Wednesday,
March 14, 2007

Part IV

Department of the Interior

Office of Surface Mining Reclamation and Enforcement

30 CFR Chapter VII
Placement of Coal Combustion Byproducts in Active and Abandoned Coal Mines; Proposed Rule
I. What are CCBs?

The legal definition of coal combustion byproducts (CCBs) at 42 U.S.C. 13364(a) provides that “the term ‘coal combustion byproducts’ means the residues from the combustion of coal including ash, slag, and flue gas desulfurization materials.” CCBs are produced when coal is burned. Electrical generating facilities are the primary producers. CCBs from power plants consist of four large-volume waste streams—fly ash, bottom ash (including fluidized-bed combustion residues, when applicable), boiler slag, and flue gas emission control residue.

The University of North Dakota Coal Ash Research Center defines the following five categories of CCBs on its Web site (http://www.undeerc.org/carrc/html/Terminology.html):

1. **Boiler slag**—“[M]olten ash collected at the base of slag tap and cyclone boilers that is quenched with water and shatters into black, angular particles having a smooth glassy appearance.”

2. **Bottom ash**—“[A]gglomerated ash particles formed in pulverized coal boilers that are too large to be carried in the flue gases and impinge on the boiler walls or fall through open grates to an ash hopper at the bottom of the boiler. Bottom ash is typically gray to black in color, is quite angular, and has a porous surface structure.”

3. **Fluidized-bed combustion materials**—“[U]nburned coal, ash, and spent bed material used for sulfur control. The spent bed material (removed as bottom ash) contains reaction products from the absorption of gaseous sulfur oxides (SO2 and SO3).”

4. **Flue gas desulfurization materials**—“Waste ‘derived from a variety of processes used to control sulfur emissions from boiler stacks. These systems include wet scrubbers, spray dry scrubbers, sorbent injectors, and a combined sulfur oxide (SOX) and nitrogen oxide (NOX) process.”

Sorbents include lime, limestone, sodium-based compounds, and high-calcium coal fly ash.”

(5) **Fly ash**—“[C]oal ash that exits a combustion chamber in the flue gas and is captured by air pollution control equipment such as electrostatic precipitators, baghouses, and wet scrubbers.”

CCBs are also known as “coal combustion residues” (CCR’s), which is the term preferred by the National Research Council, and “coal combustion wastes” (CCWs).

II. Why are we publishing this notice?

In 2003, Congress directed the Environmental Protection Agency (EPA) to commission an independent study of the health, safety, and environmental risks associated with the placement of CCWs in active and abandoned coal mines in all major U.S. coal basins. As a result, the National Research Council (NRC) established the Committee on Mine Placement of Coal Combustion Wastes in September 2004. The NRC published the committee’s findings on March 1, 2006, in a report entitled “Managing Coal Combustion Residues in Mines,” which is available online at http://newton.nap.edu/openbook/0309100496/html/index.html.

Page one of the report states that the committee “concluded that putting CCRs in coal mines as part of the reclamation process is a viable management option as long as (1) CCR placement is properly planned and is carried out in a manner that avoids significant adverse environmental and health impacts and (2) the regulatory process for issuing permits includes clear provisions for public involvement.” In the same paragraph, the committee notes that the placement of CCRs in coal mines “can assist in meeting reclamation goals (such as remediation of abandoned mine lands)” and “avoids the need, relative to landfills and impoundments, to disrupt undisturbed sites.” However, the committee cautions that “an integrated process of CCR characterization, site characterization, management and engineering design of placement activities, and design and implementation of monitoring is required to reduce the risk of contamination moving from the mine site to the ambient environment.” See p. 12 of the report. In addition, page four of the report states that “comparatively little is known about the potential for minefilling to degrade the quality of groundwater and/or surface waters particularly over longer time periods.”

The committee recommended the establishment of “enforceable federal standards” to govern the placement of
CCRs in mines. See p. 11 of the report. The following excerpt from pages 11–12 of the report (emphasis in the original) explains both the committee’s reasoning for its recommendation and its suggestions for implementation of that recommendation:

After reviewing the laws and other relevant literature, the committee concludes that although SMCRA does not specifically regulate CCR placement at mine sites, its scope is broad enough to encompass such regulation of reclamation activities. Furthermore, while SMCRA and its implementing regulations indirectly establish performance standards that could be used to regulate the manner in which CCRs may be placed in coal mines, neither the statute nor those rules explicitly address regulation of the use or placement of CCRs, and some states have expressed concern that they do not have the authority to impose performance standards specific to CCRs. Therefore, the committee recommends that enforceable federal standards be established for the disposal of CCRs in minefills. Enforceable federal standards will ensure that states have adequate, explicit authority and that they implement adequate minimum safeguards. As with current federal regulations, these rules should provide sufficient flexibility to allow states to adapt permit requirements to site-specific conditions, while providing the needed focus on the protection of ecological and human health.

There are three primary regulatory mechanisms that could be used to develop enforceable standards:
- Changes to SMCRA regulations to address CCRs specifically;
- Joint Office of Surface Mining (OSM) and EPA rules pursuant to the authority of SMCRA and RCRA (the Resource Conservation and Recovery Act, 42 U.S.C. 6901 et seq.); or
- RCRA—D rules that are enforceable through a SMCRA permit.” [RCRA—D” refers to Subtitle D of RCRA at 42 U.S.C. 6941–6949a.]

Regardless of the regulatory mechanism selected, coordination between OSM and EPA efforts is needed and would foster regulatory consistency with EPA’s intended rule-making proposal for CCR disposal in landfills and impoundments.

In all cases, guidance documents will also be necessary to help states implement their responsibility for managing CCR[s]. However, guidance alone is not adequate to achieve the needed improvements in state programs for CCR minefills. Only through enforceable standards can acceptable minimum levels of environmental protection from CCR placement in coal mines be guaranteed nationally.

The committee also made other recommendations that relate to and expand upon the recommendation for enforceable federal standards. Among other things, it suggested that:
- CCRs [should] be characterized prior to significant mine placement and with each new source of CCRs. The CCR characterization should continue periodically throughout the mine placement process to assess any changes in CCR composition and behavior.” See p. 6 of the report.
- “[C]omprehensive site characterization specific to CCR placement [should] be conducted at all mine sites prior to substantial placement of CCRs.” See p. 7 of the report.
- Management plans for CCR disposal in mines should be site-specific, with site-specific performance standards. Id.
- “CCR placement in mines [should] be designed to minimize reactions with water and the flow of water through CCRs.” See p. 8 of the report.
- “[T]he number and location of monitoring wells, the frequency and duration of sampling, and the water quality parameters selected for analysis [should] be carefully determined for each site, in order to accurately assess the present and potential movement of CCR-associated contaminants.” See p. 9 of the report.
- “[T]he disposal of CCRs in coal mines [should] be subject to reasonable site-specific performance standards that are tailored to address potential environmental problems associated with CCR disposal.” Id.
- The “placement of CCRs in abandoned and remining sites [should] be subject to the same CCR characterization, site characterization, and management planning standards recommended for active coal mines.” See pp. 9–10 of the report.
- “[A]ny proposal to dispose of substantial quantities of CCRs in coal mines [should] be treated as a ‘significant alteration of the reclamation plan’ under SMCRA” to ensure that the public is afforded adequate notice of, and an opportunity to comment on, the CCR placement proposal. See p. 11 of the report.

We are publishing this advance notice of proposed rulemaking in response to the NRC recommendations summarized above. We invite comment on how these recommendations should be implemented, i.e., how we should revise the regulations implementing Titles IV and V of SMCRA to regulate the placement of CCBs on active and abandoned coal minesites and what type of guidance documents we should issue, if any. We also seek comment on our tentative preferred approach regarding the proposed regulations, as discussed in Part VII of this notice, or whether other approaches would be more appropriate. In developing your comments, we urge you to review the entire NRC report, the background provided in this notice, and the information available on the EPA Web site at http://www.epa.gov/epaoswer/other/fossil/index.htm and our Web site at http://www.mrcc.osmre.gov/ccb/.

III. Background on SMCRA

In fashioning SMCRA, Congress created two major programs:
- An abandoned mine land reclamation program, primarily in Title IV of the Act, funded by fees that operators pay on each ton of coal mined, to reclaim land and water resources adversely affected by coal mines abandoned before August 3, 1977, and left in an inadequately reclaimed condition.
- A regulatory program, primarily in Title V of the Act, to ensure that surface coal mining operations initiated or in existence after the effective date of the Act (August 3, 1977) are conducted and reclaimed in an environmentally sound manner.

Section 501 of SMCRA, 30 U.S.C. 1251, created a limited initial regulatory program directly administered and enforced by OSM. However, Congress intended that this initial regulatory program be only a temporary measure until States adopted permanent regulatory programs consistent with the Act. Section 101(f) of SMCRA, 30 U.S.C. 1201(f), specifies that because of the diversity in terrain, climate, biology, geochimistry, and other physical conditions under which mining operations occur, the primary governmental responsibility for regulating surface mining and reclamation operations should rest with the States. To achieve primary regulatory responsibility, often referred to as primacy, a State must develop and obtain Secretarial approval of a program under section 503 of the Act, 30 U.S.C. 1253, that meets the requirements of the Act and that is no less effective than the Federal regulations in achieving the requirements of the Act. Among other things, each regulatory program must include permitting requirements and performance standards for surface coal mining and reclamation operations. To date, 24 of the 26 coal-producing states have achieved primacy.

Following approval of a State regulatory program, we assume a monitoring role. Section 517(a) of SMCRA, 30 U.S.C. 1267(a), requires that we make such inspections as are necessary to evaluate the administration of approved State programs. The primary purpose of both the State program review and approval process and the oversight of State programs is to ensure that all States maintain environmental protection requirements and inspection and
enforcement efforts consistent with the Act.

States with primacy are eligible to apply for the authority to administer AML reclamation programs within their borders. Once the Secretary approves their AML reclamation plans under section 405 of SMCRA, 30 U.S.C. 1235, those States are also eligible to receive grants for AML reclamation programs and projects. SMCRA does not establish requirements for AML reclamation projects analogous to the permitting requirements and performance standards that apply to surface coal mining operations. However, in consultation with the States, we have developed a guidance document entitled “Final Guidelines for Reclamation Programs and Projects,” which contains provisions and recommendations relating to protection of public health, safety, and the environment as part of project planning, design, and construction. See 66 FR 31250–31258, June 11, 2001. Our regulations at 30 CFR 874.13(a) encourage the use of the guidelines, but, as stated at 66 FR 31251, the guidelines do not establish new legal requirements or obligations.

IV. Which provisions of SMCRA authorize the adoption of regulations governing the use and disposal of CCBs?

SMCRA does not directly address the placement of CCBs in active or abandoned coal mines. (In the context of this notice, an “active” mine is a surface coal mining and reclamation operation with a SMCRA permit.) Sections 515(b)(11) and 516(b)(4) of SMCRA contain requirements applicable to “surface disposal of mine wastes, tailings, coal processing wastes, and other wastes” on permitted mine sites, but only when those wastes are placed in “areas other than the mine workings or excavations.” 30 U.S.C. 1265(b)(11) and 1266(b)(4) (emphasis added). Consequently, those provisions would not apply to most CCB placements in active mines, because CCBs are most frequently placed in mine workings or excavations. However, as discussed below, we believe that other provisions of SMCRA provide adequate authority for the adoption of regulations governing the placement of CCBs with respect to both permitted mines and abandoned mine reclamation projects conducted under an AML reclamation plan approved under section 405 of SMCRA.

A. Provisions Applicable to Both Active Mines and AML Reclamation Projects

Section 102 of SMCRA, 30 U.S.C. 1202, sets forth the purposes of the Act. Those purposes relevant to this notice are summarized below:

• Paragraph (a) states that one purpose is to “establish a nationwide program to protect society and the environment from the adverse effects of surface coal mining operations.”

• Paragraph (b) states that another purpose is to “assure that the rights of surface landowners and other persons with a legal interest in the land and appurtenances thereto are fully protected from surface coal mining operations.”

• Paragraph (d) states that another purpose is to “assure that adequate procedures are undertaken to reclaim surface areas as contemporarily as possible with the surface coal mining operations.”

• Paragraph (h) states that another purpose is to “promote the reclamation of mined areas left without adequate reclamation prior to the enactment of [SMCRA] and which continue, * * * to substantially degrade the quality of the environment, prevent or damage the beneficial use of land or water resources, or endanger the health or safety of the public.”

Section 201(c)(2) of the Act authorizes the Secretary, acting through OSM, to “publish and promulgate such rules and regulations as may be necessary to carry out the purposes and provisions of the Act.” 30 U.S.C. 1211(c)(2). Therefore, should we find it necessary to achieve one of the purposes in section 102 of the Act listed above, section 201(c)(2) provides a basis for the adoption of rules governing the placement of CCBs both as part of surface coal mining and reclamation operations for which a permit is required under Title V of SMCRA and on abandoned mine lands where the placement occurs in connection with a project conducted under an abandoned mine reclamation program approved under section 405 of SMCRA.

B. Provisions Applicable Only to Active Mines (Title V)

Section 501(b) of SMCRA requires the Secretary to publish regulations “covering a permanent regulatory procedure for surface coal mining and reclamation operations performance standards based on and conforming to the provisions of title V * * *.” 30 U.S.C. 1251(b). This provision, taken together with, at a minimum, sections 507(b)(11), 508(a)(13), 510(b)(3), 515(b)(10) and (14), and 516(b)(9) and (10) of SMCRA, 30 U.S.C. 1257(b)(11), 1258(a)(13), 1260(b)(3), 1265(b)(10) and (14), and 1266(b)(9) and (10), provides express authority to impose performance standards to protect the hydrologic balance and to require sufficient permit application information to conclude that the proposed surface coal mining and reclamation operations will be conducted in a manner that protects the hydrologic balance. Therefore, we believe we have the authority under SMCRA to adopt regulations containing specific requirements to monitor and control the placement of CCBs in mines with SMCRA permits to protect against adverse impacts to surface waters and ground water.

C. Provisions Applicable Only to AML Reclamation Projects (Title IV)

With respect to the reclamation of AML sites, section 405(a) of SMCRA requires the Secretary to publish “regulations covering implementation of an abandoned mine reclamation program * * * and establishing procedures and requirements for * * * annual submissions of projects.” 30 U.S.C. 1235(a). Also, section 413(a) authorizes the Secretary “to do all things necessary or expedient, including promulgation of rules and regulations, to implement and administer the provisions of this title.” 30 U.S.C. 1242(a).

Sections 403(a) and 411(c) of SMCRA, 30 U.S.C. 1233(a) and 1240a(c), do not provide any rulemaking authority, but they do establish priorities for project funding, with an emphasis first on protection of public health and safety from the adverse effects of past mining practices, followed by restoration of land and water resources and the environment previously degraded by the adverse effects of mining practices. By logical extension, AML reclamation projects involving the placement of CCBs should be designed and constructed in a manner that would not create new threats to public health or safety or the environment. However, our authority to establish requirements for AML reclamation project designs is somewhat limited by section 405(l), which provides that “States shall not be required at the start of any project to submit complete copies of plans and specifications.” 30 U.S.C. 1235(l). We seek comment on whether this provision would prohibit the adoption of any regulations analogous to the permit application requirements of the
regulatory program or whether there is sufficient latitude to require that project submittals include site-specific plans and requirements concerning the placement of CCBs, consistent with the recommendations of the NRC report.

V. How is the use of CCBs currently regulated at mines with SMCRa permits?

Generally, CCB disposal operations are regulated under State solid waste management programs under Subtitle D of RCRA. Under Subtitle D of RCRA, state solid waste management programs include those that have been approved by the Administrator of EPA, those that have been approved by OSM, and those that have been approved under other authorities available to the Regulatory Authority.

On August 9, 1993, EPA published a final regulatory determination for coal combustion wastes that concluded that the State industrial solid waste management programs implemented under Subtitle D of RCRA contained adequate regulatory controls for managing the disposal of those CCBs. For that reason, EPA determined that regulation of CCBs under the hazardous waste provisions of RCRA was not warranted. See 58 FR 42466, August 9, 1993 for further discussion regarding EPA’s basis for reaching this conclusion. However, this determination applied only to large-volume coal combustion wastes generated at electric utility and independent power-producing facilities that manage the wastes separately from other low-volume and uniquely associated coal combustion wastes. Id.

On May 22, 2000, EPA published another regulatory determination that addressed those CCBs that were not included in the 1993 regulatory determination. This determination similarly concluded that regulation of those types of CCBs as hazardous waste under Subtitle C of RCRA was not warranted. See 65 FR 32214. However, EPA also concluded that establishment of national regulations to govern the use of CCBs to fill surface and underground mines was appropriate. EPA reached this decision because it found that CCBs used as minefill could present a danger to human health or the environment under certain circumstances and because there were few states that currently operate comprehensive programs that specifically address the unique circumstances of minefilling with CCBs. See 65 FR 32231. EPA noted that a comprehensive national program could be developed by adopting regulations under Subtitle D of RCRA, by modifying SMCRa regulations, or by a combination of both. See 65 FR 32215, 32232. Currently, EPA and OSM are coordinating with each other and with other interested parties in the implementation of this determination. You can find more information regarding the history of CCB regulation under RCRA, including links to referenced documents, on EPA’s Web site at http://www.epa.gov/epaqanswer/other/fossil/index.htm.

There is no express mention of CCBs in SMCRa and only two of our regulations directly reference CCBs: 30 CFR 816.41(i)(2)(iii) and (v) and 30 CFR 817.41(h)(2)(iii) and (v), which specify that fly ash from a coal-fired facility and flue-gas desulfurization sludge may be discharged into an underground coal mine if certain demonstrations are made. The paucity of references to CCBs does not mean that SMCRa regulatory programs do not apply to placement of CCBs on permitted minesites. In fact, the opposite is true, as litigation has established that any material placed in mine pits or otherwise used to reclaim a permitted minesite must comply with SMCRa permitting requirements and performance standards, regardless of whether the material originates within the permit area or whether it is imported from outside the permit area, and that we have the authority to establish monitoring and analysis requirements for those materials. See Pacific Coal Co. v. OSM, Civ. No. 03–0260Z, (W.D. Wash. Feb. 2, 2004). As with all material being placed in the backfill, CCBs must be characterized to assure compliance with the performance standards.

In luncheon remarks published in the proceedings of the interactive forum on Coal Combustion By-Products Associated with Coal Mining (October 29–31, 1996), Katherine L. Henry, then the Acting Director of OSM, summarized the SMCRa requirements that apply to CCB disposal in a mine with an SMCRa permit:

When the use or disposal of coal combustion by-products happens at surface coal mines, state coal mining regulators are involved to the extent that SMCRa requires:

- The mine operator to ensure that all toxic materials are treated, buried, and compacted, or otherwise disposed of, in a manner designed to prevent contamination of the ground or surface water.
- Making sure the proposed land use does not present any actual or probable threat of water pollution.
- And ensuring the permit application contains a detailed description of the measures to be taken during mining and reclamation to assure the protection of the quality and quantity of surface and ground water systems, both on- and off-site, from adverse effects of the mining and reclamation process and also to assure the rights of present users of such water are protected.

For example, alkaline CCBs with cement-like properties can be used to encapsulate acid-forming or other toxic-forming materials to isolate those...
materials from contact with water and thus reduce or eliminate the formation of acidic or toxic mine drainage. When used as an alkaline addition to mine spoil, CCBs can improve soil quality and productivity as a medium for vegetation. In addition, CCBs can serve as base material for the construction of haul and access roads to support the heavy trucks and machinery used in mining. In thin overburden situations, the use of CCBs to backfill the pit can assist in restoring mined lands to elevations and grades similar to those that existed before mining, i.e., the approximate original contour.

Abandoned mine lands with exposed acidic spoils that result in acid mine drainage (AMD), contaminated streams, and barren or unproductive land also can benefit from the addition of CCBs. Alkaline CCBs can neutralize acidic and toxic-forming materials, thereby reducing AMD formation and improving the ability of the land to support a wider array of vegetation and land uses.

Even when there is no site-specific beneficial aspect to CCB placement in mines, the use of mines as CCB disposal sites benefits the environment by preventing the surface disruption that would otherwise result from disposal of CCBs in landfills and surface impoundments, which normally are constructed on previously undisturbed sites or sites with productive land uses.

VII. How do we plan to revise our regulations to implement the NRC recommendations?

After discussions with EPA and state regulatory authorities under SMCRA, we have tentatively decided to propose to revise our regulations so that they will expressly provide for the placement of CCBs as part of surface coal mining and reclamation operations permitted under Title V of SMCRA and in the reclamation of abandoned mine lands under an AML reclamation plan and program approved under section 405 of SMCRA. Those requirements would apply to any reclamation project funded under the grants awarded pursuant to section 405(h) and to AML reclamation projects conducted under the provisions of 30 CFR 874.17. The requirements would not apply to other types of AML reclamation projects, as those projects would be outside the scope of SMCRA. However, we believe that any requirements that we develop could serve as a template for states to impose comparable requirements for the use and disposal of CCBs on other abandoned mine lands under other provisions of law.

In addition, we are evaluating the impacts of the Surface Mining Control and Reclamation Act Amendments of 2006, Pub. L. No. 109–432, Division C, Title II, Subtitle A, on OSM’s authority to regulate CCB placement on reclamation projects approved or funded under Title IV.

We invite comment on the approach described above.

Comments received in response to this notice will help us scope and frame the proposed rule. We encourage commenters to be as detailed as possible and to explain how any suggested regulatory changes relate to the NRC recommendations and the rulemaking authority that we have under SMCRA.

Consistent with the requirements of the Administrative Procedure Act, we will publish in the Federal Register any proposed regulations that we may subsequently draft and provide the public with a 60-day period to review and comment on those proposed regulations.

As recommended in the NRC report, we are coordinating our rulemaking actions with EPA.

VIII. Will comments on this notice be available for review?

Yes. We will log all comments that are received prior to the close of the comment period into the administrative record; however, we cannot ensure that comments received after the close of the comment period (see DATES) or at locations other than those listed above (see ADDRESSES) will be included in the administrative record and considered.

Before including your address, phone number, e-mail address, or other personal identifying information in your comment, you should be aware that your entire comment—including your personal identifying information—may be made publicly available at any time. While we can ask you in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

Dated: March 5, 2007.

C. Stephen Allred, Assistant Secretary, Land and Minerals Management.

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