implemented necessary protective measures, and
- state regulatory programs may require protective measures to control risks EPA identified as associated with CCR disposal and use.

Based on the limited data available to EPA, the agency determined that owners and operators of CCR landfills and surface impoundments are likely to install liners and groundwater monitoring systems in new CCR disposal units, but that the majority of disposal units were likely to be older and lacked liners and groundwater monitoring. Using data gathered in 2004, EPA determined that 31% of the CCR landfills and 62% of the CCR surface impoundments lacked liners, and 10% of the CCR landfills and 58% of the CCR surface impoundments lacked groundwater monitoring.

EPA found that the majority of states appeared to regulate CCR landfills adequately, but that there appeared to be gaps in state regulatory oversight of surface impoundments. The latter may be regulated under a state's dam safety program (intended to control risks related to the unit's structural integrity), but not necessarily a state's solid waste management program (intended to control risks specific to contaminant spread related to the land-based accumulation of liquid waste). For example, a 2009 survey of states found that among survey respondents, more than 60% of states required neither liners nor groundwater monitoring for surface impoundments (67% and 61%, respectively).<sup>79</sup> EPA noted that the survey results are "particularly significant as groundwater monitoring for these kinds of units is a minimum for any credible regulatory regime."<sup>80</sup> The majority of states responding to the survey also did not have siting controls, inspection, or structural integrity requirements for surface impoundments—requirements necessary to minimize the potential of a structural failure.

EPA further noted, however, that it lacks details regarding the manner and degree to which states are regulating the disposal and use of CCRs. To address potential gaps (i.e., to establish regulations applicable to CCR disposal and use in states that are not already regulating CCRs in a manner that protects human health), EPA's June 2010 proposal was intended to create a national standard to regulate CCRs destined for disposal. In its Subtitle D option, EPA would add to 40 C.F.R. Part 257, "Standards for the Receipt of Coal Combustion Residuals in Landfills and

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<sup>79</sup> Summary results of the Association of State and Territorial Solid Waste Management Officials (ASTSWMO) "Combustion by-products (CCB) Survey" are available at <http://www.regulations.gov>, under Docket ID EPA-HQ-RCRA-2009-0640. For EPA's discussion of the survey findings, see EPA's June 2010 proposal at 75 *Federal Register* 35128, at 35152.

<sup>80</sup> *Ibid.*

Surface Impoundments.” Those standards would apply to solid waste disposal units, defined as follows:

- *CCR landfill*—disposal facility or part of a facility where CCRs are placed in or on land and that is not a land treatment facility, a surface impoundment, an underground injection well, a salt dome formation, a salt bed formation, an underground mine, a cave, or a corrective action management unit. For purposes of this part, landfills also include piles, sand and gravel pits, quarries, and/or large-scale fill operations. Sites that are excavated so that more coal ash can be used as fill are also considered CCR landfills.
- *CCR surface impoundment*—facility or part of a facility that is a natural topographic depression, man-made excavation, or diked area formed primarily of earthen materials (although it may be lined with man-made materials), which is designed to hold an accumulation of CCRs containing free liquids, and which is not an injection well. Examples of CCR surface impoundments are holding, storage, settling, and aeration pits, ponds, and lagoons. CCR surface impoundments are used to receive CCRs that have been sluiced (flushed or mixed with water to facilitate movement), or wastes from wet air pollution control devices, often in addition to other solid wastes.

Those definitions were proposed by EPA based on findings in its groundwater risk assessment and its documentation of CCR damage cases related to CCR management in such units (see definitions of selected relevant terms applicable to waste disposal facilities under the “General Standards” listed in **Table A-2**).

To identify minimum national standards for the safe disposal of CCRs, EPA’s June 2010 Subtitle D regulatory option drew primarily from the existing criteria applicable to MSW landfills under 40 C.F.R. Part 258.<sup>81</sup> According to EPA, the MSW landfill criteria provide a comprehensive framework for all aspects of the disposal of wastes such as CCRs in land-based units. Further, based on its experience with the requirements, EPA stated its belief that the MSW landfill criteria represent a reasonable balance between “ensuring the necessary protection from risks of CCR disposal and the practical realities of facilities’ ability to implement the criteria.”<sup>82</sup>

EPA tailored and supplemented the MSW landfill criteria to address threats to human health specific to CCR management. For example, the existing MSW landfill criteria were developed to be implemented in the context of a permitting program, where an overseeing authority evaluates the requirements and can adjust them, as appropriate, to account for site-specific conditions. Because there is no corresponding guaranteed permit mechanism under its Subtitle D regulatory option, EPA integrated selected regulatory criteria from 40 C.F.R. Part 265. Those criteria were for “interim status” hazardous waste TSDFs—requirements designed to apply to owners and operators of such facilities during the interim period between promulgation of the final hazardous waste regulations and the implementation of permit programs used to ensure facility compliance with those regulations. Also, EPA asserted that selected requirements applicable to TSDFs were particularly relevant in developing the proposed standards for surface impoundments, since the MSW landfill criteria did not address risks from contaminant spread associated with the

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<sup>81</sup> While the CCR bills from the 112<sup>th</sup> Congress also draw from MSW regulatory requirements, there are also differences, which are discussed in the following sections.

<sup>82</sup> See EPA’s discussion under “1. Regulatory Approach” at 75 *Federal Register* 35128, at 35193, June 21, 2010.

accumulation of liquid waste, since criteria applicable to the management of liquid wastes are not included under 40 C.F.R. Part 258.<sup>83</sup>

The MSW landfill criteria also do not address structural integrity issues associated with the accumulation of coal ash slurry (risks from a catastrophic release of liquid waste). To address such risks, selected proposed standards for CCR surface impoundments were modeled on the Mine Safety and Health Administration (MSHA) regulations in 30 C.F.R. Part 77. In particular, EPA drew from the MSHA mine safety standards for “water, sediment, or slurry impoundments and impounding structures” at 30 C.F.R. §77.216.<sup>84</sup> EPA’s decision to draw from the MSHA standards was based on its belief that records compiled by MSHA for its rulemaking (for 30 C.F.R. Part 77) and the agency’s 40 years of experience in implementing those requirements provided evidence that similar requirements, applied to CCR surface impoundments, will prevent a catastrophic release of CCRs from surface impoundments, as occurred at TVA’s facility in Kingston, TN, and will generally meet RCRA’s mandate to ensure the protection of human health and the environment.<sup>85</sup>

Taking these various issues into account, EPA’s Subtitle D regulatory option reflects the framework of MSW landfill criteria (e.g., general requirements, location restrictions, operating and design criteria), but includes selected criteria drawn from MSHA standards and standards applicable to hazardous waste TSDFs, necessary to protect human health from risks unique to CCR management.<sup>86</sup> The proposed standards include criteria EPA deemed necessary to control contaminant leaching and migration, particularly from the disposal of noncontainerized liquid waste, a large-scale release due to the structural failure of a surface impoundment pond, or the release of coal ash dust to the air. The following standards are among those intended to address concerns associated specifically with CCR disposal:

- New disposal units (landfills and surface impoundments) would be required to be placed above the natural water table, and could not be located in wetlands, within 200 feet of a fault zone, or in a seismic impact zone.
- New or existing disposal units could not be located in an unstable area (e.g., a location susceptible to natural or human-induced events or forces capable of impairing the integrity of the unit). Existing facilities in an unstable area would be required to close within five years.
- New disposal units would be required to be constructed with a composite liner. Within five years, existing surface impoundments would be required to have solids removed and be retrofitted with a composite liner.

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<sup>83</sup> *Ibid.*, at 75 *Federal Register* 35128, at 35193-35194; also see 40 C.F.R. Part 265, Subpart K, “Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities: Surface Impoundments.”

<sup>84</sup> See proposed 40 C.F.R. Section 257.71, “Design criteria for existing CCR surface impoundments.”

<sup>85</sup> See 75 *Federal Register* 35128, at 35243, June 2010.

<sup>86</sup> As noted in the section “EPA Proposals to Regulate the Disposal of CCRs,” EPA’s Subtitle D regulatory option was proposed pursuant to its existing authority in RCRA Section 4004(a) (42 U.S.C. §6944(a)) to develop criteria necessary to determine which facilities may be classified as sanitary landfills and not open dumps. Pursuant to that directive, EPA’s proposed Subtitle D criteria would establish minimum national performance standards necessary to ensure that “no reasonable probability of adverse effects on health or the environment” will result from solid waste disposal facilities or practices (as determined by EPA, using evidence presented in its proposed rulemaking). Practices not complying with EPA’s proposed criteria would constitute “open dumping,” prohibited in RCRA Section 4005(a) (42 U.S.C. §6945(a)).



- All units would be required to comply with the groundwater monitoring requirements within one year of the effective date of a final rule; *new* CCR units must have groundwater monitoring systems installed before CCRs could be disposed of in the units.
- All units would be required to control fugitive dust emissions.
- All units would be required to have an independent registered professional engineer certify that the design of the run-on/runoff control system meets requirements specified in the regulations, and the owner/ operator would be required to notify the state that the design has been placed in the operating record and on the owner's or operator's publicly accessible Internet site.
- Owners and operators of all existing surface impoundments would be required to maintain certain information about the units (e.g., a description of the physical and engineering properties of the foundation materials on which the CCR surface impoundment is constructed), and a certification by an independent registered professional engineer that the design of the CCR surface impoundment is in accordance with current, prudent engineering practices for the maximum volume of CCR slurry and CCR wastewater that can be impounded therein and for the passage of runoff resulting from the "design storm" that exceeds the capacity of the CCR surface impoundment.<sup>87</sup>

Differences between the MSW landfill criteria and EPA's proposed standards for CCR landfills and surface impoundments can be seen by comparing the two sets of standards, listed in **Table A-2**.

## **Proposed CCR Legislation Amending RCRA**

As noted, the House and Senate bills considered in the 112<sup>th</sup> Congress would add to Subtitle D of RCRA a new Section 4011, "Management and Disposal of Coal Combustion Residuals."<sup>88</sup> The bills would encourage states to create permit programs according to statutory standards included in the amendment.

Section 4011 would provide a framework for states to create permit programs to regulate CCR management. Generally, the term "permit program" refers to the body of requirements that a permitting authority (generally a state agency) uses to implement and enforce regulations. The proposed Section 4011 would not create a permit program, per se. Instead, it would provide the framework that states may be expected to use to create a permit program (i.e., regulations applicable to CCR disposal units and the program to implement and enforce those regulations).

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<sup>87</sup> In examining waste management practices, EPA has determined that runoff is one of the major sources of hazardous constituent releases from mismanaged waste disposal facilities, including CCR landfills and surface impoundments. EPA proposed that runoff control systems from the active portion of CCR disposal units be required to collect and control at least the water volume resulting from a 24-hour, 25-year storm (the "design storm"). This protects surface water that would otherwise flow untreated into a body of water. For more information, see EPA's June 2010 regulatory proposal at 75 *Federal Register* 35128, at 35203.

<sup>88</sup> Unless otherwise noted, discussion of the proposed amendment to RCRA refers to provisions included in the Coal Ash Recycling and Oversight Act of 2012 (S. 3512) or Title IV of the Stop the War on Coal Act of 2012 (H.R. 3409), proposed during the 112<sup>th</sup> Congress.

Section 4011 would provide the program specifications a state would use to create its permit program, allowing states a certain degree of flexibility to determine details regarding how the program would be implemented and to whom it would apply.

Provisions of the proposed bills discussed below are those likely to have the most impact on the development and implementation of individual state CCR Permit Programs, and EPA's potential role in oversight and implementation of those programs.

## **Provisions Relevant to Potential State CCR Permit Programs**

To create their own programs to regulate CCRs, states would draw primarily from provisions in the proposed Section 4011 that specify State Actions, Permit Program Specifications, and Definitions in Sections 4011(b), (c), and (k), respectively. Pursuant to the State Actions provisions, states would be expected to notify EPA within six months of the bill's enactment whether they intend to adopt and implement a CCR Permit Program under Section 4011. EPA would be required to implement the program in states that choose not to do so.<sup>89</sup> A CCR Permit Program could be implemented pursuant to Section 4011 only by a state that maintains an approved MSW landfill permit program or is authorized to implement the federal hazardous waste management program under RCRA Subtitle C. Using those preconditions, all states *could* implement a CCR Permit Program under Section 4011. It is assumed that all states in which CCRs are managed (i.e., primarily states with coal-fired power plants) would opt to implement their own program.<sup>90</sup>

Within 36 months of bill enactment, states (those that notify EPA they will implement their own program) must submit to EPA a certification explaining how their program meets the Permit Program Specifications in proposed Section 4011(c). The certification would require a narrative description of the state's program explaining how the state will assure its CCR Permit Program meets program specifications. Information required to be included in the certification appears to be drawn from, but would be less detailed than, information EPA required states to provide in their application for approval of state permit programs to implement the MSW landfill criteria. (See CCR Permit Program certification requirements compared to 40 C.F.R. Part 239, Subpart B—State Program Application requirements listed in **Table B-1**.)

The proposed amendment would not *explicitly* require the agency implementing the program (presumably states) to promulgate regulations applicable to waste disposal facilities that may receive CCRs. However, program preconditions arguably imply that states would promulgate such regulations. Specifically, the Permit Program Specifications in Section 4011(c) include two paragraphs titled "Minimum Requirements" and "Revised Criteria." The first provision listed among the Minimum Requirements specifies

IN GENERAL—A coal combustion residuals *permit program shall apply* the revised criteria described in paragraph (2) to owners or operators of structures, including surface impoundments, that receive coal combustion residuals.<sup>91</sup> [Emphasis added.]

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<sup>89</sup> See proposed Section 4011(e).

<sup>90</sup> See the August 1, 2011, Congressional Budget Office estimate provided to the House of Representatives prepared for H.R. 2273, discussion applicable to "Certification of State CCR permit programs," included in H.Rept. 112-226.

<sup>91</sup> Proposed Section 4011(c)(1)(A).

“[P]aragraph (2)” states the “Revised Criteria” proposed in Section 4011(c)(2).<sup>92</sup> Under that paragraph, specific subparts of the MSW landfill criteria and selected individual criteria are cited. For example, the paragraph entitled Revised Criteria begins “The revised criteria described in this paragraph are ... ,” followed by provisions such as

- “the revised criteria for design, groundwater monitoring, corrective action, closure, and post-closure, for structures, including—for new structures and lateral expansions of existing structures ... the revised criteria regarding design requirements described in” 40 C.F.R. §258.40, except that the leachate collection system requirements in 40 C.F.R. §258.40(a)(2) do not apply to structures that are surface impoundments;<sup>93</sup>
- “for all structures that receive coal combustion residuals after the date of enactment of this section, the revised criteria for air quality described in” 40 C.F.R. §258.24;<sup>94</sup>
- “for all structures that receive coal combustion residuals after the date of enactment of this section, the revised criteria for financial assurance described in” 40 C.F.R. Part 258, Subpart G.<sup>95</sup>

In addition to the “In General” provision (cited above), the Minimum Requirements include five provisions drawn from EPA’s June 2010 proposed Subtitle D standards for CCR landfills and surface impoundments. Those proposed provisions would apply to the following:

- **4011(c)(1)(B) Structural Integrity**—related to certain risks associated with a catastrophic release from surface impoundments. EPA intended those risks to be addressed, at least in part, in its “Design criteria for existing CCR surface impoundments and lateral expansions” (proposed 40 C.F.R. §257.71, included among the Design Criteria). Compared to the bills’ structural integrity provisions, EPA’s proposed criteria included more detailed requirements comparable to the MSHA standards (discussed above in “Proposed EPA Standards to Address Risks Specific to CCR Management” and detailed in **Table A-3** in **Appendix A**).
- **4011(c)(1)(C) Location**—similar to EPA’s proposed 40 C.F.R. §257.60, “Placement above the natural water table,” included among the Location Restrictions criteria, intended to address risks from contaminant spread by locating units close to groundwater (see EPA’s proposed criteria listed in **Table A-2**).
- **4011(c)(1)(D) Wind Dispersal**—similar to EPA’s proposed 40 C.F.R. §257.80, “Air Criteria,” included among proposed Operating Criteria, intended to address issues associated with fugitive emissions of coal ash dust (see **Table A-2**).

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<sup>92</sup> At proposed Section 4011(k)(5), the term “revised criteria” is also separately defined as “the criteria promulgated for municipal solid waste landfill units under section 4004(a) and under section 1008(a)(3), as revised under section 4010(c).” That definition describes the MSW landfill criteria at 40 C.F.R. Part 258. In Section 4011(c)(2), depending on the context in which it is used, the term “revised criteria” may mean specific MSW landfill criteria or the Revised Criteria provisions in proposed Section 4011(c)(2) applied to CCR structures via a CCR Permit Program.

<sup>93</sup> Proposed Section 4011(c)(2)(A)(i).

<sup>94</sup> Proposed Section 4011(c)(2)(C).

<sup>95</sup> Proposed Section 4011(c)(2)(D).

- **4011(c)(1)(F)(ii) State Notification and Groundwater Monitoring: Groundwater Monitoring**—within one year of submitting its program certification to EPA, a state would require the owner or operator of each regulated “structure” to comply with the groundwater monitoring requirements listed under the Revised Criteria (at proposed Section 4011(c)(2)(A)(ii)).
- **4011(c)(1)(J) Requirements for Surface Impoundments That Do Not Meet Certain Criteria**—related to certain risks associated with contaminant migration from unlined surface impoundments. EPA’s proposed criteria at Section 257.71 would require facility owners and operators to implement standards necessary to prevent contaminant spread; the proposed provision that would be applied via the permit program would prescribe actions a state would be required to take after it was determined that contaminants had migrated from the deposition site.

In the narrative description of its program, required to be provided to EPA under the State Actions provisions, states would be required to describe their program, including “a legal certification that the state has, at the time of certification, fully effective statutes or regulations necessary to implement a coal combustion residuals permit program that meets the [Permit Program Specifications in proposed Section 4011(c)].”<sup>96</sup> Coupled with the general directive included under the Minimum Requirements (discussed above), it is implied, but not explicitly required, that each state implementing a CCR Permit Program pursuant to proposed Section 4011 would promulgate regulations applicable to CCR structures modeled after the explicitly cited criteria applicable to MSW landfills (presumably modified to apply to CCR structures) and the five criteria (listed above) included under the Minimum Requirements.

Provisions cited under the Revised Criteria provisions include subparts of or specific criteria in the MSW landfill criteria pertaining to location restrictions, operating criteria, design criteria, groundwater monitoring and corrective action requirements, closure/post-closure care, and financial assurance. They do not, however, cite or separately include provisions comparable to “general” standards included in the MSW landfill criteria. Those general standards specify the intended scope, purpose, and applicability of the regulations, as well as compliance deadlines that existing facilities were required to meet. For example, the MSW landfill criteria specify criteria that will or will not apply to disposal units of a certain size, units that accept waste within a specific time frame, or that stopped receiving waste by a certain date. The general standards also define terms necessary to determine program applicability and to clarify required elements of specific criteria. (See 40 C.F.R. Part 258, Subpart A—General criteria listed in **Table A-2**). Absent the inclusion of requirements comparable to general criteria, states would have discretion to define those criteria, implicitly within reason.<sup>97</sup>

The Definitions in proposed Section 4011(k) would likely affect the applicability of state regulations implemented by a CCR Permit Program. The key definition is that of a “structure.” In the Permit Program Specifications, all Revised Criteria and the five relevant Minimum Requirements would apply to structures that may receive CCRs. A structure would be defined as “a landfill, surface impoundment, or other land-based unit” that may receive CCRs, with the exception of land-based units that may receive “only de minimis quantities” of CCRs “if the

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<sup>96</sup> Proposed Section 4011(b)(2)(B)(iv).

<sup>97</sup> After the states, and possibly EPA, interpret the statute, it would ultimately be left to the courts to determine the extent of states’ discretion. For further analysis, contact the Congressional Research Service, American Law Division, at 7-.....

presence of [CCRs] is incidental to the material managed in the unit.”<sup>98</sup> The proposed definitions do not include details regarding what may constitute a “CCR landfill” or a “CCR surface impoundment” comparable to other federal regulations applicable to regulated waste disposal facilities (see definitions of relevant terms in **Table A-2**). Hence, whether a particular entity may be subject to CCR regulations would depend on a state’s exercise of broad latitude in defining “CCR landfill” or “CCR surface impoundment.”

The proposed bills would define a “coal combustion residuals permit program” as “all of the authorities, activities, and procedures that comprise the system of prior approval and conditions *implemented by or for a state to regulate the management and disposal of CCR*” [emphasis added].<sup>99</sup> State regulations implemented by that program would not be explicitly required to meet a federal protection standard or other minimum standard of protection, as now required of regulations under RCRA.<sup>100</sup> CCR regulations promulgated under a state’s own authorities would then apply to CCR structures based on meeting any standard of protection deemed appropriate by that state.

The program Minimum Requirements also include five provisions that appear to be drawn, in part, from selected “Requirements for Adequate Permit Programs” included in 40 C.F.R. Part 239, Subpart C.<sup>101</sup> Those five provisions, as well as state program certification requirements specified in the State Actions provisions,<sup>102</sup> comparable to “State Program Application” requirements in 40 C.F.R. Part 239, Subpart B, are listed in **Table B-1**.

## **EPA’s Potential Role in Program Oversight and Implementation**

Provisions that would specify EPA roles in program oversight and potential enforcement are included in proposed Section 4011(d), “Written Notice and Opportunity to Remedy,” and proposed Section 4011(e), “Implementation by Administrator.” These provisions specify elements of a state’s program that EPA would be required to review, as well as conditions under which EPA would be required to intervene and implement and enforce a CCR Permit Program for a state (the latter would draw from authorities in existing sections of RCRA). It is difficult to determine in advance how EPA may interpret directives regarding its role or how the proposed authorities may affect state adoption and implementation of a permit program.

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<sup>98</sup> See proposed Section 4011(k)(6).

<sup>99</sup> See definition in proposed Section 4011(k)(2).

<sup>100</sup> Arguments may be conceived that proposed Section 4011 nonetheless contains an *implicit* standard of protection. Each of these arguments, however, appears to have weaknesses. First, while the bills do incorporate many of EPA’s MSW-landfill revised criteria—which are explicitly required by RCRA to protect health and the environment—the bills do not incorporate all of those criteria, making the coverage of the criteria in the bills less complete than EPA’s revised landfill criteria, and hence the standard of protection is also, arguably, less complete. (See the “Standard of Protection” section of this report.) Second, while a “protect human health and the environment” standard of protection is found in several RCRA provisions, such references appear to be confined to the particular sections in which they are found, or not to be a binding mandate, or both. Moreover, while Congress saw fit to include explicit standards of protection in other RCRA provisions, the bills stated no explicit standard of protection. For further analysis, contact the Congressional Research Service, American Law Division, at 7-.....

<sup>101</sup> See provisions listed under proposed Section 4011(c)(1) pertaining to Permits, State Notification, Agency Requirements, Agency Authority, and State Authority.

<sup>102</sup> See proposed Section 4011(b)(2).

There would be a number of differences between EPA's role in state implementation of a CCR Permit Program and EPA's role in approving state programs to implement the MSW landfill criteria. These differences pertain primarily to the program elements EPA would be required to review, the time frame in which EPA may be expected to provide review of substantive elements of the program, and the conditions under which EPA would have enforcement authority.

Proposed Section 4011(d) would require EPA to identify and notify a state of "deficiencies" in specific elements of its program. Program elements that could be identified by EPA as having some deficiency would include the state's obligation to submit the required notification, submit the required program certification, and maintain an approved permit program to implement the MSW landfill criteria. Those directives do not involve a substantive review of the program, only a determination that the state submitted required information at the appropriate time or continues to maintain permit programs previously approved under RCRA. The potential for EPA to review a substantive element of a CCR Permit Program is limited to a directive to EPA to notify a state and provide an opportunity to remedy deficiencies if *at any time* the state is *not implementing* a program that

- meets the Permit Program Specifications in Section 4011(c) or
- is consistent with the narrative description of its program, included in the narrative description provided in the program certification (required in the State Actions provisions in 4011(b)), and
- maintains fully effective statutes or regulations necessary to implement a CCR Permit Program.<sup>103</sup>

States would be obligated to provide information necessary for EPA to make its deficiency determination within 90 days of EPA making the request. If EPA identifies a program deficiency, the agency would be directed to collaborate with the state to establish a reasonable deadline to address it.<sup>104</sup> What constitutes a "reasonable deadline" is not explicitly defined, except that it could not be "earlier than 180 days" after the date on which the state receives the notice.<sup>105</sup>

The requirement that EPA identify a deficiency at any time a state is not *implementing* a program—as opposed to when a state is *still developing* its program—suggests that such a review may be anticipated at some point in the future, when EPA could determine if a program was being implemented as described in the state's program certification. Such a point in the future arguably might be after the state begins to issue permits or the state begins to enforce permit conditions.

With regard to its now-fulfilled obligations under RCRA Section 4005 (see "State Programs to Implement the MSW Landfill Criteria," above), EPA was explicitly required to determine whether each state developed a program "adequate" to assure facility compliance with the MSW landfill criteria.<sup>106</sup> In the proposed amendment to RCRA, however, EPA would be directed to notify a state of a "deficiency" if a state is not implementing a CCR program that meets statutory specifications (in proposed Section 4011(c)). How EPA would interpret the directives in proposed

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<sup>103</sup> See proposed Section 4011(d)(1)(D).

<sup>104</sup> See proposed Section 4011(d)(3)(A)(iv).

<sup>105</sup> See proposed Section 4011(d)(3)(B)(i).

<sup>106</sup> The directive to EPA to determine program adequacy is provided at 42 U.S.C. Section 6945(c)(1)(C); required elements of state programs that EPA was required to deem adequate are provided at 42 U.S.C. Section 6945(c)(1)(B).

Section 4011(d) using this new terminology (i.e., identify “deficiencies” instead of determine program “adequacy”) may not be known until EPA interprets the statutory directives and, possibly, promulgates requirements detailing criteria EPA would use to make its determination.<sup>107</sup>

In the bills, EPA could identify as a deficiency program elements described in the Permit Program Specifications or included in the narrative description of a state’s program. Apart from those program elements, EPA would not be explicitly required to assess other program elements (e.g., how a state defines a landfill that receives CCRs). EPA would also not be explicitly required to determine whether state regulations applicable to CCR disposal may achieve a baseline standard of protection. EPA seemingly could not conduct enforcement actions against owner/operators of CCR structures in states implementing a CCR Permit Program.

Proposed Section 4011(e) prescribes conditions under which EPA would be required to implement a CCR program for a state. For example, EPA would be required to implement a CCR Permit Program for a state if the agency identified some deficiency in that state’s permit program, and the state does not remedy the deficiency within the “reasonable timeframe” negotiated between the state and EPA.<sup>108</sup> Similarly, if a state governor notifies EPA of the state’s intent not to implement a CCR Permit Program or the state informs EPA that it will no longer implement its program, EPA would be required to implement the CCR Permit Program for a state.

This mandate raises two possibilities for EPA. Assuming that EPA has identified a deficiency, one interpretation of the bills would require EPA to implement the state’s program to regulate CCRs, except for the deficient component—the agency’s only independent authority being to provide an adequate substitute for the element it found deficient. The second interpretation, which would apply both in cases of identified deficiencies and of state decisions not to implement a program at all, is that EPA could promulgate its own program applicable to CCR disposal units.<sup>109</sup> If it did so, the agency’s regulations would be required to consist of the Permit Program Specifications proposed at Section 4011(c), as EPA interprets those specifications.<sup>110</sup> In addition, the Administrator could rely on her authority under Section 2002 of RCRA to “prescribe, in consultation with Federal, State, and regional authorities, such regulations as are necessary to carry out [her] functions under this Act.”

If EPA were to implement a CCR Permit Program for a state, Section 4011(e) cites existing provisions in Subtitle D as the authorities the agency would use to implement a CCR Permit Program.<sup>111</sup>

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<sup>107</sup> RCRA provides EPA with broad authority to prescribe regulations as necessary to carry out its function under the law (42 U.S.C. §6912(a)(1)). It was under that broad authority, coupled with the explicit directive to EPA to determine the adequacy of state permit programs (42 U.S.C. §6945(c)(1)(C)), that EPA promulgated “Requirements for State Permit Program Determination of Adequacy” under 40 C.F.R. Part 239. To meet its obligation to identify program deficiencies, pursuant to the directive in Section 4011(d), EPA may promulgate requirements applicable to adequate CCR Permit Programs that it could use to identify program deficiencies.

<sup>108</sup> Proposed Section 4011(e)(1)(B).

<sup>109</sup> In accordance with the directives to EPA to implement a CCR Permit Program for a state, coupled with EPA’s broad authority to promulgate regulations necessary to carry out its function under RCRA.

<sup>110</sup> See proposed Section 4011(e)(4).

<sup>111</sup> See proposed Section 4011(e)(5).

## A “CCR Permit Program” Compared to State Programs to Regulate MSW Landfills

The CCR bills in the 112<sup>th</sup> Congress did not explicitly state that state-implemented CCR Permit Programs would be intended to emulate (in their broad objectives or in specific program details) federal-state programs to regulate MSW landfills. Statements in the legislative history, however, asserted that the bills intended to facilitate the recovery and beneficial use of CCRs by creating a “state-based permit program that utilizes the framework and requirements of the existing municipal solid waste landfill permit program as an enforceable minimum federal standard for the regulation of coal ash.”<sup>112</sup>

The degree to which states would create, implement, and enforce programs to regulate CCRs that are similar to programs to implement and enforce regulations applicable to MSW landfills depends on various factors that cannot be determined in advance. However, certain similarities and differences can be identified. The similarities between the existing program to regulate MSW landfills and the proposed CCR program lie primarily in the requirement that a CCR Permit Program would apply selected MSW landfill criteria to owners and operators of CCR structures.

Proposed CCR Permit Program elements likely to have the most impact on state program implementation that are different from existing programs to regulate MSW landfills pertain to the following (each of which is discussed in more detail below):

- **The potential flexibility in state program development and implementation**—in the absence of provisions comparable to general regulatory standards, applicable either to regulations that would be implemented by the permit program or to the permit program itself, it would appear that each state could determine key elements related to program implementation (e.g., program applicability) and facility compliance, at least to the degree that such state determinations did not undercut a viable state program.
- **A state-determined standard of protection**—permit programs were created previously under RCRA when Congress wanted to ensure that certain solid waste disposal facilities would be subject to regulatory criteria that achieved a minimum national standard of protection and that a permit program would be implemented to assure facility compliance with that standard. The proposed statutory criteria included among the Permit Program Specifications are not comparable, in scope or in detail, to those identified by EPA as those necessary to protect human health from risks specific to CCR disposal and use (in the June 2010 EPA proposal). Absent directives that regulations promulgated and applied to CCR structures achieve a federal standard of protection, states might promulgate and implement regulations according to a state-established standard of protection, which might vary from state to state.
- **EPA’s role in program creation and implementation**—EPA would have no formal role in program development and a limited role in program implementation. Within the limited conditions and authorities specified, it is

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<sup>112</sup> See statement under the “Purpose and Summary” of H.R. 2273 in H.Rept. 112-226.



difficult to determine whether the potential for EPA to implement a CCR Permit Program for a state would serve as an incentive to states to implement a program according to the requirements specified in Section 4011.

## **Flexibility**

Section 4011 includes no explicit directive to states or EPA to promulgate regulations applicable to CCR structures. Instead, the Permit Program Specifications in Section 4011(c) list regulatory criteria that would be applied by a CCR Permit Program. As a result, Section 4011 includes a number of provisions susceptible to varying interpretations. One such provision is the definition of “structures” that may receive CCRs. All Minimum Requirements and Revised Criteria that must be applied by a CCR Permit Program would be required to apply to “structures.” It would appear that the applicability of any regulations a state would promulgate and implement using its permit program would depend on that state’s definition of a structure. In defining the term as a “landfill, surface impoundment, or other land-based unit” that may receive CCRs,<sup>113</sup> without further definition, the bills would afford states broad latitude in construing these terms.<sup>114</sup>

By contrast, existing RCRA regulations established by EPA explicitly define terms necessary to determine the applicability of those regulations. Those definitions have included sufficient detail to allow a potentially regulated entity (the owner/operator of a particular waste disposal facility) to determine whether or what regulations may apply to their waste management activities. The definitions also indicate the type of waste disposal facilities that have been found to pose a risk to human health if not properly managed (see definitions of terms applicable to waste disposal facilities included under the “General” standards in the MSW landfill criteria and EPA’s June 2010 Subtitle D proposal listed in **Table A-2**).

With regard to CCR management, EPA’s proposed definition of “CCR landfill” and “CCR surface impoundment,” and, hence, the applicability of its proposed Subtitle D standards, reflects the agency’s assessment of risks to human health from the disposal of CCRs. Details in EPA’s proposed definitions of potentially regulated units reflect risk assessment data and documented cases of threats to human health from CCR disposal in surface impoundments and landfills, as well as certain uses comparable to landfill disposal (e.g., placement on land for large-scale fill). EPA’s June 2010 proposal reflected its assessment of this body of research and analysis. Some stakeholders, however, debate the appropriateness of EPA’s definitions, with some arguing that EPA’s definitions are too inclusive and others believing they are not inclusive enough.

While there may be debate among stakeholders regarding the appropriateness of EPA’s definitions, the bills leave that issue unresolved, opening the door to a diversity of state solutions. Until states promulgate regulations that include a more detailed definition of a CCR “structure,” program applicability will not be determined with specificity. Thus, the regulated universe of “owners and operators” will not be known until a state defines a structure.<sup>115</sup>

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<sup>113</sup> Proposed Section 4011(k)(6).

<sup>114</sup> EPA could potentially issue guidance to clarify the terms or define them in regulations that the agency *might* promulgate as necessary under Section 4011(e) provisions pertaining to program administration by EPA. (Under certain conditions, the courts could also clarify the terms. For legal analysis, contact the Congressional Research Service, American Law Division, at 7-.....) However, whether EPA would do so, and the degree to which states may adopt those standards, cannot be determined.

<sup>115</sup> Under the proposed bills, the agency responsible for implementing the CCR Permit Program would be obligated to (continued...)

Section 4011 also omits other basic program elements typically specified in regulations. For example, it would not provide explicit deadlines for many program requirements, though EPA or the courts might read reasonable deadlines into the section. Certain deadlines are specified in the Permit Program Specifications. For example, not later than one year after the state certifies it has a program in place, that state shall require the owner or operator of each regulated structure to comply with applicable groundwater monitoring requirements promulgated by the state.<sup>116</sup> As noted above, however, the applicability of those groundwater monitoring requirements would depend on the state's definition of a structure.

After states promulgate regulations implementing the Section 4011 requirements and permit programs are in place, among other program elements, it could then be determined<sup>117</sup>

- whether states would uniformly apply permit program conditions to all CCR landfills and surface impoundments within the state's jurisdiction;
- when owners and operators of existing CCR structures would be required to obtain a permit and operate in accordance with permit conditions; or
- whether CCRs used as fill material (a use EPA identified as similar to landfill disposal) would be subject to permitting.

The absence of certain requirements among the Permit Program Specifications (e.g., compliance deadlines) does not mean that states would not establish those criteria in their own regulations applicable to CCR structures. However, given the flexibility that states would have to define several key program elements, it cannot be predicted whether state programs to regulate CCRs, developed and implemented pursuant to provisions in Section 4011, would result in the management of CCRs comparable to the existing programs to regulate MSW landfills.

The majority of the Permit Program Specifications are criteria that would be applied by the permit program (i.e., provisions related to regulations that may ultimately be promulgated by the state and implemented via the permit program). There are few provisions in Section 4011 that specify required elements of the *permit program* itself<sup>118</sup> (see requirements in 40 C.F.R. Part 239 compared to provisions in Section 4011 apparently drawn from those requirements, listed in **Table B-1**).

The absence of certain provisions in Section 4011 comparable to requirements relevant to existing state programs to regulate MSW landfills (primarily criteria comparable to the general standards in 40 C.F.R. Part 258 and detailed requirements comparable to those in 40 C.F.R. Part 239) may be based on a belief among some that states that maintain approved permit programs under Subtitles C or D of RCRA have adequately demonstrated that they are capable of administering a

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(...continued)

require owners and operators of structures that receive CCRs after the date of enactment of the proposed amendment to RCRA to apply for and obtain a permit incorporating the requirements of the CCR Permit Program. See proposed Section 4011(c)(1)(E).

<sup>116</sup> Pursuant to proposed Section 4011(c)(1)(F)(ii).

<sup>117</sup> In states that currently regulate CCR disposal units under their existing waste management program, these issues may be determined prior to the adoption of regulations necessary to implement provisions in the proposed Section 4011.

<sup>118</sup> See previous discussion in "State Programs to Implement the MSW Landfill Criteria."

permit program to regulate CCRs.<sup>119</sup> EPA has not questioned whether states are capable of implementing programs to regulate CCR disposal. Instead, the agency has noted that some states do not currently have effective regulatory or permitting programs to manage CCR disposal and use (particularly with regard to the management of CCRs in surface impoundments and uses comparable to landfilling).<sup>120</sup> It is not necessarily a question of a state's ability. Instead, it may be a difference in interpretation between states and EPA regarding standards necessary to ensure protection of human health. Also, whether a state has an approved MSW permit program intended to ensure compliance with the MSW landfill regulations may not be a reliable predictor of whether a state would amend its current laws or adapt its procedures to apply those requirements to the management and disposal of CCRs in structures in that state.

## **Standard of Protection**

All existing regulations applicable to waste disposal facilities, promulgated under RCRA Subtitles C or D, were established pursuant to explicit directives from Congress that those regulations meet a particular standard of protection. When those regulations are required to be implemented using a permit program, at a minimum, the regulations were required to be those necessary to “protect human health and the environment.” That generally is understood to mean regulatory criteria necessary to ensure that toxic constituents likely present in a waste, disposed of under certain conditions, will not degrade, migrate off-site, and expose humans to those constituents above levels determined to be toxic to humans (e.g., above maximum contaminant levels established under the Safe Drinking Water Act).

There is no provision in Section 4011 that explicitly requires regulations promulgated by the state and implemented by a CCR Permit Program to achieve a certain level of protection. Within the framework of RCRA, that raises the question of what changes may occur to existing state waste management programs in a state that believes it is currently regulating CCR disposal in a way that is adequate to protect human health.

Although there is no statement to this effect in the proposed bills themselves, it appears that the achievement of a level of protection comparable to that in RCRA was considered when applying the “revised criteria” to the proposed permit program under Section 4011. In particular, the House report for H.R. 2273 includes the following statement:

The Committee believes that it is not necessary for EPA to promulgate new regulations. EPA acknowledged in [its June 2010 Subtitle D] Proposed Rule that the “part 258 criteria represent a reasonable balance between ensuring the protection of human health and the environment from the risks of these wastes and the practical realities of facilities’ ability to implement the criteria.” The Committee expects that permit programs using the minimum

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<sup>119</sup> See statements included in the “Section-by-Section” analysis of H.R. 2273 in H.Rept. 112-226 with regard to proposed Section 4011(b)(3). See specifically the statement: “The Committee believes that States that are approved under 4005(c) or authorized by 3006 have established sufficient evidence of their capability to implement a permit program.”

<sup>120</sup> See EPA’s June 2010 proposal at 75 *Federal Register* 35128, at 35150. Also see discussion in “EPA Proposals to Regulate the Disposal of CCRs” regarding possible gaps in state programs to regulate CCRs as one of the primary issues that led EPA to conclude that national standards to regulate the management of CCRs are warranted; and information regarding directives in the Beville Amendment and EPA’s response to those directives in **Appendix C**.

Federal baseline established by this legislation will meet the standard of protecting human health and the environment.<sup>121</sup>

The House report further notes that the “revised criteria” that would serve as the baseline for the proposed CCR Permit Programs consist of criteria that EPA promulgated pursuant to Section 4010(c) of RCRA that require EPA to promulgate criteria necessary to protect human health and the environment. That is, by using the MSW landfill criteria as the basis of the program, it may be expected that state implementation of a CCR Permit Program that applies those criteria would protect human health and the environment. There is no legislative history for the Senate-proposed bill. However, since it also uses the MSW landfill criteria as its framework, there may have been a similar expectation that the use of those criteria would create a permit program that would meet a similar standard of protection.

The MSW landfill criteria provide minimum national regulatory standards to ensure protection of human health, but from risks associated with the management of MSW landfills, not risks associated with CCR structures, particularly not risks specific to CCR accumulation in surface impoundment ponds or uses that are largely similar to disposal in a landfill (its use as structural fill in large-scale construction projects). Further, in its June 2010 proposal, EPA did not use the MSW landfill criteria, alone, to provide a similar level of protection for the disposal of CCRs in landfills and surface impoundments. EPA used the MSW landfill criteria as the framework for its June 2010 Subtitle D proposal. However, to meet the necessary standard of protection required under RCRA, and to address risks identified by EPA in the statutory directive included in the Bevill amendment provisions (**Appendix C**), EPA’s proposal included detailed criteria necessary to address risks associated with the disposal of dry CCRs in a landfill (defined to include large-scale fill operations) and liquid slurry in surface impoundments (a category of disposal unit explicitly excluded from the definition of MSW landfills).

As noted in the “Provisions Relevant to Potential State CCR Permit Programs” section, in addition to selected MSW landfill criteria, the proposed Permit Program Specifications include five provisions that appear to be drawn from EPA’s proposed standards applicable to CCR disposal units.<sup>122</sup> Those provisions are not, however, comparable in scope or in detail to the regulatory criteria proposed by EPA under its June 2010 Subtitle D regulatory option.<sup>123</sup> Still, since selected provisions in the bills are drawn from EPA’s June 2010 proposal, it appears that a CCR Permit Program would be intended to address certain risks associated with CCR disposal. However, by drawing from selected standards proposed by EPA, but not others, and allowing states flexibility to define what constitutes a CCR landfill or surface impoundment, it is unclear whether individual state CCR Permit Programs would address the same range of risks identified by EPA.

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<sup>121</sup> See H.Rept. 112-226 “Section-by-Section Analysis of the Legislation,” pertaining to the definition of “revised criteria” in proposed Section 4011(k).

<sup>122</sup> See provisions listed under the Minimum Requirements in proposed Section 4011(c)(1) related to “Structural Integrity” (proposed paragraph (B)); “Location” (proposed paragraph (C)); “Wind Dispersal” (proposed paragraph (D)); “State Notification and Groundwater Monitoring” (proposed paragraph (F)); and “Requirements for Surface Impoundments That Do Not Meet Certain Criteria” (proposed paragraph (J)).

<sup>123</sup> The *scope* of EPA’s proposed standards can be seen by comparing the existing MSW landfill criteria to EPA’s proposed Subtitle D standards to regulate CCR landfills and surface impoundments, listed in **Table A-2**; for an example of the *detail* found in EPA’s proposed regulations compared to the proposed provisions in Section 4011, see the regulatory criteria that would apply to existing CCR surface impoundments, listed in **Table A-3**, compared to “Structural Integrity” provisions in proposed Section 4011(c)(1)(B).

The absence of any explicit directive that the CCR Permit Program or state regulations applied by that program meet a standard of protection does not mean that a state would not require its program to achieve a state-specific standard of protection. However, when permit programs have been required to be implemented under RCRA in the past, it has been with the specific intent of assuring that waste disposal facilities will operate in compliance with baseline federal regulatory criteria that meet an explicit standard of protection. Those existing federal criteria were designed to address gaps in the protection of human health that may occur as a result of gaps in state regulatory programs. In its June 2010 proposal, EPA's primary objective was to address gaps in state programs to regulate CCRs by establishing national standards that would achieve a minimum level of protection from risks specific to CCR disposal and use.

Generally, it would be during the rulemaking process, under the Administrative Procedure Act,<sup>124</sup> that EPA would provide its analysis of risk assessment data, studies, reports, and various other data used to determine regulatory criteria that it (EPA, in conjunction with state agencies and other interested stakeholders) determined are those necessary to achieve a certain national standard of protection. In its proposal to regulate CCRs, various stakeholders have disagreed with EPA's assessment of what criteria should be applied to CCRs. The administrative process, however, provides some transparency regarding how EPA arrived at its determination. It also provides a forum through which stakeholders can provide their views and supplement data EPA may draw from to form a final decision. The analytical process and technical basis for determining how and why certain requirements were selected or excluded (primarily those found in 4011(c)) in the proposed CCR Permit Program are not clear.

Questions regarding the potential standard of protection intended to be achieved by state programs to regulate CCRs are also raised when the purpose of existing state programs to regulate MSW landfills is compared to the purpose of the proposed CCR Permit Program. Under Subtitle D, states were required to adopt and implement a permit program to ensure that each solid waste management facility in the state that may receive MSW would comply with the MSW landfill criteria.<sup>125</sup> EPA defined those state programs as the "authorities, activities, and procedures that comprise the state's system of prior approval and conditions for regulating the location, design, operation, ground-water monitoring, closure, post-closure care, corrective action, and financial assurance of Subtitle D regulated facilities" (i.e., a program to implement the MSW landfill criteria).<sup>126</sup> Given the standard of protection the MSW landfill criteria were required to achieve,<sup>127</sup> state programs implementing the MSW landfill criteria would ensure facility compliance requirements designed to protect human health.

In contrast to that existing RCRA program, the preamble in the proposed bills broadly states that the amendment to RCRA is to "facilitate recovery and beneficial use, and provide for the proper management and disposal" of CCRs. Further, a "coal combustion residuals permit program" would be defined as "all authorities, activities, and procedures that comprise the system of prior approval and conditions implemented by a state to *regulate the management and disposal*" of CCRs [emphasis added].<sup>128</sup> In contrast to the existing programs to regulate MSW landfills, that

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<sup>124</sup> See CRS Report RL32240, *The Federal Rulemaking Process: An Overview*, coordinated by (name redacted).

<sup>125</sup> 42 U.S.C. §6945(c)(1)(B); solid waste management facilities "that may receive hazardous household waste," as they are referred to in this provision, were subsequently referred to as municipal solid waste landfills in 40 C.F.R. Part 258.

<sup>126</sup> 40 C.F.R. §239.2(b).

<sup>127</sup> Specified in 42 U.S.C. §6949a(c).

<sup>128</sup> See proposed Section 4011(k).

proposed program would not be explicitly required to ensure facility compliance with regulations that meet a baseline standard of protection. Although it could be assumed that any state permit program would be used to implement certain regulatory requirements, it could not be assumed that the purpose of those requirements would be to achieve a particular standard of protection. Further, until states begin to adopt and implement CCR Permit Programs, it cannot be determined whether states would interpret provisions in Section 4011 to mean that their programs would be required to ensure facility compliance with requirements that meet a particular standard of protection.

## EPA's Role

In the bills, EPA's role in program development and oversight would be substantially different from the agency's role in other permit programs established under RCRA. EPA would be given a more limited role in development of the regulatory program for CCR facilities, compared to the existing program to regulate MSW landfills. Compared to that program, the most significant differences in EPA's role are with regard to promulgating regulations applicable to the entity required to obtain a permit, assessing state permit programs, and the potential to directly enforce some set of regulatory criteria. **Table 2** summarizes EPA's statutory role in each program, and highlights selected areas in which the difference between each program may affect CCR Permit Program implementation.

**Table 2. EPA's Role in State Permit Program Development and Implementation**  
Comparison of Existing MSW Landfill and Proposed CCR Permit Programs

Statutory Directives	Existing Programs Regulating MSW Landfills	Proposed Programs to Regulate CCR Structures
Promulgate regulations	EPA promulgated regulations (standards) specific to the management of MSW in landfills.	No explicit directive to EPA to promulgate federal regulations applicable to CCR structures. Standards are specified in the bills.
Assess state programs: Scope	EPA determined state program adequacy to ensure facility compliance with federal criteria intended to meet an explicit federal standard of protection.	EPA would notify and provide states with an opportunity to remedy any program deficiencies using criteria prescribed in 4011(c).
Assess state programs: Timing	EPA determined the adequacy of state programs before states were approved to implement such programs.	EPA would identify any deficiencies in state programs after implementation has begun.
Enforcement	EPA could directly enforce federal MSW landfill criteria in a state without an adequate permit program.	EPA would implement a CCR Permit Program, including enforcement, for a state that opts not to do so, or if EPA identifies program deficiencies a state fails to remedy.

**Source:** Congressional Research Service.

As summarized in **Table 2**, EPA played a significant role in developing regulations applying to MSW landfill facilities, which have been implemented by states using a permit program. Once those state permit programs were approved by EPA, however, the agency had little role in state implementation, including enforcement, of the MSW landfill criteria. In contrast, a CCR Permit Program would be implemented using regulations promulgated by states, based on their interpretation of the Permit Program Specifications in the bills. The bills would provide no formal role for EPA in this regulatory development process. Once a state is implementing a permit program, EPA would have a role in states that fail to remedy program deficiencies, but the extent of EPA's role would depend on how EPA interprets its obligation to implement a permit program.

EPA's authority with regard to state program elements found to be "deficient" involves the use of a term not found in the RCRA statute, and thus lacking a history of interpretation.<sup>129</sup> It is difficult to anticipate how EPA would interpret this authority, but there appear to be at least three options:

- In the first and most limited option, EPA would implement only the deficient components of a state's program. Thus, EPA might implement part of the program while the state implements other parts of the program, as occurs in other elements of RCRA. Alternatively, EPA could implement the state's entire program, with the deficient components corrected.
- In a second interpretation (which might apply not only in cases of identified deficiencies but also where a state decides not to implement a program at all), EPA would promulgate its own program applicable to CCR structures. In this case, the agency's regulations would be required to consist of the Permit Program Specifications in Section 4011(c), as EPA interprets those specifications.
- A third interpretation envisions a more proactive role for EPA. In this interpretation, rather than wait to make decisions regarding deficiencies after the fact, the Administrator might issue guidance before the states implement their programs, informing the states in advance how to avoid having CCR Permit Program elements deemed deficient. Anticipating criticism that such guidance would constitute regulations in disguise, the Administrator might actually issue regulations, using her authority under Section 2002 of the existing RCRA statute, which allows her to "prescribe, in consultation with Federal, State, and regional authorities, such regulations as are necessary to carry out [her] functions under this Act."

In this third scenario, the need to interpret statutory provisions, coupled with the authorities already given to EPA in RCRA, might inadvertently create something like the agency's traditional regulatory role, rather than limiting it. In this regard, it may be worth noting that EPA has already—in its June 2010 proposal—done much of the work of writing such regulations or guidance: it has identified the CCR management practices that it wants to address, the standards it would set, and the time frames that it considers adequate for compliance. That work might be adapted to guide the process of identifying deficiencies.

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<sup>129</sup> Instead, the directive to EPA to identify program deficiencies draws from existing criteria and procedures for withdrawal of determinations of adequacy in 40 C.F.R. Section 239.13 relevant to existing state programs to regulate MSW landfills.

## Conclusion

Pursuant to RCRA Subtitle D, EPA has been required to promulgate regulations specific to certain types of waste disposal facilities. EPA and state agency roles in implementing and enforcing those regulations were largely established in RCRA's comprehensive amendments to the Solid Waste Disposal Act in 1976 and the Hazardous and Solid Waste Amendments of 1984. One set of regulations promulgated by EPA, the criteria applicable to MSW landfills, is in 40 C.F.R. Part 258. EPA's involvement in the creation of state programs to adopt, implement, and enforce those criteria evolved during the 1990s, but largely ended in the early 2000s, when state programs deemed adequate by EPA were in place in all U.S. states and territories. These now-mature state MSW programs reflect a variety of state approaches, but share common elements. For example, those programs have similarities with regard to the following:

- **Regulations**—the federal MSW landfill criteria at 40 C.F.R. Part 258 are those EPA determined (as part of a public rulemaking process) are necessary to protect human health and the environment from risks specific to the management of MSW in landfills; baseline federal criteria were applied to owners and operators of regulated units within two years of EPA promulgating the regulations, regardless of when states adopted the regulations or created a permit program to implement them; many states used the federal regulatory criteria as a model for their own regulations, in most cases modifying existing programs to meet the federal criteria; individual state regulations applicable to MSW landfills could vary, as long as facility compliance with those regulations would meet the baseline federal level of protection.
- **Permit programs**—state permit programs were intended to ensure facility compliance with regulations applicable to owners and operators of MSW landfills; state programs were approved by EPA based on its determination that they were adequate to ensure facility compliance (according to requirements specified in 40 C.F.R. Part 239); all states are currently implementing permit programs approved by EPA.
- **Enforcement**—EPA could directly enforce the federal MSW landfill criteria in any state that EPA determined did not have an adequate permit program; EPA has never exercised its authority to directly enforce the federal criteria, but concern over the possibility that EPA could do so likely served as an incentive to states to adopt and implement permit programs that would be deemed adequate by EPA; EPA could potentially withdraw its approval of a state program, if EPA were to receive information indicating that the program is not being implemented as originally described by a state, but EPA has not done so.

The bills considered in the 112<sup>th</sup> Congress would use a fundamentally different framework to create state programs to regulate CCRs. The bills did not explicitly require EPA to set uniform national standards of protection or promulgate regulations applicable to CCR structures. In taking this unique approach, several questions are raised that cannot be answered until states begin to develop and implement their programs and EPA interprets its role as it would be described in the proposed bills:

- How would states interpret minimum program requirements and the MSW landfill criteria listed in the bills to promulgate regulations applicable to owners and operators of CCR structures?



- Given the flexibility the bills would have provided states to define what constitutes a CCR “landfill,” “surface impoundment,” or “other land-based unit,” to what specific “CCR structures” would state permit program conditions be applied? Would EPA issue guidance to clarify what it would consider a CCR “structure”? If so, how much would EPA’s guidance influence states?
- To what extent would the bills result in states developing or revising requirements for CCR management that would go beyond current waste management requirements?
- When would owners and operators of CCR structures be subject to any new regulations?
- If a state were to promulgate new regulations, how would that state determine the level of protection that CCR structures would be required to meet?
- How would EPA interpret its obligation to identify program deficiencies? Would EPA identify a program as having a deficiency if EPA determined it was not adequate to ensure facility compliance with requirements necessary to protect human health? For example, would EPA identify as a deficiency a state’s definition of a “CCR landfill” that EPA determined was insufficient to ensure that uses of CCRs that constitute disposal on land are regulated?
- When and how often would EPA identify program deficiencies? Would EPA review a program for adequacy immediately after a state certified that it had a program in place, or would it wait until years after? Would EPA make such determinations on an ongoing basis?
- Would EPA establish requirements (similar to 40 C.F.R. Part 239) or issue guidance to allow states to determine what EPA may identify as a program deficiency?
- Under a range of circumstances specified in the proposed bills, EPA would be *required* to implement a CCR Permit Program for a state. Given that directive, would EPA promulgate regulations applicable to CCR structures that it would then implement under those circumstances? If so, how much influence would EPA regulations have on a state’s development of its own regulations?
- If EPA implemented a permit program for a state, what regulations would EPA implement—its own or a state’s? If EPA uses its own rules, how would the agency interpret permit program requirements that would otherwise be left to states to interpret (e.g., what constitutes a CCR structure or deadlines that existing CCR structures would be required to meet)?
- How would EPA use its existing general authorities under RCRA and the latitude provided in the bills to interpret Section 4011 in a way that it views as necessary to ensure the viability of the state programs?

Some in Congress who have expressed concern that EPA has “overreached” its existing legislative mandates have supported legislation that would limit EPA’s role in regulating CCR disposal while encouraging states to create programs to regulate the material according to conditions established in federal law (i.e., by creating a CCR Permit Program pursuant to proposed Section 4011). Supporters of this approach have suggested, given the unique conditions in each state, that such programs to regulate CCRs could be at least as effective as federal

requirements that may be established by EPA under either regulatory option proposed in June 2010. Others counter that, given the potential gaps in existing state programs to regulate CCRs, a program that would continue to allow states flexibility to regulate CCR disposal as they deem necessary would not necessarily fill those gaps—potentially allowing waste management practices identified by EPA as those posing a risk to human health to continue.

In light of EPA's June 2010 proposal and uncertainty regarding the agency's future regulatory plans, it is likely that CCR legislation will be considered in the 113<sup>th</sup> Congress. Congressional consideration of such legislation will occur in the context of ongoing concern about the impacts of current CCR facilities, changing economics for coal-fired electricity, and a range of perspectives about the appropriate role of states and EPA.

## **Appendix A. Selected Authorities and Directives in RCRA Relevant to CCR Management**

Any waste deemed nonhazardous or explicitly excluded from the Subtitle C requirements (such as CCRs) is subject to RCRA Subtitle D. In contrast to the directive and authorities provided to EPA to promulgate and enforce standards applicable to hazardous waste, Subtitle D established state and local governments as the primary regulating and implementing entities for the management of solid waste (i.e., household garbage and nonhazardous industrial solid waste).

Under Subtitle D, states have the primary authority to implement and enforce standards applicable to the management of nonhazardous solid waste. EPA's role in regulating the management of nonhazardous solid wastes is, with certain exceptions, limited to promulgating criteria applicable to RCRA's prohibition on open dumping. That prohibition is enforceable by states or by citizens, pursuant to RCRA's citizen suit provisions. EPA's role regarding the open dumping prohibition was to promulgate regulations that contained criteria to distinguish between facilities that would be classified as "sanitary landfills" or "open dumps." At a minimum, a facility would be deemed a sanitary landfill if solid waste disposal at such a facility posed no reasonable probability of adverse effects on health or the environment. Disposal facilities that did not meet the criteria for sanitary landfills would be considered open dumps, prohibited under Subtitle D.

EPA's June 2010 Subtitle D option to promulgate standards applicable to owners and operators of landfills and surface impoundments that receive CCRs would be done pursuant to its existing authority under Subtitle D to promulgate criteria applicable to open dumping. Specifically, if finalized, the Subtitle D option would be implemented pursuant to EPA's authority under RCRA Section 4004 to identify criteria necessary to determining whether a facility should be classified as a "sanitary landfill" or an "open dump."

In 1984, the Hazardous and Solid Waste Amendments of 1984 (HSWA; P.L. 98-616) amended RCRA Subtitle D to—add Section 4010 "Adequacy of Certain Guidelines and Criteria" (42 U.S.C. §6949a); and amend the existing Section 4005, "Upgrading of Open Dumps," to include Section 4005(c), "Control of Hazardous Disposal" (42 U.S.C. §6945(c)). Pursuant to provisions in these sections, EPA promulgated the MSW landfill criteria (at 40 C.F.R. Part 258) and requirements necessary to determine the adequacy of state permit programs that implement those criteria (at 40 C.F.R. Part 239).

The manner in which the federal MSW landfill criteria were adopted, implemented, and enforced by states illustrates the limitations to EPA's authority under Subtitle D to require states to adopt, implement, and enforce federal criteria applicable to owner/operators of facilities that receive waste *other than* MSW. Beyond its limited authority to directly enforce the MSW landfill criteria in states without an EPA-approved permit program, EPA is not authorized to regulate any other type of nonhazardous solid waste (such as CCRs). Instead, EPA may only expand upon the landfill criteria relevant to the state-enforced prohibition of open dumping. Further, EPA has no authority to require or approve/disapprove of state solid waste permit programs applicable to facilities receiving any other type of solid waste regulated under Subtitle D.

Provisions in RCRA that prescribe EPA and state authorities to promulgate, implement, and/or enforce requirements broadly applicable to the management of nonhazardous solid waste are identified and summarized in **Table A-1**.

**Table A-1. RCRA Authorities and Directives Relevant to CCR Management**

Excerpts from RCRA	Summary
<p><b>RCRA Section 1007; 42 U.S.C. §6907(a), solid waste management information and guidelines.</b></p> <p><i>§6907(a) Guidelines.</i> Within one year of October 21, 1976, and from time to time thereafter, EPA shall, in cooperation with appropriate federal, state, municipal, and intermunicipal agencies, and in consultation with other interested persons, and after public hearings, develop and publish suggested guidelines for solid waste management. Such suggested guidelines shall—</p> <p>(1) provide a technical and economic description of the level of performance that can be attained by various available solid waste management practices (including operating practices) which provide for the protection of public health and the environment;</p> <p>(2). By October 21, 1978, describe levels of performance, including appropriate methods and degrees of control, that provide at a minimum for (A) protection of public health and welfare; (B) protection of the quality of ground waters and surface waters from leachates; (C) protection of the quality of surface waters from runoff through compliance with effluent limitations under the Federal Water Pollution Control Act, as amended [33 U.S.C. §1251 et seq.]; (D) protection of ambient air quality through compliance with new source performance standards or requirements of air quality implementation plans under the Clean Air Act, as amended [42 U.S.C. §7401 et seq.]; (E) disease and vector control; (F) safety; and (G) esthetics; and</p> <p>(3) Provide minimum criteria to be used by the States to define those solid waste management practices which constitute the open dumping of solid waste or hazardous waste and are to be prohibited under [Subtitle D of RCRA].</p>	<p>The provisions provide background regarding the risks associated with waste disposal, identified by Congress, that RCRA regulations were intended to address. It also includes a directive to EPA with regard to the establishment of criteria necessary to assist states in enforcing RCRA's prohibition on open dumping. At a minimum, EPA was required to assist states in defining solid waste management practices that constitute open dumping.</p>

Excerpts from RCRA	Summary
<p><b>RCRA Section 2002; 42 U.S.C. §6912(a), Authorities of Administrator.</b></p> <p>In carrying out this chapter, EPA is authorized to—</p> <ol style="list-style-type: none"><li>(1) prescribe, in consultation with federal, state, and regional authorities, such regulations as are necessary to carry out his functions under this chapter;</li><li>(2) consult with or exchange information with other federal agencies undertaking research, development, demonstration projects, studies, or investigations relating to solid waste;</li><li>(3) provide technical and financial assistance to States or regional agencies in the development and implementation of solid waste plans and hazardous waste management programs;</li><li>(4) consult with representatives of science, industry, agriculture, labor, environmental protection and consumer organizations, and other groups, as he deems advisable;</li></ol>	<p>This section also specifies EPA’s broad authority to establish regulations as necessary to carry out its function under RCRA. EPA used this general authority, in part, when it established requirements at 40 C.F.R. Part 239, in response to the directive from Congress to determine whether state permit programs were adequate to assure facility compliance with the MSW landfill criteria (see Section 6945(c)(1)(C), below).</p> <p>EPA review of existing criteria applicable to sanitary landfills, including its potential decision to revise those criteria to include standards applicable to CCR disposal facilities, would occur pursuant, in part, to this authority,</p>
<p><b>RCRA Section 4004; 42 U.S.C. §6944, Criteria for sanitary landfills; sanitary landfills required for all disposal.</b></p> <p><b>§6944(a), Criteria for sanitary landfills.</b> After consultation with the States, and after notice and public hearings, EPA shall promulgate regulations containing criteria for determining which facilities shall be classified as sanitary landfills and which shall be classified as open dumps ... At a minimum, such criteria shall provide that a facility may be classified as a sanitary landfill and not an open dump only if there is no reasonable probability of adverse effects on health or the environment from disposal of solid waste at such facility. Such regulations may provide for the classification of the types of sanitary landfills.</p> <p><b>§6944(b), Disposal required to be in sanitary landfills.</b> For purposes of complying [minimum requirements for state solid waste management plans established under Section 6943(a)(2)] each State plan shall prohibit the establishment of open dumps and contain a requirement that disposal of all solid waste within the State shall be in compliance with [its solid waste management plans established under Section 6943(a)(2)].</p>	<p>The legal standard of protection applicable specific to sanitary landfills is identified here (necessary to assure the landfill poses no “reasonable probability of adverse effects on health or the environment.” EPA subsequently promulgated the “Criteria for Classification of Solid Waste Disposal Facilities and Practices” at 40 C.F.R. Part 257.</p> <p>EPA’s June 2010 Subtitle D option to regulate CCR landfills and surface impoundments would add regulations applicable to the sanitary landfill criteria under Part 257 and would meet the legal standard of protection applicable to those units.</p>

Excerpts from RCRA	Summary
<p><b>RCRA Section 4005; 42 U.S.C. §6945, Upgrading of open dumps.</b></p>	
<p><b>§6945(a), Closing or upgrading of existing open dumps.</b> Upon promulgation of [the criteria for sanitary landfills] any solid waste management practice or disposal of solid waste or hazardous waste which constitutes the open dumping of solid waste or hazardous waste is prohibited.... [That prohibition] shall be enforceable under §6972 of this title against persons engaged in the act of open dumping ... [State solid waste management plans] shall contain a requirement that all existing disposal facilities or sites for solid waste in such State which are open dumps [identified by the state] shall comply with such measures as may be promulgated by EPA to eliminate health hazards and minimize potential health hazards. Each such plan shall establish, for any entity which demonstrates that it has considered other public or private alternatives for solid waste management to comply with the prohibition on open dumping and is unable to utilize such alternatives to so comply, a timetable or schedule for compliance for such practice or disposal of solid waste which specifies a schedule of remedial measures, including an enforceable sequence of actions or operations, leading to compliance with the prohibition of open dumping of solid waste within a reasonable time (not to exceed 5 years from the date of publication of criteria under section 1008(a)(3)).</p>	<p>This section specifies states' authorities to enforce the open dumping prohibition and assure facility compliance with EPA's sanitary landfill criteria (open dumping prohibition). It further specifies that the open dumping prohibition is enforceable pursuant to RCRA Citizen Suit provisions (at Section 6972). Under this section, EPA's role in enforcing regulatory standards applicable to sanitary landfills is limited.</p>
<p><b>§6945(c), Control of hazardous disposal.</b></p>	
<p>§6945(c)(1)—</p> <p>(A). Not later than 36 months after November 8, 1984, each State shall adopt and implement a permit program or other system of prior approval and conditions to assure that each solid waste management facility within such State which may receive hazardous household waste ... will comply with the applicable criteria promulgated under section 6944(a) and 6907(a)(3) of this title.</p>	<p>Within three years, states were required to adopt a permit program to assure that landfills that may receive hazardous household wastes (subsequently identified by EPA as MSW landfills) complied with the sanitary landfill criteria. That is, states were required to implement a permit program to assure facility compliance with the sanitary landfill criteria, until EPA promulgated criteria specific to this type of waste management facility.</p>
<p>(B). Not later than eighteen months after the promulgation of revised criteria under subsection 6944(a), each State shall adopt and implement a permit program or other system of prior approval and conditions, to assure that each solid waste management facility within such State which may receive hazardous household waste ... will comply with the criteria revised under section 6944(a).</p>	<p>Within 18 months of EPA promulgating the MSW landfill criteria, states were required to adopt a permit program to assure that owners and operators of landfills subject to those regulations operated in compliance with those criteria.</p>

Excerpts from RCRA	Summary
<p>(C). EPA was required to determine whether each state developed an adequate program under this paragraph. EPA could make that determination in conjunction with its approval, disapproval or partial approval of a State's waste management plan (required under §6947).</p> <p>§6945(c)(2)—</p> <p>(A) In any state that EPA determines has not adopted an adequate program for such facilities [pursuant to directive in §6945(c)(1)(B)] by the date provided, EPA may use the authorities available under §§6927 and 6928 to enforce the [open dumping] prohibition contained in §6945(a)] with respect to such facilities.</p> <p>(B) For purposes of [§6945(c)(2)], the term “requirement of this subchapter” in section 6928 of [RCRA] shall be deemed to include criteria promulgated by the EPA under sections 6907(a)(3) and 6944(a) of this title, and the term “hazardous wastes” in section 6927 of [RCRA] shall be deemed to include solid waste at facilities that may handle hazardous household wastes...</p> <p><b>RCRA Section 4010a; 42 U.S.C. §6949a, Adequacy of certain guidelines and criteria.</b></p> <p>§6949a(a), <i>Study</i>. EPA was required to conduct a study of the extent to which the guidelines and criteria under this chapter (other than guidelines and criteria for facilities to which subchapter III of this chapter applies) which are applicable to solid waste management and disposal facilities, including, but not limited to landfills and surface impoundments, are adequate to protect human health and the environment from ground water contamination. Such study shall include a detailed assessment of the degree to which the criteria under section 6907(a) of this title and the criteria under section 6944 of this title regarding monitoring, prevention of contamination, and remedial action are adequate to protect ground water and shall also include recommendation with respect to any additional enforcement authorities which EPA, in consultation with the Attorney General, deems necessary for such purposes.</p> <p>§6949a(b), <i>Report</i>. [By November 8, 1987], EPA was required to submit a report to the Congress setting forth the results of the study required under [Section 6949a(a)], together with any recommendations made by EPA on the basis of such study.</p>	<p>EPA was required to determine if state permit programs were adequate to assure facility compliance with the MSW landfill criteria. Pursuant to the directive from Congress to make the determinations, EPA promulgated “Requirements for State Permit Program Determination of Adequacy” at 40 C.F.R. Part 239.</p> <p>If, within the time frame allowed, a state did not adopt and implement a permit program that EPA deemed adequate to assure facility compliance with the MSW landfill criteria, EPA was authorized to enforce the open dumping prohibition (consistent with the MSW landfill criteria) at MSW landfill facilities in that state.</p> <p>Since EPA has no separate authority under Subtitle D to enforce facility compliance with federal standards or to conduct facility inspections, this provision authorizes EPA to use its inspection and federal enforcement authorities under Subtitle C at Sections 6927 and 6928. This provision also explicitly states that, in applying those Subtitle C authorities, the term “hazardous waste” would be interpreted to include waste that may be received at MSW landfill facilities.</p> <p>In 1984, EPA was required to study the existing sanitary landfill criteria (in 40 C.F.R. Part 257) to determine their adequacy to protect human health and the environment from</p>

Excerpts from RCRA	Summary
<p>§6949a(c)(1), <i>Revisions of guidelines and criteria; In general.</i> [By March 31, 1988, EPA was required to] shall promulgate revisions of the criteria promulgated under paragraph (1) of section 6944(a) of this title and under section 6907(a)(3) of this title for facilities that may receive hazardous household wastes ... The criteria shall be those necessary to protect human health and the environment and may take into account the practicable capability of such facilities. At a minimum such revisions for facilities potentially receiving such wastes should require ground water monitoring as necessary to detect contamination, establish criteria for the acceptable location of new or existing facilities, and provide for corrective action as appropriate.</p>	<p>EPA was required to revise the criteria necessary to distinguish between an open dump and sanitary landfill, and revise as necessary to meet the stated standard of protection.</p> <p>Pursuant to this directive, in October 1991, EPA finalized “Criteria for Municipal Solid Waste Landfills” in 40 C.F.R. Part 258. In these criteria, the term “municipal solid waste landfill units” refers to regulated facilities that may receive “hazardous household waste.”</p>

**Source:** Congressional Research Service.

**Note:** In this table, statutory references to “the Administrator” have been replaced with “EPA.”

### Determining Criteria Necessary to “Protect Human Health and the Environment” Under RCRA

Under RCRA, when Congress has required EPA to promulgate regulations applicable to solid waste disposal facilities and required those regulation to be implemented using a permit program, at a minimum, those standards have been explicitly required to be those necessary to protect human health and the environment from threats specific to a particular type of waste disposal facility or units that may receive a particular type of waste.<sup>130</sup> Regulatory criteria that meet that directive have been identified in the more than 30 years that EPA has gone through the public rulemaking process. With regard to waste management, necessary protections involve the identification of various factors, including, but not limited to

- common methods of managing the waste—such as in a landfill or surface impoundment pond;
- analysis of toxic constituents—this step involves waste characterizations to identify constituents likely in the waste that may cause harm to humans, such as heavy metals;
- potential pathways of human exposure—the presence of toxic constituents alone is not relevant if they cannot reach humans (or the environment); pathways of exposure may include potential release to air or to water from precipitation run-on/runoff across the disposal site, or contaminant leaching to surface water or groundwater at levels that could lead to drinking water exceeding maximum contaminant levels (MCLs) established under the Safe Drinking Water Act;

<sup>130</sup> See the directive to EPA to promulgate standards applicable to hazardous waste TSDFs at 42 U.S.C. §6924(a); and the directive to EPA to revise criteria applicable to sanitary landfills to apply to solid waste disposal facilities that may receive hazardous household waste at 42 U.S.C. §6949a(c). In contrast, sanitary landfill criteria (at 40 C.F.R. Part 257) are not required, in RCRA, to be implemented using a permit program. The standard of protection to be achieved by those criteria are to have “no reasonable probability of adverse effects on health or the environment” (see 42 U.S.C. §6944(a)).



- potential protective measures—waste management practices identified as those that may minimize human exposure to toxins below a standard specified according to federal law; such practices have included a requirement that composite liners be used at the site of deposition.

In gathering this information, EPA must rely on data provided by states and the potentially regulated industry. Much of what EPA knows now about what constitutes waste management criteria necessary to protect human health has been gleaned from the process to determine criteria applicable to hazardous waste treatment, storage and disposal facilities (TSDFs) and for MSW landfills. Final regulations represent the “minimum national standard” applicable to waste disposal facilities that, when implemented, would be expected to would achieve the standard of protection set in statute.

EPA considers risk to be the chance of harmful effects to human health or to ecological systems resulting from exposure to an environmental stressor. A stressor is any physical, chemical, or biological entity that can induce an adverse response. Stressors may adversely affect specific natural resources or entire ecosystems, including plants and animals, as well as the environment with which they interact. EPA uses risk assessments to characterize the nature and magnitude of health risks to humans (e.g., residents, workers, recreational visitors) and ecological receptors (e.g., birds, fish, wildlife) from chemical contaminants and other stressors that may be present in the environment.<sup>131</sup>

### **Waste Management Criteria That Meet a Federal Performance Standard**

Pursuant to a directive from Congress, the federal regulatory criteria applicable to MSW landfills were designed to “protect human health and the environment” from risks specific to the management of municipal solid waste in a landfill (see information included under “RCRA Section 4010a; 42 U.S.C. §6949a, Adequacy of certain guidelines and criteria,” listed in **Table A-1**). Promulgated in 1991, those federal criteria (in 40 C.F.R. Part 258) have since been adopted and implemented by individual states.

In its June 2010 proposal to regulate CCRs, standards included in EPA’s Subtitle D option were designed to meet the standard of protection established by Congress for sanitary landfills (requirements included under 40 C.F.R. Part 257). To meet that standard of protection, EPA’s proposed standards applicable to CCR landfills and surface impoundments were designed to be those that would pose “no reasonable probability of adverse effects on health or the environment from disposal of solid waste at such facility” (see information included under “§6944(a), Criteria for sanitary landfills,” listed in **Table A-1**). In establishing that Subtitle D option, EPA drew largely from the existing MSW landfill criteria. However, those existing criteria would not address all risks specific to the management of CCRs in landfills and surface impoundments.

To recognize the differences between the existing MSW landfill criteria and EPA’s proposed standards for CCR disposal units, **Table A-2** compares each set of criteria. Listed under each column are individual requirements specifying general compliance standards (statements of purpose and scope, facility compliance deadlines, and program definitions) and regulatory criteria

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<sup>131</sup> See EPA’s “Risk Assessment” web page, particularly its “Basic Information” page at <http://epa.gov/riskassessment/basicinformation.htm#risk> and its “Human Health Risk Assessment” page at <http://epa.gov/riskassessment/health-risk.htm>.

detailing location restrictions, operating criteria, design criteria, groundwater monitoring and corrective action, closure and post-closure care, and financial assurance. When individual requirements are largely similar, only the regulatory heading is included. When there is a significant difference between two requirements, additional information is provided to clarify that difference. Those descriptions are not intended to summarize the full range of detail in each requirement.

The most significant differences pertain to the potential regulation of surface impoundments. For example, requirements that would provide protections specific to the disposal of liquids are not included in Part 258 because bulk disposal of liquids is prohibited in MSW landfills. In comparison, EPA's June 2010 Subtitle D proposal includes various requirements intended to address issues unique to the management of CCRs, particularly the accumulation of liquids in surface impoundments and with regard to both the higher potential risk of a catastrophic release associated with a structural failure and contaminant leaching from those units.

For an example of the level of detail included in regulatory criteria, as well as an example of a requirement that EPA determined was necessary ensure that management of CCRs in surface impoundment would pose no reasonable probability of adverse effects on health or the environment, **Table A-3** lists EPA's proposed "Design criteria for new CCR surface impoundments and lateral expansions" at 40 C.F.R. §257.72.

**Table A-2. Standards for MSW Landfills and CCR Disposal Units**

<b>Municipal Solid Waste Landfill Criteria</b> (in 40 C.F.R. Part 258)	<b>Standards for Landfills and Surface Impoundments That Receive CCRs</b> (proposed by EPA for inclusion in 40 C.F.R. Part 257)
<p>Overview. The MSW landfill regulations were promulgated Oct. 9, 1991. As detailed in the regulations, the criteria would apply to owners and operators of all new landfills; existing MSW landfill units were required to comply with the specific criteria by deadlines specified in the regulations, generally within two years.</p> <p>Enforcement: Individual states were required to adopt and enforce the standards in accordance with a permit program. The permit program was required to be adopted and implemented within 18 months of EPA promulgating the landfill criteria. Permit programs were subject to EPA approval pursuant with requirements established by EPA at 40 C.F.R. Part 239 (see <b>Table B-1</b>). In states determined to have an inadequate permit program, EPA was authorized to enforce the MSW landfill criteria at regulated facilities in that state.</p>	<p>Overview. If finalized by EPA, the standards would apply to new units or lateral expansions of existing units. The standards would apply to existing facilities in accordance with various deadlines.</p> <p>Enforcement: If finalized, the standards would be enforceable pursuant to RCRA's prohibition on open dumping. Under that authority, EPA could not directly enforce the standards. EPA would encourage states to adopt them under their independent state enforcement authority, but could not require states to do so or require states to implement them using a permit program. Instead, the standards could be enforced under RCRA Section 7003 citizen suit authority.</p>

**Subpart A—General**

Specifies the purpose, scope, and applicability of the requirements and defines terms relevant to them

<p>§258.1(a). The purpose of Part 258 is to establish minimum national criteria under RCRA for all municipal solid waste landfill units and, under the Clean Water Act, for municipal solid waste landfills that are used to dispose of sewage sludge. These minimum national criteria ensure the protection of human health and the environment.</p>	<p>§257.1 Scope and purpose. Unless otherwise provided, the criteria in §§257.51 through 257.101 are adopted for determining which CCR Landfills and CCR Surface impoundments pose a reasonable probability of adverse effects on health or the environment pursuant to RCRA requirements applicable to sanitary landfills.</p>
<p>§258.1(b). The criteria apply to owners and operators of new MSW landfill units, existing MSW landfills and lateral expansions, except as otherwise specifically provided in this part; all other solid waste disposal facilities and practices that are not regulated under Subtitle C of RCRA are subject to the criteria contained in Part 257 of this chapter.</p>	<p>Facilities failing to satisfy either the criteria in §§257.1 through 257.4 or §§257.5 through 257.30 or §257.51 through 257.101 are considered open dumps, prohibited under section 4005 of RCRA.</p>
<p>§258.1(c). The Criteria did not apply to landfill units that did not receive waste after October 1991.</p>	<p>§257.40 Disposal standards for owners/operators of CCR landfills and CCR surface impoundments. Except as otherwise specified in the Subpart, all of the requirements would apply 180 days after the effective date of the final rule.</p>
<p>§258.1(d). Certain MSW landfills that received waste after October 1991, but stopped receiving waste before April 1994, were exempt from Part 258 requirements, except the final cover requirement specified in §258.60(a). The final cover was required to be installed by October 1994, or the owner/operators would be subject to Part 258.</p>	
<p>§258.1(g)-(h). MSW landfill units failing to satisfy the criteria are considered open dumps, prohibited under section 4005 of RCRA.</p>	

**Municipal Solid Waste Landfill Criteria**  
(in 40 C.F.R. Part 258)

**Standards for Landfills and Surface Impoundments  
That Receive CCRs**  
(proposed by EPA for inclusion in 40 C.F.R. Part 257)

**Definitions of selected terms pertaining to  
the waste received by the regulated waste**

*Household waste*—any solid waste (including garbage, trash, and sanitary waste in septic tanks) derived from households (including single and multiple residences, hotels and motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds, and day-use recreation areas).

*Industrial solid waste*—solid waste generated by manufacturing or industrial processes that is not a hazardous waste regulated under Subtitle C of RCRA. Such waste may include, but is not limited to, waste resulting from the following manufacturing processes: electric power generation; fertilizer/agricultural chemicals; food and related products/by-products; inorganic chemicals; iron and steel manufacturing; leather and leather products; nonferrous metals manufacturing/foundries; organic chemicals; plastics and resins manufacturing; pulp and paper industry; rubber and miscellaneous plastic products; stone, glass, clay, and concrete products; textile manufacturing; transportation equipment; and water treatment. This term does not include mining waste or oil and gas waste.

*Solid waste*—any garbage, or refuse, sludge from a wastewater treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semi-solid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities, but does not include solid or dissolved materials in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges that are point sources subject to permit under 33 U.S.C. §1342, or source, special nuclear, or by-product material as defined by the Atomic Energy Act of 1954.

**Definitions of selected terms pertaining to  
the regulated waste disposal units**

*Facility*—contiguous land and structures, other appurtenances, and improvements on the land used for the disposal of solid waste.

*MSW landfill (MSWLF)*—a discrete area of land or an excavation that receives household waste, and that is not a land application unit, surface impoundment, injection well, or waste pile, as those terms are defined under §257.2 of this chapter. A MSWLF unit also may receive other types of RCRA Subtitle D wastes, such as commercial solid waste, nonhazardous sludge, conditionally exempt small quantity generator waste and industrial solid waste. Such a landfill may be publicly or privately owned. A MSWLF unit may be a new MSWLF unit, an existing

*Coal Combustion Residuals*—fly ash, bottom ash, boiler slag, and flue gas desulfurization materials. CCRs are also known as coal combustion wastes (CCWs) and fossil fuel combustion (FFC) wastes.

*Facility*—all contiguous land and structures, other appurtenances, and improvements on the land used for the disposal of CCRs.

*CCR landfill*—a disposal facility or part of a facility where CCRs are placed in or on land and is not a land treatment facility, a surface impoundment, an underground injection well, a salt dome formation, a salt bed formation, an underground mine, a cave, or a corrective action management unit. Landfills would also include piles, sand and gravel pits, quarries, and/or large-scale fill operations. Sites that are excavated so that more coal ash can be used as fill are also considered CCR landfills.

*CCR surface impoundment*—a facility or part of a facility which is a natural topographic depression, man-made

<b>Municipal Solid Waste Landfill Criteria</b> (in 40 C.F.R. Part 258)	<b>Standards for Landfills and Surface Impoundments That Receive CCRs</b> (proposed by EPA for inclusion in 40 C.F.R. Part 257)
MSWLF unit or a lateral expansion. A construction and demolition landfill that receives residential lead-based paint waste and does not receive any other household waste is not a MSWLF unit.	excavation, or diked area formed primarily of earthen materials (although it may be lined with man-made materials) that is designed to hold an accumulation of CCRs containing free liquids (e.g., a holding, storage, settling, or aeration pit, pond, and lagoon).
<i>Existing MSWLF unit</i> —any unit that is receiving solid waste as of dates specified in §258.1(e). Waste placement in existing units must be consistent with past operating practices or modified practices to ensure good management.	<i>Existing CCR landfill or surface impoundment</i> —a unit that was in operation on, or for which construction commenced prior to [the effective date of the final rule]. A CCR facility has “commenced construction” if the owner or operator has obtained the federal, state and local approvals or permits necessary to begin physical construction; and either: a continuous on-site, physical construction program has begun; or the owner or operator has entered into contractual obligations—which cannot be cancelled or modified without substantial loss—for physical construction of the CCR landfill or surface impoundment to be completed within a reasonable time.
<i>Lateral expansion</i> —a horizontal expansion of the waste boundaries of an existing MSWLF unit.	<i>Lateral expansion</i> —a horizontal expansion of the waste boundaries of an existing CCR landfill or surface impoundment made after [the effective date of the final rule].
<i>New MSWLF unit</i> —any unit that has not received waste prior to October 9, 1993, or October 9, 1997 if the MSWLF unit meets certain conditions in Part 258.	<i>New CCR landfill</i> —a CCR landfill in which there is placement of CCRs without the presence of free liquids, which began operation, or for which the construction commenced after [the effective date of the final rule].
	<i>New CCR surface impoundment</i> —a CCR surface impoundment from which there is placement of CCRs with the presence of free liquids, which began operation, or for which the construction commenced after [the effective date of the final rule].
	<i>Area-capacity curves</i> —graphic curves which readily show the reservoir water surface area, in acres, at different elevations from the bottom of the reservoir to the maximum water surface, and the capacity or volume, in acre-feet, of the water contained in the reservoir at various elevations.
	<i>Independent registered professional engineer or hydrologist</i> —a scientist or engineer who is not an employee of the owner or operator of a CCR landfill or surface impoundment who has received a baccalaureate or postgraduate degree in the natural sciences or engineering and has sufficient training and experience in groundwater hydrology and related fields as may be demonstrated by state registration, professional certifications, or completion of accredited university programs that enable that individual to make sound professional judgments regarding the technical information for which a certification under this subpart is necessary.

<b>Municipal Solid Waste Landfill Criteria</b> (in 40 C.F.R. Part 258)	<b>Standards for Landfills and Surface Impoundments That Receive CCRs</b> (proposed by EPA for inclusion in 40 C.F.R. Part 257)
	<i>Recognized and generally accepted good engineering practices—engineering maintenance or operation activities based on established codes, standards, published technical reports, recommended practice, or similar document. Such practices detail generally approved ways to perform specific engineering, inspection, or mechanical integrity activities.</i>
<b>Subpart B—Location Restrictions</b>	
Restrictions applicable to new units and lateral expansions and those requiring closure of existing units	
§258.10 Airport safety.	* No similar requirement.
§258.11 Floodplains.	* No similar requirement.
* No similar requirement.	§257.60 Placement above the natural water table. Requires new CCR landfills and surface impoundments receiving CCRs to be constructed with a base located a minimum of two feet above the upper limit of the natural water table.
§258.12 Wetlands.	§257.61 Wetlands.
§258.13 Fault areas.	§257.62 Fault areas.
§258.14 Seismic impact zones.	§257.63 Seismic impact zones.
§258.15 Unstable areas.	§257.64 Unstable areas.
§258.16 Closure of existing municipal solid waste landfill units—required closure of MSW landfills that could not demonstrate compliance with location requirements pertaining to airports, floodplains, or unstable areas.	§257.65 Closure of existing CCR landfills and surface impoundments. Would require closure of existing CCR disposal units that cannot demonstrate compliance with location requirements pertaining to unstable areas. Closure would be required within five years, but may be extended under certain circumstances.
<b>Subpart C—Operating Criteria</b>	
Daily operating standards for running and maintaining regulated disposal units	
§258.20 Procedures for excluding the receipt of hazardous waste.	* No similar requirement.
§258.21 Cover material requirements.	* No similar requirement.
§258.22 Disease vector control.	* No similar requirement.
§258.23 Explosive gases control.	* No similar requirement.
§258.24 Air criteria—Requires MSW landfill units to comply with State Implementation Plans and prohibit open burning.	§257.80 Air criteria—differs from MSW criteria in that the criteria specify fugitive dust controls.
§258.25 Access requirements.	* No similar requirement.
§258.26 Run-on/run-off control systems.	§257.81 Run-on/run-off control systems. Requires an independent registered professional engineer to certify that the design of the run-on/run-off control system meets the requirements of this section; and the owner/ operator to notify the state that the design has been placed in the operating record and on the owner's or operator's publicly accessible internet site. Also requires the owner/operator to prepare a report, certified by an independent registered professional engineer, that documents how relevant calculations were made, and how

<b>Municipal Solid Waste Landfill Criteria</b> (in 40 C.F.R. Part 258)	<b>Standards for Landfills and Surface Impoundments That Receive CCRs</b> (proposed by EPA for inclusion in 40 C.F.R. Part 257)
	the control systems meet the requirements of this subpart and notify the state that the report has been placed in the operating record and made available to the public on the owner/ operator's publicly accessible internet site.
§258.27 Surface water requirements.	§257.82 Surface water requirements.
§258.28 Liquids restrictions—prohibits disposal of bulk or noncontainerized liquid waste in MSW landfills. If similarly applied to CCR units, this restriction may essentially prohibit liquid disposal of CCRs (i.e., surface impoundment disposal).	* No similar requirement.
* No similar requirement.	§257.83 Surface impoundment inspection requirements. Requires surface impoundments to be inspected weekly for appearances of structural weakness. The proposal specifies when such inspections must occur and who would be qualified to conduct them. It also would require certain responses in the event hazardous conditions are identified.
§258.29 Recordkeeping requirements.	§257.84 Recordkeeping requirements. Differs from MSW criteria in that records required to be kept include those that document/demonstrate annual surface impoundment inspections (something that is not required under the MSW criteria). EPA's proposal also specifies that the records must be publicly accessible via the internet.

**Subpart D—Design Criteria**

Liner and leachate collection requirements sufficient for groundwater to meet maximum contaminant levels for selected chemicals

§258.40 Design criteria—requires new MSW landfills or expansions of existing units to either install a composite liner or to allow the facility design to be based on site-specific conditions. Design criteria did not apply to existing units (i.e., units were not required to be retrofitted to meet the new liner requirements).	§257.70 Design criteria for new CCR landfills and lateral expansions. Would require new/expanding CCR landfills to have composite liners and leachate collection and removal systems similar to those required under §258.40. EPA stated that its decision was based on its experience that such a liner design would be expected to be effective in mitigating the risks of leaching contaminant to groundwater from a waste such as CCRs. EPA did not modify the design criteria to allow for the consideration of site-specific conditions in individual CCR landfill design.
* No similar requirement.	§257.71 Design criteria for existing CCR surface impoundments. Existing units would require a composite liner, similar to that required of CCR landfills. Units would require retrofitting with a liner within five years of the effective date of a final rule or be subject to closure. EPA also proposed a "D Prime" option. Under this modification, the regulations would not require surface impoundment closure or retrofitting with a liner; rather, these surface impoundments could continue to operate for the remainder of their useful life. The other co-proposed Subtitle D requirements would remain the same.  Specific to surface impoundment units that continue to operate, EPA's proposal would require design and inspection requirements similar to those of the Mine Safety and Health Administration (MSHA), including

<b>Municipal Solid Waste Landfill Criteria</b> (in 40 C.F.R. Part 258)	<b>Standards for Landfills and Surface Impoundments That Receive CCRs</b> (proposed by EPA for inclusion in 40 C.F.R. Part 257)
	requirements that an independent registered professional engineer certify that the impoundment's design is in accordance with engineering practices applicable to that unit; weekly inspections to identify potentially hazardous conditions or structural weakness; and annual inspections by an independent registered professional engineer to assure design, operation, and maintenance of the unit is in accordance with engineering practices applicable to that unit.
* No similar requirement.	§257.72 Design criteria for new CCR surface impoundments and lateral expansions. Essentially identical to the provisions applicable to <i>existing</i> CCR surface impoundments with regard to composite liner requirements and the additional criteria applicable to surface impoundment design, inspection, and recordkeeping.
§258.42 Approval of site-specific flexibility requests in Indian country.	* No similar requirement.

**Subpart E—Groundwater Monitoring and Corrective Action**  
Requirements necessary to detect and respond to potential groundwater contamination

§258.50 Applicability. All MSW landfill units unless the owner/operator can demonstrate that there is no potential for migration of hazardous constituents from the unit. The criteria specify a time-table of compliance based on the proximity of the unit to a drinking water intake source.	§257.90 Applicability. All <i>existing</i> CCR units would be required to comply with the groundwater monitoring requirements within one year of the effective date of a final rule; <i>new</i> CCR units must comply with groundwater monitoring requirements before CCRs could be disposed of in the units.
§258.51 Groundwater monitoring systems.	§257.91 Groundwater monitoring systems.
§258.53 Groundwater sampling and analysis requirements.	§257.93 Groundwater sampling and analysis requirements.
§258.54 Detection monitoring program. Specific constituents required to be included in the detection monitoring and assessment monitoring programs are listed under Appendix I to Part 258—Constituents for Detection Monitoring and Appendix II to Part 258—List of Hazardous Inorganic and Organic Constituents.	§257.94 Detection monitoring program. Constituents for detection monitoring are boron, chloride, conductivity, fluoride, pH, sulphate, sulfide, total dissolved solids.
§258.55 Assessment monitoring program. Within 90 days of finding that any of the constituents listed in Appendix II have been detected at a statistically significant level exceeding the groundwater protection standards, the owner or operator must initiate an assessment of corrective measures that must be completed within “a reasonable period of time.”	§257.95 Assessment monitoring program. Would be required whenever a statistically significant increase over background was detected for aluminum, antimony, arsenic, barium, beryllium, boron, cadmium, chloride, chromium (total), copper, fluoride, iron, lead, manganese, mercury, molybdenum, pH, selenium, sulphate, sulfide, thallium, total dissolved solids. In such cases, additional sampling and analysis requirements would also apply. Owners/operators would be required to complete their assessment corrective measures within 90 days of detecting the increase.



<b>Municipal Solid Waste Landfill Criteria</b> (in 40 C.F.R. Part 258)	<b>Standards for Landfills and Surface Impoundments That Receive CCRs</b> (proposed by EPA for inclusion in 40 C.F.R. Part 257)
§258.56 Assessment of corrective measures.	§257.96 Assessment of corrective measures.
§258.57 Selection of remedy.	§257.97 Selection of remedy.
§258.58 Implementation of the corrective action program.	§257.98 Implementation of the corrective action program.
<b>Subpart F—Closure and Post-Closure Care</b> Requirements applicable to the closure of regulated disposal units	
§258.60 Closure criteria.	§257.100 Closure criteria. Requires the removal of liquid and stabilization of remaining waste from a surface impoundment before closure.
§258.61 Post-closure care requirements.	§257.101 Post-closure care requirements.
§258.62 Approval of site-specific flexibility requests in Indian country.	* No similar requirement.
<b>Subpart G—Financial Assurance</b> Guarantees required to be established to ensure that the owner/operator can pay for potential cleanup of contamination	
§258.70 Applicability and effective date.	* EPA did not include financial assurance requirements in its proposal. It noted that any such requirements would be proposed in a separate rulemaking.
§258.71 Financial assurance for closure.	
§258.72 Financial assurance for post-closure care.	
§258.73 Financial assurance for corrective action.	
§258.74 Allowable mechanisms.	
§258.75 Discounting.	

**Source:** Created by CRS based on a review of 40 C.F.R. Part 258 and EPA's June 2010 proposed standards to regulate CCR landfills and surface impoundments.

As an example of the level of detail provided in regulatory criteria, **Table A-3** lists EPA's "Design criteria for new CCR surface impoundments and lateral expansions" at proposed 40 C.F.R. §257.72. As discussed in the section "Proposed EPA Standards to Address Risks Specific to CCR Management," in EPA's assessment, the CCR damage cases and EPA's quantitative groundwater risk assessment show the need for effective liners—namely composite liners—to significantly reduce the probability of adverse effects. The proposed Subtitle D design standards would require that new landfills and all surface impoundments that have not completed closure prior to the effective date of the rule, can only continue to operate if composite liners and leachate collection and removal systems have been installed. Units would be required to be retrofitted with a liner or closed within five years of the effective date of the final rule. That is the same time frame EPA proposed under its Subtitle C alternative. EPA also proposed to require the same liner and leachate collection and removal systems as part of the Subtitle D criteria as those being proposed under its Subtitle C option. EPA noted that the technical justification for the requirements is equally applicable to the wastes and surface impoundment, irrespective of the statutory authority under which the requirement is proposed.

**Table A-3. EPA's Proposed Design Criteria for Existing Surface Impoundments**

**Proposed 257.71 design criteria for existing CCR surface impoundments**

**Criteria intended to reduce risk to contaminant spread**

(a) No later than [five years after effective date of final rule] existing CCR surface impoundments shall be constructed:

(1) With a composite liner, as defined in paragraph (a)(2) of this section and a leachate collection system between the upper and lower components of the composite liner. The design shall be in accordance with a design prepared by, or under the direction of, and certified by an independent registered professional engineer.

(2) For purposes of this section, *composite liner* means a system consisting of two components; the upper component must consist of a minimum 30-mil flexible membrane liner (FML), and the lower component must consist of at least a two-foot layer of compacted soil with a hydraulic conductivity of no more than  $1 \times 10^{-7}$  cm/sec. FML components consisting of high density polyethylene (HDPE) shall be at least 60-mil thick. The FML component must be installed in direct and uniform contact with the compacted soil component.

(3) For purpose of this section, *hydraulic conductivity* means the rate at which water can move through a permeable medium (i.e., the coefficient of permeability).

(b) The owner or operator of an existing CCR surface impoundment shall place in the operating record and on the owner's or operator's publicly accessible internet site, and provide to the state a history of construction, and any record or knowledge of structural instability if the existing surface impoundment can:

(1) Impound CCRs to an elevation of five feet or more above the upstream toe of the structure and can have a storage volume of 20 acre-feet or more; or

(2) Impound CCRs to an elevation of 20 feet or more above the upstream toe of the structure.

(c) For purposes of this subpart, upstream toe means, for an embankment dam, the junction of the upstream slope of the dam with the ground surface. (Federal Guidelines for Dam Safety, Glossary of Terms, Federal Emergency Management Agency, April 2004.)

d) The history of construction specified in paragraph (b) of this section shall contain, at a minimum, the following information as may be available:

(1) The name and address of the persons owning or operating the CCR surface impoundment; the name associated with the CCR surface impoundment; and the identification number of the CCR surface impoundment if one has been assigned by the state.

(2) The location of the CCR surface impoundment indicated on the most recent USGS 7½ minute or 15 minute topographic quadrangle map, or a topographic map of equivalent scale if a USGS map is not available.

(3) A statement of the purpose for which the CCR surface impoundment is being used.

(4) The name and size in acres of the watershed affecting the CCR surface impoundment.

(5) A description of the physical and engineering properties of the foundation materials on which the CCR surface impoundment is constructed.

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

(7) At a scale not to exceed 1 inch = 100 feet, detailed dimensional drawings of the CCR surface impoundment, including a plan view and cross sections of the length and width of the CCR surface impoundment, showing all zones, foundation improvements, drainage provisions, spillways, diversion ditches, outlets, instrument locations, and slope protection, in addition to the measurement of the minimum vertical distance between the crest of the CCR surface impoundment and the reservoir surface at present and under design storm conditions, CCR slurry level and CCR waste water level, and any identifiable natural or manmade features which could affect operation of the CCR surface impoundment.

(8) A description of the type and purpose of existing or proposed instrumentation.

(9) Graphs showing area-capacity curves.

(10) The hazard potential classification for which the facility is designed and a detailed explanation of the basis for this

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**Proposed 257.71 design criteria for existing CCR surface impoundments**

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classification.

(11) A description of the spillway and diversion design features and capacities and calculations used in their determination.

(12) The computed minimum factor of safety for slope stability of the CCR retaining structure(s) and the analyses used in their determinations.

(13) A certification by an independent registered professional engineer that the design of the CCR surface impoundment is in accordance with generally accepted engineering standards for the maximum volume of CCR slurry and CCR waste water which can be impounded therein and for the passage of runoff from the design storm which exceeds the capacity of the CCR surface impoundment. The owner or operator shall place the certification in the operating record and on the owner's or operator's publicly accessible internet site and notify the state that these actions have been taken.

(14) The construction specifications and provisions for surveillance, maintenance, and repair of the CCR surface impoundment.

(15) General provisions for closure.

(e) A permanent identification marker, at least six feet high and showing the identification number of the existing CCR surface impoundment, if one has been assigned by the state, the name associated with the CCR surface impoundment and the name of the person owning or operating the structure, shall be located on or immediately adjacent to each existing CCR surface impoundment. This requirement becomes effective [date 60 days after the effective date of the final rule].

(f) For existing CCR surface impoundments classified as having a high or significant hazard potential, as certified by an independent registered professional engineer, the owner or operator shall develop and maintain in the operating record, and on the owner's or operator's publicly accessible internet site, an Emergency Action Plan which: defines responsible persons and the actions to be taken in the event of a dam-safety emergency; provides contact information for emergency responders; includes a map which delineates the downstream area which would be affected in the event of a dam failure; and includes provisions for an annual face-to-face meeting or exercise between representatives of the facility owner and the local emergency responders.

(g) CCR surface impoundments shall be dredged of CCRs and lined with a composite liner system, as defined in paragraph (d)(2) of this section, by [date five years after the effective date of the final rule] or closed in accordance with §257.100.

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**Source:** Table created by CRS with information taken from 75 *Federal Register* 35128, at 35224.

## **Appendix B. Requirements in 40 C.F.R. Part 239 and Comparable Program Elements in the Amendment to RCRA Proposed in the 112<sup>th</sup> Congress**

The State Implementation Rule (SIR), or Requirements for State Permit Program Determination of Adequacy at 40 C.F.R. Part 239, specify the requirements that state permit programs were required have to be deemed adequate by the EPA. An adequate program was one that EPA determined could ensure regulated facility compliance with the MSW landfill criteria. The requirements list the detailed information that states were required to provide to EPA, as well as the authorities, activities, and procedures a state would have to demonstrate that they had in place, before EPA would approve a state program as adequate to enforce the federal MSW landfill criteria.

Listed below are provisions included in the bills proposed in the 112<sup>th</sup> Congress that appear to be drawn from the requirements included in 40 C.F.R. Part 239. Potential differences in program implementation can be seen when statutory requirements that would apply to a CCR Permit Program are compared to the regulatory requirements applicable to the permit program to implement the MSW landfill criteria at 40 C.F.R. Part 239 (listed in **Table B-1**). Those subsections are primarily the following:

- **4011(b) State Actions.** Provisions pertaining to program certification include selected elements from Section 239.3, Components of Program Application and Section 239.4, Narrative Description of State Permit Program.
- **4011(c) Permit Program Specifications.** Included under the “Minimum Requirements” in this section are five provisions (pertaining to Permits, State Notification, Agency Requirements, Agency Authority, and State Authority) that are drawn, in part, from selected individual criteria included among the Requirements for Adequate Permit Programs in Subpart C of Part 239.
- **4011(d) Written Notice and Opportunity to Remedy and 4011(e) Implementation by Administrator.** Both sections include provisions drawn, in part, from selected elements in 40 C.F.R. §239.13, Criteria and procedures for withdrawal of determination of adequacy.
- **4011(k) Definitions.** Proposed definitions comparable to those in 40 C.F.R. Part 239 are those for “coal combustion residuals permit program” and “permit.” The applicability of a CCR Permit Program would also depend on the definition of a “structure” (at proposed Section 4011(k)(6)), which would mean a landfill, surface impoundment, or other land-based unit which may receive CCRs, but would not include any land-based unit that receives only de minimis quantities of CCRs.

**Table B-I. Comparison of State Programs to Regulate MSW Landfills and CCR Structures**

Selected “Requirements for State Permit Programs Determination of Adequacy” in 40 C.F.R. Part 239	Provisions in Proposed Section 401 I Comparable to Part 239 Requirements
<b>40 C.F.R. Part 239 Subpart A—General</b>	
<b>§239.1 Purpose</b>	
This part specifies the requirements that state permit programs must meet to be determined adequate by the EPA under section 4005(c)(1)(C) of RCRA and the procedures EPA will follow to determine the adequacy of state Subtitle D permit programs or other systems of prior approval and conditions required to be adopted and implemented by states under RCRA section 4005(c)(1)(B).	
<b>§239.2 Scope and Definitions</b>	<b>Section 401 I(k) Definitions</b>
(a) <i>Scope.</i> (1) Nothing in this part precludes a state from adopting or enforcing requirements that are more stringent or more extensive than those required under this part or from operating a permit program with more stringent requirements or a broader scope of coverage than that required under this part.	
(2) All states which develop and implement a Subtitle D permit program must submit an application for an adequacy determination for purposes of this part.	
(3) If EPA determines that a state Subtitle D permit program is inadequate, EPA will have the authority to enforce the Subtitle D MSW landfill criteria on regulated facilities under the state’s jurisdiction.	
(b) <i>Definitions.</i> (1) For purposes of this part:	
<i>Approved permit program or approved program</i> means a state Subtitle D permit program or other system of prior approval and conditions required under section 4005(c)(1)(B) of RCRA that has been determined to be adequate by EPA under this part.	
<i>Approved state</i> means a state whose Subtitle D permit program or other system of prior approval and conditions required under section 4005(c)(1)(B) of RCRA has been determined to be adequate by EPA under this part.	
<i>Permit or prior approval and conditions</i> means any authorization, license, or equivalent control document issued under the authority of the state regulating the location, design, operation, groundwater monitoring, closure, post-closure care, corrective action, and financial assurance of Subtitle D regulated facilities.	(4) <i>Permit and prior approval and conditions</i> mean any authorization, license, or equivalent control document that incorporates the Minimum Requirements and Revised Criteria described in Section 401 I(c)(1) and (2).

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**Selected “Requirements for State Permit Programs Determination of Adequacy”  
in 40 C.F.R. Part 239**

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**Provisions in Proposed Section 401 I  
Comparable to Part 239 Requirements**

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*Permit documents* means permit applications, draft and final permits, or other documents that include applicable design and management conditions in accordance with the Subtitle D federal revised criteria, found at 40 C.F.R. Part 257, Subpart B, and 40 C.F.R. Part 258, and the technical and administrative information used to explain the basis of permit conditions.

*Regional Administrator* means any one of the ten Regional Administrators of the U.S. Environmental Protection Agency or any authorized representative.

*State Director* means the chief administrative officer of the lead state agency responsible for implementing the state permit program for Subtitle D regulated facilities.

*State program* or *permit program* means all the authorities, activities, and procedures that comprise the state’s system of prior approval and conditions for regulating the location, design, operation, ground-water monitoring, closure, post-closure care, corrective action, and financial assurance of Subtitle D regulated facilities.

*Subtitle D regulated facilities* means all solid waste disposal facilities subject to the revised criteria promulgated by EPA under the authority of RCRA Section 4010(c).

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(2) A *coal combustion residuals permit program* means all of the authorities, activities, and procedures that comprise the system of prior approval and conditions implemented by or for a State to regulate the management and disposal of coal combustion residuals.

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**40 C.F.R. Part 239 Subpart B—State Program Application**

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**§239.3 Components of Program Application**

Any state that seeks a determination of adequacy under this part must submit an application to the Regional Administrator in the appropriate EPA Region. The application must identify the scope of the program for which the state is seeking approval (i.e., which class of Subtitle D regulated facilities are covered by the application). The application also must demonstrate that the state’s authorities and procedures are adequate to ensure compliance with the relevant Subtitle D federal revised criteria and that its permit program is uniformly applicable to all the relevant Subtitle D regulated facilities within the state’s jurisdiction. The application must contain the following parts:

(a) A transmittal letter, signed by the State Director, requesting program approval. If more than one state agency has implementation responsibilities, the transmittal letter must designate a lead agency and be jointly signed by all state agencies with implementation responsibilities or by the State Governor;

(b) A narrative description of the state permit program in accordance with §239.4;

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**Section 401 I(b)(2)(A)-(B), State Actions:  
Certification**

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The head of the lead state agency responsible for implementing the “CCR Permit Program” shall submit to EPA a certification that the program meets Permit Program Specification in Section 401 I(c).

The contents shall include: a letter identifying the lead State agency responsible for implementing the CCR Permit Program; and any other agencies involved with the implementation of the program.

A narrative description shall include an explanation of how the state will ensure that the CCR Permit Program meets the requirements of Section 401 I.

Selected “Requirements for State Permit Programs Determination of Adequacy” in 40 C.F.R. Part 239	Provisions in Proposed Section 401 I Comparable to Part 239 Requirements
(c) A legal certification in accordance with §239.5; (d) Copies of all applicable state statutes, regulations, and guidance.	
§239.4 Narrative Description of State Permit Program	Section 401 I (b)(2)(B)(iii)(I)-(IV), State Actions: Contents of the narrative description
<p>The description of a state’s program must include:</p> <p>(a) An explanation of the jurisdiction and responsibilities of all state agencies and local agencies implementing the permit program and description of the coordination and communication responsibilities of the lead state agency to facilitate communications between EPA and the state if more than one state agency has implementation responsibilities;</p> <p>(b) An explanation of how the state will ensure that existing and new facilities are permitted or otherwise approved and in compliance with the relevant Subtitle D federal revised criteria;</p> <p>(c) A demonstration that the state meets the requirements in §§239.6, 239.7, 239.8, and 239.9;</p> <p>(d) The number of municipal solid waste landfill units within the state’s jurisdiction that received waste on or after, October 9, 1991.</p> <p>(e) A discussion of staff resources available to carry out and enforce the relevant state permit program.</p> <p>(f) A description of the state’s public participation procedures as specified in §239.6(a) through (c).</p>	<p>The narrative description of the state’s program shall include a description of the state’s—</p> <ul style="list-style-type: none"> <li>• process to inspect or otherwise determine compliance with the permit program;</li> <li>• process to enforce the requirements of the permit program;</li> <li>• public participation process for the promulgation, amendment, or repeal of regulations for, and the issuance of permits under, the permit program; and</li> <li>• statutes, regulations, or policies pertaining to public access to information, such as groundwater monitoring data.</li> </ul>

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**Selected “Requirements for State Permit Programs Determination of Adequacy”  
in 40 C.F.R. Part 239**

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**Provisions in Proposed Section 401 I  
Comparable to Part 239 Requirements**

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**§239.5 State Legal Certification**

- (a) A state must submit a written certification from the state Attorney General that the laws, regulations, and any applicable guidance cited in the application are enacted at the time the certification is signed and are fully effective when the state permit program is approved. This certification may be signed by the independent legal counsel for the state rather than the Attorney General, provided that such counsel has full authority to independently represent the lead state agency in court on all matters pertaining to the state program.
- (b) If guidance is to be used to supplement statutes and regulations, the state legal certification must discuss that the state has the authority to use guidance to develop enforceable permits which will ensure compliance with relevant standards issued pursuant to RCRA section 4010(c) and that the guidance was duly issued in accordance with state law.
- (c) If any laws, regulations, or guidance are not enacted or fully effective when the legal certification is signed, the certification should specify what portion(s) of laws, regulations, or guidance are not yet enacted or fully effective and when they are expected to be enacted or fully effective.

**Section 401 I(b)(2)(B)(iv)-(iv), State Actions:  
Contents of legal certification**

The program certification shall include a legal certification that the state has, at the time of certification, fully effective statutes or regulations necessary to implement a coal combustion residuals permit program that meets 401 I(c), including copies of State statutes and regulations.

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**40 C.F.R. Part 239 Subpart C—Requirements for Adequate Permit Programs**

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**§239.6 Permitting Requirements**

- (a) State law must require that: (1) Documents for permit determinations are made available for public review and comment; and (2) Final determinations on permit applications are made known to the public.
- (b) The state shall have procedures that ensure that public comments on permit determinations are considered.
- (c) The state must fully describe its public participation procedures for permit issuance and post-permit actions in the narrative description required under §239.4 and include a copy of these procedures in its permit program application.
- (d) The state shall have the authority to collect all information necessary to issue permits that are adequate to ensure compliance with the relevant 40 C.F.R. Part 257, subpart B or 40 C.F.R. Part 258 federal revised criteria.

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**401 I(c)(1), Permit Program Specifications:  
Minimum Requirements**

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**(G) Agency Requirements.** Except for confidential business information, the agency implementing the CCR Permit Program shall ensure that—documents for permit determinations are made available for public review and comment under the public participation process described in the program’s narrative description; final determinations on permit applications are made known to the public; and groundwater monitoring data are publicly available.



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**Selected “Requirements for State Permit Programs Determination of Adequacy”  
in 40 C.F.R. Part 239**

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- (e) For municipal solid waste landfill units, state law must require that: (1) Prior to construction and operation, all new municipal solid waste landfill units shall have a permit incorporating the conditions identified in paragraph (e)(3) of this section; (2) All existing municipal solid waste landfill units shall have a permit incorporating the conditions identified in paragraph (e)(3) of this section by the deadlines identified in 40 C.F.R. §258.1; (3) The state shall have the authority to impose requirements for municipal solid waste landfill units adequate to ensure compliance with 49 C.F.R. Part 258. These requirements shall include:
- (i) General standards which achieve compliance with 40 C.F.R. Part 258, subpart A;
  - (ii) Location restrictions for municipal solid waste landfill units which achieve compliance with 40 C.F.R. Part 258, subpart B;
  - (iii) Operating criteria for municipal solid waste landfill units which achieve compliance with 49 C.F.R. Part 258, subpart C;
  - (iv) Design criteria for municipal solid waste landfill units which achieve compliance with 49 C.F.R. Part 258, subpart D;
  - (v) Ground-water monitoring and corrective action standards for municipal solid waste landfill units which achieve compliance with 49 C.F.R. Part 258, subpart E;
  - (vi) Closure and post-closure care standards for municipal solid waste landfill units which achieve compliance with 40 C.F.R. Part 258, subpart F; and
  - (vii) Financial assurance standards for municipal solid waste landfill units which achieve compliance with 49 C.F.R. Part 258, subpart G.

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**§239.7 Requirements for Compliance Monitoring Authority**

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- (a) The state must have the authority to:
- (1) Obtain any and all information necessary, including records and reports, from an owner or operator of a Subtitle D regulated facility, to determine whether the owner or operator is in compliance with the state requirements;
  - (2) Conduct monitoring or testing to ensure that owners and operators are in compliance with the state requirements; and
  - (3) Enter any site or premise subject to the permit program or in which records relevant to the operation of Subtitle D regulated facilities or activities are kept.

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**Provisions in Proposed Section 401 I  
Comparable to Part 239 Requirements**

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**(E) Permits.** The agency responsible for implementing the program shall require that the owner or operator of each structure that receives CCR after the date of enactment of Section 401 I apply for and obtain a permit incorporating the requirements of the CCR permit program.

**(F)(i) State Notification and Groundwater Monitoring: Notification.** Not later than the date on which a state submits its program certification to EPA (required under proposed Section 401 I (b)(2)), the state shall notify owners or operators of structures within the state of the obligation to apply for and obtain a permit (per subparagraph (E)).

**(H) Agency Authority.** The agency responsible for implementing the program has the authority to:

- obtain information necessary to determine whether the owner or operator of a structure is in compliance with the CCR Permit Program requirements of Section 401 I;
- conduct or require monitoring and testing to ensure that structures are in compliance with CCR Permit Program requirements of Section 401 I; and
- (III) enter, at reasonable times, any site or premise

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**Selected “Requirements for State Permit Programs Determination of Adequacy”  
in 40 C.F.R. Part 239**

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**Provisions in Proposed Section 4011  
Comparable to Part 239 Requirements**

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(b) A state must demonstrate that its compliance monitoring program provides for inspections adequate to determine compliance with the approved state permit program.

(c) A state must demonstrate that its compliance monitoring program provides mechanisms or processes to:

- (1) Verify the accuracy of information submitted by owners or operators of Subtitle D regulated facilities;
- (2) Verify the adequacy of methods (including sampling) used by owners or operators in developing that information;
- (3) Produce evidence admissible in an enforcement proceeding; and
- (4) Receive and ensure proper consideration of information submitted by the public.

subject to the coal combustion residuals permit program for the purpose of inspecting structures and reviewing records relevant to the operation and maintenance of structure.

If monitoring or testing is conducted by or for the agency responsible for implementing the CCR Permit Program, the agency shall, if requested, provide to the owner or operator—a written description of the monitoring or testing completed; and a copy of the results of any analysis of samples collected.

**(I) State Authority.** A state implementing a CCR Permit Program has the authority to inspect structures; and implement and enforce the program.

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**§239.8 Requirements for Enforcement Authority**

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Any state seeking approval must have the authority to impose the following remedies for violation of state program requirements:

- (a) To restrain immediately and effectively any person by administrative or court order or by suit in a court of competent jurisdiction from engaging in any activity which may endanger or cause damage to human health or the environment.
  - (b) To sue in a court of competent jurisdiction to enjoin any threatened or continuing activity which violates any statute, regulation, order, or permit which is part of or issued pursuant to the state program.
  - (c) To sue in a court of competent jurisdiction to recover civil penalties for violations of a statute or regulation which is part of the state program or of an order or permit which is issued pursuant to the state program.
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**§239.9 Intervention in Civil Enforcement Proceedings**

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Any state seeking approval must provide for intervention in the state civil enforcement process by providing either:

- (a) Authority that allows intervention, as a right, in any civil action to obtain remedies specified in §239.8 by any citizen having an interest that is or may be adversely affected; or,
- (b) Assurance by the appropriate state agency that:
  - (1) It will provide notice and opportunity for public involvement in all proposed settlements of civil enforcement actions (except where immediate action is necessary to adequately protect human health and the environment);
  - (2) It will investigate and provide responses to citizen complaints about violations; and,
  - (3) It will not oppose citizen intervention when permissive intervention is allowed by statute, rule, or regulation.

**40 C.F.R. Part 239 Subpart D—Adequacy Determination Procedures**

**§239.10 Criteria and procedures for making adequacy determinations**

- (a) The State Director seeking an adequacy determination must submit to the appropriate Regional Administrator an application in accordance with §239.3.
- (b) Within 30 days of receipt of a state’s application, EPA will review the application and notify the state whether its application is administratively complete in accordance with the application components required in §239.3. The 180-day review period for final determination of adequacy, described in paragraph (d) of this section, begins when the Regional Administrator deems a state application to be administratively complete.
- (c) After receipt and review of a complete application, EPA will make a tentative determination on the adequacy of the state program and publish a tentative determination on the adequacy of the state program in the *Federal Register*, which must allow public comment on the state application and the tentative determination and include a specific statement of the areas of concern, if EPA indicates the state program may not be adequate.

(d) Within 180 days of determining that a state program application is administratively complete, the Regional Administrator will make a final determination of adequacy after review and consideration of all public comments, unless the Regional Administrator, after consultation with the State Director, agrees to extend the review period. The Regional Administrator will give notice of the final determination in the Federal Register. The document must include a statement of the reasons for the determination and a response to significant comments received.

(e) For all states that do not submit an application, the Administrator or Regional Administrator may issue a final determination of inadequacy in the Federal Register declaring those state permit programs inadequate to ensure compliance with the relevant Subtitle D federal revised criteria. Such states may apply later for a determination of adequacy.

**§239.11 Approval procedures for partial approval**

Under certain conditions, EPA could partially approve state permit programs that do not meet all of the requirements in §239.6(e)(3) (i.e., do not incorporate all of the relevant Subtitle D federal revised criteria). Such permit programs may be partially approved if:

- (1) The appropriate Regional Administrator determines that the state’s permit program largely meets the technical requirements of §239.6 and meets all other requirements of this part;
- (2) Changes to a specific part(s) of the state permit program are required in order for the state program to fully meet the requirements of §239.6; and
- (3) Provisions not included in the partially approved portions of the state permit program are clearly identifiable and separable subsets of the relevant Subtitle D federal revised criteria.

**§239.12 Modifications of state programs.** Specifies conditions under which state programs may need to be modified; and procedures EPA and states would follow to make those modifications.

- a) Approved state permit programs may be modified for various reasons, such as changes in federal or state statutory or regulatory authority
- (b) If the federal statutory or regulatory authorities that have significant implications for state permit programs change, approved states may be required to revise their permit programs. These changes may necessitate submission of a revised application. Such a change at the federal level and resultant state requirements would be made known to the states either in a Federal Register document containing the change or through the appropriate EPA Regional Office.
- (c) States that modify their programs must notify the Regional Administrator of the modifications. Program modifications include changes in state statutory or regulatory authority or relevant guidance or shifting of responsibility for the state program within the lead agency or to a new or different state agency or agencies.

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**Selected “Requirements for State Permit Programs Determination of Adequacy”  
in 40 C.F.R. Part 239**

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**Provisions in Proposed Section 4011  
Comparable to Part 239 Requirements**

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Changes to the state’s permit program, as described in its application which may result in the program becoming inadequate, must be reported to the Regional Administrator. In addition, changes to a state’s basic statutory or regulatory authority or guidance which were not part of the state’s initial application, but may have a significant impact on the adequacy of the state’s permit program, also must be reported to the Regional Administrator.

(d) States must notify the appropriate Regional Administrator of all permit program modifications required in paragraphs (b) and (c) of this section within a time-frame agreed to by the State Director and the Regional Administrator.

**§239.13 Criteria and procedures for withdrawal of determination of adequacy**

(a) The Regional Administrator may initiate withdrawal of a determination of adequacy when the Regional Administrator has reason to believe that:

- (1) A state no longer has an adequate permit program; or
  - (2) The state no longer has adequate authority to administer and enforce an approved program in accordance with this part.
- (b) Upon receipt of substantive information sufficient to indicate that a state program may no longer be adequate, the Regional Administrator shall inform the state in writing of the information.

(c) If, within 45 days of the state’s receipt of the information in paragraph (b) of this section, the state demonstrates to the satisfaction of the Regional Administrator that the state program is adequate (i.e., in compliance with this part), the Regional Administrator shall take no further action toward withdrawal of the determination of adequacy and shall so notify the state and any person(s) who submitted information regarding the adequacy of the state’s program and authorities.

**Portions of 4011(e), Implementation by  
Administrator and 4011(d), Written Notice and  
Opportunity to Remedy**

**4011(d)(1)(D)-(E), Written Notice and  
Opportunity to Remedy.** EPA shall provide a state with a written notice and an opportunity to remedy program deficiencies if at any time the state—

- is not implementing a CCR Permit Program that— meets the specifications in 4011(c); or is consistent with its program certification and maintains fully effective statutes; or regulations necessary to implement a coal combustion residuals permit program; or
- does not make information available to EPA, within 90 days, necessary to ascertain whether the state has complied with the certain applicable requirements.

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**Selected “Requirements for State Permit Programs Determination of Adequacy”  
in 40 C.F.R. Part 239**

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**Provisions in Proposed Section 4011  
Comparable to Part 239 Requirements**

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(d) If the State Director does not demonstrate the state’s compliance with Part 239 to the satisfaction of the Regional Administrator, the Regional Administrator shall list the deficiencies in the program and negotiate with the state a reasonable time for the state to complete such action to correct deficiencies as the Regional Administrator determines necessary. If these negotiations reach an impasse, the Regional Administrator shall establish a time period within which the state must correct any program deficiencies and inform the State Director of the time period in writing.

(e) Within the schedule negotiated by the Regional Administrator and the State Director, or set by the Regional Administrator, the state shall take appropriate action to correct deficiencies and shall file with the Regional Administrator a statement certified by the State Director describing the steps taken to correct the deficiencies.

(f) If the state takes appropriate action to correct deficiencies, the Regional Administrator shall take no further action toward withdrawal of determination of adequacy and shall so notify the state and any person(s) who submitted information regarding the adequacy of the state’s permit program. If the state has not demonstrated its compliance with this part to the satisfaction of the Regional Administrator, the Regional Administrator shall inform the State Director and may initiate withdrawal of all or part of the determination of state program adequacy.

(g) The Regional Administrator shall initiate withdrawal of determination of adequacy by publishing the tentative withdrawal of determination of adequacy of the state program in the Federal Register. Notice of the tentative determination must:

- (1) Afford the public at least 60 days after the notice to comment on the Regional Administrator’s tentative determination;
- (2) Include a specific statement of the Regional Administrator’s areas of concern and reason to believe the state program may no longer be adequate; and
- (3) Indicate that a public hearing will be held by EPA if sufficient public interest is expressed during the comment period or when the Regional Administrator determines that such a hearing might clarify issues involved in the tentative withdrawal determination.

**4011(d)(3)(A)(iv)-(v), Written Notice and Opportunity to Remedy: Contents of the Notice.**

A notice provided to a state shall include EPA’s findings detailing any applicable deficiencies in the state program meeting the Permit Program Specifications (in proposed Section 4011(c)); and state compliance with EPA requests to the state for program information.

**4011(d)(3)(B) Written Notice and Opportunity to Remedy: Deadline for response.**

EPA would be required to collaborate with the state to identify a reasonable deadline to remedy program deficiencies. That deadline could not be earlier than 180 days; except with regard to requests for information, for which the deadline cannot exceed 90 days.

**4011(e)(1)(B), Implementation by Administrator: If deficiencies are not addressed.**

EPA shall implement a coal combustion residuals permit program for a state if the state has received a notice of deficiency (see 4011(d)) and EPA determines, after providing a 30-day period for notice and public comment, that the state has failed to remedy the deficiencies by the agreed-upon deadline (see 4011(d)(3)(B)).

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**Selected “Requirements for State Permit Programs Determination of Adequacy”  
in 40 C.F.R. Part 239**

**Provisions in Proposed Section 401 I  
Comparable to Part 239 Requirements**

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(h) If the Regional Administrator finds, after the public hearing (if any) and review and consideration of all public comments, that the state is in compliance with this part, the withdrawal proceedings shall be terminated and the decision shall be published in the Federal Register. The document must include a statement of the reasons for this determination and a response to significant comments received. If the Regional Administrator finds that the state program is not in compliance with this Part by the date prescribed by the Regional Administrator or any extension approved by the Regional Administrator, a final notice of inadequacy shall be published in the Federal Register declaring the state permit program inadequate to ensure compliance with the relevant Subtitle D federal revised criteria. The document will include a statement of the reasons for this determination and response to significant comments received.

(i) States may seek a determination of adequacy at any time after a determination of inadequacy.

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**Source:** Table created by CRS, taken from selected requirements in 40 C.F.R. Parts 239 and provisions included in proposed Section 401 I that are drawn from selected requirements included in Part 239.

## **Appendix C. RCRA Provisions and EPA Responses Related to Directives in the “Bevill Amendment”**

As required under Subtitle C, EPA first proposed hazardous waste management regulations in 1978.<sup>132</sup> In these proposed regulations, EPA identified six categories of wastes it deemed “special wastes” that would be deferred from hazardous waste management requirements until further study and assessment could be completed to determine their risk to human health and the environment. These special wastes were identified because they typically were generated in large volumes and, at the time, were believed to pose less risk to human health and the environment than the wastes being identified for regulation as hazardous waste.

In the months before the hazardous waste regulations were finalized in 1980, Congress was debating RCRA reauthorization. In February 1980, Representative Tom Bevill introduced an amendment to the pending legislation that would require EPA to defer the imposition of hazardous waste regulatory requirements for fossil fuel combustion waste until data regarding its potential hazard to human health or the environment could be determined. Representative Bevill stated that EPA’s intent to regulate such waste as hazardous would discourage the use of coal and constitute an unnecessary burden on the utility industry.<sup>133</sup> In anticipation of the enactment of this legislation, according to EPA, the agency excluded the regulation of fossil fuel combustion waste from its final hazardous waste regulations.<sup>134</sup>

Ultimately, the Solid Waste Disposal Act Amendments of 1980 (P.L. 96-482) included provisions commonly referred to as the “Bevill Amendment” or the “Bevill exclusion.” Under those provisions Congress specifically excluded CCRs from regulation under RCRA Subtitle C, pending EPA’s completion of a report to Congress and regulatory determination on whether hazardous waste regulations were warranted.<sup>135</sup> Pursuant to that directive, EPA was required to conduct a comprehensive study and submit to Congress a report on the adverse effects on human health and the environment related to the disposal and utilization of wastes and other byproduct materials generated primarily from the combustion of coal or other fossil fuels, including an analysis of

- the source and volumes of such material generated per year;
- present disposal and utilization practices;
- potential danger, if any, to human health and the environment from the disposal and reuse of such materials;
- documented cases in which danger to human health or the environment from surface runoff or leachate has been proved;
- alternatives to current disposal methods;
- the costs of such alternatives;

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<sup>132</sup> 42 *Federal Register* 58946, December 18, 1978.

<sup>133</sup> *Congressional Record*, February 20, 1980, p. 1087.

<sup>134</sup> 45 *Federal Register* 33084, May 19, 1980.

<sup>135</sup> The exclusion is specified at 42 U.S.C. §6921(b)(3)(A)(i); factors EPA was required to study to make the appropriate regulatory determination are specified at 42 U.S.C. §6982(n).



- the impact of those alternatives on the use of coal and other natural resources; and
- the current and potential utilization of such materials.

Further, as it deemed appropriate, EPA was required to review studies and other actions of other federal and state agencies regarding the material and invite participation by other concerned parties, including industry, with a view toward avoiding duplication of effort.

Both legislative and administrative actions regarding the potential regulation of CCRs, particularly EPA action taken in response to the Bevill directive and more recent action taken in the wake of the Kingston release, are summarized in **Table C-1**.

**Table C-1. Legislative and Administration Action Relevant to CCR Management**

Date	Action/ Document	Summary/Description
1976	The Solid Waste Disposal Act is amended by the Resource Conservation and Recovery Act (RCRA)	In Section 3001 of RCRA Subtitle C (42 U.S.C. §6921), "Identification and listing of hazardous waste," Congress requires EPA to develop and promulgate criteria for identifying the characteristics of hazardous waste and for listing wastes as hazardous. In developing that criteria, Congress explicitly required EPA to take into account "toxicity, persistence, and degradability in nature, potential for accumulation in tissue, and other related factors such as flammability, corrosiveness, and other hazardous characteristics." Using those criteria, EPA was also required to promulgate regulations identifying the characteristics of hazardous waste, and listing particular hazardous wastes that will be subject to Subtitle C requirements. EPA was required to promulgate those regulations after providing notice and opportunity for public hearing and after consulting with appropriate federal and state agencies. EPA was further required to revise those criteria "from time to time as may be appropriate."
Dec. 18, 1978	Proposed Rule (43 FR 58991)	<p>In its proposed rule, "Hazardous Waste Guidelines and Regulations," EPA states that, in the course of preparing its Subtitle C regulations, it realized that "some portions of certain very large volume wastes will be hazardous" under its proposed criteria for identifying and listing hazardous waste. As such, they would be subject to standards under the Subtitle C regulatory scheme. Included among the special wastes identified was "utility waste" (fly ash, bottom ash, and scrubber sludge).</p> <p>EPA stated that it had very little information on the composition, characteristics, and the degree of hazard posed by the wastes. EPA also noted it did not yet have data on the effectiveness of current or potential waste management technologies or the technical or economic practicability of imposing the Subpart D standards on facilities managing such waste. The limited information EPA did have indicated that the wastes occur in very large volumes, that the potential hazards are relatively low, and that the waste is not amenable to the control technique developed in Subpart D. EPA determined that it would call such wastes "special wastes" and proposed to regulate it with special standards.</p>
May 19, 1980	Final Rule (45 FR 33084)	EPA publishes a final rule: "Hazardous Waste Management Systems: Identification and Listing of Hazardous Waste," as directed by Congress under RCRA Section 3001. At 40 C.F.R. Part 261, EPA includes four Subparts that (1) define the terms "solid waste" and "hazardous waste," and identifies wastes that are excluded from Subtitle C regulation; (2) set forth the criteria used by EPA to identify <i>characteristics</i> of hazardous waste and to <i>explicitly list</i> particular wastes as hazardous; (3) identify the explicit characteristics that would make a waste ignitable, corrosive, reactive, or toxic; (4) list specific waste it has identified as hazardous. In accordance with these criteria, hazardous wastes are generally referred to as "characteristic" or "listed" wastes. A waste generator is responsible for determining whether its waste meets a characteristic specified in the regulations that would make it subject to Subtitle C

Date	Action/ Document	Summary/Description
		requirements. Listed wastes are those specifically identified by EPA that may be generated from “specific” and “non-specific” sources that the agency has determined to be subject to Subtitle C. With regard to the EPA-listed waste, the agency also promulgated regulations that specify procedures a waste generator may take to have the waste generated at its facility “delisted” (i.e., excluded from Subtitle C requirements).
1980	Amendment to RCRA: the Solid Waste Disposal Act Amendments of 1980 (P.L. 96-482)	<p>This 1980 amendment to RCRA includes provisions, widely referred to as the Bevill Amendment or Bevill Exclusions (at 42 U.S.C. §§6921(b)(3)(A); 6924; and 6982(n)) relevant to the management of CCRs. Pursuant to those provisions, Congress specified that “fly ash waste, bottom ash waste, slag waste, and flue gas emission control waste generated primarily from the combustion of coal or other fossil fuels” were to be excluded from the Subtitle C requirements, pending further study on the adverse effects on human health and the environment, if any, related to the disposal and use of the wastes. That study was required to include an analysis of (1) the source and volumes of such material generated per year; (2) present disposal and utilization practices; (3) potential danger, if any, to human health and the environment from the disposal and reuse of such materials; (4) documented cases in which danger to human health or the environment from surface runoff or leachate has been proved; (5) alternatives to current disposal methods; (6) the costs of such alternatives; (7) the impact of those alternatives on the use of coal and other natural resources; and (8) the current and potential utilization of such materials.</p> <p>Unless or until EPA determined that CCRs warranted regulation under Subtitle C, the material would be subject to regulation under other applicable provisions of federal or state law. If EPA did determine CCRs warranted regulation under Subtitle C, EPA was authorized to tailor certain standards applicable to hazardous waste TSDFs to take into account the special characteristics of the waste.</p>
<b>EPA Action In Response to Bevill Amendment Directives</b>		
Oct. 31, 1982	Deadline	EPA missed its statutory deadline to submit its fossil fuel combustion waste report to Congress.
Feb. 1988	Report to Congress (RTC)	<p>In its “Report to Congress on Wastes from Combustion of Coal by Electric Utility Power Plants,” EPA found that the four large volume waste streams studied (fly ash, bottom ash, boiler slag, and flue gas emission control waste) were not a major concern. Trace constituents in the wastes, including arsenic, barium, cadmium, chromium, lead, mercury, and selenium, may present risks to human health and the environment. However, the data also indicated that these wastes generally do not exhibit RCRA hazardous waste characteristics. Further, the RTC concluded that current waste management practices appear to be adequate. The RTC also indicated that as of 1988, coal-fired electric utilities spent about \$800 million per year for CCR disposal, and that costs would increase to \$3.7 billion per year if CCRs were regulated as hazardous waste under RCRA’s Subtitle C.</p> <p>This report addressed wastes generated from the combustion of coal by electric utility power plants, but did not address co-managed wastes (independent power producing facilities that are co-managed with certain other CCRs), other fossil fuel combustion wastes, and wastes from non-utility boilers. Those “remaining wastes” were addressed in a subsequent RTC in 1999.</p>
Aug. 31, 1988	Deadline	EPA missed its statutory deadline for making a regulatory determination regarding wastes studied in its February 1988 RTC.
Aug. 9, 1993	Regulatory Determination (58 FR 42466)	EPA concluded that the four waste streams studied in the 1988 RTC did not warrant regulation as hazardous waste under Subtitle C of RCRA. EPA determined that it required more time to research the “remaining wastes” to make an appropriate determination.

Date	Action/ Document	Summary/Description
March 31, 1999	Report to Congress	In its "Report to Congress on Wastes from the Combustion of Fossil Fuels," EPA addresses "remaining wastes" identified in the 1988 RTC and 1993 regulatory determination.
March 5, 2000	Draft Regulatory Determination	<p>In its draft "Regulatory Determination on Wastes from Fossil Fuel Combustion," submitted to the White House Office of Management and Budget for review, EPA determined that large-volume CCRs generated at electric utility and independent power producing facilities, and non-utilities warranted regulation under Subtitle C when land disposed (e.g., managed in landfills or surface impoundments). Further, EPA stated its intent to develop national standards that would include a contingent hazardous waste listing for CCRs. That is, when the waste was managed in accordance with EPA's national standards, they would not become a listed hazardous waste, but when improperly managed (e.g., disposed of in an unlined surface impoundment) they would become a listed hazardous waste subject to Subtitle C standards, tailored to requirements in Section 3004(x) of RCRA.</p> <p>EPA recognized that its decision was a departure from its 1993 and 1999 statement that regulation under Subtitle C was not warranted. According to EPA, the change reflected public comments and additional data and analysis that convinced them that the waste poses a threat to human health when not managed under certain conditions. Additional data included documented damage cases that showed the potential threat to human health and the environment when the waste was managed without basic environmental controls (e.g., disposal in units with no liner or groundwater monitoring). Additionally, based on a comparison of leach tests data from CCR samples, EPA identified a "potential for significant risks from arsenic that we cannot dismiss at this time," including risk to human health associated with agricultural uses of coal ash a substitute for lime.</p>
May 22, 2000	Regulatory Determination (65 FR 32230)	<p>After review by OMB, EPA revised its March 2000 regulatory determination and issued a final determination that would leave the Bevill exclusion in place. However, EPA stated that it was convinced that national regulations under Subtitle D were warranted for CCR disposal in landfills and surface impoundments because (1) the composition of the waste had the potential to present danger to human health and the environment in certain circumstances; (2) EPA had identified proven cases of damages to human health and the environment through improper waste management; (3) while industry management practices had improved measurably, there was sufficient evidence the wastes were being managed in a significant number of landfills and surface impoundments without proper controls in place, particularly in the area of groundwater monitoring; and (4) while there had been substantive improvements in state regulatory programs, EPA identified significant gaps either in states' regulatory authorities or in their exercise of existing authorities.</p> <p>To consistently regulate such waste across all waste management scenarios, EPA stated its intent to promulgate national requirements. Citing its concern regarding the potential mismanagement and inconsistent state regulation of CCRs, EPA stated that it would revise its determination if it found that a need for regulation under Subtitle C was warranted.</p> <p>This determination applied to large-volume CCRs generated at electric utility and independent power producing facilities, and non-utilities. EPA concluded that no additional regulations were warranted for CCRs used beneficially. EPA stated that it did not wish to place any unnecessary barriers on the beneficial use of fossil fuel combustion wastes so that they can be used in applications that conserve natural resources and reduce disposal costs.</p>

Date	Action/ Document	Summary/Description
May 2001 - May 2004	Public Meetings	EPA held several meetings with stakeholders regarding the use and disposal of coal combustion byproducts. In the public notice for its March 2004 meetings, EPA stated that the “Agency remains concerned about coal combustion byproducts because of the potential for environmental damage; the lack of ground-water protection via monitoring and/or liners; and widely varying state regulatory programs.”
Dec. 2002	Reports	EPA issued two draft reports “Regulation and Policy Concerning Mine Placement of Coal Combustion Waste in Selected States” and “Mine Placement of CCR: State Program Elements Analysis” (final versions do not appear to have been released). The reports review and summarize current state regulations and policies concerning the placement of CCRs in surface and underground mines.
March 1, 2006	Report	The National Academy of Sciences’ National Research Council (NRC) issued a report, <i>Managing Coal Combustion Residues in Mines</i> . Among other recommendations, NAS recommends that the Department of the Interior’s Office of Surface Mining (OSM) take the lead in CCR disposal standards under the Surface Mining Control and Reclamation Act of 1977 (SMCRA, the primary federal law that regulates the environmental effects of coal mining). EPA is working with OSM as they amend the SMCRA regulations to better address minefilling in active coal mines as well as federally funded abandoned mines.
August 2006	Report	EPA and the U.S. Department of Energy issued a joint report <i>Coal Combustion Waste Management at Landfills and Surface Impoundments, 1994-2004</i> . The report evaluated CCR disposal practices and state regulatory requirements at landfills and surface impoundments that were permitted, built, or laterally expanded between January 1, 1994, and December 31, 2004. In part, the report concluded that, since the 1988 RTC, a majority of the states reviewed for the study tightened regulation of landfill liners, leachate-collection systems, and groundwater monitoring for new disposal units.
July 9, 2007	Report	EPA’s Office of Solid Waste issued “Coal Combustion Waste Damage Case Assessment.” In that report, EPA determined that there have been 24 cases of proven damage and 43 cases of potential damage associated with CCR landfills and surface impoundments. (Cases of alleged damage were submitted for review to EPA by environmental organizations. EPA also collected information from its own experience and from state agencies.) In each case there has been either proven damage to surface water or to groundwater. In some cases, elevated levels of PCBs, chromium, arsenic, cadmium, nickel, beryllium, selenium, iron, and other metals were found. Potential impacts to human health and the environment that were observed included contaminated well water and fish-kills.
Aug 6, 2007	Draft Risk Assessment	EPA’s Office of Solid Waste issued “Human and Ecological Risk Assessment of Coal Combustion Wastes.” The draft risk assessment conducted by EPA sought to quantify human health and ecological risks associated with current disposal practices for high-volume CCR in landfills and surface impoundments. In part, the risk assessment stated that risks from clay-lined liners are lower than unlined units, but that risks were still well above risk criteria for arsenic and thallium for landfills and arsenic, boron, and molybdenum for surface impoundments. Composite liners effectively reduce the risks from all constituents below the risk criteria for both landfills and surface impoundments. Further, although it is likely that new landfills will have some type of liner, it is not known how many unlined units continue to operate in the United States.

Date	Action/ Document	Summary/Description
Aug. 29, 2007	Notice of Data Availability (NODA)	<p>EPA issued a NODA on “Disposal of Coal Combustion Wastes in Landfills and Surface Impoundments.” Documents made available were the August 2006 joint EPA/DOE report on CCW Management at Landfills and Surface Impoundments; EPA’s Aug. 2007 risk assessment; and EPA’s July 2007 damage case assessments. EPA made these documents available and sought public comments on how, if at all, the information should affect EPA’s decisions as it continued to follow up on its Regulatory Determination for CCRs disposed of in landfills and surface impoundments.</p> <p>In this NODA, EPA stated that it would “consider all the information provided through the NODA, the comments and new information submitted on the NODA, as well as the results of a subsequent peer review of the risk assessment, as it continued to follow up on its Regulatory Determination for CCR disposed of in landfills and surface impoundments.”</p>
Feb. 12, 2008	Report	EPA Office of Solid Waste and Emergency Response, Economics, Methods, and Risk Analysis Division issued “Waste and Materials-Flow Benchmark Sector Report: Beneficial Use of Secondary Materials-Coal Combustion Products.” Among other information, the report provides an overview of key beneficial uses of CCRs and an analysis of its benefits and potential impacts.
March 9, 2009	Information request	EPA sent letters to electric utilities and corporations that have surface impoundments or similar units that contain CCRs. The letters requested information to assist EPA in evaluating the structural integrity of the units.
Oct. 16, 2009	Draft Proposed Rule	EPA submitted its “Regulatory Determination on Wastes from Fossil Fuel Combustion” to OMB for review. In the draft, EPA proposes to revise its regulatory determination and list CCRs as hazardous waste under Subtitle C.
June 21, 2010	Proposed Rule	EPA releases for public comment, “Hazardous and Solid Waste Management System; Identification and Listing of Special Wastes; Disposal of Coal Combustion Residuals From Electric Utilities.” In this proposal, EPA stated that the decision to revise the May 2000 regulatory determination had not yet been made, and proposed an additional regulatory option for consideration. That second regulatory option would continue to exclude CCRs from regulation as hazardous waste under Subtitle C, and establish national criteria applicable to landfills and surface impoundments under RCRA’s Subtitle D nonhazardous solid waste requirements. The primary reason EPA cited for including the option to regulate CCRs under Subtitle D’s solid waste requirements was industry’s argument that the “hazardous waste” label would stigmatize beneficial uses of the material and ultimately increase the amount that must be disposed.

**Source:** CRS based on a review of the legislative history and EPA response to Bevill directives.

In March 2000, EPA submitted its “Regulatory Determination on Wastes from Fossil Fuel Combustion” to the White House Office of Management and Budget, for review. In this March draft, EPA determined that CCRs warranted regulation under Subtitle C when land disposed (e.g., managed in landfills or surface impoundments). Further, EPA stated that it was considering developing national management standards that would include a contingent hazardous waste listing of CCRs under Subtitle C. That is, when the waste was managed in accordance with EPA standards, they would not be classified as hazardous waste. When improperly managed (e.g., disposed of in an unlined surface impoundment) the wastes would become a listed hazardous waste subject to tailored Subtitle C standards.

EPA recognized that its March 2000 proposal was a departure from previous opinions regarding the management of CCRs. EPA’s determination that CCRs warranted regulation as hazardous waste was based, in part, on data from damage cases that showed the potential threat to human

health and the environment when the waste was managed in a way that lacked basic environmental control (e.g., disposal in units with no liner or groundwater monitoring). Additionally, EPA cited new data that identified significant risks for the waste to leach arsenic, including risk to human health associated with agricultural uses of coal ash a substitute for lime.

In May 2000, after review by OMB, EPA issued a revised regulatory determination that stated its intent to leave the Bevill exclusion in place. However, EPA stated that it was convinced that national regulations under Subtitle D were warranted for CCR disposal in landfills and surface impoundments because

1. the composition of the waste had the potential to present danger to human health and the environment in certain circumstances;
2. EPA had identified proven cases of damages to human health and the environment through improper waste management;
3. while industry management practices had improved measurably, there was sufficient evidence the wastes were being managed in a significant number of landfills and surface impoundments without proper controls in place, particularly in the area of groundwater monitoring; and
4. while there had been substantive improvements in state regulatory programs, EPA identified significant gaps either in states' regulatory authorities or in their exercise of existing authorities.<sup>136</sup>

Further, citing its concern regarding the potential mismanagement and inconsistent state regulation of CCRs, EPA stated that it would revise its determination if it found that a need for regulation under Subtitle C was warranted. EPA's June 2010 proposal reflects the agency's revised determination.

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<sup>136</sup> 65 *Federal Register* 32230, May 22, 2000.

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