H.R. _____, THE COAL ASH RECYCLING AND OVERSIGHT ACT OF 2013

HEARING

BEFORE THE

SUBCOMMITTEE ON ENVIRONMENT AND THE ECONOMY

OF THE

COMMITTEE ON ENERGY AND COMMERCE

HOUSE OF REPRESENTATIVES

ONE HUNDRED THIRTEENTH CONGRESS

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WITNESSES

SUBMITTED MATERIAL

H.R. ————, THE COAL ASH RECYCLING AND OVERSIGHT ACT OF 2013

THURSDAY, APRIL 11, 2013

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON ENVIRONMENT AND THE ECONOMY,
COMMITTEE ON ENERGY AND COMMERCE
Washington, DC.

The subcommittee met, pursuant to call, at 10:34 a.m., in room 2123 of the Rayburn House Office Building, Hon. John Shimkus (chairman of the subcommittee) presiding.

Members present: Representatives Shimkus, Gingrey, Hall, Murphy, Latta, Harper, Cassidy, McKinley, Bilirakis, Johnson, Barton, Upton (ex officio), Tonko, Green, Capps, McNerney, Dingell, Barrow, and Waxman (ex officio).

Staff present: Nick Abraham, Legislative Clerk; Charlotte Baker, Press Secretary; Matt Bravo, Professional Staff Member; Karen Christian, Chief Counsel, Oversight; Jerry Couri, Senior Environmental Policy Advisor; David McCarthy, Chief Counsel, Environment and the Economy; Brandon Mooney, Professional Staff Member; Andrew Powaleny, Deputy Press Secretary; Tina Richards, Counsel, Environment and the Economy; Chris Sarley, Policy Coordinator, Environment and the Economy; Jacqueline Cohen, Democratic Senior Counsel; Greg Dotson, Democratic Staff Director, Environment and the Economy; Caitlin Haberman, Democratic Policy Analyst; and Elizabeth Letter, Democratic Assistant Press Secretary.

OPENING STATEMENT OF HON. JOHN SHIMKUS, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF ILLINOIS

Mr. SHIMKUS. I would like to call the hearing to order, and ask folks to maybe get the anteroom doors, so that we can start. We want to welcome you here to this legislative hearing, and I would like to recognize myself for a 5-minute opening statement.

In our first hearing this Congress, we heard about the great work states are doing when it comes to environmental regulation and how well equipped and qualified they are to take on that mission. Today we will focus directly on coal ash and legislation designed to give states the framework to build off their successes in the past handling waste streams under the Resource Conservation Recovery Act, commonly known as RCRA.

Most people think of federal law when it comes to environmental protection and we have passed many important environmental laws over the years. However, states also pass environmental laws. States have the same concerns about protecting the environment

and contrary to some of the things you might hear today, states establish and carry out a standard of protection through their environmental permitting programs. In fact, in our last hearing we kind of highlighted that most of the inspections are done through the state agencies, and my example, the state IEPA, Illinois Environmental Protection Agency, do a lot of the legwork, and it is obviously a partnership that is very important. That is actually what my notes say, too. Regulators are directed to establish programs to restore, protect and enhance the quality of the environment, and to assure that adverse effects upon the environment are fully considered and borne by those who cause them, and that is in my home State of Illinois.

While it may not use the same words Congress has used to direct EPA, the effect is exactly the same. The legislation we consider today sets out a new approach. It does not follow the same path as we have traveled with the RCRA before, which is for Congress to set a subjective standard that EPA must interpret and implement through regulations and enforcement. Instead, we are setting the standard in statute and charging the states with implementation. Just because it is different does not mean ineffective or not protective of human health and the environment.

We heard the comments and concerns about the bill we passed in the last Congress and we worked both across the aisle and across the Capitol to develop the text of this discussion draft. The legislation makes several key improvements. In particular, it establishes additional requirements for surface impoundments that aren't meeting a groundwater protection standard and requires impoundments that can't meet the standards within a certain time period to close.

The discussion draft requires groundwater monitoring for all disposal units that are receiving coal ash and tightens the dust requirements. The bill also improves on the dam stability standards by requiring an annual inspection of the design, construction, and maintenance of the structures by an independent professional engineer.

The long and short of it is Congress is perfectly capable of establishing a standard of protection for coal ash. The states are perfectly capable, and in the best position, to implement robust permit programs for coal ash.

I have brought with me, as I have in different hearings, actually coal ash as we have talked before, beneficial reuse, which is in concrete, which is in kind of a brick-like material. Obviously, we have drywall as part of the production. We have countertops. We have shingles. And part of this debate for us for a long time is ensuring that we properly define this waste that is part of this debate so that this stuff that has beneficial uses is not eventually labeled as toxic and then we can't use it in the building of roads and bridges and schools and the like, which is what we have been doing now for many, many years. So that is part of the concern in which we bring this legislation forward, and we are excited at the opportunity to—as a former teacher in high school, you know, the whole debate of how a bill becomes a law sometimes gets lost here because we, you know, we push things through. We had a bill, as I said in the opening statement. There were concerns. The Senate

started moving legislation. We have taken a lesson from both of those processes. We are adjusting and amending those opportunities. There is some optimism, I think, that there is some common ground that can be found, and we look forward to moving this process forward and this is just the first start of, I think, a couple different opportunities of negotiations in this process, which I hope will end in a successful conclusion.

[The prepared statement of Mr. Shimkus follows:]

PREPARED STATEMENT OF HON. JOHN SHIMKUS

In our first hearing this Congress we heard about the great work states are doing when it comes to environmental regulation and how well equipped and qualified they are to take on that mission. Today we will focus directly on coal ash and legislation designed to give states the framework to build off their successes in the past handling waste streams under the Resource Conservation Recovery Act (RCRA).

Most people think of federal law when it comes to environmental protection and we have passed many important environmental laws over the years. However, states also pass environmental laws. States have the same concerns about protecting the environment and contrary to some of the things you might hear today, states establish and carry out a standard of protection through their environmental permitting programs. For example, in my home state of Illinois, regulators are directed to establish programs to restore, protect and enhance the quality of the environment, and to assure that adverse effects upon the environment are fully considered and borne by those who cause them.

While it may not use the same words Congress has used to direct EPA, the effect is exactly the same. The legislation we consider today sets out a new approach. It does not follow the same path as we have traveled with the RCRA before which is for Congress to set a subjective standard that EPA must interpret and implement through regulations and enforcement.

Instead, we are setting the standard in statute and charging the states with implementation. Just because it's different does not mean ineffective or not protective of human health and the environment.

We heard the comments and concerns about the bill we passed in the last Congress and we worked both across the aisle and across the Capitol to develop the text of this discussion draft. The legislation makes several key improvements. In particular, it establishes additional requirements for surface impoundments that aren't meeting a groundwater protection standard and requires impoundments that can't meet the standards within a certain time period, to close.

The discussion draft requires groundwater monitoring for all disposal units that are receiving coal ash and tightens the dust requirements. The bill also improves on the dam stability standards by requiring an annual inspection of the design, construction, and maintenance of structures by an independent professional engineer.

The long and short of it is—Congress is perfectly capable of establishing a standard of protection for coal ash. The states are perfectly capable—and in the best position—to implement robust permit programs for coal ash.

# # #

[The discussion draft follows:]

[DISCUSSION DRAFT]

113TH CONGRESS
1ST SESSION

H. R. _____

To amend subtitle D of the Solid Waste Disposal Act to facilitate recovery and beneficial use, and provide for the proper management and disposal, of materials generated by the combustion of coal and other fossil fuels.

IN THE HOUSE OF REPRESENTATIVES

M__. _____ introduced the following bill; which was referred to the Committee on _____

A BILL

To amend subtitle D of the Solid Waste Disposal Act to facilitate recovery and beneficial use, and provide for the proper management and disposal, of materials generated by the combustion of coal and other fossil fuels.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the "Coal Ash Recycling and Oversight Act of 2013".

SEC. 2. MANAGEMENT AND DISPOSAL OF COAL COMBUSTION RESIDUALS.

(a) IN GENERAL.—Subtitle D of the Solid Waste Disposal Act (42 U.S.C. 6941 et seq.) is amended by adding at the end the following:

"SEC. 4011. MANAGEMENT AND DISPOSAL OF COAL COMBUSTION RESIDUALS.

"(a) STATE PERMIT PROGRAMS FOR COAL COMBUSTION RESIDUALS.—Each State may adopt and implement a coal combustion residuals permit program.

"(b) STATE ACTIONS.—

"(1) NOTIFICATION.—Not later than 6 months after the date of enactment of this section (except as provided by the deadline identified under subsection (d)(3)(B)), the Governor of each State shall notify the Administrator, in writing, whether such State will adopt and implement a coal combustion residuals permit program.

"(2) CERTIFICATION.—

"(A) IN GENERAL.—Not later than 36 months after the date of enactment of this section (except as provided in subsections (f)(1)(A) and (f)(1)(C)), in the case of a State that has notified the Administrator that it will implement a coal combustion residuals permit program, the head of the lead State agency respon-

sible for implementing the coal combustion residuals permit program shall submit to the Administrator a certification that such coal combustion residuals permit program meets the specifications described in subsection (c).

"(B) CONTENTS.—A certification submitted under this paragraph shall include—

"(i) a letter identifying the lead State agency responsible for implementing the coal combustion residuals permit program, signed by the head of such agency;

"(ii) identification of any other State agencies involved with the implementation of the coal combustion residuals permit program;

"(iii) a narrative description that provides an explanation of how the State will ensure that the coal combustion residuals permit program meets the requirements of this section, including a description of the State's—

"(I) process to inspect or otherwise determine compliance with such permit program;

"(II) process to enforce the requirements of such permit program;

"(III) public participation process for the promulgation, amendment, or repeal of regulations for, and the issuance of permits under, such permit program; and

"(IV) statutes, regulations, or policies pertaining to public access to information, such as groundwater monitoring data;

"(iv) 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 specifications described in subsection (c); and

"(v) copies of State statutes and regulations described in clause (iv).

"(C) UPDATES.—A State may update the certification as needed to reflect changes to the coal combustion residuals permit program.

"(3) MAINTENANCE OF 4005(c) OR 3006 PROGRAM.—In order to adopt or implement a coal combustion residuals permit program under this section

(including pursuant to subsection (f)), the State agency responsible for implementing a coal combustion residuals permit program in a State shall maintain an approved program under section 4005(c) or an authorized program under section 3006.

"(c) PERMIT PROGRAM SPECIFICATIONS.—

"(1) MINIMUM REQUIREMENTS.—

"(A) 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.

"(B) STRUCTURAL INTEGRITY.—

"(i) ENGINEERING CERTIFICATION.—A coal combustion residuals permit program shall require that an independent registered professional engineer certify that—

"(I) the design of structures is in accordance with recognized and generally accepted good engineering practices for containment of the maximum volume of coal combustion residuals

and liquids appropriate for the structure; and

"(II) the construction and maintenance of the structure will ensure dam stability.

"(ii) INSPECTION.—A coal combustion residuals permit program shall require that structures that are surface impoundments be inspected not less than annually by an independent registered professional engineer to assure that the design, operation, and maintenance of the surface impoundment is in accordance with recognized and generally accepted good engineering practices for containment of the maximum volume of coal combustion residuals and liquids which can be impounded, so as to ensure dam stability.

"(iii) DEFICIENCY.—

"(I) IN GENERAL.—If the head of the agency responsible for implementing the coal combustion residuals permit program determines that a structure is deficient with respect to the requirements in clauses (i) and

(ii), the head of the agency has the authority to require action to correct the deficiency according to a schedule determined by the agency.

"(II) UNCORRECTED DEFICIENCIES.—If a deficiency is not corrected according to the schedule, the head of the agency has the authority to require that the structure close in accordance with subsection (h).

"(C) LOCATION.—Each structure that first receives coal combustion residuals after the date of enactment of this section shall be constructed with a base located a minimum of 2 feet above the upper limit of the water table, unless it is demonstrated to the satisfaction of the agency responsible for implementing the coal combustion residuals permit program that—

"(i) the hydrogeologic characteristics of the structure and surrounding land would preclude such a requirement; and

"(ii) the function and integrity of the liner system will not be adversely impacted by contact with the water table.

"(D) WIND DISPERSAL.—

"(i) IN GENERAL.—The agency responsible for implementing the coal combustion residuals permit program shall require that owners or operators of structures address wind dispersal of dust by requiring cover, or by wetting coal combustion residuals with water to a moisture content that prevents wind dispersal, facilitates compaction, and does not result in free liquids.

"(ii) ALTERNATIVE METHODS.—Subject to the review and approval by the agency, owners or operators of structures may propose alternative methods to address wind dispersal of dust that will provide comparable or more effective control of dust.

"(E) PERMITS.—The agency responsible for implementing the coal combustion residuals permit program shall require that the owner or operator of each structure that receives coal combustion residuals after the date of enactment of this section apply for and obtain a permit incorporating the requirements of the coal combustion residuals permit program.

"(F) STATE NOTIFICATION AND GROUNDWATER MONITORING.—

"(i) NOTIFICATION.—Not later than the date on which a State submits a certification under subsection (b)(2), the State shall notify owners or operators of structures within the State of—

"(I) the obligation to apply for and obtain a permit under subparagraph (E); and

"(II) the groundwater monitoring requirements applicable to structures under paragraph (2)(A)(ii).

"(ii) GROUNDWATER MONITORING.—Not later than 1 year after the date on which a State submits a certification under subsection (b)(2), the State shall require the owner or operator of each structure to comply with the groundwater monitoring requirements under paragraph (2)(A)(ii).

"(G) AGENCY REQUIREMENTS.—Except for information described in section 1905 of title 18, United States Code, the agency responsible for implementing the coal combustion residuals permit program shall ensure that—

"(i) documents for permit determinations are made available for public review and comment under the public participation process described in subsection (b)(2)(B)(iii)(III);

"(ii) final determinations on permit applications are made known to the public; and

"(iii) groundwater monitoring data collected under paragraph (2) is publicly available.

"(H) AGENCY AUTHORITY.—

"(i) IN GENERAL.—The agency responsible for implementing the coal combustion residuals permit program has the authority to—

"(I) obtain information necessary to determine whether the owner or operator of a structure is in compliance with the coal combustion residuals permit program requirements of this section;

"(II) conduct or require monitoring and testing to ensure that structures are in compliance with the

coal combustion residuals permit program requirements of this section; and

"(III) enter, at reasonable times, any site or premise subject to the coal combustion residuals permit program for the purpose of inspecting structures and reviewing records relevant to the operation and maintenance of structures.

"(ii) MONITORING AND TESTING.—If monitoring or testing is conducted under clause (i)(II) by or for the agency responsible for implementing the coal combustion residuals permit program, the agency shall, if requested, provide to the owner or operator—

"(I) a written description of the monitoring or testing completed;

"(II) at the time of sampling, a portion of each sample equal in volume or weight to the portion retained by or for the agency; and

"(III) a copy of the results of any analysis of samples collected by or for the agency.

"(I) STATE AUTHORITY.—A State implementing a coal combustion residuals permit program has the authority to—

"(i) inspect structures; and

"(ii) implement and enforce the coal combustion residuals permit program.

"(J) REQUIREMENTS FOR SURFACE IMPOUNDMENTS THAT DO NOT MEET CERTAIN CRITERIA.—

"(i) IN GENERAL.—In addition to the groundwater monitoring and corrective action requirements described in paragraph (2)(A)(ii), a coal combustion residuals permit program shall require a surface impoundment that receives coal combustion residuals after the date of enactment of this section to—

"(I) comply with the requirements in clause (ii)(I)(aa) and subclauses (II) through (IV) of clause (ii) if the surface impoundment—

"(aa) does not—

"(AA) have a liner system described in section 258.40(b) of title 40, Code of Federal Regulations; and

"(BB) meet the design criteria described in section 258.40(a)(1) of title 40, Code of Federal Regulations; and

"(bb) within 10 years after the date of enactment of this section, is required under section 258.56(a) of title 40, Code of Federal Regulations, to undergo an assessment of corrective measures for any constituent identified in paragraph (2)(A)(ii) for which assessment groundwater monitoring is required; and

"(II) comply with the requirements in clause (ii)(I)(bb) and subclauses (II) through (IV) of clause (ii) if the surface impoundment—

"(aa) does not—

"(AA) have a liner system described in section 258.40(b) of title 40, Code of Federal Regulations; and

"(BB) meet the design criteria described in section 258.40(a)(1) of title 40, Code of Federal Regulations; and

"(bb) as of the date of enactment of this section, is subject to a State corrective action requirement.

"(ii) REQUIREMENTS.—

"(I) DEADLINES.—

"(aa) IN GENERAL.—Except as provided in item (bb), subclause (IV), and clause (iii), the groundwater protection standard for structures identified in clause (i)(I) established by the agency responsible for implementing the coal combustion residuals permit program under section 258.55(h) or 258.55(i) of title 40, Code of

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Federal Regulations, for any constituent for which corrective measures are required shall be met—

"(AA) as soon as practicable at the relevant point of compliance, as described in section 258.40(d) of title 40, Code of Federal Regulations; and

"(BB) not later than 10 years after the date of enactment of this section.

"(bb) IMPOUNDMENTS SUBJECT TO STATE CORRECTIVE ACTION REQUIREMENTS.—Except as provided in subclause (IV), the groundwater protection standard for structures identified in clause (i)(II) established by the agency responsible for implementing the coal combustion residuals permit program under section 258.55(h) or 258.55(i) of title 40, Code of Federal Regulations, for any con-

stituent for which corrective measures are required shall be met—

"(AA) as soon as practicable at the relevant point of compliance, as described in section 258.40(d) of title 40, Code of Federal Regulations; and

"(BB) not later than 8 years after the date of enactment of this section.

"(II) CLOSURE.—If the deadlines under clause (I) are not satisfied, the structure shall cease receiving coal combustion residuals and initiate closure under subsection (h).

"(III) INTERIM MEASURES.—

"(aa) IN GENERAL.—Except as provided in item (bb), not later than 90 days after the date on which the assessment of corrective measures is initiated, the owner or operator shall implement interim measures, as nec-

essary, under the factors in section 258.58(a)(3) of title 40, Code of Federal Regulations.

"(bb) IMPOUNDMENTS SUBJECT TO STATE CORRECTIVE ACTION REQUIREMENTS.—Item (aa) shall only apply to surface impoundments subject to a State corrective action requirement as of the date of enactment of this section if the owner or operator has not implemented interim measures, as necessary, under the factors in section 258.58(a)(3) of title 40, Code of Federal Regulations.

"(IV) EXTENSION OF DEADLINE.—

"(aa) IN GENERAL.—Except as provided in item (bb), the deadline for meeting a groundwater protection standard under subclause (I) may be extended by the agency responsible for implementing the coal combustion re-

siduals permit program, after opportunity for public notice and comment under the public participation process described in subsection (b)(2)(B)(iii)(III), based on—

"(AA) the effectiveness of any interim measures implemented by the owner or operator of the facility under section 258.58(a)(3) of title 40, Code of Federal Regulations;

"(BB) the level of progress demonstrated in meeting the groundwater protection standard;

"(CC) the potential for other adverse human health or environmental exposures attributable to the contamination from the surface impoundment undergoing corrective action; and

"(DD) the lack of available alternative management capacity for the coal combustion residuals and related materials managed in the impoundment at the facility at which the impoundment is located if the owner or operator has used best efforts, as necessary, to design, obtain any necessary permits, finance, construct, and render operational the alternative management capacity during the time period for meeting a groundwater protection standard in subclause (I).

"(bb) EXCEPTION.—The deadlines under subclause (I) shall not be extended if there has been contamination of public or private drinking water systems attributable to a surface impoundment undergoing corrective

action, unless the contamination has been addressed by providing a permanent replacement water system.

"(iii) SUBSEQUENT CLOSURE.—

"(I) IN GENERAL.—In addition to the groundwater monitoring and corrective action requirements described in paragraph (2)(A)(ii), a coal combustion residuals permit program shall require a surface impoundment that receives coal combustion residuals after the date of enactment of this section to comply with the requirements in subclause (II) if the surface impoundment—

"(aa) does not—

"(AA) have a liner system described in section 258.40(b) of title 40, Code of Federal Regulations; and

"(BB) meet the design criteria described in section 258.40(a)(1) of title 40,

Code of Federal Regulations;

"(bb) more than 10 years after the date of enactment of this section, is required under section 258.56(a) of title 40, Code of Federal Regulations, to undergo an assessment of corrective measures for any constituent identified in paragraph (2)(A)(ii) for which assessment groundwater monitoring is required; and

"(cc) is not subject to the requirements in clause (ii).

"(II) REQUIREMENTS.—

"(aa) CLOSURE.—The structures identified in subclause (I) shall cease receiving coal combustion residuals and initiate closure in accordance with subsection (h) after alternative management capacity for the coal combustion residuals and related materials managed in the impoundment at the facility is available.

"(bb) BEST EFFORTS.—The alternative management capacity shall be developed as soon as practicable with the owner or operator using best efforts to design, obtain necessary permits, finance, construct, and render operational the alternative management capacity.

"(cc) ALTERNATIVE MANAGEMENT CAPACITY PLAN.—The owner or operator shall, in collaboration with the agency responsible for implementing the coal combustion residuals permit program, prepare a written plan that describes the steps necessary to develop the alternative management capacity and includes a schedule for completion.

"(dd) PUBLIC PARTICIPATION.—The plan described in item (cc) shall be subject to public notice and comment under the public participation process de-

scribed in subsection (b)(2)(B)(iii)(III).

"(2) REVISED CRITERIA.—The revised criteria described in this paragraph are—

"(A) the revised criteria for design, groundwater monitoring, corrective action, closure, and post-closure, for structures, including—

"(i) for new structures, and lateral expansions of existing structures, that first receive coal combustion residuals after the date of enactment of this section, the revised criteria regarding design requirements described in section 258.40 of title 40, Code of Federal Regulations, except that the leachate collection system requirements described in section 258.40(a)(2) of title 40, Code of Federal Regulations do not apply to structures that are surface impoundments;

"(ii) for all structures that receive coal combustion residuals after the date of enactment of this section, the revised criteria regarding groundwater monitoring and corrective action requirements de-

scribed in subpart E of part 258 of title 40, Code of Federal Regulations, except that, for the purposes of this paragraph, the revised criteria shall also include—

"(I) for the purposes of detection monitoring, the constituents boron, chloride, conductivity, fluoride, mercury, pH, sulfate, sulfide, and total dissolved solids; and

"(II) for the purposes of assessment monitoring, establishing a groundwater protection standard, and assessment of corrective measures, the constituents aluminum, boron, chloride, fluoride, iron, manganese, molybdenum, pH, sulfate, and total dissolved solids;

"(iii) for all structures that receive coal combustion residuals after the date of enactment of this section, in a manner consistent with subsection (h), the revised criteria for closure described in subsections (a) through (c) and (h) through (j) of section 258.60 of title 40, Code of Federal Regulations; and

"(iv) for all structures that receive coal combustion residuals after the date of enactment of this section, the revised criteria for post-closure care described in section 258.61 of title 40, Code of Federal Regulations, except for the requirement described in subsection (a)(4) of that section;

"(B) the revised criteria for location restrictions described in—

"(i) for new structures, and lateral expansions of existing structures, that first receive coal combustion residuals after the date of enactment of this section, sections 258.11 through 258.15 of title 40, Code of Federal Regulations; and

"(ii) for existing structures that receive coal combustion residuals after the date of enactment of this section, sections 258.11 and 258.15 of title 40, Code of Federal Regulations;

"(C) for all structures that receive coal combustion residuals after the date of enactment of this section, the revised criteria for air quality described in section 258.24 of title 40, Code of Federal Regulations;

"(D) for all structures that receive coal combustion residuals after the date of enactment of this section, the revised criteria for financial assurance described in subpart G of part 258 of title 40, Code of Federal Regulations;

"(E) for all structures that receive coal combustion residuals after the date of enactment of this section, the revised criteria for surface water described in section 258.27 of title 40, Code of Federal Regulations;

"(F) for all structures that receive coal combustion residuals after the date of enactment of this section, the revised criteria for recordkeeping described in section 258.29 of title 40, Code of Federal Regulations;

"(G) for landfills and other land-based units, other than surface impoundments, that receive coal combustion residuals after the date of enactment of this section, the revised criteria for run-on and run-off control systems described in section 258.26 of title 40, Code of Federal Regulations; and

"(H) for surface impoundments that receive coal combustion residuals after the date of

enactment of this section, the revised criteria for run-off control systems described in section 258.26(a)(2) of title 40, Code of Federal Regulations.

"(d) WRITTEN NOTICE AND OPPORTUNITY TO REMEDY.—

"(1) IN GENERAL.—The Administrator shall provide to a State written notice and an opportunity to remedy deficiencies in accordance with paragraph (2) if at any time the State—

"(A) does not satisfy the notification requirement under subsection (b)(1);

"(B) has not submitted a certification under subsection (b)(2);

"(C) does not satisfy the maintenance requirement under subsection (b)(3);

"(D) is not implementing a coal combustion residuals permit program that—

"(i) meets the specifications described in subsection (c); or

"(ii)(I) is consistent with the certification under subsection (b)(2)(B)(iii); and

"(II) maintains fully effective statutes or regulations necessary to implement a

coal combustion residuals permit program; or

"(E) does not make available to the Administrator within 90 days of a written request, specific information necessary for the Administrator to ascertain whether the State has complied with subparagraphs (A) through (D).

"(2) REQUEST.—If the request described in paragraph (1)(E) is made pursuant to a petition of the Administrator, the Administrator shall only make the request if the Administrator does not possess the information necessary to ascertain whether the State has complied with subparagraphs (A) through (D) of paragraph (1).

"(3) CONTENTS OF NOTICE; DEADLINE FOR RESPONSE.—A notice provided under this subsection shall—

"(A) include findings of the Administrator detailing any applicable deficiencies in—

"(i) compliance by the State with the notification requirement under subsection (b)(1);

"(ii) compliance by the State with the certification requirement under subsection (b)(2);

"(iii) compliance by the State with the maintenance requirement under subsection (b)(3);

"(iv) the State coal combustion residuals permit program in meeting the specifications described in subsection (c); and

"(v) compliance by the State with the request under paragraph (1)(E); and

"(B) identify, in collaboration with the State, a reasonable deadline, by which the State shall remedy the deficiencies detailed under subparagraph (A), which shall be—

"(i) in the case of a deficiency described in clauses (i) through (iv) of subparagraph (A), not earlier than 180 days after the date on which the State receives the notice; and

"(ii) in the case of a deficiency described in subparagraph (A)(v), not later than 90 days after the date on which the State receives the notice.

"(e) IMPLEMENTATION BY ADMINISTRATOR.—

"(1) IN GENERAL.—The Administrator shall implement a coal combustion residuals permit program for a State only if—

"(A) the Governor of the State notifies the Administrator under subsection (b)(1) that the State will not adopt and implement a permit program;

"(B) the State has received a notice under subsection (d) and the Administrator determines, after providing a 30-day period for notice and public comment, that the State has failed, by the deadline identified in the notice under subsection (d)(3)(B), to remedy the deficiencies detailed in the notice under subsection (d)(3)(A); or

"(C) the State informs the Administrator, in writing, that such State will no longer implement such a permit program.

"(2) REVIEW.—A State may obtain a review of a determination by the Administrator under this subsection as if the determination was a final regulation for purposes of section 7006.

"(3) OTHER STRUCTURES.—For structures located on property within the exterior boundaries of a State for which the State does not have authority

or jurisdiction to regulate, the Administrator shall implement a coal combustion residuals permit program only for those structures.

"(4) REQUIREMENTS.—If the Administrator implements a coal combustion residuals permit program for a State under paragraph (1) or (3), the permit program shall consist of the specifications described in subsection (c).

"(5) ENFORCEMENT.—

"(A) IN GENERAL.—If the Administrator implements a coal combustion residuals permit program for a State under paragraph (1)—

"(i) the authorities referred to in section 4005(c)(2)(A) shall apply with respect to coal combustion residuals and structures for which the Administrator is implementing the coal combustion residuals permit program; and

"(ii) the Administrator may use those authorities to inspect, gather information, and enforce the requirements of this section in the State.

"(B) OTHER STRUCTURES.—If the Administrator implements a coal combustion residuals

permit program for a State under paragraph (3)—

"(i) the authorities referred to in section 4005(c)(2)(A) shall apply with respect to coal combustion residuals and structures for which the Administrator is implementing the coal combustion residuals permit program; and

"(ii) the Administrator may use those authorities to inspect, gather information, and enforce the requirements of this section for the structures for which the Administrator is implementing the coal combustion residuals permit program.

"(f) STATE CONTROL AFTER IMPLEMENTATION BY ADMINISTRATOR.—

"(1) STATE CONTROL.—

"(A) NEW ADOPTION AND IMPLEMENTATION BY STATE.—For a State for which the Administrator is implementing a coal combustion residuals permit program under subsection (e)(1)(A), the State may adopt and implement such a permit program by—

"(i) notifying the Administrator that the State will adopt and implement such a permit program;

"(ii) not later than 6 months after the date of such notification, submitting to the Administrator a certification under subsection (b)(2); and

"(iii) receiving from the Administrator—

"(I) a determination, after providing a 30-day period for notice and public comment that the State coal combustion residuals permit program meets the specifications described in subsection (c); and

"(II) a timeline for transition of control of the coal combustion residuals permit program.

"(B) REMEDYING DEFICIENT PERMIT PROGRAM.—For a State for which the Administrator is implementing a coal combustion residuals permit program under subsection (e)(1)(B), the State may adopt and implement such a permit program by—

"(i) remedying only the deficiencies detailed in the notice provided under subsection (d)(3)(A); and

"(ii) receiving from the Administrator—

"(I) a determination, after providing a 30-day period for notice and public comment, that the deficiencies detailed in such notice have been remedied; and

"(II) a timeline for transition of control of the coal combustion residuals permit program.

"(C) RESUMPTION OF IMPLEMENTATION BY STATE.—For a State for which the Administrator is implementing a coal combustion residuals permit program under subsection (e)(1)(C), the State may adopt and implement such a permit program by—

"(i) notifying the Administrator that the State will adopt and implement such a permit program;

"(ii) not later than 6 months after the date of such notification, submitting to the

Administrator a certification under subsection (b)(2); and

"(iii) receiving from the Administrator—

"(I) a determination, after providing a 30-day period for notice and public comment, that the State coal combustion residuals permit program meets the specifications described in subsection (c); and

"(II) a timeline for transition of control of the coal combustion residuals permit program.

"(2) REVIEW OF DETERMINATION.—

"(A) DETERMINATION REQUIRED.—The Administrator shall make a determination under paragraph (1) not later than 90 days after the date on which the State submits a certification under paragraph (1)(A)(ii) or (1)(C)(ii), or notifies the Administrator that the deficiencies have been remedied pursuant to paragraph (1)(B)(i), as applicable.

"(B) REVIEW.—A State may obtain a review of a determination by the Administrator under paragraph (1) as if such determination

was a final regulation for purposes of section 7006.

"(3) IMPLEMENTATION DURING TRANSITION.—

"(A) EFFECT ON ACTIONS AND ORDERS.—Actions taken or orders issued pursuant to a coal combustion residuals permit program shall remain in effect if—

"(i) a State takes control of its coal combustion residuals permit program from the Administrator under paragraph (1); or

"(ii) the Administrator takes control of a coal combustion residuals permit program from a State under subsection (e).

"(B) CHANGE IN REQUIREMENTS.—Subparagraph (A) shall apply to such actions and orders until such time as the Administrator or the head of the lead State agency responsible for implementing the coal combustion residuals permit program, as applicable—

"(i) implements changes to the requirements of the coal combustion residuals permit program with respect to the basis for the action or order; or

"(ii) certifies the completion of a corrective action that is the subject of the action or order.

"(4) SINGLE PERMIT PROGRAM.—If a State adopts and implements a coal combustion residuals permit program under this subsection, the Administrator shall cease to implement the permit program implemented under subsection (e)(1) for such State.

"(g) EFFECT ON DETERMINATION UNDER 4005(c) OR 3006.—The Administrator shall not consider the implementation of a coal combustion residuals permit program by the Administrator under subsection (e) in making a determination of approval for a permit program or other system of prior approval and conditions under section 4005(c) or of authorization for a program under section 3006.

"(h) CLOSURE.—

"(1) IN GENERAL.—If it is determined, pursuant to a coal combustion residuals permit program, that a structure should close, the time period and method for the closure of such structure shall be set forth in a closure plan that establishes a deadline for completion and that takes into account the nature and the site-specific characteristics of the structure to be closed.

"(2) SURFACE IMPOUNDMENT.—In the case of a surface impoundment, the closure plan under paragraph (1) shall require, at a minimum, the removal of liquid and the stabilization of remaining waste, as necessary to support the final cover.

"(i) AUTHORITY.—

"(1) STATE AUTHORITY.—Nothing in this section shall preclude or deny any right of any State to adopt or enforce any regulation or requirement respecting coal combustion residuals that is more stringent or broader in scope than a regulation or requirement under this section.

"(2) AUTHORITY OF THE ADMINISTRATOR.—

"(A) IN GENERAL.—Except as provided in subsections (d) and (e) and section 6005, the Administrator shall, with respect to the regulation of coal combustion residuals, defer to the States pursuant to this section.

"(B) IMMINENT HAZARD.—Nothing in this section shall be construed as affecting the authority of the Administrator under section 7003 with respect to coal combustion residuals.

"(C) ENFORCEMENT ASSISTANCE ONLY UPON REQUEST.—Upon request from the head of a lead State agency that is implementing a

coal combustion residuals permit program, the Administrator may provide to such State agency only the enforcement assistance requested.

"(D) CONCURRENT ENFORCEMENT.—Except as provided in subparagraph (C), the Administrator shall not have concurrent enforcement authority when a State is implementing a coal combustion residuals permit program.

"(E) OTHER AUTHORITY.—The Administrator shall not have authority to finalize the proposed rule published at pages 35128 through 35264 of volume 75 of the Federal Register (June 21, 2010).

"(3) CITIZEN SUITS.—Nothing in this section shall be construed to affect the authority of a person to commence a civil action in accordance with section 7002.

"(j) MINE RECLAMATION ACTIVITIES.—A coal combustion residuals permit program implemented by the Administrator under subsection (e) shall not apply to the utilization, placement, and storage of coal combustion residuals at surface mining and reclamation operations.

"(k) DEFINITIONS.—In this section:

"(1) COAL COMBUSTION RESIDUALS.—The term 'coal combustion residuals' means—

"(A) the solid wastes listed in section 3001(b)(3)(A)(i), including recoverable materials from such wastes;

"(B) coal combustion wastes that are co-managed with wastes produced in conjunction with the combustion of coal, provided that such wastes are not segregated and disposed of separately from the coal combustion wastes and comprise a relatively small proportion of the total wastes being disposed in the structure;

"(C) fluidized bed combustion wastes;

"(D) wastes from the co-burning of coal with non-hazardous secondary materials, provided that coal makes up at least 50 percent of the total fuel burned; and

"(E) wastes from the co-burning of coal with materials described in subparagraph (A) that are recovered from monofills.

"(2) COAL COMBUSTION RESIDUALS PERMIT PROGRAM.—The term '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.

"(3) CODE OF FEDERAL REGULATIONS.—The term 'Code of Federal Regulations' means the Code of Federal Regulations (as in effect on the date of enactment of this section) or any successor regulations.

"(4) PERMIT; PRIOR APPROVAL AND CONDITIONS.—The terms 'permit' and 'prior approval and conditions' mean any authorization, license, or equivalent control document that incorporates the requirements and revised criteria described in paragraphs (1) and (2) of subsection (c), respectively.

"(5) REVISED CRITERIA.—The term 'revised criteria' means 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).

"(6) STRUCTURE.—

"(A) IN GENERAL.—Except as provided in subparagraph (B), the term 'structure' means a landfill, surface impoundment, or other land-based unit which may receive coal combustion residuals.

"(B) DE MINIMIS RECEIPT.—The term 'structure' does not include any land-based unit that receives only de minimis quantities of coal

combustion residuals if the presence of coal combustion residuals is incidental to the material managed in the unit.".

(b) CONFORMING AMENDMENT.—The table of contents contained in section 1001 of the Solid Waste Disposal Act is amended by inserting after the item relating to section 4010 the following:

"Sec. 4011. Management and disposal of coal combustion residuals.".

SEC. 3. 2000 REGULATORY DETERMINATION.

Nothing in this Act, or the amendments made by this Act, shall be construed to alter in any manner the Environmental Protection Agency's regulatory determination entitled "Notice of Regulatory Determination on Wastes from the Combustion of Fossil Fuels", published at 65 Fed. Reg. 32214 (May 22, 2000), that the fossil fuel combustion wastes addressed in that determination do not warrant regulation under subtitle C of the Solid Waste Disposal Act (42 U.S.C. 6921 et seq.).

SEC. 4. TECHNICAL ASSISTANCE.

Nothing in this Act, or the amendments made by this Act, shall be construed to affect the authority of a State to request, or the Administrator of the Environmental Protection Agency to provide, technical assistance under the Solid Waste Disposal Act (42 U.S.C. 6901 et seq.).

SEC. 5. FEDERAL POWER ACT.

Nothing in this Act, or the amendments made by this Act, shall be construed to affect the obligations of the owner or operator of a structure (as defined in section 4011 of the Solid Waste Disposal Act, as added by this Act) under section 215(b)(1) of the Federal Power Act (16 U.S.C. 824o(b)(1)).

Mr. SHIMKUS. So with that, I want to thank all our witnesses for being with us today, and I will recognize Ranking Member Tonko for 5 minutes for the purposes of an opening statement.

OPENING STATEMENT OF HON. PAUL TONKO, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEW YORK

Mr. TONKO. Thank you, Mr. Chair. Good morning, everyone, and I thank our chair for holding this hearing on the discussion draft of the Coal Ash Recycling and Oversight Act. Thank you to our witnesses for participating in the hearing, and offering your thoughts on this legislation today.

We have dealt with coal ash as long as we have been burning coal, a very long time. Coal ash can be beneficially reused. Recycling of coal ash is a well-established practice, but not all coal ash can be safely recycled, and when it is improperly used or disposed of, coal ash creates significant problems.

The Environmental Protection Agency, the EPA, was charged with studying coal combustion residuals back in 1980 when the Resource, Reuse, and Recovery Act, RCRA, became law. It has been over 30 years, and communities in many states have experienced many problems from improper handling and disposal of coal ash. Spills from wet impoundments, windborne ash, and groundwater contamination have caused serious health and environmental problems, and required expensive clean up efforts. Five years after the catastrophic spill in Tennessee, we are still without reasonable regulations to safeguard communities and ensure proper treatment of this waste.

It is long past time to resolve these issues and indeed move forward. We need a policy that ensures safe disposal of coal ash, provides clear guidance to state agencies, and the regulated industry, and an appropriate federal oversight role. Perhaps EPA can achieve that with regulation under the current law. If not, I believe we can develop a law that balances the concerns of all involved. The discussion draft does not meet these goals in its current form, so we have more work to do.

I look forward to the testimony of our witnesses today, and their thoughts on this issue. I am willing to work with you, Mr. Chair, and our other colleagues to improve this legislation. Working together, I am convinced that we can move a bill forward that finally can provide a sound policy to deal with coal ash.

And with that, I yield back.

Mr. SHIMKUS. Gentleman yields back his time. Chair now recognizes the chairman of the full committee, Mr. Upton, for 5 minutes.

OPENING STATEMENT OF HON. FRED UPTON, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MICHIGAN

Mr. UPTON. Well thank you.

You know, our efforts to solve the coal ash certainly do continue with this hearing. We began the last Congress by asking should we allow EPA to write rules that would bind every state regardless of geography, hydrology, history, and economics, or should we allow the states to build and operate their own permitting systems?

The answer that this committee reported, and which the House passed, both with bipartisan support, was a compromise. It gave

the choice to the states to apply minimum federal standards specified in the legislation itself, or a state could vacate the field and let EPA step in and run that state's program directly.

Mr. McKinley's bill, H.R. 2273 passed the House with bipartisan support in October 2011. Building on the House-passed bill, Senators Hoeven and Baucus and a bi-partisan Senate group wrote S. 3512. It preserved the approach of our House bill, but added more detail to the minimum federal standards. For example, it added a requirement that leaking surface impoundments meet a groundwater protection standard within a certain time period or they are required to close. That bill also included a requirement that all structures that receive coal ash after enactment install groundwater monitoring within one year after a state certifies its program. The bill was introduced on August 2 of last year with Senators Hoeven and Baucus and 12 Republicans and 12 Democrats as original co-sponsors, and the text of today's discussion draft is actually the text of that bill, S. 3512.

Now, we are eager to hear from our witnesses today as they focus on the details of the legislation before us. We welcome suggestions to improve the text for sure, however, we do prefer to preserve the signature approach of the bill: minimum statutory standards implemented by the states.

We welcome our first witness, Mr. Stanislaus, and thank him for sure for testimony that is quite useful as it directly addresses the legislation. That is what this legislative hearing is intended to do. We know that he would like to resolve the coal ash issue as well, and we appreciate that good will.

The dispute about how to regulate coal ash ties up EPA in court and prevents all parties from moving forward. This legislation aims to help settle that litigation.

We also welcome our state environmental officials. We look forward to learning from them how they will develop certified programs that EPA can approve, and whether the nuts and bolts of the bill are tight enough to make the vehicle work in the real world.

I also expect the witnesses to answer questions about details of the legislation. Are the minimum federal standards the right ones? How do they compare with what the EPA proposed? Should we consider some type of timeline for state implementation? Do the states welcome the approach set out in the discussion draft?

[The prepared statement of Mr. Upton follows:]

PREPARED STATEMENT OF HON. FRED UPTON

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- how they will develop certified programs that EPA can approve; and
- whether the nuts and bolts of the bill are tight enough to make the vehicle work in the real world.

I also expect the witnesses to answer questions about details of the legislation—Are the minimum federal standards the right ones? How do they compare with what EPA proposed? Should we consider some type of timeline for state implementation? Do the states welcome the approach set out in the Discussion Draft?

Thank you to all our experts for joining us today as we work to resolve this important issue.

# # #

Mr. UPTON. I appreciate the good work by Chairman Shimkus, and yield the balance of my time to Mr. McKinley from West Virginia.

Mr. MCKINLEY. Thank you, Mr. Chairman, for the time that you have given me on this.

Let me just kind of paraphrase again much of what you have heard so far on this, is that the creation of fly ash, it is an unavoidable byproduct of burning coal. You get this product, this little dust. It is just an unavoidable byproduct. So I guess the fight here would be if we don't want to have this product, then we don't burn coal, but that is not realistic.

So what has happened over here is we have developed about 140 million tons of this fly ash annually. Forty percent of it is recycled, and 60 percent goes to landfills. But the 40 percent that has been recycled, it has been blessed by the EPA as a nonhazardous material and should be used. As a matter of fact, under Bill Clinton, the '93 and the 2000 reports both came out and supported it. So the 40 percent issue should be moot.

The real issue, then, is the disposal. How do you dispose of this product? Perhaps the argument, when it really comes down to it, do we want to have the Federal Government have primacy or should the states have primacy? The groups that recycle, labor unions, utilities, coal operators, state environmental groups, all the stakeholders in this think that the best way to do it is to have the state have primacy, but what I like about in this bill is that we actually begin with the federal standard. There is a minimum standard that is going to be set forth, and the states have to apply that. If they don't adhere to that, then the Federal Government does take primacy. So let's make sure that we understand that if this

bill doesn't pass, then what we are going to do is we are going to be back to, once again, what has been talked about for the last 30-some years, arguing over this while we have fly ash that is created every day all across America, is going to landfills that are not approved. Some of them, some states have no certified landfill requirements. Do we want to continue that or not?

It is time this bill gets passed, and I am particularly pleased, from what I am hearing from the other side and from the EPA is that this may very well be the year to do it, that we can find a compromise, and I appreciate very much the testimony that you are about to give and how we can work together to make this resolve, because this is not right for people to fear this is being disposed of in their backyard and they don't—there are no standards. It is time that we have standards and adhere to them, and we can do that.

So this legislation is important and I think it is going to resolve. I hope, after 30-some years, we are finally going to resolve this problem.

So with that, Mr. Chairman, I yield back my time.

Mr. SHIMKUS. Gentleman's time is expired. Chair now recognizes the ranking member of the full committee, Mr. Waxman, for 5 minutes.

OPENING STATEMENT OF HON. HENRY A. WAXMAN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA

Mr. WAXMAN. Thank you, Mr. Chairman. Today, the subcommittee examines the discussion draft that would govern the disposal of coal ash, the toxic-laden residual waste from burning coal.

The language isn't new. It is almost identical to the bill reported by this committee in the last Congress without ever being examined in a legislative hearing. It is identical to the language that 90 percent of Democrats opposed when it was considered on the House Floor in September of last year. It is the same language that has been exhaustively analyzed by the Congressional Research Service and found severely wanting. And it is the same language that has failed to get sufficient support in the United States Senate.

Over the years, Congress and the states have developed a proven model for environmental protection that has successfully reduced pollution and enhanced the protection of the public health. We had a hearing on that model of environmental federalism just 2 months ago, and heard from stakeholders that it continues to work well.

States have received delegation for just over 96 percent of the environmental programs that can be delegated. This is an impressive track record that has protected the American people from pollution-induced respiratory diseases, from contaminates in their drinking water, from toxic environmental exposures that can cause cancers and other diseases.

Despite these successes, the discussion draft we consider today would abandon the proven models of environmental protection and adopt an approach that we have every reason to believe would fail if enacted. This proposal will not ensure the safe disposal of coal ash. It will not prevent groundwater contamination from unlined ash ponds or prevent coal ash impoundments from failing cata-

strophically. It will not allow EPA to complete its rulemaking to identify the disposal criteria necessary to protect human health and the environment.

I continue to oppose such an approach and believe that there is simply not the support for this proposal to become law. But as I have said for 2 years now, I am willing to work with the Majority on this issue to get a law, if the chairman wants a law.

That would require rethinking this legislation and listening to the expert views available to us. EPA, and the Congressional Budget Office, the Congressional Research Service all have relevant expertise on this legislation. Their views must not be dismissed and, in fact, relying on their expertise will only help us craft a much better piece of legislation.

I believe this is an issue we should be able to resolve. We can provide certainty and reasonable standards that would work for industry. And at the same time, we can ensure that health and the environment are protected.

But what we should avoid is remaining gridlocked on a stale proposal. That won't stop dangerous coal ash dumping. It won't prevent toxic contamination from leaking into the groundwater and surface water. And it won't promote beneficial reuse of coal ash.

Whether it is by administrative or legislative action, it is time to resolve this issue and ensure the safe disposal of coal ash. Environmental groups and the biggest recycler of coal ash in the country have sued EPA to complete their regulatory process and get a rule finalized.

Mr. Chairman, I hope we can work together on this issue. And if not, I hope EPA will move expeditiously to establish strong standards that ensure the safe disposal of coal ash.

I yield back my time.

[The prepared statement of Mr. Waxman follows:]

PREPARED STATEMENT OF HON. HENRY A. WAXMAN

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Mr. Chairman, I hope we can work together on this issue. And if not, I hope EPA will move expeditiously to establish strong standards that ensure the safe disposal of coal ash.

Mr. SHIMKUS. Gentleman yields back his time.

Now we would like to welcome our first witness, the Honorable Mathy Stanislaus, who is the Assistant Administrator for the Office of Solid Waste and Emergency Response with the U.S. EPA. Sir, welcome. Your full statement is in the record. You will have 5 minutes. We have, obviously, a newer time system there with the green, the yellow, and the red, and—but we are going to be very generous, and based upon the comments in the opening statements, we really look forward to hearing your opening statement because we are going to get input from the EPA here.

You are recognized.

STATEMENT OF THE HONORABLE MATHY STANISLAUS, ASSISTANT ADMINISTRATOR FOR OFFICE OF SOLID WASTE AND EMERGENCY RESPONSE, U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)

Mr. STANISLAUS. Good morning, Mr. Chairman and members of the subcommittee. I am Mathy Stanislaus, Assistant Administrator for the Office of Solid Waste and Emergency Response at the United States Environmental Protection Agency. Thank you for the opportunity to testify today on the committee's legislative discussion draft, the Coal Ash Recycling and Oversight Act.

Coal combustion residuals, or CCRs, are one of the largest waste streams generated in the United States, with approximately 136 million tons generated in 2008. CCRs contain constituents, such as arsenic, cadmium, and mercury, which can pose threats to public health and the environment, if improperly managed.

At the time, EPA issued its proposed coal ash rule, EPA had documented evidence of damages to groundwater or surface water in 27 cases, 17 cases of damage to groundwater, and ten cases of damage to surface water. In addition, EPA identified 40 cases of potential damage to groundwater or surface water. In the majority of cases, damages to groundwater or surface water were associated with the lack of standards necessary to protect the environment, particularly the use of unlined impoundments and units and the failure to monitor these impoundments and other associated units.

EPA also had documented evidence of a number of damage cases due to the catastrophic structural failure of coal ash impoundments, such as at the Martins Creek Power Plant in Pennsylvania, and the TVA Kingston facility in Harriman, Tennessee. The sudden failure of a surface impoundment retaining wall at the TVA Kingston facility in December 2008, and the resulting catastrophic spill of coal ash and their impacts on the community highlight the issue of impoundment stability.

Since EPA's proposed rule was issued, a number of additional reports have been submitted to EPA by several organizations that identified dozens of additional damage cases. In addition, for states that have begun to require groundwater monitoring of surface impoundments, in almost all cases, groundwater contamination has been identified. Thus, it appears, based on all of EPA's information, improper management of coal ash in landfills and surface impoundments will continue to pose a threat to human health and the environment.

Regarding beneficial use, coal ash can provide environmental benefits and new applications may provide even greater benefits, based on current studies. Some of the information confirms or strengthens EPA's views on the benefits of coal ash reuse. However, some information indicates that certain uses may raise concerns and merit additional attention.

Some beneficial uses are in an encapsulated form, while other are in an unencapsulated form. EPA believes that the great bulk of beneficial uses, particularly in an encapsulated form, such as concrete and wallboard, do not raise concerns and offer important environmental benefits. However, some questions have been raised regarding the lack of clear methodology to evaluate reuse of coal ash. Thus, EPA's proposal sought additional information and requested specific comment on certain aspects of beneficial use of coal ash.

To help resolve questions regarding the environmental consequences of beneficially using coal ash, EPA has developed a draft methodology, which can be used to determine whether encapsulated products containing coal ash are comparable to analogous non-coal combustion residual products. It will also develop a draft application report for the use of coal fly ash in concrete and the use of FGD gypsum in wallboard as replacement materials. The draft application report is currently undergoing formal internal peer review. EPA is also developing a draft methodology for evaluating current unencapsulated beneficial uses of coal ash. We expect to issue both of them in the fall.

Now turning to the committee's legislative discussion draft, it establishes a framework for the management of coal ash, recognizing the documented damages associated with the mismanagement of coal ash support the need for action to address those risks. EPA believes that the proper management of coal ash requires nationally consistent standards necessary to protect human health and the environment. These standards should address the installation and use of liners for new units and allow expansions of existing units, provide standards that control airborne dust and particulate matter, address the phase out of unlined surface impoundments within a reasonable period of time, require groundwater monitoring for

new and existing facilities, include location criteria, provide for corrective action where contamination or releases to the environment have been identified, including criteria for maintenance and structura stability of dams, address standards for closure and post-closure, and address the issues of financial assurance. The discussion draft addresses many of the areas I have just discussed. However, the discussion draft could be clarified in some important areas, including timelines for the development and implementation of state programs, criteria to help EPA determine when a state program is deficient, criteria for coal ash unit structural stability, deadlines for closure of unlined or leaking units, including inactive or abandoned units, and the universe of units subject to the permit program.

Mr. Chairman, should Congress decide to address the regulation of coal ash through legislation, EPA stands ready to assist in that effort to help ensure that legislation establishes a regulatory framework to regulate the management of coal ash in a nationally consistent manner that fully protects human health and the environment.

Thank you, and this concludes my prepared remarks.

[The prepared statement of Mr. Stanislaus follows:]

Testimony of Mathy Stanislaus
Assistant Administrator
Office of Solid Waste and Emergency Response
U.S. Environmental Protection Agency
Before the Subcommittee on Environment and Economy
Committee on Energy and Commerce
United States House of Representatives
April 11, 2013

Mr. Chairman and members of the Subcommittee, thank you for the opportunity to testify today on EPA's regulatory efforts and on Congressional legislative efforts to address coal combustion residuals (CCRs). My testimony provides our views regarding key elements to address the safe management of CCRs.

As discussed in our proposed rule[1], CCRs are one of the largest waste streams generated in the United States, with approximately 136 million tons generated in 2008. Of this, approximately 34% (46 million tons) are landfilled; approximately 21% (29 million tons) are disposed of in surface impoundments; approximately 37% (50 million tons) are beneficially used; and approximately 8% (11 million tons) are placed in mines. CCRs contain constituents, such as arsenic, cadmium, and mercury, which can pose threats to public health and the environment, if improperly managed. The Agency continues to obtain information on damage cases around the country, which demonstrates that the improper management of CCRs, poses a threat to public health and the environment. Thus, proper management of this waste stream is essential to protecting public health and the environment.

[1] Hazardous and Solid Waste Management System; Identification and Listing of Special Wastes; Disposal of Coal Combustion Residuals From Electric Utilities; Proposed Rule, 75 FR 35128-35264, June 10, 2010.

IMPROPER MANAGEMENT OF CCRS

At the time, EPA issued its proposed CCR rule (on June 21, 2010), EPA had documented evidence of damages to groundwater or surface water in 27 cases, 17 cases of damage to groundwater, and ten cases of damage to surface water. All but one of the proven damage cases to groundwater involved disposal in unlined units. In the remaining unit, there was not enough information as to whether or not the unit had a liner. In addition, EPA identified 40 cases of potential damage to groundwater or surface water. In the majority of cases, damage to groundwater or surface water were associated with practices such as the use of unlined impoundments/units and the failure to monitor those impoundments/units.

EPA also had documented evidence of a number of damage cases due to the catastrophic structural failure of the CCR impoundments, such as at the Martins Creek Power Plant, Martins Creek, Pennsylvania and Tennessee Valley Authority (TVA) Kingston facility, Harriman, Tennessee. The sudden failure of a surface impoundment retaining wall at the TVA Kingston facility in December 2008, and the resulting catastrophic spill of coal ash, highlighted the issue of impoundment stability. In response, EPA developed a proposed rule that would establish regulatory requirements designed to ensure proper management of this waste stream, including measures to prevent future catastrophic releases, as well as other types of environmental impacts associated with the disposal of CCRs in landfills and surface impoundments.

Since EPA's proposed rule was issued, a number of additional reports have been submitted to EPA by several environmental organizations that identified dozens of additional damage cases that these organizations believe resulted from the potential mismanagement of coal combustion residuals; these reports were made available for comment on October 12, 2011. In addition, for states that have begun to require groundwater monitoring of surface impoundments,

in almost all cases, groundwater contamination has been identified. Thus, it appears, based on information received in response to the proposed rule, that without proper management, the disposal of coal combustion residuals in landfills and surface impoundments can pose a threat to human health and the environment.

EPA received more than 450,000 comments on the proposed rule, which raised a number of complex issues. In addition, as part of the rulemaking effort, EPA solicited and received additional technical data. The information, technical data, and comments the agency received on the proposal will help inform the final rule.

BENEFICIAL USE

The beneficial use of CCRs can provide environmental benefits and new applications may provide even greater benefits, based on current studies. Some of the information confirms or strengthens EPA's views on the benefits of CCRs. However, some information indicates that certain uses may raise concerns and merit additional attention.

Evaluations of beneficial use can be quite complex, in that some of these uses are in an encapsulated form, while other uses are in an unencapsulted form, and any evaluation of the potential risks of these uses must take these differences into account. EPA believes that the great bulk of beneficial uses, particularly in an encapsulated form, as in concrete and wallboard, do not raise concerns and offer important environmental benefits. However, some questions have been raised about the use of CCRs in the environment an unencapsulated form. Thus, EPA's proposal sought additional information and requested specific comment on certain aspects of the beneficial use of coal combustion residuals.

We recognize that questions regarding the environmental consequences of beneficially using CCRs have been raised. To help address these questions, EPA is in the process of developing a methodology, which can be used to determine whether encapsulated products containing CCRs are comparable to analogous non-coal combustion residual products, as well as a draft application report utilizing the draft methodology for the use of coal fly ash in concrete and the use of FGD gypsum in wallboard as replacement materials. EPA is also developing a draft methodology for evaluating current unencapsulated beneficial uses of CCRs.

CCR LEGISLATION

The Discussion Draft of the Coal Ash Recycling and Oversight Act appears to establish a framework for the management of CCRs. The documented damages associated with the mismanagement of CCRs support the need for action to address those risks. We support the development, implementation, and enforcement of appropriate standards for facilities managing coal ash, while encouraging the beneficial use of this economically important material. The proper management of CCRs should include clear requirements that address the risks associated with the coal ash disposal and management, consideration of the best science and data available, adequate evaluation of structural integrity, protective solutions for existing as well as new facilities, and appropriate public information and comment.

The Discussion Draft of the Coal Ash Recycling and Oversight Act addresses some of the principles discussed above for effective CCR management. Although the Discussion draft contains key provisions that require states to implement CCR programs that address specific contaminants, address leaking surface impoundments and, require the establishment of groundwater monitoring, we note that it does not clearly address timelines for the development

and implementation of state programs, criteria for EPA to use to determine when a state program is deficient, criteria for CCR unit structural integrity, deadlines for closure of unlined or leaking impoundments/units, including inactive or abandoned impoundments/units, and the universe of CCR disposal units subject to a permit program including impoundments, landfills, waste piles, pits and quarries, and other disposal scenarios.

CONCLUSION

The regulation of CCRs raises complex issues – from the scientific analyses to public and regulatory policy. Should Congress decide to address the regulation of CCRs through legislation, EPA stands ready to assist in that effort to help ensure that legislation establishes a regulatory framework to regulate the management of CCRs in a nationally consistent manner that fully protects human health and the environment.

Testimony

Subcommittee on Environment and the Economy

Committee on Energy and Commerce

Thursday, April 11, 2013

by

Robert J. Martineau, Jr. Commissioner

Tennessee Department of Environment and Conservation

and

Secretary-Treasurer, Environmental Council of the States

Main Points

1. The states have collectively taken a position outlining how to address coal combustion residuals through an ECOS resolution.
2. ECOS supports congressional legislation that comports with the provisions of our resolution.
3. The CRS report re-released in March 2013 contains several criticisms of the legislative report which I address from a state agency leader point of view.

Mr. SHIMKUS. Thank you very much, and I think your opening statement and your submission is very helpful in us moving forward, and I appreciate that.

So I will recognize myself for the first 5 minutes of opening questions.

Mr. Stanislaus, doesn't the legislation in the discussion draft give EPA continuing watchdog role to ensure that state permit programs meet the minimum federal requirements?

Mr. STANISLAUS. Thank you, Congressman. As I noted in my oral statement, there is a role for EPA to oversee the implementation of a state program, and in my oral statement I noted that for the clarity as to how EPA would execute that function is something that we could provide technical assistance regarding that.

Mr. SHIMKUS. Great, thank you. And you could, based upon the discussion draft, take over a state permit program if the state fails to correct identified deficiencies, based upon the discussion draft, is that correct?

Mr. STANISLAUS. Yes, and thank you, Congressman. Again, referring back to my oral statement, there is a provision, as I understand the intent of that, for EPA to review and take over in certain circumstances. As noted in my oral statement, clarity as to those circumstances for EPA to conduct that function would be beneficial.

Mr. SHIMKUS. Yes, and I think the discussion draft basically identifies a base standard, and I think it is pretty clear, and I think you are alluding to that cautiously that based upon that language, as presented, if passed and signed into law, if it is deficient in those base standards, you would have the authority.

So let me go to didn't the EPA state in the proposed rule that 40 C.F.R. part 258, the revised criteria for municipal solid waste landfills would be a framework for regulating coal ash?

Mr. STANISLAUS. In the proposed rule?

Mr. SHIMKUS. That the revised criteria that you all have are proposed that using the municipal solid waste as a guideline would be a proper way of evaluating and moving CCR materials into, obviously, sites?

Mr. STANISLAUS. Congressman, I am not familiar with the specific reference. Let me check that and——*

Mr. SHIMKUS. Well, and I would just obviously—the preamble of the proposed rule basically says that, does it not?

Mr. STANISLAUS. Again, I don't have that in front of me but I will check and put that into the record.

Mr. SHIMKUS. I think if you read the preamble, the answer will be yes, it does. And so our point is, this is not new. We are pretty close on how we need to get to where we need to get to, and we just want to continue to work with you and clean up some stuff. But EPA is pretty much on the record on at least four provisions of this legislation and the ability to have a guideline, the ability of you all to preempt if the states don't meet the guidelines, but the ability of the states to actually—to operate this, and that is what the legislation intends on doing.

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*As indicated in the Preamble of EPA's coal combustion residuals proposal, the Agency's RCRA Subtitle D option references criteria for solid waste disposal facilities and practices found in 40 CFR Part 257. EPA's proposal can be found on the Agency's web site at: http://www.epa.gov/wastes/nonhazlindustrial/special/fossil/ccr-rule/

Consensus seems to be emerging in support of coal combustion residuals being dealt with under a nonhazardous regulatory framework. Do you agree?

Mr. STANISLAUS. Well, again I mean with respect to—regarding the legislation, I mean, so again, I think there are areas of further clarification regarding how the coal ash management should be executed.

Mr. SHIMKUS. Are you prepared to give us any—in this legislative hearing any words and clarifications that might be acceptable, or are we prepared to do this after the hearing and in discussions with you all and committee staff? I mean, how—if we are not asking these questions and not going to glean from you what areas and language that would be helpful in perfecting the language, when do we have a chance to do that, especially in an open forum?

Mr. STANISLAUS. Sure. Well again, we will provide specific details in our technical assistance role, and so there are areas, as I noted in my oral statement, that could be improved and so I think it will be helpful for me and my staff to work with your staff providing details regarding potential areas of——

Mr. SHIMKUS. OK, let me—my time is running out. EPA cannot issue enforceable permits under Subtitle D, is that correct?

Mr. STANISLAUS. That is right.

Mr. SHIMKUS. And from an enforcement standpoint, isn't it better for facilities to operate under an enforceable permit instead of a self-implementing regulation or regulations that are only enforceable through citizen suits?

Mr. STANISLAUS. Well as I understand the legislation, it does provide that the states would issue a permit and oversee that, and——

Mr. SHIMKUS. Isn't that preferable than fighting through the courts and having citizen suits across the country trying to delineate this, clearing this up, and putting a responsible party involved? And this, as we will hear from the state regulators, they are willing, ready, and capable, and do, in fact, all states except for Florida and South Dakota, are part of ECOS, even New York and California and Massachusetts, and they all agree with this approach.

Mr. STANISLAUS. Yes, EPA, under Subtitle D, the states do, in fact, go forward and implement in sum through a permit program. Even under the other titles, EPA delegates that authority, so there are many circumstances where states do—in fact, we rely on the states to implement the solid waste programs. In many cases, that is done through a permit program and enforced by the states.

Mr. SHIMKUS. Perfect. Thank you.

Now I would like to yield to the ranking member, Mr. Tonko, for 5 minutes.

Mr. TONKO. Thank you, Mr. Chair, and thank you, Assistant Administrator Stanislaus for testifying today.

EPA has proposed two alternative regulatory approaches to address the risks posed by unsafe disposal of coal ash. Both approaches include requirements to address failures of wet impoundments, dust from ash landfills, groundwater contamination, and other potential risks. The Subtitle D proposed rule includes detailed technical criteria developed by EPA to protect human health and the environment from the risks associated with CCR disposal.

Getting these technical criteria right is critically important because they ensure that coal ash disposal sites are structurally sound and don't pollute the air or pollute the water. Proponents of the discussion draft that we are considering today have said that the draft contains many of the appropriate criteria, but I have concerns that significant safeguards are missing.

In the last Congress, EPA provided this committee with technical assistance on whether legislation similar to the draft we are considering today included all of the elements necessary to protect human health and the environment. So I would like to ask a few questions to understand whether the new draft addresses those concerns.

First, EPA's technical assistance states that under the language we considered in the last Congress, EPA would not be authorized to develop criteria tailored to the specific risks of coal ash disposal. Does the discussion draft we are considering today address that shortcoming?

Mr. STANISLAUS. So are you referring to the technical assistance for last year's House bill or the Senate bill?

Mr. TONKO. The House bill.

Mr. STANISLAUS. My understanding is the draft discussion is based on the Senate bill. Is that not correct? So let me get back to you in terms—I mean, if you are asking a comparison of technical assistance on the Senate bill I can get back to you regarding what we provided on the Senate bill. I can provide that to you, but generally as noted in my oral statement, there are areas that we are willing to work with you and the committee in terms of areas of further clarification in the areas I have articulated.

Mr. TONKO. OK, and EPA's technical assistance states that the structural integrity requirements in the previous language were deficient because they did not address the full volume of liquid to be stored? Did the changes in this discussion draft address those deficiencies?

Mr. STANISLAUS. Yes, speaking to the discussion draft, it does address liquids and what we have said is that—further clarification as to the standard for which structural integrity would be judged against. The further clarification would be beneficial.

Mr. TONKO. And EPA's technical assistance states that the previous language did not include the longstanding operating criteria for wet impoundments developed by the Mine Safety and Health Administration. Does this discussion draft apply these criteria?

Mr. STANISLAUS. My understanding is that it does not, that there is a provision requiring good engineering practices as the basis of structural integrity.

Mr. TONKO. And EPA's technical assistance states that under the previous language, dry landfills would not be required to comply with many of the operating criteria that currently apply to municipal solid waste and would be applied to coal ash under EPA's proposed rule. Does this discussion draft fix that flaw with the previous proposal?

Mr. STANISLAUS. I am not sure about that.

Mr. TONKO. OK, is there a way that you can get back to us?

Mr. STANISLAUS. Yes, I can review that and get back to you.

Mr. TONKO. OK. That would be most appreciated.

Thank you for your response, Mr. Stanislaus. Let me just indicate, this proposal eliminates EPA's rulemaking authority and replace's the agency's expertise with that of this panel, so it is essential that we get these disposal criteria correct. I hope that the committee will engage with you as we move forward to address these and other deficiencies in this legislation. I believe it is absolutely critical that as we assist those in the industries involved with the guidelines, with the certainty, and with the policy initiated here that we can get things done to work in the best order possible.

So with that, I see my time is almost expired and I yield back. Thank you, Mr. Chair.

Mr. SHIMKUS. Gentleman yields back his time. Chair now recognizes the gentleman from Texas, Mr. Barton, for 5 minutes.

Mr. BARTON. I am not going to use 5 minutes. I am going to ask one question and then I will yield to Mr. McKinley or Mr. Johnson or back to the chairman.

I missed most of your verbal statement, but my question is pretty straightforward. Does the EPA have an official position on the discussion draft, and if they do, what is it?

Mr. STANISLAUS. We do not have an official position. In my oral statement, I have noted there are areas that the bill does, in fact, advance the basic requirements we believe are necessary for safe coal ash disposal and areas of further clarification that we are willing to work with the committee to expand upon.

Mr. BARTON. Could you characterize the EPA's position is wishing to cooperate with the committee on this bill, or wanting to be confrontational?

Mr. STANISLAUS. We are absolutely willing to cooperate.

Mr. BARTON. All right. Thank you, sir, and I would yield to whoever you want me to.

Mr. SHIMKUS. I would claim your time.

Mr. BARTON. OK, I yield back to the chairman.

Mr. SHIMKUS. Thank you, and I would just like to follow up in that question. So EPA is not taking a position of opposition to the language—to the bill?

Mr. STANISLAUS. That is right.

Mr. SHIMKUS. OK, and I think that is important.

I will just continue. Let me ask, on the legislation, doesn't the legislation require issuance of enforceable permits to all coal ash disposal facilities?

Mr. STANISLAUS. My understanding of the legislation is that the states would be—would implement the program to issue permits, so the area of further clarification is kind of—clarification regarding timeline of that.

Mr. SHIMKUS. And I think that is something we could—I mean, my understanding of your testimony is that there are four things you kind of like. There are six provisions that you think we could—we need to look at, one of those being establishing a timeline. But—and so I think that is something I think we can be helpful and work on, but it is my understanding on the issue of the question that it—the way the language is drafted is that we do require enforced—now you might question the standard of enforcement—not even standards, because we believe the states can enforce it. We may have a question of what are the standards, right?

Mr. STANISLAUS. Yes.

Mr. SHIMKUS. But I don't think there is any dispute in the language that there would be—and I am just making sure I say it properly—that there is an issuance requirement and enforceable permits that—in this draft language.

Mr. STANISLAUS. I believe the language or the intended language is to put in place a permit program, an implemented permit program, and again, assuming we could address the timing question is also the—what universe it would apply to, so—people are giving me notes.

Mr. SHIMKUS. Me too.

Mr. STANISLAUS. I think one of the areas is the definition of what is covered, yes.

Mr. SHIMKUS. OK. Let me ask, is a Subtitle C rule still on the table?

Mr. STANISLAUS. Well again, Congressman, we have noted in my testimony, we are evaluating a number of comments, about 430,000 comments and data, and also there is additional data which will inform the risk and the management—the preferred management mechanism to address that. So the additional data which we would want the public to review before we make a decision, we want to get that out to the public and then that will inform which is the best technique, given all the considerations.

Mr. SHIMKUS. So for the public, moving on legislation could actually create a quicker standard of protection versus waiting for a process going through your due diligence?

Mr. STANISLAUS. It could.

Mr. SHIMKUS. All right. What is the agency's—do you have any timing? I guess that is a follow-up to legislation could be quicker when you have timing?

Mr. STANISLAUS. I don't have a specific timeframe in mind, and we have laid out in filings that we will have some idea in about 6 months in terms of—based on the ability to get public input on this data, but we will—it is not that we will be able to act in 6 months, but in 6 months, based on the data being submitted to the public for review and comment.

Mr. SHIMKUS. So I guess—again, let me just follow up. We believe that legislation would help you all deal with the pending CCR deadline. You are currently in litigation. You are involving—and I can answer that question, but I think that is a thing that we can debate and discuss.

So with that, Mr. Barton's time is expired, which I was able to use, and I now yield to the chairman emeritus of the full committee, Mr. Dingell for 5 minutes.

Mr. DINGELL. Mr. Chairman, I thank you for your courtesy. This is a very useful hearing. It reminds me, however, of a Greek tragedy. I see us sitting here like the chorus and anticipating that terrible calamities are about to come and we don't know what to do about it. Well, there is a way out of this thicket, and I want to commend you for having the hearing, because I think this might just be a beginning.

Having said this, I have got a bunch of yes or no questions and I hope that you will respond, referring to the witness.

On other waste issues, states create their plans within a certain timeframe and with certain federal requirements that they are obligated to meet, is that right?

Mr. STANISLAUS. I am sorry, could you repeat that question?

Mr. DINGELL. I will dispense with that question. Do you believe this draft bill has the timelines and minimum legal standards of protection to ensure that proper program plans are implemented in the states? Yes or no.

Mr. STANISLAUS. Well, that is one of the areas that I noted in my oral statement——

Mr. DINGELL. Yes or no.

Mr. STANISLAUS. —that could be clarified.

Mr. DINGELL. OK. Could you submit additional records or information for the record?

Mr. STANISLAUS. Sure.

Mr. DINGELL. And I don't want to see you toe dancing around. Take a firm stance here, because the situation stinks and quite honestly, the legislation is not good.

This bill would legislatively create regulatory requirements. Under a normal regulatory process, if these requirements such as a legal standard for protection, needed to be updated or to better address the issue, there would be a comment period to obtain input from industry, stakeholders, and the public, isn't that right?

Mr. STANISLAUS. Yes, my understanding of the draft legislation——

Mr. DINGELL. Yes or no.

Mr. STANISLAUS. My understanding of the draft legislation is that the——

Mr. DINGELL. I have limited time. Please say yes or no. There is no requirement in this bill that any future changes should go through a public comment process, is that right?

Mr. STANISLAUS. Again, my understanding of the legislation is that in implementing the program by the state, it is subject to public input and comment. However——

Mr. DINGELL. You are not being helpful, sir. Under EPA's proposed rule to establish requirements to address this issue, in your testimony you said that EPA received nearly a half million public comments, solicited public data, started drafting a methodology to evaluate the beneficial uses. Under the legislative proposal before us, would EPA have the authority to gather public comments, technical data, or develop methodologies in the future to improve the implementation of the program proposed in the bill? Yes or no?

Mr. STANISLAUS. My understanding of the legislation is that the legislation would prescribe to the states to implement a program and a permit thereafter.

Mr. DINGELL. All right. Submit additional information for the record.

What four or five national standards do you believe should be specifically addressed and added to this legislation to ensure that there is national conformity amongst several states?

Mr. STANISLAUS. Yes, as I noted in my——

Mr. DINGELL. Would you submit that for the record?

Mr. STANISLAUS. Sure, absolutely.

Mr. DINGELL. Now do you believe this legislation as currently written would require these standards to be included in state program plans? Yes or no? Would you please submit that for the record?

Mr. STANISLAUS. Sure.

Mr. DINGELL. Mr. Chairman, from what I am seeing today it appears there is much we need to do to prevent spills like that experienced in Tennessee and more recently in Wisconsin when we had a tremendous—of nastiness flowing into Lake Michigan. I am just a poor Polish lawyer from Detroit, but I would remind members of the subcommittee that we are not engineers and we must give EPA the flexibility to implement appropriate performance standards without having to come back to Congress for approval. Traditionally, Congress and this committee have given EPA authority to develop regulations and to address particular issues, but this bill jumps straight to the regulations without knowing whether the regulations are sound or not. And I am concerned that we may be setting, quite frankly, a most disturbing precedent, one which is inconsistent with the Administrative Procedures Act, and it allows regulations to be set without the extensive public comments and technical data that are needed from industry and from stakeholders. I hope my friends on the other side will recognize that we are imposing a congressional straight jacket on the EPA and the administrators of this program. The end result will be, if we are right, it might be fine. That is most unlikely. The probabilities are we are going to find we are wrong. We have no flexibility here that I can discern. EPA can't find any, and we are not getting much help from the witness, but it is urgently necessary that we consider these facts and that we do these things intelligently.

The industry has got a legitimate complaint. We ought to hear it. We ought to do something about it. But we ought not jump blindly in and set a bunch of standards about which we know nothing and simply prolong the problem and increase litigation that is going to curse us if we pass the bill as it now is.

I look forward to working with you, and I hope you will cooperate with me in trying to get a bill that makes some sense. Thank you.

Mr. SHIMKUS. I thank my colleague. Every time I hear from the poor Polish lawyer, I check my wallet.

So with that, I would like to recognize the author of last Congress' legislation, and the member who is intimately involved with this, Mr. McKinley for 5 minutes.

Mr. MCKINLEY. Thank you, Mr. Chairman, and again, thank you for appearing before the committee.

You are right. This thing has been hanging for 30-some years, and we passed a bill 2 years ago, we passed a bill a year ago, we are back at it again. If we continue with this, with being stonewalled, I guess, that argument of making perfect the enemy of good and we do not pass a bill, can you help paint the picture of what happens? Won't we continue to be disposing of fly ash in the way they did it in the '40s and the '50s, because there are some states that have no regulations whatsoever on this? So if we don't do something, aren't we really challenging people as a result?

Mr. STANISLAUS. I agree, Congressman. As I noted in my oral statement, the ongoing damages that are occurring and past dam-

ages from, particularly, the unlined impoundment kind of scenario and the particular—the requirements that I have articulated in my oral statement, things like lining, things like monitoring are things that will be necessary to protect against those risks. So I think we do need some action.

Mr. MCKINLEY. What about the—are you—I think I heard you make some remarks earlier in your opening statement that the 40 percent that we recycle, the beneficial recycling, you are still of an opinion that we should be able to continue to beneficially recycle about 40 percent of the product?

Mr. STANISLAUS. Yes, I believe it is 37, but yes, close to 40.

Mr. MCKINLEY. So if this legislation doesn't go through—and I want to paint probably the worst picture would be—I believe isn't there litigation now?

Mr. STANISLAUS. There is litigation now.

Mr. MCKINLEY. OK, and that litigation wants you to call this a hazardous material?

Mr. STANISLAUS. My understanding of the litigation is to—for EPA to move forward on a timeline for regulating the disposal of coal ash, yes.

Mr. MCKINLEY. Under a hazardous waste landfill?

Mr. STANISLAUS. Let me get back to you. I don't believe it is prescriptive in that way.

Mr. MCKINLEY. I thought there was something to that effect that would label it, and I just know that if something were hazardous, then none of us should be using that. We shouldn't use it in drywall; we shouldn't use it in concrete if it is hazardous. We do?

Mr. STANISLAUS. If it is hazardous, no.

Mr. MCKINLEY. But I think EPA has already determined that it is not a hazardous material. We just need to make sure that we dispose of it and recycle it in a way that is appropriate. So I have watched now over 2 years—it is my second term here—how it has matured in this conversation with the EPA a relationship that we can probably work this thing through, because it does us no good if we continue with the other side, I suppose it would be, not to work with us to come up with a piece of legislation because that was my earlier comment. If we don't do it, we are going to have areas that people could feel threatened. Their homes could be challenged, I suppose, a whole series of things, unless we get something approved. I am hoping that we get some good cooperation and compromise and work together to come up with a piece of legislation. I am very encouraged from your remarks earlier today and what we have heard over the last few months, that there is some chance we are going to get something accomplished this year, and we won't continue this 30 years of uncertainty.

So you are telling me that you think we will be able to come up with something this year?

Mr. STANISLAUS. I am not in the prediction business, but my commitment is that we will work with you, Congressman and the committee, in terms of the areas that I have articulated in my oral statement.

Mr. MCKINLEY. Some of the recommendations I hope that we will take into consideration. That is what we did last time. We had a hearing like this on the original bill and then we modified it after

we heard from people. I don't think any of us are afraid to make changes to a piece of legislation. We are trying to get it right. I want to get this resolved, and I like the history and the ideology that people are putting out there about that they would rather have nothing than have something that moves in the right direction.

So I thank you very much and I yield back the balance of my time.

Mr. SHIMKUS. Gentleman yields back his time. Chair now recognizes the gentlelady from California, Ms. Capps, for 5 minutes.

Mrs. CAPPS. Thank you, Mr. Chairman, for calling this hearing. I thank you, Mr. Stanislaus, for your testimony.

As you know, this proposal passed the House in the last Congress, despite serious concerns about whether it would sufficiently protect the health of people living near coal ash disposal sites. In technical assistance you provided to the committee last Congress, you identified multiple principal contaminants of concern in coal ash, including arsenic, cadmium, lead, mercury, and many others. These heavy metals pose very serious threats to human health. Would you, for our hearing today, please identify briefly some of the health effects of these contaminants?

Mr. STANISLAUS. Well, let me commit to get back to you on the record in terms of all the contaminants we have identified in the bill in terms of the specific health impacts.

Mrs. CAPPS. Just generally, the ones that I have mentioned came from the list you provided last time, arsenic, cadmium, lead, mercury. Can you just identify a few of those health——

Mr. STANISLAUS. Well, not getting into the specifics of each of the contaminants, so——

Mrs. CAPPS. Right.

Mr. STANISLAUS. —generally, you could have—depending on the contaminant and the contaminant level, you could have some developmental issues, sometimes non-cancerous and cancerous. It all depends on the particular contaminant you are talking about. So what I can do is after the hearing provide a breakdown of each of the contaminants and the various health impacts, based on the level of exposure.

Mrs. CAPPS. I would appreciate that for the record, but I think that there is a sense of urgency that we get something done, because these are very serious health threats. We need to address them in a good piece of legislation because the lives of people in the area—surrounding areas depend on it.

I will just turn to a little bit different way of asking a similar question. In your proposed rule for coal ash disposal, EPA identified three main pathways of exposure to these contaminants. First, leaching from unlined units, second, direct uncontrolled discharges in the case of a structural failure of an impoundment, and third, fugitive dust emissions. So, to further the record, would you discuss, please, some of the primary public health and environmental impacts that these three types of coal ash exposure can create?

Mr. STANISLAUS. Well, those are the exposure pathways, so those are—those identify how a person would be exposed.

Mrs. CAPPS. Right.

Mr. STANISLAUS. And so the various categories of health consequence would occur from that exposure, be it developmental, noncancer, or cancer. So you can have different kinds of health impacts, depending on whether it is inhalation, whether it is ingestion.

Mrs. CAPPS. Right.

Mr. STANISLAUS. So I don't have that breakdown, but I can provide it. Depending on the pathway of exposure, the particular contaminant and the kinds of health impacts, I can provide that for the record.

Mrs. CAPPS. So am I right then in drawing the conclusion that there are multiple kinds of exposure with kinds of multiple serious health effects, because some of it is from the dust, some of it is from the discharge, some of it is from leaching. I mean, different ways that it can enter the environment that a person's health can be directly affected by it, would that be a fair assessment?

Mr. STANISLAUS. That is correct. If it is improperly managed, you can be exposed in multiple different ways, so if you don't have effective controls of dust, you could inhale it. If you don't have effective controls of leaching, it could get into the groundwater and you could drink that. So it could be multiple and different, depending on whether it is managed well or not.

Mrs. CAPPS. Thank you.

And finally, I want to follow up on the storage liners issue. My question is, will any kind of liner work to prevent leaching, or are there certain technical specifications that must be met?

Mr. STANISLAUS. Well clearly, it depends on the type of liner and then also ensuring that the liner is within a management framework, meaning a monitoring program and oversight program.

Mrs. CAPPS. So it is not—and first of all, not any kind of liner will work, it has got to be some specified kind of liner. You don't have to go into the details here if you don't have that information, but there has been work to uncover and figure out what that kind of liner is? Am I correct?

Mr. STANISLAUS. There are industry standards in terms of——

Mrs. CAPPS. There are industry standards.

Mr. STANISLAUS. Yes, the nature and particular materials for that liner.

Mrs. CAPPS. OK, so there has already been research done?

Mr. STANISLAUS. And implemented in certain parts of the country.

Mrs. CAPPS. And implemented already, and studied to see if it is effective?

Mr. STANISLAUS. Yes, yes.

Mrs. CAPPS. OK. Well, the conclusion that I draw is that there are some robust specifications already and I am led to conclude that these are very serious concerns, and I hope that my colleagues will work with these technical experts at EPA—I hope we all will—to ensure that we address each of these exposure pathways appropriately and sufficiently and have that be part of the legislation that comes so that the bill will have some teeth in it and it will be effective in finally addressing this particular challenge. And I am looking across the aisle, because this is going to take the efforts of all of us to make sure that these standards are met.

I yield back the balance of my time.

Mr. SHIMKUS. Gentlelady's time is expired.

I would just say that in this draft is really the Senate bill from last year, which is changed from ours, so it does have the groundwater, it does have the dust, it does have the levy issues and standards. It also—and Mr. Stanislaus mentioned previously that the technical considerations—this is part of the Senate bill, so some of the observations is based on the old house bill, not this draft bill which is part of the Senate language. That is safe to say, I think.

So I would like to yield, and I apologize to the gentleman from Ohio. He should have went previous to the gentleman from West Virginia, but I am just scared of the guy from West Virginia, so to recognize Mr. Latta for 5 minutes.

Mr. LATTA. Thank you very much, Mr. Chairman. I appreciate it, and I greatly appreciate your testimony today and welcome you before the committee.

You know, having served in the Ohio General Assembly, I truly believe that the states really know their citizens need better than the Federal Government, and also the states also believe that we have got to protect not only our citizens' health, but also the environment, while at the same time ensuring job creation and growth, not only in Ohio, but across the country.

Ohio currently requires permits for both coal ash landfills and surface impoundments, and have continuously worked to improve the requirements, including those for liners and groundwater monitoring. Additionally, the Ohio Department of Natural Resources has its own program to monitor and prevent impoundment failure. Because of the quality of the program, Ohio EPA considers the risk of catastrophic failure of Ohio coal ash surface impoundments to be low. As you can see, Ohio, like many other states, has quality coal ash management measures already in place, and I believe that the Coal Ash Recycling and Oversight Act of 2013 will allow them to continue this ability.

If I could ask you this first question, given the measures that Ohio and other states have or are working on right now and are currently putting into place, do you believe the states have that ability to ensure proper management and disposal of coal ash under the proposed legislation?

Mr. STANISLAUS. Oh, absolutely. I mean, there are many examples. I don't know— I can't tell you at this moment specifically about Ohio's program. There are many examples of states doing a really good job on coal ash management. There are also other situations where even the states would acknowledge that there are places where it has not been effectively managed. Even a state survey among state waste managers has concluded that there are areas that are not managed well. I can't talk specifically about Ohio's program.

Mr. LATTA. OK, well thank you.

And to ask kind of a follow-up and as to other questions that the gentlelady from California was mentioning a little bit earlier about liners, and if I could ask a couple questions in regards of the EPA would like to discuss. Do you agree that the bill contains a provision for requiring liners?

Mr. STANISLAUS. Yes, my understanding that the bill does require a provision for liners, and again, my oral statement is that there are particular—one of them is where additional clarity as to how that will be implemented would be helpful.

Mr. LATTA. OK, and do you also agree that the bill contains a provision requiring groundwater monitoring?

Mr. STANISLAUS. Congressman, my understanding is that the bill would require groundwater monitoring.

Mr. LATTA. OK. Do you agree that the bill has a deadline for the installation of the groundwater monitoring?

Mr. STANISLAUS. Congressman, my understanding that there is a deadline for installing groundwater monitoring.

Mr. LATTA. OK, thank you. Do you agree that the bill includes all of the constituents identified by the EPA as being of concern for coal ash?

Mr. STANISLAUS. I believe that is correct. Let me verify, but I believe that is correct. Let me verify it and place a statement on the record.

Mr. LATTA. OK, thank you. Doesn't the bill set a timeline for meeting the groundwater protection standards for surface impoundments that are incorrective?

Mr. STANISLAUS. That is something I am not sure is clear, but let me——

Mr. LATTA. If you could get with us on that, it would be great.

Mr. STANISLAUS. Yes.

Mr. LATTA. Do you agree that the bill requires control of fugitive dust?

Mr. STANISLAUS. It does have a provision for fugitive dust control, and again, it could be another area where further clarification of how it would be implemented could be beneficial.

Mr. LATTA. OK. Does the bill require financial assurance?

Mr. STANISLAUS. That is something I am not sure.

Mr. LATTA. OK, if you want to get back with us on that, we would appreciate it.

And doesn't the bill contain location restriction for coal ash management and disposal units?

Mr. STANISLAUS. I think that is another area where I think it could be further clarified. It is a bit ambiguous to us.

Mr. LATTA. OK, and then with my remaining time, in your opinion, has the EPA developed a risk assessment that supports a determination that coal ash should be regulated under Subchapter C or Subtitle D—excuse me, Subtitle C or Subtitle D?

Mr. STANISLAUS. Yes, as noted earlier, there is substantial additional data that has been provided to us by multiple stakeholders that will inform our risk assessment, and so we are now in a position to move soon—will be, hopefully, to make that judgment. So based on that, it will inform the best management regime to safely address the risks that we have identified.

Mr. LATTA. Well thank you very much, and Mr. Chairman, I will yield back the balance of my time. If the witness could provide us with those answers, I would appreciate it.

Mr. STANISLAUS. Sure.

Mr. SHIMKUS. Gentleman yields back his time. The chair now recognizes the gentleman from California, Mr. McNerney, for 5 minutes.

Mr. MCNERNEY. Thank you, Mr. Chairman. I certainly wouldn't want to live downstream of a coal ash waste disposal site, but the conflict seems to be between federal authority and state authority, and the question I have is some states are going to do a good job. Some states may not do as good a job. If a site is leaking and poses a danger to the people in the groundwater, et cetera, does the EPA have sufficient authority in this bill to go in and take steps to remediate the situation?

Mr. STANISLAUS. Well as I understand, the program would require the states to set forth a permit program and then implement the permit program to oversee that. In terms of EPA as well, that is one of the areas I noted earlier that can be further clarified as to under what circumstances it could play a role in the oversight.

Mr. MCNERNEY. So basically you are saying that there is not—it is not sufficiently clear in the proposal what is—when the EPA should and can step in?

Mr. STANISLAUS. Yes, it can be further clarified, and we are willing to provide technical assistance on potential areas of clarification and some analogies to other programs that we have had that role and where we work in partnership with the states to do that.

Mr. MCNERNEY. Is that something that the EPA is working with this committee to try and clarify the language?

Mr. STANISLAUS. We can, absolutely.

Mr. MCNERNEY. Mr. Chairman, is that something that you are looking forward to doing?

Mr. SHIMKUS. If the gentleman would yield, I would say that the discussion draft addresses ponds that are unlined and leaking, and the bill requires unlined leaking impoundments to meet groundwater protection standards within a certain time period, or close. Is that correct?

Mr. STANISLAUS. Yes, there are closure requirements, and again, they could be further clarified as to the timeline and what is the trigger for closure.

Mr. MCNERNEY. So regaining my time then, in an emergency situation, would the EPA have the authority to go in and take the steps that are necessary to remediate the danger?

Mr. STANISLAUS. Yes, again, under the legislation that is an area that could be further clarified in terms of EPA's role, and clearly, there are situations where there is imminent substantial endangerment, under our authorities, we can and we have gotten involved to address those emergencies.

Mr. SHIMKUS. So the answer is yes is what he is saying.

Mr. MCNERNEY. It didn't sound like yes to me, Mr. Chairman.

Now, the EPA doesn't have the authority—moving to the planning and design stage, to impose design standards, is that correct?

Mr. STANISLAUS. My understanding of the draft framework is that it will be up to the states to determine the details regarding that through their permit program.

Mr. MCNERNEY. Do you—you used the word "encapsulated" several times in your oral testimony. Could you explain what that means?

Mr. STANISLAUS. Sure. It simply means in the beneficial use world, coal ash can be beneficially used in circumstances where essentially it is fixed, like in wall board, like in concrete, and there are other areas where it is not fixed, fill operations as an example, agricultural use. So there are a variety of areas of its utilization, so in terms of developing methodology, addressing how it is safely used, we have to look at how it is used and not just the methodology currently developed, and with the first set of methodologies to be encapsulated, and we anticipate that to be issued in the fall.

Mr. MCNERNEY. Well then encapsulated means commercially viable encapsulation. It doesn't mean encapsulated specifically for the purpose of disposing it safely?

Mr. STANISLAUS. Yes, I use that terminology not relating to the disposal regime, as it relates to just beneficial use.

Mr. MCNERNEY. Now some toxic wastes are encapsulated, say, in a glass container that won't leak for many thousands of years. Is that prohibitive in this case for coal ash because the volume is too big, or is there some way to encapsulate it so that it can be disposed of safely for generations?

Mr. STANISLAUS. Well, the framework for safe disposal is a combination of a lining system and a monitoring program, and we believe that can effectively address the risks that we have identified. Obviously, you have to look at also addressing fugitive dust or fugitive dust control systems as well.

Mr. MCNERNEY. So is that what you described, the lining, the groundwater monitoring, was that the 2000 proposal with the EPA? Was that included in that 2000 proposal?

Mr. STANISLAUS. Those elements were included in that.

Mr. MCNERNEY. OK. Thank you, Mr. Chairman.

Mr. SHIMKUS. Thank you. Chair now recognizes the gentleman from Ohio, Mr. Johnson, for 5 minutes.

Mr. JOHNSON. Thank you, Mr. Chairman. Mr. Stanislaus, thanks for being with us today.

Does CRCLA give EPA's authority the authority to address inactive or abandoned impoundments or units?

Mr. STANISLAUS. Generally CERCLA provides that if there's a threat from hazardous waste, its authorities can be used. I am not sure specifically where we used that in an impoundment scenario, but I can check and get back to you.

Mr. JOHNSON. Inactive or abandoned? Not active ones, but inactive or abandoned.

Mr. STANISLAUS. Yes, let me check and determine whether we used that and whether we can use that.

Mr. JOHNSON. If you could respond back in writing, that would be great.

Mr. STANISLAUS. Sure.

Mr. JOHNSON. Also, Mr. Stanislaus, following Kingston, EPA inspected coal ash impoundments, some 600 of them, in fact, to make sure that they are structurally sound. You hired independent contractors who in the agency's own words are experts in the area of dam integrity. Do you agree with the findings of your staff that not a single coal ash impoundment was rated unsatisfactory and poses an immediate safety threat?

Mr. STANISLAUS. You know, I have to go back and look cumulatively of our postings, but we have done an assessment and we didn't believe there was a scenario where there was a threat of imminent failure, and it is a combination of looking at how it is designed, an inspection, and there was some recommendation to do some additional enhancements to prevent risk.

Mr. JOHNSON. But none was rated unsatisfactory and none posed an immediate safety threat? Do you agree?

Mr. STANISLAUS. Let me check and put it on the record.

Mr. JOHNSON. OK, if you could check and get back to us on that also.

Do you agree with the findings of your professional staff as well that the owners and operators of impoundments with identified deficiencies have responded responsibly by submitting response action plans?

Mr. STANISLAUS. Yes, I will go verify that and place it on the record.

Mr. JOHNSON. OK, so you can get back to us with all of that?

Mr. STANISLAUS. Sure.

Mr. JOHNSON. Mr. Chairman, with that, that is all my questions. I yield back.

Mr. SHIMKUS. Gentleman yields back his time. Chair now recognizes gentleman from Mississippi, Mr. Harper, for 5 minutes.

Mr. HARPER. Thank you, Mr. Chairman, and thank you for being here. I know this always fun, but we appreciate your time and expertise. These are important issues and we need to make sure we stay on top of this.

You know, EPA has direct enforcement authority for municipal solid waste only when the agency determines that a state program is inadequate. The bill adopts essentially the same approach. Why is the approach not acceptable for coal ash?

Mr. STANISLAUS. Well, as I noted earlier, there is—there are provisions for EPA to review a state program, the state's implementation program. Further clarity as to how it will conduct its review and under what circumstance it could engage a state's improvement of that or take it over, that is where there is some ambiguity.

Mr. HARPER. OK. You know, EPA has suggested that it would measure the adequacy of existing state programs based on whether groundwater monitoring was required. The bill requires groundwater monitoring, as you were asked and affirmed earlier, for all structures that receive coal ash. That is correct, isn't it?

Mr. STANISLAUS. Well, I think what the bill states that it requires groundwater monitoring for facilities that receive coal ash after the effective date of the legislation. So one of the areas of clarification as to what are the universe that will be subject to the groundwater requirements?

Mr. HARPER. You know, EPA's proposed rule suggests the importance of having state coal ash permit programs address surface impoundments and require liners. The bill requires regulation of surface impoundments and liners for all new and expanded land disposal units, doesn't it?

Mr. STANISLAUS. I believe for those units that receive waste after the enactment date.

Mr. HARPER. OK.

Mr. STANISLAUS. That is correct.

Mr. HARPER. All right. Mr. Chairman, I yield back the balance of my time.

Mr. SHIMKUS. Chair thanks the gentleman, and then the chair recognizes the gentleman from Louisiana, Mr. Cassidy, for 5 minutes.

Mr. CASSIDY. I yield back.

Mr. SHIMKUS. That is the quickest 5 minutes I have ever had as chairman, and the chair thanks you.

Seeing no other members, Mr. Stanislaus, thank you for your testimony. We are going to try to get you to yes a little bit clearer. I think we have made great progress since the last Congress, and we look forward to working with you and we thank you for your time.

I would like to ask the second panel to join us.

Mr. STANISLAUS. Thank you, Mr. Chairman, and thank you, members.

Mr. SHIMKUS. We would like to get started as promptly as possible, so we would like to thank the second panel for joining us. Many of you have been here before and seen the process. I will recognize you in order from left to right. I will do it, you will be given 5 minutes for an opening statement, and your full statement has been submitted for the record. We will begin.

First I would like to recognize Mr. Robert Martineau, Jr., Commissioner from the Tennessee Department of Environment and Conservation. Sir, you are recognized for 5 minutes, and welcome.

STATEMENTS OF ROBERT J. MARTINEAU, JR., COMMISSIONER, TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION; STEPHEN A. COBB, P.E., CHIEF, GOVERNMENTAL HAZARDOUS WASTE BRANCH LAND DIVISION, ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT; SUSAN PARKER BODINE, PARTNER, BARNES & THORNBURG, LLP; LISA EVANS, SENIOR ADMINISTRATIVE COUNSEL, EARTHJUSTICE; AND JACK SPADARO, MINE SAFETY & HEALTH AND ENVIRONMENTAL CONSULTANT

STATEMENT OF ROBERT J. MARTINEAU, JR.

Mr. MARTINEAU. Thank you, Mr. Chairman, and thank you to the committee for the invitation to be here today to discuss the issues about coal ash combustion and the legislation.

I am here today representing the Environmental Council of State, or ECOS, whose members are the leaders of state and territorial environmental protection agencies, and my own State of Tennessee. Currently I serve as the—on the executive council of ECOS as secretary/treasurer.

The incident that occurred in Kingston, Tennessee, in 2008 obviously made coal ash management an issue of national attention. I am here today to talk about the position that the states have on collectively—on how to best move forward with regulation of coal ash.

ECOS adopted a formal resolution on this issue, first passed in 2008, and reaffirmed last month at our spring meeting. I have at-

tached that to my written testimony and ask that it be made part of the record.

In short, our ECOS resolution agrees with the multiple studies that EPA has conducted over many years and three administrations, that coal ash is not a hazardous waste and should not be regulated as such. ECOS also agrees with EPA's 2005 finding that the states should continue to be the principal regulatory authority for regulation of coal ash. We recognize that there are some significant beneficial reuses for coal ash, and we support those. While some may suggest otherwise, regulation of coal ash as a hazardous waste would have an extreme chilling effect on the beneficial reuse of coal ash in concrete road bed material and other uses.

While we believe the states are the appropriate regulatory authority for coal ash, we also recognize there is some benefit for a national consistency approach. Therefore, ECOS has supported the bipartisan efforts of the House and Senate in the last Congress to create a federal program that allows states to regulate coal ash management and disposal under a set of federal standards created directly by Congress and implemented by the states. This is a new and thoughtful approach in regulation.

ECOS sees this approach in this bill as a new path forward for federal involvement in some of the environmental challenges we face. We live in an era of constrained resources in government at both the federal, state, and local level. Challenges like coal ash would benefit from a new partnership model between the state and the Federal Government.

The discussion bill today sets standards that protect human health and the environment, and provides the states the opportunity to implement, enforce, and supplement the standards that are most applicable for each state. If a state chooses not to implement the CCR program, then EPA can and will. States can ask for technical assistance from EPA, should they need it, and EPA is required periodically to assess and evaluate the states' implementation of those programs. If necessary, EPA can assume control of any state program if the state is unsuccessful in implementing those standards. Because the bill does not require EPA to promulgate the rules, but creates the standards directly in the legislation, there are fewer delays in the program's startup, and there is an additional savings to the Federal Government.

Obviously, any new proposed partnership in management of coal ash is subject to constructive criticism. I would like to briefly address a couple of the criticisms identified in the Congressional Research Service report.

First, the report noted that last year's bill lacked a time table for implementation and other deadlines. While there are a number of time tables for closure and groundwater monitoring upgrades in the statute, there are a reasonable well-defined schedule for the states to actually adopt the rules as necessary and develop the permit programs. It would certainly be reasonable. States are used to dealing with that as they implement other federal programs. This time table would allow states to pass state rules, set up their regulatory programs, or supplement the ones they already have to get the permit program up and running to the extent they don't have one.

Second, the CRS report also implied that a lack of direct EPA enforcement authority would make it less likely for the states to implement a program. I think that is simply contradicted by the record. ECOS has gone on record saying that they desire to run the—regulate coal ash at the state level. It is certainly not the case for Tennessee, and I don't think it would be the case for any other states.

A third criticism in the standards is that you can only set these kinds of standards through promulgation of rules. We believe Congress can create the basic standards for coal residual management, and the references to some of the existing regulatory requirements under part 258 are already set forth in the standard and would be encompassed in setting forth the basic criteria that states would have to implement. Obviously, states can choose to do more if they need to do so to address particular geographic or other conditions in the state.

Lastly, there is skepticism that EPA will be able to judge the states' performance on coal ash programs that would be created by this bill. EPA has been judging state air, water, and waste programs for 40 years through the delegation of programs. ECOS continues and the state agencies continue to interact with EPA every single day on the adequacy of their programs, and I don't think this program would be any different. The key is not to judge whether a state would implement the program exactly as EPA would, but whether the state has created an effective program for regulation that is consistent with the statute. A state must certify in detail to EPA that it has the equivalent statutory and regulatory authority to operate its CCR management and disposal program, including permitting, inspections, monitoring, review of site data, and enforcement. If the state falters, EPA can warn it. If the state fails, then EPA can take the program. This is the same authority that EPA has with all other delegated state programs.

I will close with a quotation from the March CRS report that I think is accurate and appropriate here. "That a coal ash regulatory program would be created using a new approach does not mean that it cannot achieve its intended purpose. The bills would establish a framework that could be used to create programs to regulate CCR disposal, allow states flexibility to develop and implement the CCR management and disposal programs, and specify some level of EPA oversight after states are implementing the program." We concur with that view, that this is a new approach, and that we think will work well to serve the public.

Thank you.

[The prepared statement of Mr. Martineau follows:]

Testimony

Subcommittee on Environment and the Economy

Committee on Energy and Commerce

Thursday, April 11, 2013

by

Robert J. Martineau, Jr. Commissioner

Tennessee Department of Environment and Conservation

and

Secretary-Treasurer, Environmental Council of the States

Thank you for inviting me here today to talk about state regulation of coal ash and coal combustion by-products. I am representing the Environmental Council of the States (ECOS), whose members are the leaders of the state and territorial environmental protection agencies, and my own state. I am the current Secretary-Treasurer of ECOS.

The incident that occurred in Tennessee in 2008 made coal ash management an issue of national concern. I am here today to talk about the position that the states have collectively chosen to best manage coal ash. ECOS has adopted this position as a formal resolution entitled, "The Regulation of Coal Combustion Residuals" (CCR), which I ask to be made part of the record. ECOS first passed this resolution in 2008, and reaffirmed it last month.

In short, the resolution agrees with the multiple studies that the U.S. Environmental Protection Agency has conducted in fewer than three different administrations that coal ash is not a hazardous material. We also agree with EPA's 2005 finding that the states should continue to be the principal regulatory authority for coal ash. We recognize that there are significant

beneficial reuses for coal ash, and we support these. Regulation of coal ash as a hazardous waste would have a chilling effect on the beneficial reuse of coal ash in concrete, as road bed fill and other uses.

While we believe the states are the appropriate regulatory authority for coal ash, we also recognize there is benefit for some level of national consistency; therefore, ECOS supported the bi-partisan efforts in the House and Senate in the last Congress to create a federal program that allows states to regulate coal ash management and disposal under a set of federal standards created directly by Congress and implemented by the states. This is a new approach as some have noted, including the Congressional Research Service in its recent rewrite of an earlier report on this topic. We expect to support a similar effort in this Congress.

ECOS sees the approach in this bill as a new path forward for federal involvement in some of the environmental challenges we face. We live in an era of constrained resources at all levels of government: federal, state and local. Some national environmental challenges, air quality as an example, require significant partnerships between the states and the federal government. Other challenges, like coal ash, are suitable and would benefit from a new partnership model.

The bi-partisan bill brought forward by Rep. McKinley is a blueprint for that partnership. In this bill, the federal government sets standards that protect human health and the environment, and provides the states the opportunity to implement, enforce, and supplement the standards that are the most applicable for each state. If a state chooses not to implement the CCR program, then EPA will. There is no financial assistance from the federal government to the states. However, the states can ask for technical and enforcement assistance from EPA should they need it. In turn, EPA is required to evaluate the states' success in implementing the standards in this law. If

necessary, EPA can assume control of any state program that is unsuccessful in implementing the standards. This serves as the "backstop" protection for the public.

Because the bill does not require EPA to promulgate rules, but creates the standards directly in the legislation, there are fewer delays in the program start-up, and there is an additional savings to the federal government.

I would like to address some of the criticisms by some of the approach taken in the CCR legislation from a state point-of-view. First, we acknowledge that constructive criticism is helpful in shaping the solution to our approach for CCR management and disposal. The March 19, 2013 CRS report is the most detailed review, so I will address some of the concerns expressed in it.

First, the March CRS report noted that last year's bill lacked a timetable for implementation and other deadlines. States recognize the value of a well defined schedule for implementation of environmental regulatory programs. States commonly include implementation schedules in regulations and Compliance Orders as part of operating an effective regulatory program. So, we would support changes to the bill that beef up the CCR Management and Disposal with a reasonable implementation schedule for states and the regulated community. A timetable allows time for the states to pass new legislation, if needed, to acquire sources of funding, and to promulgate "state" rules. Some states may have coal ash programs already in place that have addressed all, or most, of the requirements, and therefore may be able to start implementation of this act relatively quickly. This is a new approach for our times, and one that we believe will serve the public well.

The CRS report also implied that the lack of direct EPA enforcement authority would make it less likely for the states to implement a program. That is not the case for Tennessee, nor do I suspect it will be the case for any of my colleagues in other states. The bill allows states to request EPA's assistance when needed, which meets our needs.

Another criticism is that standards can only be set by the promulgation of rules. We believe Congress can create regulatory standards for CCR management and disposal that are protective of human health and the environment. If states need additional regulations, the proposed federal statute allows each state to promulgate the necessary rules, as allowed by all other federal environmental programs; provided the regulations are as stringent as the federal statute or rule. The standards created in this statute provide a uniform national platform for CCR management and regulation, which states can modify to meet their individual needs. Every state is required to meet the standards in the act and these standards provide a strong foundation for CCR management and disposal. Our experience tells us that when states recognize special circumstances particular to their state that require additional regulation the individual state legislature or the Governor will direct their responsible state environmental agency to make the appropriate changes.

Fourth, the CRS report seems skeptical that EPA will be able to judge the states' performance on the coal ash programs created in this bill. EPA has been judging state air, water, and waste programs for over 40 years. ECOS continues to interact with EPA on these matters on a regular basis. The key is not to judge a state program by whether or not it operates a regulatory program as EPA would, but whether the state regulatory program effectively meets the CCR standards set by federal statute using the regulations the state has promulgated. A state must certify in detail to EPA that it has equivalent statutory and regulatory authority to operate its

CCR Management and Disposal – including permitting, inspections, monitoring, review of site data, and enforcement. If a state falters, EPA can warn it. If a state fails, then EPA can take the program. This is the same authority that EPA has in all other delegated state environmental programs.

I will close with a quotation from the CRS report that I think is accurate and appropriate:

> That a RCRA program has never been authorized or established by Congress using such n approach does not mean that this new approach would not meet a particular objective." (March 2013 CRS report at 7.). The report goes on to say: "That it [a coal ash regulatory program] would be created using a new approach does not mean that it cannot achieve its intended purpose. ...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 [CCR Management and Disposal] 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 the RCRA open dumping prohibition." (CRS Report at 14.)

Appendix

Resolution Number 08-14

Approved September 22, 2008

Branson, Missouri

Revised March 23, 2010

Sausalito, California

Revised March 5, 2013

Scottsdale, Arizona

As certified by

R. Steven Brown

Executive Director

THE REGULATION OF COAL COMBUSTION RESIDUALS

WHEREAS, the 1980 Bevill Amendment to the Resource Conservation and Recovery Act (RCRA) requires the U.S. Environmental Protection Agency (U.S. EPA) to "conduct a detailed and comprehensive study and submit a report" to U.S. Congress on the "adverse effects on human health and the environment, if any, of the disposal and utilization" of fly ash, bottom ash, slag, flue gas emission control wastes, and other byproducts from the combustion of coal and other fossil fuels and "to consider actions of state and other federal agencies with a view to avoiding duplication of effort;" and

WHEREAS, U.S. EPA conducted the comprehensive study required by the Bevill Amendment and reported its findings to U.S. Congress on March 8, 1988 and on March 31, 1999, and in both reports recommended that coal combustion residuals (CCR) not be regulated as hazardous waste under RCRA Subtitle C; and

WHEREAS, on August 9, 1993, U.S. EPA published a regulatory determination that regulation of the four large volume coal combustion wastes (fly ash, bottom ash, boiler slag, and flue gas emission control waste) as hazardous waste under RCRA Subtitle C is "unwarranted;" and

WHEREAS, on May 22, 2000, U.S. EPA published a final regulatory determination that fossil fuel combustion wastes, including coal combustion wastes, "do not warrant regulation [as hazardous waste] under Subtitle C of RCRA," and that "the regulatory infrastructure is generally in place at the state level to ensure adequate management of these wastes;" and

WHEREAS, U.S. EPA is under no statutory obligation to promulgate federal regulations applicable to CCR disposal following the regulatory determination that hazardous waste regulation of CCR disposal is not warranted, and throughout the entire Bevill regulatory process, CCR disposal has remained a state regulatory responsibility and the states have developed and implemented regulatory programs tailored to the wide-ranging circumstances of CCR management throughout the country; and

WHEREAS, in 2005, U.S. EPA and the U.S. Department of Energy published a study of CCR disposal facilities constructed or expanded since 1994 and evolving state regulatory programs that found: state CCR regulatory requirements have become more stringent in recent years, the vast majority of new and expanded CCR disposal facilities have state-of-the-art environmental controls, and deviations from state regulatory requirements were being granted only on the basis of sound technical criteria; and

WHEREAS, in June 2010, U.S. EPA issued proposed rules for the management of CCR under both RCRA Subtitle C (hazardous waste) and RCRA Subtitle D (solid waste) laws, and these proposed rules have yet to be finalized; and

WHEREAS, the Association of State and Territorial Solid Waste Management Officials (ASTSWMO) conducted surveys of states in 2009 and 2010, which indicated that of the 42 states that responded which have disposal of CCR, 36 of those states have permitting programs for disposal activity, with 94% of those requiring groundwater monitoring. In addition, all 42 states have the authority to require remediation, should it be necessary, and the majority of these state regulations are under general solid waste and general industrial waste regulations; and

WHEREAS, the states have demonstrated a continued commitment to ensuring proper management of CCR and several states have announced proposals for revising and upgrading their state CCR regulatory programs; and

WHEREAS, some states and utilities have cooperatively demonstrated numerous beneficial uses of CCR, such as additives in cement, soil amendments, geotechnical fill, and use in drywall.

NOW, THEREFORE BE IT RESOLVED THAT THE ENVIRONMENTAL COUNCIL OF THE STATES:

Agrees with U.S. EPA's repeated assessments in 1988, 1993, 1999, 2000, and 2005 that CCR disposal does not warrant regulation as hazardous wastes under RCRA Subtitle C;

Agrees with U.S. EPA's finding in the 2005 study previously cited that "the regulatory infrastructure is generally in place at the state level to ensure adequate management of these wastes" and believes that states should continue to be the principal regulatory authority for regulating CCR as they are best suited to develop and implement CCR regulatory programs tailored to specific climate and geological conditions designed to protect human health and the environment;

Supports safe, beneficial reuse of CCR, including for geotechnical and civil engineering purposes;

Believes that the adoption and implementation of a federal CCR regulatory program would create an additional level of oversight that is not warranted, duplicate existing state regulatory programs, and require additional resources to revise or amend existing state programs to conform to new federal regulatory programs and to seek U.S. EPA program approval;

Believes that if U.S. EPA promulgates a federal regulatory program for state CCR waste management programs, the regulations must be developed under RCRA Subtitle D rather than RCRA Subtitle C;

Believes that designating CCR a hazardous waste under RCRA Subtitle C could create stigma and liability concerns that could impact the beneficial use of CCR; and

Therefore calls upon U.S. EPA to conclude that additional federal CCR regulations would be duplicative of most state programs, are unnecessary, and should not be adopted, but if adopted must be developed under RCRA Subtitle D rather than RCRA Subtitle C, and in addition, urges U.S. EPA to make a timely decision, and calls upon U.S. EPA to begin a collaborative dialogue with the states to develop and promote a national framework for beneficial use of CCR including use principles and guidelines, and to accelerate the development of markets for this material.

Mr. SHIMKUS. Gentleman yields back his time. I want to thank you for your testimony.

Now I would like to recognize Mr. Stephen A. Cobb, Professional Engineer, Chief, Governmental Hazardous Waste Branch Land Division of the Alabama Department of Environmental Management. Sir, welcome, and you have 5 minutes.

STATEMENT OF STEPHEN A. COBB

Mr. COBB. Thank you, Mr. Chairman. Chairman Shimkus, Ranking Member Tonko, honorable subcommittee members, my name is Stephen Cobb and I represent the Alabama Department of Environmental Management, or ADEM, which is the environmental regulatory agency in the State of Alabama. Thank you for the opportunity to address the subcommittee this morning. My remarks are based on ADEM's more than 30 years of implementing programs for the management of solid and hazardous waste in the state, including my personal experience in this area over the last 25 years. I have also submitted a more detailed statement for the committee's consideration.

Alabama is home to one of the largest hazardous waste disposal facilities in the Nation, and we have extensive experience managing higher risk waste. We clearly understand that a massive influx of lower risk solid waste such as coal combustion residuals into the hazardous waste classification would pose a threat to the level of attention needed for the safe management of all materials classified as hazardous waste, and also understand the challenges and resources required to permit and inspect such facilities. Alabama is also home to 29 medium to large municipal solid waste, or MSW, landfills, so we also have a very good understanding of the protections that are provided by the MSW landfills under 40 C.F.R. part 258, to ensure safe waste management, to prevent future releases, and to require corrective action to address past releases where needed.

As a result of having both types of facilities, we have a unique perspective on the issues which should be taken into account in considering how best to regulate materials such as CCRs. EPA has attempted to resolve the regulatory status of CCRs since the early '80s, but its difficulty in doing so may be attributed to two facts. First, CCRs generally do not meet the established criteria for classification of hazardous waste under Subtitle C, and second, there is no provision under Subtitle D for a national permitting program for these materials as nonhazardous solid wastes. The enactment of new Section 4011 as described in the discussion draft will solve this problem by requiring the CCR structures be designed and permitted pursuant to national standards under Subtitle D, the same standards used for MSW facilities.

We must be aware of the tiered method by which waste has been regulated and controlled for the last 5 decades, which imposes restrictions commensurate with the risk of permanent harm to human health and the environment posed by mismanagement. Looking at this system from the highest risk materials down, we see nuclear rated electrical waste at the top, followed by hazardous waste, municipal solid waste, industrial waste, construction demolition, and other wastes such as yard trimmings at the bottom. Of

these categories, only municipal, hazardous, and nuclear radiological waste are currently subject to federally mandating permitting and management requirements, with the remainder addressed effectively through the jurisdiction and authority of the individual states.

To include CCRs in the hazardous waste category would pose a risk of neglecting the wastes that are currently classified as hazardous, due to the massive expansion of waste quantities caused by including CCRs in the category. For example, about 120,000 tons of hazardous waste are land disposed in Alabama each year, compared to approximately 4 million tons of CCRs that are generated within our state annually.

Congress can look to the fact that Alabama and other states have routinely adopted and implemented those programs that are required and authorized by federal law as clear evidence that we will appropriately implement the national CCR program. In fact, in anticipation of first national standards for these materials, our legislature in 2011 authorized our agency to develop and adopt rules as necessary to implement a state regulatory program consistent with the federal requirements. As a safeguard, there is a role for EPA to evaluate our implementation of the permitting program, and to demand changes if the state program is not meeting the national requirements, as well as for EPA to take over implementation of the permitting program if the state does not do so.

In conclusion, Mr. Chairman, ADEM stands ready to implement a comprehensive permitting program for CCRs in Alabama, based on national standards, so as to ensure that these materials are properly managed now and into the future, but we must do so in a manner that provides the needed protections, can be implemented quickly and efficiently by the states, does not disrupt the established tiered system of waste management in this country, and does not result in needless duplication and proliferation of regulations and regulatory programs.

Thank you again for the opportunity to address the committee this morning. I will be glad to answer any questions you might have.

[The prepared statement of Mr. Cobb follows:]

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U.S. House of Representatives

Committee on Energy and Commerce

Subcommittee on Environment and the Economy

Hearing

"Discussion Draft of H.R. ___, The Coal Ash Recycling and Oversight Act of 2013"

April 11, 2013

Testimony of

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Summary

EPA has attempted to resolve the regulatory status of CCRs since the early 1980s, but has had considerable difficulty due to two facts – first, CCRs generally do not meet the established criteria for classification as hazardous wastes under Subtitle C of RCRA; and second, there is no provision for a national permitting program for these materials as a non-hazardous solid waste under Subtitle D of RCRA. Establishing a national permitting program for CCRs should build from MSW requirements which will provide the needed protections.

To include CCRs in the "Hazardous Waste" category would pose a risk of neglecting the wastes that are currently classified as hazardous due to the massive expansion of waste quantities caused by including CCRs in this category. Because states have been successfully implementing MSW permit programs for many years, a CCR permitting program could be adopted sooner than developing a new program from scratch, and will help to prevent the needless duplication of regulatory programs and regulations.

Congress can look to the fact that Alabama and other States have routinely adopted and implemented those programs required and authorized by federal law as clear evidence that States will appropriately implement the national CCR program. As a safeguard, there is a role for EPA to evaluate our implementation of the permitting program and demand changes if the state program is not meeting the national program requirements, as well as for EPA to take over implementation of the permitting program if the State does not do so.

Enactment of minimum national standards and a permitting program for CCRs must be done in a manner that: 1) provides the needed protections, 2) can be implemented quickly and efficiently by the States, 3) does not disrupt the established tiered system of waste management in this country, and 4) does not result in needless duplication and proliferation of regulations and regulatory programs. The Discussion Draft appears to achieve this balance.

Full Statement

Chairman Shimkus, Ranking Member Tonko, Honorable Subcommittee Members, ladies and gentlemen, my name is Stephen Cobb and I represent the Alabama Department of Environmental Management, or ADEM, which is the environmental regulatory agency for the State of Alabama. Thank you for the opportunity to address the Subcommittee this morning regarding the "Discussion Draft of H.R. __, The Coal Ash Recycling and Oversight Act of 2013" that is the subject of this hearing, and the regulation of the management and disposal of coal combustion residuals, or CCRs, also often referred to as coal ash. My remarks are intended to share ADEM's perspective based on more than thirty years of experience implementing programs for the management of solid and hazardous wastes in the State, including my personal experience in this area over the last twenty-five years.

Alabama has one of the largest Hazardous Waste disposal facilities in the nation, and ADEM has extensive experience managing higher risk wastes. We clearly understand that a massive influx of lower risk solid waste, such as coal combustion materials, into the Hazardous Waste classification would pose a threat to the level of attention needed for the safe management of all materials classified as hazardous waste. We also understand the challenges and regulatory resources required to permit and inspect such facilities. Alabama is also home to twenty-nine medium to large municipal solid waste, or MSW, landfills, and therefore also has considerable experience in implementing the MSW landfill (MSW) permitting program. As a result, ADEM has a very good understanding of the protections provided by the MSW standards under 40 CFR Part 258 to: 1) ensure safe waste management, 2) prevent future releases, and 3) require corrective action to address past releases where needed. As a result of having both types of

facilities, Alabama has a unique perspective on the contrasts and considerations which should be taken into account in considering how best to regulate materials such as CCRs.

The U.S. Environmental Protection Agency (EPA), has attempted to resolve the regulatory status of CCRs since the early 1980s, but its considerable difficulty in doing so may be attributed to two facts – first, CCRs generally do not meet the established criteria for classification as hazardous wastes under Subtitle C of the Resource Conservation and Recovery Act (RCRA); and second, there is no provision for a national permitting program for these materials as a non-hazardous solid waste under Subtitle D of RCRA in the absence of a national directive or minimum federal standards. The enactment of new Section 4011, as described in the Discussion Draft, will solve this problem by requiring that CCR structures be designed and permitted pursuant to national standards under Subtitle D – the standards required for MSW facilities. In Alabama, for many years these materials and structures were statutorily exempt from the State solid waste requirements. However, in anticipation of enactment of first-ever minimum national standards for CCRs, our Legislature in 2011 removed this exemption and authorized ADEM to "develop and adopt rules as necessary to implement a state regulatory program consistent with the federal requirements.[1]" ADEM is prepared to revise our program as necessary to meet federal standards, whether set by EPA regulations, or by Congress, to enable and require a non-hazardous waste permit program for CCRs.

In establishing a national permitting program for CCRs, we must recognize that CCRs are solid wastes – they routinely do not meet the long-established criteria for designating a material as a hazardous waste, a fact which has been supported by multiple EPA Regulatory Determinations through the years. To force CCRs into the Hazardous Waste classification would serve to dilute the protections needed for "real" Hazardous Waste. In addition, there is no need to "re-create

[1] Act No. 2011-258, as codified at Section 22-27-3(h), Code of Alabama (1975), as amended.

the wheel" for non-hazardous solid wastes – we can build from long-established MSW requirements, which will provide the needed protections. In fact, the preamble presented in EPA's Proposed Rule of June 21, 2010 states:

> *"In developing the proposed RCRA subtitle D option for CCRs, EPA considered a number of existing requirements as relevant models for minimum national standards for the safe disposal of CCRs. The primary source was the existing requirements under 40 CFR part 258, applicable to municipal solid waste landfills, which provide a comprehensive framework for all aspects of disposal in land-based units, such as CCR landfills. Based on the Agency's substantial experience with these requirements, EPA believes 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 engineered structures regulated under part 258 are very similar to those found at CCR disposal facilities, and the regulations applicable to such units would be expected to address the risks presented by the constituents in CCR wastes. Moreover, CCR wastes do not contain the constituents that are likely to require modification of the existing part 258 requirements, such as organics; for example, no adjustments would be needed to ensure that groundwater monitoring would be protective, as the CCR constituents are all readily distinguishable by standard analytical chemistry. As discussed throughout this preamble, each of the provisions adopted for today's subtitle D co-proposal relies, in large measure, on the record EPA developed to support the 40 CFR part 258 municipal solid waste landfill criteria,*

along with the other record evidence specific to CCRs, discussed throughout the co-proposed subtitle C alternative."[2]

The MSW permit program is currently limited to MSW. CCRs are similar to MSW, but arguably less dangerous (in that CCRs typically pass toxicity characteristic leaching potential, or TCLP tests, do not contain putrescible organics, do not contain household hazardous waste, contain fewer overall constituents of concern, etc.). An option which should be avoided is attempting to create a new regulatory regime from whole cloth (as opposed to building from the existing RCRA Subtitle D building blocks), which would result in unnecessary regulatory proliferation, add unneeded bureaucracy to the regulatory process, and add substantially to the overall costs to the taxpayers of properly regulating solid wastes. Proposed Section 4011 as described in the Discussion Draft will appropriately build the CCR permitting program from the MSW program requirements. Proposed Section 4011 accomplishes this by using the existing MSW regulations where applicable, and adding to the MSW framework needed requirements for structural integrity and provisions to address new and existing surface impoundments, as well as providing for appropriate inspection and enforcement authorities, public participation in the regulatory process, and EPA review of State permitting programs.

We must be cognizant of the established tiered method by which we have regulated and controlled wastes in this country for the last 5 decades. Basically this structure imposes restrictions on the management of wastes commensurate with the level of risk of permanent harm to human health and the environment posed by mismanagement, and is generally classified by category of wastes. Looking at this system from the highest risk materials down, we see Nuclear/Radiological wastes at the top, followed by Hazardous Wastes, Municipal Solid

[2] Hazardous and Solid Waste Management System; Identification and Listing of Special Wastes; Disposal of Coal Combustion Residuals From Electric Utilities, 75 Fed. Reg. (proposed June 21, 2010) (Section D.IX.A.1."Regulatory Approach", pg. 35139).

Wastes, Industrial Wastes, Construction/Demolition Wastes, and other wastes (such as yard trimmings) at the bottom. Of these categories, only Municipal Solid Waste, Hazardous Waste, and Nuclear/Radiological wastes are subject to federally mandated management and permitting requirements, with the remainder effectively addressed through the jurisdiction and authority of the individual States. EPA has been attempting to establish a regulatory program for CCRs for several years, but has not yet achieved its goal. Proposed Section 4011 as described in the Discussion Draft would accomplish this.

To include CCRs in the "Hazardous Waste" category would pose a risk of neglecting the wastes that are currently classified as hazardous due to the massive expansion of waste quantities caused by including CCRs in this category. For example, about one hundred twenty thousand (120,000) tons[3] of Hazardous Wastes are land disposed in Alabama each year, compared to approximately four (4) million tons[4] of CCRs generated annually in our state. Nationally, about two (2) million tons[5] of Hazardous Waste are disposed in landfills and surface impoundments annually, as compared to a national generation rate for CCRs of about one hundred forty-nine (149) million tons[6] per year. Proposed Section 4011 as described in the Discussion Draft will ensure that CCRs are disposed in a protective manner without diverting the attention and protections which are necessary for more harmful materials.

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[3] National Biennial RCRA Hazardous Waste Report: 2011 Edition, USEPA; and National Biennial RCRA Hazardous Waste Report: 2009 Edition, USEPA; and National Biennial RCRA Hazardous Waste Report: 2007 Edition, USEPA.

[4] Regulatory Impact Analysis For EPA's Proposed RCRA Regulation Of Coal Combustion Residues Generated by the Electric Utility Industry – Appendix C. USEPA ORCR, April 30, 2010.

[5] National Biennial RCRA Hazardous Waste Report: 2011 Edition, USEPA; and National Biennial RCRA Hazardous Waste Report: 2009 Edition, USEPA; and National Biennial RCRA Hazardous Waste Report: 2007 Edition, USEPA.

[6] Regulatory Impact Analysis For EPA's Proposed RCRA Regulation Of Coal Combustion Residues Generated by the Electric Utility Industry – Appendix C. USEPA ORCR, April 30, 2010.

Section 4011(c) of the Discussion Draft Legislation would establish a national permitting program similar to the one for MSWs that draws upon existing state MSW permit program requirements. Because states have been successfully implementing MSW permit programs for many years, a CCR permitting program could be adopted sooner than developing a new program from scratch, and will help to prevent the needless duplication of regulatory programs and regulations. Sections 4011(b) and 4011(c) of the Discussion Draft mandate an aggressive implementation schedule for CCR permitting programs, including implementation of groundwater monitoring and corrective action for existing CCR surface impoundments.

Congress can look to the fact that Alabama and other States have routinely adopted and implemented those programs required and authorized by federal law as clear evidence that we will again rise to the occasion and implement the national CCR program. It is important to acknowledge that the implementation of this new program, and particularly the initial issuance of permits under it, will be a significant resource challenge for Alabama, and presumably for other States as well. However, it is a challenge that we recognize must be met, and we will meet that challenge.

As a safeguard, proposed Sections 4011(d) and 4011(e) provide a significant role for EPA to evaluate a State's implementation of the permitting program and demand changes if the State is not meeting the national program requirements, as well as the authority for EPA to take over implementation of the permitting program if the State does not do so.

States such as Alabama have repeatedly demonstrated our ability to implement waste programs, for both hazardous waste and for MSW – and it does not make sense to have yet another laborious pre-implementation demonstration of State capabilities, especially given the already strained State and federal budgets we operate under. However, it does make sense for EPA to have a role in reviewing a program as it is implemented to verify that it is meeting the

required objectives and standards of the national program requirements, and to be able to step in and implement the program should the State not do so. Ensuring that CCRs are properly and safely managed should be about actually implementing the programs in a timely and effective manner. The similarities between the permit program in the Discussion Draft and the MSW permit program make it feasible for States to implement these programs without spending years providing demonstrations of capability before we get about the business of doing the job that needs to be done. This type of State-EPA partnership ensures that programs are implemented quickly and effectively, while at the same time providing the checks and balances necessary to assure Congress and the American public that programs are indeed protective of human health and the environment. As Senator Shelby from Alabama reminded me in a hearing on another matter years ago, it's not what we say that matters ... it's our actions that count. We can spend years studying and talking about how best to implement and document an effective State regulatory program, or we can implement that program and hold it accountable for achieving the desired results.

MSW-based controls, in addition to ensuring the safeguards needed to prevent harmful impacts from CCRs, also do not bring other unintended and undesirable consequences – such as the stigma and long-term uncertainty regarding the future disposition of products made from recycled materials that discourage safe and appropriate recycling of a significant portion of these materials. Given the extremely high volume of the CCR waste stream, it is critically important to consider that the safe and appropriate reuse of these materials not only reduces the volume of waste that must be permanently disposed, but also substantially reduces the demand for virgin raw materials, and thus reduces the costs and environmental impacts associated with the extraction and processing of the replaced natural resources.

Thus, it is critical that in establishing needed minimum national standards for CCRs, that we enact those standards necessary to provide adequate protections. But in doing so, 1) we must not undermine the regulation of materials with greater potential for harm, and 2) we must not unnecessarily discourage reuse and recycling that is in the overall national interest. Based on our experience and evaluation in Alabama, we believe a permitting program administered by the States and based generally upon existing MSW standards, as proposed in the Discussion Draft, achieves this balance.

Further, building a national CCRs permitting program utilizing the pre-existing MSW framework will enable States to implement effective and protective programs with less fiscal impact to already strained State budgets, and without the need for a major influx of new federal grants and funding which would be required under a Subtitle C approach.

In conclusion, Mr. Chairman, ADEM stands ready to implement a comprehensive permitting program for CCRs in Alabama based on national standards, so as to ensure that these materials are properly managed now and into the future. But we must do so in a manner that: 1) provides the needed protections, 2) can be implemented quickly and efficiently by the States, 3) does not disrupt the established tiered system of waste management in this country, and 4) does not result in needless duplication and proliferation of regulations and regulatory programs. Thank you, again, for the opportunity to address the Subcommittee this morning. I will be glad to answer any questions you may have.

Mr. SHIMKUS. Thank you, Mr. Cobb, and I would like to recognize Ms. Susan Parker Bodine, who is a partner with the law firm of Barnes & Thornburg. You are recognized for 5 minutes. Your full statement is in the record.

STATEMENT OF SUSAN PARKER BODINE

Ms. BODINE. Thank you, Chairman Shimkus——

Mr. SHIMKUS. I think there should be a button underneath—there you go.

Ms. BODINE. I think I would remember that.

Chairman Shimkus, Ranking Member Tonko, members of the subcommittee, thank you for inviting me here today to testify on the Coal Ash Recycling and Oversight Act of 2013. As the chairman said, I am a partner in the firm Barnes & Thornburg. I am here to testify based on my understanding of RCRA, Research Conservation Recovery Act, and its implementation, and that is from my past experience as being the Assistant Administrator for the Office of Solid Waste and Emergency Response from January, 2006 to January, 2009. So I can understand the situation that the agency is in, but I also understand the prerogatives of Congress and certainly the role of Congress in developing regulatory programs, because before I was at EPA, I was working in this building for 11 years over on the Transportation and Infrastructure Committee staff. So I can bring both perspectives to bear here.

But first, I want to talk about EPA and development of regulations. As I think some have already noted, EPA has been looking at coal ash management issues, and any risks that might be associated with that for, you know, let's just say 30 years, a long time. And in that time period, EPA has not developed a record that supports federal regulation of coal ash. I will go into—that is not the agency's fault, but they simply have not developed a risk assessment and the record to support it. They have acknowledged that back in 1998. This risk assessment was done before the report to Congress in 1999 and the 2000 regulatory determination. EPA said that—this is a quote—"EPA found that modeling uncertainty and error may have led to substantial overestimation of risks." That was in the '98 risk assessment. Again, if they didn't stop work on this issue, and continued to work on the risk assessment, continued to make changes to it, sent it out for peer review in 2008. Again, didn't—the agency still did not fix the problems that had been identified, and the peer reviewers pointed out many of the same problems and EPA acknowledged those issues. And there is a 2009 response to the peer review that is in the docket for the rulemaking that is pending, and that 2009 response says—and this is a quote—"EPA acknowledges that the leaching profile described by Dr. Basta may be more realistic, however, the agency does not have the data to use time variant leaching concentrations." And what that means is that EPA assumed that whatever—that there is no attenuation of any hazardous constituents if anything leaches out of a landfill. One hundred percent of the constituents they say would leak out at 100 percent level. Same issue, again, a quote from the peer review, "EPA acknowledges there may be insoluble or otherwise unleachable contaminant mass that remains in a waste management unit, however, EPA has no data available, again, to sup-

port a different approach." They are assuming 100 percent moves out of a landfill or a surface impoundment, because they have no data to assume otherwise.

The agency is now—they are saying that they still want to fix the risk assessment. We do have a proposal out there, but the agency is saying they do still want to fix it. They are now pointing to data that was collected by the Office of Water when they were looking at revising Clean Water Act regulations, and in filings before the District Court for the District of Columbia, the agency has said that this new data may change the assessment of risk by an order of magnitude. You heard Mr. Stanislaus say just a few minutes ago that they are not in a position to make a judgment on risk, and yes, that is right. The risk assessment hasn't changed and has the assumptions that are very conservative.

The bill takes an approach that takes the EPA out of its box. They are in a box. They don't have a record to support regulation. By prescribing the standards in the legislation directly, they don't have to justify a rule, they don't have to justify standards based on risk. I heard Mr. Stanislaus say to you that they would like to provide technical assistance for criteria tailored to specific risks. Again, they don't have a risk assessment that can do that kind of tailoring, but the bill allows them to then go ahead and implement the program without creating those justifications. As I think you pointed out, Mr. Chairman, the provisions of the legislation are based on provisions that the agency has already said are protective. You were asking Mr. Stanislaus to quote from his Federal Register preamble, and it does say that the part 258 criteria present a reasonable balance between ensuring protection of the human health and the environment, and the practical realities of facilities' ability to implement the criteria. So they have endorsed that and you have also picked up the structural integrity issues and the fugitive dust issues.

So what my message to you is that—and actually, my message to the agency is they should embrace this because it gets them out of a regulatory box and allows you to move forward, which we have heard from other members saying let's move forward and address these issues, and let's do it.

Thank you.

[The prepared statement of Ms. Parker Bodine follows:]

Testimony of Susan Parker Bodine
Partner
Barnes & Thornburg
Before the Subcommittee on Environment and the Economy
Of the House Committee on Energy and Commerce
Hearing on "The Coal Ash Recycling and Oversight Act of 2013"
April 11, 2013

Chairman Shimkus, Ranking Member Tonko, members of the subcommittee, thank you for the invitation to appear today to testify on "The Coal Ash Recycling and Oversight Act of 2013." My goal today is to provide an analysis of this draft legislation, based on my understanding of the Resource Conservation and Recovery Act (RCRA) and its implementation. I am currently a partner in the law firm of Barnes & Thornburg. From January 2006 to January 2009, I held the position of Assistant Administrator, EPA Office of Solid Waste and Emergency Response.

First I will provide a brief history of the status of coal ash under RCRA. Second, I will briefly discuss EPA's 2010 proposal to regulate coal ash under RCRA. Third, with that background, I will discuss the draft legislation.

EPA Review of Coal Ash Management and Risks

Under subtitle C of RCRA, EPA has the authority to regulate the management and disposal of hazardous wastes. Coal ash, when discarded, is a solid waste subject to Subtitle D of RCRA. This means that the disposal of coal ash is regulated by states and not the federal government. This division of authority is based on a determination by Congress that the protection of human health and the environment does not require federal control over wastes other than hazardous wastes, except to a limited extent to preclude open dumping.

Coal ash is not a hazardous waste. First, coal ash rarely if ever exhibits any of the hazardous characteristics used to identify hazardous wastes under EPA's subtitle C regulations.[1] Second, coal ash has not been individually listed by EPA as a hazardous waste.[2] Third, in 1980, Congress precluded EPA from listing coal ash (and other large volume, low toxicity wastes) as hazardous waste until it had conducted a study and made a report to Congress regarding the characteristics and management of these materials, to determine whether regulation under subtitle C was warranted. *See* RCRA section 3001(b)(3), 42 U.S.C. § 6921(b)(3) (Bevill Amendment). In regulatory determinations issued in 1993[3] and in 2000,[4] pursuant to the Bevill Amendment to RCRA, EPA has found that subtitle C regulation of coal ash is not warranted. In the 2000 regulatory determination EPA did say that federal regulation under subtitle D would be appropriate.

The 2000 regulatory determination that federal regulation under Subtitle D was warranted was based on a record developed by the Agency before 1995 and relied on industry practices between 1985 and 1995 and EPA's review of the eleven damage cases that EPA determined to be related

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[1] *See* 40 C.F.R. § 261.11(a). The hazardous characteristics used to identify waste as hazardous are toxicity, corrosivity, ignitability, and reactivity.

[2] *See* 40 C.F.R. § 261.11(b), 261.31-261.33. In general, EPA has authority to list waste has hazardous if EPA determines that the waste is capable of posing a substantial present or potential hazard to human health or the environment based on 10 listing criteria found at 40 C.F.R. § 261.11(b)(3).

[3] In 1988, EPA completed a study and report to Congress that examined four "large-volume" types of coal combustion waste (fly ash, bottom ash, boiler slag, and flue gas emission control waste). Based on that study and report, in 1993 EPA published a regulatory determination that subtitle C regulation of those wastes is not warranted. 58 Fed. Reg. 42,466 (Aug. 9, 1993).

[4] In 1999, EPA completed a study and report to Congress that examined additional "low- volume" types of coal combustion waste, including their co-management with the four large volume types of coal combustion waste. Based on that study and report, EPA published another regulatory determination finding that these wastes also did not warrant subtitle C regulation. 65 Fed. Reg. 32,214 (May 22, 2000).

to coal ash management. While EPA had conducted an assessment of coal ash management risks, EPA did not rely that risk assessment in its regulatory determination. Too many issues had been raised about the validity of that risk assessment that EPA could not address because EPA was under a court ordered deadline to make the regulatory determination.[5]

Following the 2000 regulatory determination, EPA continued to evaluate coal ash by continuing work on the risk assessment, reviewing new alleged damage cases submitted by environmental groups,[6] developing a report in conjunction with the Department of Energy on more recent management practices, and working with the Department of the Interior to develop regulations under the Surface Mining Control and Reclamation Act to address coal ash used to fill surface or underground coal mines. EPA also reviewed a 2004 petition for rulemaking submitted by the Clean Air Task Force and the Hoosier Environmental Council and a Voluntary Action Plan submitted by the electric utility industry. In 2007, EPA made all of this information available for public review and comment in a Notice of Data Availability (NODA). 72 Fed. Reg. 49714 (Aug. 29, 2007).

In 2008, EPA sent its draft risk assessment to external peer reviewers. The reviewers raised significant concerns about the risk assessment. These concerns included the following: (1) the

[5] 72 Fed. Reg. 49714, 49717 (Aug. 29, 2007). *See also*, Technical Background Document for Supplemental Report To Congress on Remaining Fossil Fuel Combustion Wastes, Ground-Water Pathway, Human Health Risk Assessment, Revised Draft Final, June 1998, at 8-2 ("EPA found that modeling uncertainty and error may have led to substantial overestimation of risks."); and 8-4 ("As with the other waste types, EPA found that uncertainty and modeling error may have overestimated the risks associated with FBC wastes.").

[6] This review raised the total of proven damage cases from 11 to 24, of which 6 were related to disposal in sand and gravel pits. 72 Fed. Reg. at 49718-19. By the time it issued its June 2010 proposal to federally regulate coal ash under either subtitle C or subtitle D, EPA had identified 3 additional proven damage cases for a total of 27, 8 of which were damages related to surface water discharges, which are regulated under the Clean Water Act. 75 Fed. Reg. 35128, 35147 (June 21, 2010).

risk assessment assumed that 100% of the mass of any contaminants would leach out and none would remain insoluble and non-leachable, (2) the risk assessment assumed that the concentrations of those contaminants would remain constant throughout a 10,000 year modeling period and would not attenuate, (3) the modeling used in the risk assessment did not take into account that some groundwater plumes would reach surface water and would never reach receptors, and (4) EPA had no data on the existence of potential receptors and instead assumed the existence of drinking water wells based on data on wells in the proximity of solid waste landfills. In its September 1, 2009, draft response to Peer Review Comments on the CCW Risk Assessment, EPA acknowledges the issues but states that it can not address them due to limitations on available data and in the models used.

EPA's 2010 proposal to regulate coal ash under RCRA

In December 2008, a dike used to contain fly ash in the dewatering area of the TVA's Kingston Fossil Plant in Harriman, Tennessee released approximately 5.4 million cubic yards of fly ash sludge into the Emory River. Although this release was a Clean Water Act violation, EPA decided to initiate rulemaking to regulate coal ash under RCRA. EPA released its proposed regulation in June 2010. 75 Fed. Reg. 35128 (June 21, 2010). EPA proposed both a subtitle C and a subtitle D regulatory option. However, both options proposed essentially the same regulatory requirements, including removal and retrofitting or removal and closure of all surface impoundments managing coal ash.[7]

[7] An additional option, subtitle D "prime" would not require closure or retrofitting of existing unit.

EPA's 2010 proposed rule departs from prior RCRA rulemakings in three significant ways. First, under the subtitle C option, EPA is proposing to overturn a previous Bevill determination. EPA has never before taken such an action and some commentors have questioned whether EPA has the legal authority to do so. Second, EPA is proposing to apply the newly proposed management standards retroactively, to regulate disposal that has already occurred. Congress has never authorized and EPA has never attempted to apply hazardous or solid waste regulations retroactively. For example, in the 1984 Hazardous and Solid Waste Amendments, Congress imposed minimum technology requirements for hazardous waste management units, requiring double liners and leachate collection. However, units that closed before the effective date of the new requirements were not affected. Similarly, criteria for municipal landfills also requiring liners and leachate collection went into effect in 1993, but landfills that closed before that date did not have to meet the new requirements. EPA applies the same approach to newly listed hazardous wastes. If a waste is newly listed, hazardous waste management standards do not apply to the newly listed waste unless it is actively managed. Thus, EPA has never before sought to compel persons to dig up and remove wastes that have already been placed into management units.

The third significant departure from past practices is the quality of the risk assessment upon which EPA is relying. In the proposed rule, EPA admits that there are questions surrounding the risk assessment. 75 Fed. Reg. at 35133. EPA also states that it made revisions to its risk assessment based on the 2008 peer review. *Id.* at 35144. However, EPA did not make changes to the risk assessment to address the peer review comments. Instead, EPA changed the risk assessment to acknowledge the issues raised by peer reviewers and the resulting uncertainty.

Nonetheless, this risk assessment is the basis for EPA's proposal to regulate coal ash as a hazardous waste under subtitle C, or to set prescriptive standards for coal ash under subtitle D.

The defects in the risk assessment identified by peer reviewers may undermine the legal defensibility of EPA's proposed rulemaking. EPA is very cognizant of this, as is apparent from a brief filed by EPA in a case relating to its proposed rule that is pending in the District Court for the District of Columbia. In this brief, EPA argues that six months is not sufficient time to complete action on its coal ash rulemaking because EPA now has additional data on the location, size, and age of coal ash management units; the waste types in these units; and the liners present in these units; from work carried out by the Office of Water to develop new Clean Water Act effluent limitation guidelines for electric utilities and EPA wants to revise its risk assessment to incorporate that new data:

> Overall, the 2010 ICR data could allow EPA to model more precisely the risks associated with the range of practices currently used by steam electric generating unit facilities to manage and dispose of coal combustion residuals. Id. ¶ 30. For example, these data will allow EPA to model the extent to which plumes of contamination leaching from coal combustion residual disposal units into groundwater are intercepted (and reduced) by surface water bodies that exist between a landfill or surface impoundment and a down-gradient drinking water well. Id. This modeling in turn would allow EPA to better estimate the contaminant levels that people would be expected to receive in drinking water. Id. These data would also allow EPA to better model the likely environmental risks (e.g., to fish and other aquatic life) from such contaminants. Id.
>
> EPA notes that one of the primary criticisms received in public comments by regulated industry was the absence of such an analysis. Id. ¶ 32. These commenters claimed that EPA, in its risk assessment underlying the rulemaking proposal, had overestimated the human health risks from the many surface impoundments that are located adjacent to large surface water bodies, because the risk assessment failed to model the extent to which plumes of contamination leaching from coal combustion residual disposal units into groundwater are intercepted (and reduced) by surface water bodies that exist between a landfill or surface impoundment and groundwater. Id. Consideration of the 2010 ICR data would allow EPA to respond to these comments. Id.

> The public has not yet had an opportunity, however, to comment on the 2010 ICR data or on the methodology EPA could use to conduct such analyses. *Id.* ¶ 34.7 Taken together, the new data and analyses have the potential to significantly affect the risk assessment supporting the final rule. This final risk assessment, in turn, will drive many of the decisions with respect to the contents of any final regulations. *Id.* Given the importance of the final risk assessment, EPA believes the failure to provide an opportunity for additional public comment could jeopardize the legal defensibility of a final decision. *Id.* Thus, EPA needs sufficient time to make this new data available for public comment, and to assess the comments that will be received.

Appalachian Voices, et al. v. EPA, Civ. No. 1:12-cv-00523, Document 24-1 (D.D.C. Oct. 11, 2012), at 23-24.

States and the regulated community have opposed EPA's proposal to regulate coal ash as a hazardous waste under subtitle C of RCRA. On the other hand, environmental groups have opposed EPA's proposal to regulate coal ash under subtitle D of RCRA. Concern has also been raised that EPA's proposed subtitle D option does not take advantage of existing state regulatory programs. EPA itself has expressed the concern that "EPA lacks the authority to require state permits, approve state programs, and to enforce the criteria." 75 Fed. Reg. at 35194. Given the many concerns raised with EPA's proposal, any final rule is likely to be challenged in court.

"The Coal Ash Recycling and Oversight Act of 2013"

The Coal Ash Recycling and Oversight Act of 2013 addresses many of the issues identified with EPA's proposed rulemaking by giving EPA and states additional authority.

The Act would address industry and state concerns by regulating coal ash under subtitle D of RCRA and by providing for continued state regulation of coal ash. The Act would address EPA

and environmental group concerns by setting forth specific criteria for coal ash permit programs, giving EPA authority to review and approve state permitting programs, and to directly enforce a federal permitting program in states without an approved state program. Finally, by codifying the management standards directly in the statute, the Act relieves EPA of the responsibility to identify and quantify any risks associated with coal ash management, and to justify management measures to address those risks.

Some questions have been raised about how the Coal Ash Recycling and Oversight Act of 2013 would be implemented, including questions raised by the Congressional Research Service (CRS) in a March 19, 2013 analysis of legislation introduced in the 112th Congress. The draft legislation that is the subject of this hearing is essentially the same as S. 3512 from the 112th Congress so the CRS questions and responses to those questions remain relevant.

First, the CRS analyst questions the absence of a performance standard, such as "protection of human health and the environment" and notes that when authorizing regulatory programs under RCRA, Congress often establishes a performance standard and then leaves it up to EPA to decide, through regulation, what management practices will meet the performance standard.

In the case of coal ash, such a grant of general authority to EPA may not support EPA's ability to regulate coal ash at the federal level, contrary to the assumption of the CRS analyst. As noted above, EPA has been unable to develop a risk assessment that accurately reflects risks associated with the management of coal ash and therefore any regulations the Agency may issue to meet a protection of human health and the environment standard would be legally vulnerable. Instead, the legislation incorporates by reference management practices that EPA has already found to be

protective of human health and the environment, *i.e.*, standards applicable to municipal solid waste landfills under 40 C.F.R. Part 258. According to EPA:

> Based on the Agency's substantial experience with these requirements, EPA believes 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. 75 Fed. Reg. at 35193.[8]

The legislation also adopts criteria for landfills and surface impoundments that are based on criteria in EPA's June 2010 proposed subtitle D rulemaking.[9] By codifying Part 258 regulatory requirements and additional landfill and surface impoundment regulatory requirements directly in the statute, EPA is relieved of the responsibility of justifying the need for imposing these requirements through a risk assessment.

Second, while the CRS analyst concedes that the legislation gives EPA the authority to review state programs, the analyst raises the concern that the standard to be applied is whether the state program is "deficient" rather whether the state program is "adequate," a word that is used in section 4005 of RCRA. This concern appears to be based on the belief that Congress should not use words in statutes that it has not used before because old words have been interpreted by EPA while new words have not. EPA's ability to interpret statutory language is not limited by the draft legislation so it does not appear that EPA would be any less able to interpret the word "deficient" that it was able to interpret the word "adequate" when Congress first enacted section 4005 of RCRA. This question seems to imply that prior Congresses should be able to bind subsequent Congress to their word choices.

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[8] In fact, EPA has already put its belief into practice by approving the disposal of coal ash recovered from the TVA Kingston spill in a subtitle D landfill. *See* Administrative Order and Agreement on Consent, In the Matter of TVA Kingston Fossil Fuel Plant Release Site, Roane County, Tennessee, (May 6, 2009), at ¶ 45.

[9] Congress has previously incorporated EPA regulations into a statute. In 1996, after EPA regulations defining the scope of Superfund liability for lenders were struck down by a court, Congress incorporated those regulatory provisions directly into the statute. P.L. 104-208 (Sept. 30, 1996).

Third, the CRS analyst questions the lack of an explicit direction to EPA to issue regulations that would codify the criteria set forth in the legislation. While EPA does have general rule-making authority in section 2002 of RCRA, given the specificity of the proposed statutory language setting forth criteria for state coal ash permit programs, it is unclear what would be added by the promulgation of federal regulations, other than a delay in implementation. The draft legislation does not compel EPA to go through what could be a meaningless regulatory exercise.[10]

Fourth, the CRS analyst creates a definition of what constitutes "backstop authority" (a word that does not appear in the legislation) and then claims that the legislation does not provide EPA with authority to backstop state programs. Under the definition created by the CRS analyst, federal backstop authority is federal authority to take enforcement actions even when a state has an authorized program. That definition of backstop is not universally accepted.[11] A different definition of "backstop," is EPA authority to take an action if a state fails to do so.[12] The draft legislation requires EPA to implement a coal ash disposal permit program if a state chooses not to or fails to develop a program that meets the criteria set forth in the legislation.

Fifth, the CRS analyst questions whether states will create different definitions of "landfill," "surface impoundment," or "land-based unit." All three of these terms exist in RCRA, without statutory definition. The terms "landfill" and "surface impoundment," and "land-based unit" are defined in

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[10] As with the regulation of underground storage tanks in Indian County, EPA could decide to promulgate a federal permitting program to apply in areas not covered by state programs, should coal ash management structures exist in such areas.

[11] Courts are split on whether EPA retains authority to overfile under RCRA (*i.e.* file an enforcement action when a state with an approved program has already taken action). *Compare Harmon Indus. v. Browner,* 191 F.3d 894 (8th Cir. 1999) (holding that EPA may not overfile in RCRA cases given the unique statutory language that state programs operate "in lieu of" the federal program), *with* United States v. Power Eng'g Co., 303 F.3d 1232 (10th Cir. 2002) (holding that EPA may overfile in RCRA cases).

[12] *Scott v. City of Hammond,* 741 F.2d 992, 996 (7th Cir. 1984), *cert. denied,* 469 U.S. 1196 (1985) (interpreting the Clean Water Act to give EPA the authority to take an action – here the establishment of a TMDL – where the state has failed to do so).

EPA's subtitle C regulations. 40 C.F.R. 260.10. While these definitions do not apply to subtitle D, it seems unlikely that states will have trouble interpreting these terms under new section 4011 of RCRA.

In general, the CRS analysis seems to believe that because the draft legislation is not identical to the existing statutory authority to regulate municipal solid waste landfills those differences will result in uncertainty. The basis for this concern or how the differences would somehow prevent the legislation from achieving its goals is not explained.

Many of the questions raised in the CRS analysis are inherent in any authorization of new statutory authority. However, the existence of some flexibility for both EPA and states to interpret statutory language does not mean that the legislation will not achieve its purposes. In fact, given the detailed criteria for coal ash management permit programs that are specified in the draft legislation, there is less uncertainty with how this legislation will be implemented than many other environmental laws, which defer to EPA to create a regulatory program.

Mr. SHIMKUS. Thank you very much. Time is expired.

Now I would like to recognize Ms. Lisa Evans, Senior Administrative Counsel from EarthJustice. Thank you, and your full statement is in the record. You are recognized for 5 minutes.

STATEMENT OF LISA EVANS

Ms. EVANS. Thank you very much. Chairman Shimkus and members of the committee, I thank you for having me here to testify on this very important and very controversial draft discussion bill from Representative McKinley. I am Lisa Evans, Senior Administrative Counsel for EarthJustice, a national nonprofit public interest law firm dedicated to defending the right of all people to a healthy environment.

On behalf of many public interest groups, thank you for holding the first legislative hearing on this complex bill. I am hopeful that his hearing will clarify the discussion draft's contents, including the very significant criticisms and questions by two recent CRS reports.

I am also hopeful that we can find common ground on this critical public health issue, as well as common ground on the objectives of any coal ash legislation.

Without a doubt, when mismanaged, coal ash harms Americans nationwide by poisoning water and air and by threatening the very existence of communities living near high hazard dams. We must work together to establish regulations that, foremost, prevent injury to health, and ensure the safety of all communities, but which also allow for safer use of coal ash that improves our economy, environment, and again, our health.

I trust that all in this room share this goal. In that spirit, I offer these comments.

While the bill at issue raises many important questions, the following four are among the most critical to understanding the problems with the bill. First, does the bill establish a national protective standard and federal minimum requirements? In other words, will the bill require every state to implement coal ash programs that protect the health of all the residents? The CRS report twice says no. The bill cannot guarantee consistent national protection, and we agree. CRS points to the absence of a national protective standard, which is unique among federal environmental laws. This approach is not just new and unprecedented, it is inadequate. According to CRS, the failure of the bill to require the protection of human health and the environment, and to define key terms renders it impossible for the bill to guarantee that all states will implement consistent and health protective programs.

Why is this so important? Currently, our Nation is a patchwork of widely different state programs, as Representative McKinley has pointed out. Tennessee and Alabama, for example, lack many basic and needed safeguards for the management of coal ash dams. To ensure full protection for the citizens of those states where there is considerable disproportionate impact on communities of color and low income communities, the bill must contain a national protective standard and minimum federal requirements. We agree with CRS that this bill has neither.

Secondly, does the bill provide EPA with backstop authority? In other words, does the bill provide EPA with clear and effective oversight to ensure that all state programs protect Americans from mismanaged coal ash? Again, the CRS reports twice say no, and we agree. According to CRS, the bill contains no backstop authority as that term is commonly understood. Pursuant to this bill, backstop authority can only be exercised when states fail to implement the co-called minimum requirements, but as CRS pointed out in two reports, the bill's requirements are so vague that there are, in fact, no minimum federal standards. In other words, backstop authority is meaningless without a clear set of standards and deadlines that EPA can use to determine whether a state program is deficient. The CRS reports clearly say that the bill doesn't provide that criteria. Further, this bill deliberately and effectively removes most of EPA's authority over coal ash. EPA cannot take immediate enforcement action if a state fails to act. EPA cannot evaluate the adequacy of state programs before their implementation, and EPA cannot promulgate regulations where they are needed to protect health and the environment to reflect the increasing toxicity and changing nature of ash.

Third, will the bill protect the Nation's drinking water? No, it will not. The bill's failure to phase out unlined ponds, its failure to set deadline for the permitting of dumps, its failure to require closure of polluting sites by a date certain, and its failure to ensure that all dangerous dumps are monitored will leave our water at risk of continued poisoning by arsenic, hexavalent chromium, lead, mercury, and more.

Fourth and finally, will the bill prevent another catastrophic disaster? No, and yet I think all would agree that any bill must ensure that the earth and dams holding back millions of tons of toxic waste be made safe for all the communities unfortunate enough to live beneath them.

I speak for many in the public interest community when I say that we, too, want an immediate end to the delay of the EPA's rulemaking, but any rule or any bill foremost must protect public health and safety. Together, we can and must end the longstanding serious threat thousands of communities living near unsafe, unstable, and leaking coal ash dumps, because every person in this room, every family in your districts, every citizen in this country deserves water free from ash contamination, air free of dust, and a safe and secure community.

I appreciate the opportunity to comment, and I look forward to questions. Thank you.

[The prepared statement of Ms. Evans follows:]

Testimony of
Lisa Evans, Senior Administrative Counsel
Earthjustice
before the Subcommittee on Energy and Environment,
Committee on Energy and Commerce,
U.S. House of Representatives
Hearing on the Discussion Draft of H.R. ____, The Coal Ash Recycling and Oversight Act of 2013
April 11, 2013

Chairman Shimkus and Members of the Subcommittee, I appreciate the opportunity today to discuss the legislative proposal offered by Rep. David McKinley to address the management and disposal of coal ash. On behalf of many public interest groups, I thank you for holding the first legislative hearing on this very complex bill. I am hopeful that this hearing will clarify the contents of the bill and its likely impact. I am equally hopeful that we can find common ground on this important public health issue. Without a doubt, when mismanaged, coal ash harms Americans nationwide by poisoning water and air and threatening the very existence of communities near high hazard dams. While coal ash, when safely reused in concrete and bricks, can offer environmental and economic benefits, it is absolutely essential that laws and regulations foremost protect human health and communities from exposure to hazardous chemicals.

I am Lisa Evans, senior administrative counsel for Earthjustice, a national non-profit, public interest law firm dedicated to protecting natural resources and wildlife, and to defending the right of all people to a healthy environment. I have worked previously as an assistant regional counsel for U.S. Environmental Protection Agency ("EPA") enforcing hazardous waste laws.

In my testimony, I will cover briefly the serious threats posed to public health by coal ash and the inability of the proposed bill to adequately address these threats. With

regard to public health, my concerns echo those of health experts, scientists, engineers and the EPA. My concerns about the substance, structure and impact of the Coal Ash Recycling and Oversight Act of 2013 mirror those enumerated by the Congressional Research Service (CRS) in their December 5, 2012[1] and March 19, 2013[2] reports on an identical bill, S. 3512.

I. MISMANAGEMENT OF COAL ASH CAUSES SEROUS HEALTH AND ENVIRONMENTAL DAMAGE

A. Coal Ash Poses A Significant Human Health Hazard

Coal combustion waste, or coal ash, is largely made up of ash and other unburned materials that remain after coal is burned in a power plant to generate electricity. Burning concentrates the metals naturally found in coal and results in an ash rich in toxic elements such as arsenic, cadmium, chromium, lead, mercury, selenium, thallium and numerous other dangerous contaminants.[3] In addition, coal ash contains the particles captured by pollution control devices installed to prevent air emissions of particulate matter and other gaseous pollutants from the smokestack. As new technologies are mandated to filter additional hazardous air pollutants from power plants, cleaning the air we breathe of smog, soot and other harmful pollution, the quantity of dangerous chemicals in coal ash exponentially increases.[4] Without adequate safeguards, the chemicals that have harmed human health for years as air pollutants, including mercury, arsenic, chromium, lead and

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[1] Congressional Research Service, *H.R. 2273 and S. 3512: Analysis of Proposals to Create a Coal Combustion Residuals Permit Program Under RCRA*, (hereinafter, "2012 CRS Report") (Dec. 5, 2012).

[2] Congressional Research Service, *Analysis of Recent Proposals to Amend the Resource Conservation and Recovery Act (RCRA) to Create a Coal Combustion Residuals Permit Program*, (hereinafter "2013 CRS Report") (Mar. 19, 2013).

[3] Office of Solid Waste & Emergency Response, U.S. Envtl. Prot. Agency, Report to Congress: Wastes from the Combustion of Fossil Fuels (Mar. 1999).

[4] *See*, e.g., Office of Research & Dev., U.S. Envtl. Prot. Agency, Characterization of Coal Combustion Residues from Electric Utilities Using Wet Scrubbers for Multi-Pollutant Control (July 2008) and Office of Research & Dev., U.S. Envtl. Prot. Agency, Characterization of Mercury-Enriched Coal Combustion Residues from Electric Utilities Using Enhanced Sorbents for Mercury Control (Feb. 2006).

thallium, will now reach us through drinking water supplies and airborne dust contaminated by ash.

The hazardous substances found in coal ash are among the most deadly known to man, including toxins that can cause cancer and damage the nervous systems and other organs, especially in children. (*See* Figure 1, Table of Human Health Impacts of Coal Ash Pollutants.) One of the most common and mobile pollutants in coal ash is arsenic. Arsenic has been found to cause multiple forms of cancer, including cancer of the liver, kidney, lung, and bladder, and an increased incidence of skin cancer in populations consuming drinking water high in inorganic arsenic.[5] According to the Human Health and Ecological Risk Assessment completed by the EPA in 2010, the excess cancer risk for children drinking groundwater contaminated with arsenic from some unlined coal ash ponds is estimated to be as high as 1 in 50.[6] For context, the EPA typically considers cancer risk to be unacceptable when environmental exposures result in more than one additional cancer per 100,000 people.[7] Consequently, a lifetime cancer risk of 1 in 50 represents a risk 2000 times the EPA's regulatory goals.

The EPA risk assessment also states that living near coal ash ponds and landfills that lack composite liners increases the risk of damage to the liver, kidney, lungs and other organs as a result of being exposed to toxic metals like cadmium, cobalt, lead, thallium and other pollutants at concentrations far above levels that are considered safe.[8]. Further, the EPA risk assessment warns that peak pollution from dump sites can occur

[5] U.S. Envtl. Prot. Agency, Integrated Risk Information System (IRIS), Arsenic (CASRN 7440-38-2). http://cfpub.epa.gov/ncea/iris/index.cfm?fuseaction=iris.showQuickView&substance_nmbr=0278.
[6] U.S. Envtl. Prot. Agency, Human and Ecological Risk Assessment of Coal Combustion Wastes (April 10, 2010) (draft) (hereinafter EPA Risk Assessment).
[7] EPA Risk Assessment, supra note 3, at 4-1.
[8] *Id.*

long after the waste is placed. For example, peak exposures from coal ash ponds are projected to occur approximately 78 to 105 years after the ponds first began operation—thus retired sites still pose very significant threats.[9] Clearly, coal ash, when disposed improperly, poses an extraordinary and highly unacceptable long-term risk to human health.

B. Advances In Scientific Analysis Of Coal Ash Reveals Dramatically Increased Risks

Several studies published by the EPA's Office of Resource and Development ("ORD") in 2006, 2008 and 2009 document the increasing toxicity of coal ash.[10] Testing of numerous ashes and scrubber sludge at plants employing air pollution control devices reveal that coal ash is far more dangerous than earlier tests predicted. Using an improved leaching protocol,[11] the EPA found that coal ashes and sludge leached *16 to 680 times* the chromium, arsenic, selenium, boron and thallium than previously documented in EPA and industry data. In fact, the EPA found that some coal ashes leached toxic metals, such as arsenic, barium, chromium and selenium, at levels that far exceeded federal thresholds established for hazardous waste.[12]

This evidence of increased risk was unavailable when the EPA issued its 1988 and 1999 Reports to Congress on coal ash and when it issued its regulatory

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[9] *Id.* at 4-7 to 4-8.

[10] *See* Office of Research and Development, U.S. Envtl. Prot. Agency, *Characterization of Coal Combustion Residues from Electric Utilities—Leaching and Characterization Data* (EPA/600/R-09/151) at ii (Dec. 2009), *available at* http://www.epa.gov/nrmrl/pubs/ 600r09151/600r09151.html (citing EPA, *Characterization of Mercury-Enriched Coal Combustion Residuals from Electric Utilities Using Enhanced Sorbents for Mercury Control* (EPA–600/ R–06/008) (Feb. 2006), *available at*http://www.epa.gov/ORD/NRMRL/pubs/600r06008/600r06008.pdf; *and* EPA, *Characterization of Coal Combustion Residuals from Electric Utilities Using Wet Scrubbers for Multi-Pollutant Control* (EPA–600/ R–08/077) (July 2008), *available at* http://www.epa.gov/nrmrl/pubs/600r08077/600r08077.pdf.

[11] *See* D.S. Kosson et al, *An Integrated Framework for Evaluating Leaching in Waste management and Utilization of Secondary Materials*, 19 Environmental Engineering Science 159 (2002) *and* F. Sanchez and D.S. Kosson, *Probabilistic Approach for Estimating the Release of Contaminants under Field Management Scenarios*, 25 Waste Management 643 (2005).

[12] *Supra* at footnote 10.

determinations on coal ash in 1993[13] and 2000.[14] Central to these recent ORD studies is the rejection of an older leach test, the toxicity characteristic leaching procedure (TCLP). Historically, estimating metal release from coal ash has been based on the results of a single-point extraction test, the TCLP, which was designed to simulate a single "mismanagement" disposal scenario.[15] For nearly two decades, however, the EPA Science Advisory Board has identified significant problems with the accuracy of the TCLP.[16] In 2006, the National Academy of Sciences also acknowledged the inaccuracy of the TCLP and weighed in with explicit criticism of its use for testing coal ash.[17] Thus the EPA's previous reports and regulatory determinations were based on the outdated TCLP testing, which according to the scientific community, has no little or no relevance to coal ash.

The new evidence contained in the ORD reports underscores the need to reevaluate the risk posed to water supplies by coal ash. The evidence also indicates that unless coal ash is disposed or reused in a manner that ensures that toxic chemicals are not released into the environment, our careful efforts to capture the pollutants at the power plant stacks will have an unintended, and unwelcome consequence—the pollution of our water.

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[13] 58 Fed. Reg. 42,466 (Aug. 16, 1993), http://www.epa.gov/epawaste/nonhaz/industrial/special/mineral/080993.pdf.
[14] 65 Fed. Reg. 32,214, (May 22, 2000). http://www.epa.gov/fedrgstr/EPA-WASTE/2000/May/Day-22/f11138.htm
[15] Susan A. Thorneloe, EPA, et al., Evaluating the Fate of Metals in Air Pollution Control Residues from Coal-Fired Power Plants, 44 Envtl. Sci. Technol. 7,351, 7,351 (Aug. 31, 2010) [hereinafter Thorneloe, Evaluating the Fate of Metals], available at http://pubs.acs.org/doi/pdfplus/10.1021/es1016558
[16] Letter from EPA, Science Advisory Board, to Carol Browner, Administrator, EPA, Re: "Waste Leachability: The Need for Review of Current Agency Procedures" (Feb. 26, 1999) (emphasis in original), available at www.yosemite.epa.gov/sab/sabproduct.nsf/.../SFile/eecm9902.pdf
[17] Nat'l Research Council, Nat'l Academies, Managing Coal Combustion Residues in Mines (2006), available at http://books.nap.edu/catalog.php?record_id=11592#toc at 123-129.

C. Evidence of Coal Ash Contamination Is Increasing Exponentially

Sites where coal ash has contaminated ground water or surface water have increased 25-fold since 1999 to more than 200 sites in 37 states.[18] At these sites, coal ash has poisoned drinking water, destroyed entire fish populations, killed scores of livestock, created myriad superfund sites, sickened families and destroyed livelihoods.[19] These sites include leaks, major spills, and the pervasive contamination of underground drinking water sources. The contamination includes toxic metals at concentrations hundreds of times above safe drinking water standards and involves chemicals hazardous to humans or aquatic life in small doses, including arsenic, cadmium, chromium, lead, mercury and selenium. The damage at most of the newly identified sites is largely unmitigated, and it represents present disposal practices, not just historical practices. Furthermore, these 203 contaminated sites do not even include those communities that have been inundated with toxic coal ash dust, of which there are scores located throughout the U.S. Lastly, these cases of documented water contamination are likely to be only a small percentage of the coal-ash contaminated sites in the U.S., because most coal ash ponds and many coal ash landfills do not conduct monitoring, so water contamination largely goes undetected.

D. Coal Ash Poses A Serious Threat To Fish and Wildlife

One of coal ash's most mobile toxins, selenium, is deadly at low concentrations to fish. Yet almost every one of the nation's hundreds of unlined coal ash dumps sits near a river, stream or lake. The loading of selenium to these waterways, by spills, seeps,

[18] *See* http://earthjustice.org/features/campaigns/in-harm-s-way-coal-ash-contaminated-sites.

[19] See EPA, Proposed Rule, Coal Combustion Residuals from Electric Utilities, 75 Fed. Reg. 35,128 (proposed June 21, 2010); Environmental Integrity Project (EIP), Earthjustice, & Sierra Club, In Harm's Way: Lack of Federal Coal Ash Regulations Endangers Americans and their Environment (Aug. 26, 2010), available at http://environmentalintegrity.org/news_reports/documents/INHARMSWAY_FINAL3.pdf; EIP and Earthjustice, Out of Control: Mounting Damages from Coal Ash Waste Sites (Feb. 24, 2011), available at http://earthjustice.org/sites/default/files/library/reports/ej-eipreportout-of-control-final.pdf; Office of Solid Waste, EPA, Coal Combustion Waste Damage Case Assessments (July 9, 2007).

surface discharges or groundwater pathways has poisoned dozens of aquatic environments and killed or impaired fish, amphibians, and the wildlife that feed on them.[20] Selenium bioaccumulates, so this damage is deadly and long lasting.[21] A series of recent studies by Duke University scientists identified the long-term ecological threat to the waterways impacted by the 2008 TVA spill and to numerous lakes and rivers throughout North Carolina by the ongoing discharge of prodigious volumes of heavy metals from coal ash ponds.[22]

E. State Coal Ash Regulations Are Grossly Deficient In The Majority of States

The majority of states fail to require essential safeguards for coal ash landfills and surface impoundments, including liners, groundwater monitoring, leachate collection, dust controls and financial assurance. According to EPA data, the majority of states fail to prohibit the placement of coal ash in water tables, wetlands, unstable areas and floodplains. The EPA's own analyses of state regulatory programs in 2005, 2006 and 2010 reveal that many states have not improved their regulations to close these gaps over the last decade.[23]

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[0] National Research Council, National Academy of Sciences, Managing Coal Combustion Waste in Mines (2006), http://www.catf.us/resources/filings/power_plant_waste/NAS_Coal_Ash_Full_Report.pdf.

[1] *Id.*

[2] *See* Laura Ruhl, Avner Vengosh, Gary S. Dwyer, Heileen Hsu-Kim, Amrika Deonarine, Mike Bergin, and Julia Kravchenko, Survey of the Potential Environmental and Health Impacts in the Immediate Aftermath of the Coal Ash Spill in Kingston, Tennessee, Environ. Sci. Technol., 2009, *43* (16), pp 6326–6333, May 4, 2009. *See also*, Laura Ruhl, Avner Vengosh, Gary S. Dwyer, Heileen Hsu-Kim, Grace Schwartz, Autumn Romanski, and S. Daniel Smith. The Impact of Coal Combustion Residue Effluent on Water Resources: A North Carolina Example, Environ. Sci. Technol., 2012 Nov 6;46(21):12226-33.

[3] *See* 75 Federal Register 35128, 35150. The EPA stated "Further, recently collected information regarding the existing state regulatory programs 42 calls into question whether those programs, in the absence of national minimum standards, have sufficiently improved to address the gaps that EPA had identified in its May 2000 Regulatory Determination such that EPA can continue to conclude that in the absence of federal oversight, the management of these wastes will be adequate to protect human health and the environment." *See also*, EPA, Regulatory Impact Analysis For EPA's Proposed RCRA Regulation Of Coal Combustion Residues (CCR) Generated by the Electric Utility Industry (April 30, 2010).

In the most recent Congressional Research Service report on coal ash, CRS describes the gap in state regulations identified by the Association of State and Territorial Solid Waste Management Officials ("ASTSWMO") in 2009.[24] CRS cites a 2009 survey of states by ASTSWMO that found that among survey respondents, basic safeguards for surface impoundments were not mandated by most states. CRS notes that 67 percent of states failed to require liners and 61 percent of states failed to require groundwater monitoring for surface impoundments.[25] According to CRS, "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."[26] CRS also cites data gathered by the EPA in 2004 that indicates that 62% of coal ash ponds in the U.S. and 31% of the landfills in the U.S. lacked liners.[27] In addition, 58% of the coal ash ponds and 10% of coal ash landfills lacked groundwater monitoring.[28]

F. Coal Ash Harms America's Most Vulnerable Communities

According to the EPA, coal ash ponds and landfills are disproportionately located in low-income communities. Almost 70 percent of coal ash ponds in the U.S. are in areas where household income is lower than the national median.[29] Consequently, communities of color and low-income communities will be disproportionally hurt by the failure to

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[24] 2013 CRS Report at 25.
[25] *Id.*
[26] *Id.*
[27] *Id.*
[28] *Id.*
[29] U.S. Census Bureau, Census 2000 Summary File 3 (SF 3) - Sample Data, All 5-Digit ZIP Code Tabulation Areas (860), Table P53 "Median Household Income in 1999 (Dollars)", *available at* http://factfinder.census.gov/servlet/DCSubjectKeywordServlet?_ts=307978361769. Further, of 181 ZIP codes nationally that contain coal ash ponds, 118 (65.19 percent) have above-average percentages of low-income families. *See* U.S. Census Bureau, Census 2000 Summary File 3 (SF 3) - Sample Data, All 5-Digit ZIP Code Tabulation Areas (860), Table P76 "Family Income in 1999" (downloaded June 23, 2009), *available at* http://factfinder.census.gov/servlet/DownloadDatasetServlet?_lang=en&_ts=263843114140

control coal ash contamination. Given the serious health threats posed by coal ash, it is particularly troublesome that coal ash impoundments are disproportionately located in low-income communities, where residents are more likely to rely on groundwater supplies and less likely to have access to medical insurance and care. In view of the national disparity found by the EPA, a federal coal ash rule that applies equally in all parts of the country is necessary to alleviate the disparate impacts of ash disposal under the present patchwork of state laws.

II. THE CONGRESSIONAL RESEARCH SERVICE CONCLUDES THAT THE "COAL ASH RECYCLING AND OVERSIGHT ACT OF 2013" CANNOT GUARANTEE PROTECTION OF PUBLIC HEALTH AND THE ENVIRONMENT FROM THE THREATS POSED BY COAL ASH

Twice in the last six months, the Congressional Research Service published reports on proposed coal ash legislation in the House and Senate, and both times CRS concluded unequivocally that such bills lack a clear purpose and would not ensure state adoption and implementation of minimum standards "necessary to protect human health and the environment."[30] Specifically, on December 5, 2012, the CRS issued a report on pending coal ash legislation, entitled *H.R. 2273 and S. 3512: Analysis of Proposals to Create a Coal Combustion Residuals Permit Program Under RCRA*.[31] Following the publication of this report, Republican supporters of the legislation claimed that the CRS' conclusions were erroneous and may have been "politically motivated," and they pressed CRS to revise the report.[32]

On March 19, 2013, CRS published a second report, *Analysis of Recent Proposals*

[30] Congressional Research Service, *H.R. 2273 and S. 3512: Analysis of Proposals to Create a Coal Combustion Residuals Permit Program Under RCRA*, (hereinafter, "CRS Report 2012") (Dec. 5, 2012) at Summary.
[31] Id.
[32] Hopkinson, Jenny. Inside EPA, "Under GOP Pressure, CRS Said To Weigh Changes To Coal Ash Report," January 17, 2013, available at http://insideepa.com/Inside-EPA-General/Inside-EPA-Public-Content/under-gop-pressure-crs-said-to-weigh-changes-to-coal-ash-report/menu-id-565.html

to Amend the Resource Conservation and Recovery Act (RCRA) to Create a Coal Combustion Residuals Permit Program,[33] wherein CRS expanded its analysis and reiterated the conclusions of the first report.[34] The authors of this second report included the original analyst, but also included two additional senior CRS analysts. CRS' March 2013 report again found that the legislation's "unique" approach fell far short. The report reiterated the uncertainty engendered by a bill that fails to guarantee basic nationwide protections and fails to provide EPA with the authority to write rules, approve state programs and enforce safety requirements. The CRS reiterated that the bills contain no clear deadlines for states to issue permits and that terms usually defined by regulations would be left open for the states to decide. If the purpose of the legislation was to close significant gaps in health and safety protections that were identified by the EPA, this purpose was not achieved with certainty, according to CRS.

Among the critical findings of the CRS report are the following:

A. The Bills Fail To Establish A Protective Standard

Current RCRA state programs for the disposal of municipal solid waste are required by statute to meet a national standard of protection to "protect human health and the environment."[35] The 2013 CRS Report reiterates its finding that the proposed coal ash bills fail to establish any national protective standard, stating "[t]here is no provision in Section 4011 that explicitly requires regulations promulgated by the state and

[33] Congressional Research Service, *Analysis of Recent Proposals to Amend the Resource Conservation and Recovery Act (RCRA) to Create a Coal Combustion Residuals Permit Program,* (hereinafter "CRS Report 2013") (Mar. 19, 2013).
[34] Martinson, Erica. Politico, "CRS doubles down on criticism of coal ash bills," March 20, 2013, available at https://www.politicopro.com/go/?id=20421.
[35] *See* RCRA, Section 4004(a).

implemented by a CCR Permit Program to achieve a certain level of protection."[36] Both CRS reports explicitly conclude that under the novel and unprecedented approach of the bills, "[e]ach state arguably could apply its own standard of protection."[37]

The practical impact of the failure to establish a protective standard is quite simply that state regulations would not necessarily be required to "protect human health and the environment." Thus, in the absence of a protective standard, the EPA would have no authority to assert as a "program deficiency" the failure of a state to protect human health or the environment. The CRS explains, "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."[38] CRS observes that, unlike the federal municipal solid waste permit program, the bill would curtail EPA oversight to an exceptionally narrow range of issues. CRS writes, "EPA would not be authorized to identify as a deficiency the program's adequacy to enforce federal statutory standards or to assess the level of protection the program may provide."[39]

B. The Bills Fail To Establish Minimum Federal Standards

The bills fail to establish minimum federal standards for the management and disposal of coal ash under state permit programs. The 2013 CRS Report concludes that the bills would "allow individual states to define key terms.... Hence program applicability could vary from state to state, depending on how each state defines those terms."[40] The report explains:

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[36] 2013 CRS Report at 38. *See also,* 2012 CRS Report at 30.
[37] 2013 CRS Report, Summary at page 3.
[38] *Id.*
[39] 2012 CRS Report at 25.
[40] 2013 CRS Report, Summary at page 2.

> 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*.[41]

Even after publication of the 2012 CRS Report, proponents of the Coal Ash Recycling and Oversight Act continued to incorrectly claim that the bill established "minimum federal standards."[42] Proponents of the bill claimed that the federal municipal solid waste (MSW) landfill regulations constituted such minimum federal standards. CRS points out explicitly, however, that this is simply not correct. CRS states, "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."[43] In no uncertain terms, CRS explains, "[d]ue to the questions regarding how states may implement it, a CCR permit program would be similar to the program to regulate Municipal Solid Waste (MSW) landfill criteria, *only in states that choose to implement it as such*. That level of uncertainty

[41] 2013 CRS Report at 16. Emphasis added.
[42] *See* Energy and Commerce Committee, "In Closing Days of 112th Congress, Rare Opportunity Emerges to Pass Bipartisan, Bicameral Agreement on Coal Ash," (December 19, 2012), available at http://energycommerce.house.gov/press-release/closing-days-112th-congress-rare-opportunity-emerges-pass-bipartisan-bicameral
[43] 2013 CRS Report at 37.

defeats the purpose of a permit program and would not be consistent with other permit programs created under RCRA."[44]

CRS specifically points out that certain key directives critical to program implementation are either missing from or ambiguously defined in Section 4011. It would appear that those missing/ambiguous directives would be subject to a state's interpretation of those requirements (e.g., a distinct definition of entities subject to the permit program (i.e., "structures") and deadlines for existing facilities to obtain a permit). As a result, according to CRS, it cannot be determined whether CCR permit program implementation would create minimum federal standards, comparable to the MSW landfill criteria, to regulate CCR management."[45]

C. The Bills Lack Federal Backstop Authority

Both CRS reports are unequivocal about the failure of the Coal Ash Recycling and Oversight Act to provide EPA with "backstop authority." The 2013 CRS Report unambiguously states that the bill "would not provide EPA with authority to backstop state programs to regulate CCR facilities."[46] Similarly, the 2012 CRS Report was crystal clear, stating,

> The proposed amendments to RCRA include no directive to EPA to determine whether state CCR permit programs are adequate to enforce the statutory standards or to assess whether the programs would result in necessary protections. Instead, EPA would be required to notify states of deficiencies in a narrow range of program requirements. Given other limits to EPA's role in state implementation of a CCR permit program, EPA would have no federal backstop authority to implement federal standards comparable to its authorities established under other environmental law, including RCRA. Regardless of whether a state chose to adopt a CCR permit program, *EPA would have no authority to compel*

[44] 2012 CRS Report at 21-22, emphasis added.
[45] 2012 CRS Report at 20.
[46] 2013 CRS Report at 9.

states to adopt and implement the program according to provisions in the proposed amendments to RCRA."[47]

D. CRS Finds the Requirements for Wet Impoundments Insufficient

The CRS reports conclude that the requirements concerning structural stability of coal ash ponds in the Coal Ash Recycling and Oversight Act [48] are not equivalent "in detail or scope" to the safeguards proposed by the EPA to ensure the structural stability of dangerous coal ash dams.[49] According to CRS, the EPA modeled its proposed coal ash impoundment standards on the Mine Safety and Health Administration ("MSHA") regulations in 30 C.F.R. Part 77. In particular, the EPA drew from the MSHA mine safety standards for "water, sediment, or slurry impoundments and impounding structures" at 30 C.F.R. §77.216.[50] According to CRS, the 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."[51]

CRS points out that the EPA's proposed criteria "included more detailed requirements comparable to the MSHA standards" than are present in the proposed legislation.[52] In fact, the bill's structural integrity section is riddled with gaps that render

[47] 2012 CRS Report at 2. Emphasis added.
[48] *See* §§ 4011(c)(1)(B) and 4011(c)(1)(A).
[49] 2012 CRS Report at 24. *See also*, 2013 CRS Report at 39.
[50] *See* proposed 40 C.F.R. Section 257.71, "Design criteria for existing CCR surface impoundments." U.S. Envtl. Prot. Agency, "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.
[51] 2013 CRS Report at 27. See 75 Federal Register 35128, at 35243, June 2010.
[52] 2013 CRS Report at 30.

it clearly insufficient to prevent future dam failures. For example, the bill does not require owner/operators of coal ash dams to report to their state regulatory agencies the content of inspections, even when serious deficiencies are found. The bill also does not require public disclosure of inspections. The bill also does not require an owner/operator to remedy deficiencies in a timely manner or require the state to take action —no matter what problems were discovered in an annual inspection.[53] Lastly, there is no requirement that annual inspections begin one year, five years, or even decades after enactment of the bill. The initiation of inspections is wholly dependent on when a state begins to implement its permit program, which is entirely discretionary to the state.

Even if the bill required annual inspections to begin immediately, however, the usefulness of these inspections is extremely suspect. The bill simply requires that an engineer, hired by the utility, certify that the design of the structure is "in accordance with recognized and generally accepted good engineering practices."[54] The bill does not require engineers to employ federal standards in this certification, submit such certification to the state or EPA, or make such certification public. As stated above, if the engineer cannot certify that the "construction and maintenance of the structure will ensure dam stability,"[55] *the bill requires no further action* by the utility or the state. Lastly, the bill does not require *the state or EPA* to ever inspect dams themselves, even if such impoundments are found to be deficient or are categorized as high or significant hazard.

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[53] *See* Section 4011(c)(1)(B).
[54] *See* § 4011(c)(1)(B)(i)(I).
[55] *Id.* § 4011(c)(1)(B)(i)(II).

E. The Bill Fails to Set Any Deadlines for Permit Issuance

The CRS reports also observe that the bills would "establish no explicit deadlines for the issuance of permits or for facility compliance with applicable regulations, allowing individual states to establish such deadlines."[56] According to CRS, "States must certify that they have a permit program that meets the permit program specifications within three years of enactment. *However, no deadline is specified for states to issue permits or to compel owner/operators of CCR structures to operate in compliance with permit conditions.*"[57]

Thus States have no deadlines whatsoever for implementing the entire permit system on which the bill's requirements are based.[58] The absence of a deadline renders the bill nearly meaningless. Owners of coal ash disposal units need not obtain enforceable permits by any date certain. Since almost all the requirements applicable to coal ash dumps are effective only through state permits, compliance with needed safeguards can be delayed indefinitely (with the exception of groundwater monitoring at some units). Further, without a deadline for states to actually issue permits, EPA oversight is an empty promise, and citizen enforcement of standards is legally impossible.

F. The Bill Fails to Protect the Nation's Groundwater

Seventy-seven percent of community water systems in the United States use ground water as their primary source, supplying drinking water to thirty percent of community water system users, or almost 90 million Americans.[59] In addition, an estimated 15 million

[56] 2013 CRS Report, at Summary.
[57] 2012 CRS Report at 22. Emphasis added.
[58] *See* § 4011(c)(1)(E).
[59] *See* http://www.cdc.gov/features/groundwaterawareness/, citing U.S. Environmental Protection Agency. Fiscal Year 2010 Drinking Water and Ground Water Statistics. Updated in 2012.

American households get their water from private ground water wells.[60] Coal ash legislation must ensure that coal ash landfills and surface impoundments do not leach hazardous contaminants into groundwater. The Coal Ash Recycling and Oversight Act of 2013, however, fails to offer such protection.

As explained above, the bill fails to ensure that all states and all dump sites have the baseline protections offered in the Municipal Solid Waste Landfill regulations. The bill's failure to phase out unlined ponds, to set a deadline for permitting all disposal sites, to define the universe of regulated disposal units,[61] to require closure of polluting dumps by a date certain,[62] and its failure to ensure that all dangerous sites are monitored will leave the nation's ground water at risk of continued poisoning by pollutants harmful to human health in minute concentrations, including arsenic, hexavalent chromium, lead, mercury and more.

G. The Bill Fails to Require Adequate Fugitive Dust Controls

The bill does not require the control of fugitive dust sufficient to protect the health of communities residing near coal ash ponds and landfills. According to CRS, the EPA found risks and actual evidence of human exposure from "fugitive dust emissions, when fine particulates in the dried ash become airborne as at landfills or large-scale fill operations."[63] Yet the Coal Ash Recycling and Oversight Act of 2013 simply directs a state agency to "address" wind dispersal of coal ash, but does not provide a standard for air quality analogous to the EPA's proposed federal requirement that fugitive dust not

[60] *Id.*, citing US Census Bureau. Current Housing Reports, Series H150/09, American Housing Survey for the United States: 2009, U.S. Government Printing Office, Washington, DC: 20401. Printed in 2011 .
[61] The CRS Reports point repeatedly to the failure of the bill to define "structure" with sufficient specificity. *See* 2013 CRS Report at 6.
[62] The bill's provision that purports to set a closure date for unlined ponds that cannot meet groundwater protection standards after 8 or 10 years has significant loopholes making it unlikely to result in closure of many polluting units. In addition, the provision applies only to unlined, operating surface impoundments.
[63] 2012 CRS Report at 14. *See also,* 2013 CRS Report at 25.

exceed 35 ug/m3.[64] The bill also fails to even include the federal minimum "cover material requirements" mandated at municipal solid waste landfills.

Conclusion

In summary, the Coal Ash Recycling and Oversight Act of 2013 cannot and will not adequately protect American communities from the toxic pollution from coal ash. Its "unique" approach fails to guarantee the safety and security of communities located near high hazard dams and fails to ensure the protection of our nation's drinking water, rivers and streams. After decades of dangerous disposal of billions of tons of coal ash, it is extremely disappointing that a bill without deadlines would receive serious consideration by this Congress. In light of the evidence of water supplies poisoned with cancer-causing chemicals, it is unconscionable to consider a bill that allows polluting dumps to continue to operate indefinitely. Lastly, in the wake of the largest toxic waste spill in U.S. history, it is unfathomable to consider a legislative solution that fails to ensure the structural integrity of hundreds of dams impounding millions of tons of toxic sludge. The problems posed by coal ash can and must be solved, but the Coal Ash Recycling and Oversight Act of 2013 is not the answer.

We remain open to further discussion of coal ash legislation with Members of the Subcommittee in the hope that we can arrive at a better understanding of our mutual concerns and establish common goals that benefit the health of all Americans, our environment and our economy.

[64] *See* § 4011(c)(1)(D).

Figure 1: Human Health Effects of Coal Ash Pollutants

Aluminum	Lung disease, developmental problems
Antimony	Eye irritation, heart damage, lung problems
Arsenic	Multiple types of cancer, darkening of skin, hand warts
Barium	Gastrointestinal problems, muscle weakness, heart problems
Beryllium	Lung cancer, pneumonia, respiratory problems
Boron	Reproductive problems, gastrointestinal illness
Cadmium	Lung disease, kidney disease, cancer
Chromium	Cancer, ulcers and other stomach problems
Chlorine	Respiratory distress
Cobalt	Lung/heart/liver/kidney problems, dermatitis
Lead	Decreases in IQ, nervous system, developmental and behavioral problems
Manganese	Nervous system, muscle problems, mental problems
Mercury	Cognitive deficits, developmental delays, behavioral problems
Molybdenum	Mineral imbalance, anemia, developmental problems
Nickel	Cancer, lung problems, allergic reactions
Selenium	Birth defects, impaired bone growth in children
Thallium	Birth defects, nervous system/reproductive problems
Vanadium	Birth defects, lung/throat/eye problems
Zinc	Gastrointestinal effects, reproductive problems

Source: ATSDR ToxFAQs, available at www.atsdr.cdc.gov/toxfaq.html

Mr. SHIMKUS. Thank you.

The last testimony we will receive is from Mr. Spadaro, who is a mine safety and health environmental consultant. Mr. Spadaro, I understand you are going to show some slides in your testimony, is that correct?

Mr. SPADARO. Yes, I am.

Mr. SHIMKUS. We would just on the record, as we have submissions, you know, in a certain amount of time, when you have slides if we could see those in the same timely manner on the submission, that just makes it easier for us, too. So that is actually part of your testimony and we should have received that 48 hours in advance, too, but we are happy to, with asking for unanimous consent, to allow you to have the slides shown. So with that, I recognize you for 5 minutes.

STATEMENT OF JACK SPADARO

Mr. SPADARO. Thank you. I will try to show these as I go so we will save time.

I just want to thank you for inviting me here today, and for allowing me to make these comments. I have been involved in the regulation of dams related to coal mine waste since 1972, when I went down to southern West Virginia as a young engineer to investigate the Buffalo Creek dam failure, where 125 people died and about 4,000 people ended up having their homes destroyed by the failure of a dam that had not been engineered properly. Then after that time, I have worked for really in the past 40 years in regulating both the environmental effects of mining, and the mine health and safety regulations at both the federal and state levels.

The management and disposal of coal ash is an issue with serious health and safety implications that warrant federal action to protect the communities living with this waste, particularly to ensure the structural integrity of more than 1,000 coal ash dams across the country.

In the draft discussion, there is just a mere mention, really, of the standards necessary to address these threats. The language is something vague, like good engineering practices. Well—and I am going to show here in a minute the after-effects of the dam failure at Buffalo Creek, and several others.

So when I went to Buffalo Creek and spent almost a year there, I was there—I went in about a week after the dam failed and then I worked with a committee that was appointed by the governor of West Virginia and their very first conclusion read this way, "The lack of definitive, clear-cut, and enforceable laws with regard to the safety of mine refuse banks and impounding structures, both at the federal and state levels, was a major shortcoming that contributed to the disaster." Now I want to show, if we can, the first photographs of the Buffalo Creek dam failure.

[Slide shown.]

This is how destructive one dam failure can be. In this failure, the structure was about 60 feet high, contained 125 million gallons of coal slurry, and it failed in a matter of 15 minutes because there were no engineering standards in place.

So after that, I was honored to work with the—we can go on to the next slides.

[Slide shown.]

I was honored to work both at the state and federal level in writing regulations that could govern these structures, and so we, over time, developed under the Code of Federal Regulations under the Surface Lining Act, under 30 C.F.R. 816.49, 816.81, 816.83, and 816.84 standards that have been in place since 1977. That was for the Federal Office of Surface Mining, and states then implemented those regulations. We also have, since 1977, federal standards that are enforced by the Mine Safety and Health Administration, and that is under 30 C.F.R. 77.214 through 77.216.

Unlike the discussion draft, the OSM and MSHA regulations require specific recognized engineering standards to be applied to the planning, construction, and maintenance of coal refuse dams and do not merely leave the design and maintenance criteria to an independent contractor.

[Slide shown.]

The failure that you see now on the screen was the Martin County dam failure that occurred in October, 2000. That was a failure where a dam had been repeatedly certified by an engineer who was a contract engineer for the company who owned the dam, and then there is a similar failure that occurred as recently as past December, 2012. The engineer who had repeatedly certified that dam was safe was standing on top of the dam when it failed.

So the EPA's studies have shown that there are—the structures study, there are at least 25 percent of them were in poor conditions. They did recommend urgent action to stabilize those dams. Fifty-four of the significant hazard dams were rated poor, and less than half of all the dams received a satisfactory rating.

I want to say to you, I have seen, as you have seen here, the result of inadequate and irresponsible regulation of coal refuse dams, and these catastrophes that I hope never to see again, and I shall never forget the bodies of the people that I saw wrapped in the coal slurry in the weeks following the Buffalo Creek dam failure, and hearing the voices of the survivors who had lost their families forever.

Thank you.

[The prepared statement of Mr. Spadaro follows:]

Statement of Jack Spadaro
Former Director of the National Mine Health and Safety Academy
Regarding Coal Ash Dam Safety

Committee on Energy & Commerce, Subcommittee on Environment & Economy
April 11, 2013

In February 1972 I witnessed firsthand the complete and utter destruction of seventeen (17) mining communities on Buffalo Creek in Logan County, W. Va. I was sent as part of the Commission appointed by the Governor of West Virginia to investigate the causes of the failure of a coal waste dam at the headwaters of Buffalo Creek on February 26, 1972. The dam failure resulted in the release of a massive wall of toxic coal mine waste water that killed one hundred twenty-five (125) men, women and children who were residents of the Buffalo Creek Valley. More than fifteen hundred (1500) homes were destroyed or severely damaged and four thousand (4000) people were left homeless. The Governor's Commission of Inquiry concluded:

> ***"1. The lack of definitive, clear-cut, and enforceable laws with regard to the safety of mine-refuse banks and impounding structures, both at the Federal and State levels, was a major shortcoming that contributed to the disaster."***

I have been involved in the evaluation and regulation of coal waste dams since 1972 and I have written federal and state regulations governing the structural integrity of such dams. The regulations I wrote in 1978 for the federal Office of Surface Mining (OSM) Reclamation and Enforcement are still in effect. The regulations under 30 CFR 816.49, 816.81, 816.83, and 816.84 have in large part been complied with when adequately enforced by state and federal regulating authorities. The exceptions were the failures of the Martin County Coal Waste Dam in Martin County, KY, on October 11, 2000 and the failure of the Robinson Run Coal Waste Dam operated by Consolidation Coal Company in Harrison County, W.Va. in December 2012. I will speak more about these coal waste dam failures in this discussion. Comparable regulations regarding coal waste dams are also enforced by the federal Mine Safety and Health Administration (MSHA) under **30 CFR 77.214 through 77.216.** Both the OSM and MSHA regulations require at a minimum that the coal waste embankments and dams be constructed in compacted layers and meet stringent geotechnical engineering requirements ensuring a long time minimum factor of safety of 1.5. The OSM and MSHA regulations further require that the plans for the construction and maintenance of coal waste dams be approved by the MSHA District Manager and Technical Support Division and, in the case of OSM, by the designated regulatory authority. Safety examinations of the coal waste dams by a qualified dam safety expert are required on a weekly basis under the MSHA rules. The OSM and MSHA regulations require specific recognized engineering standards be applied to the planning, construction and maintenance of coal refuse dams and do not merely leave the design and maintenance criteria to an independent engineer as has been proposed in recent discussion papers. There is an inherent and profoundly dangerous risk in leaving the entire structural integrity question up to an engineer employed by the owner or a contract engineer engaged by the owner of the coal ash containment dam. This risk was clearly evidenced in October 2000 in

Martin County Kentucky when a coal slurry impoundment failed unleashing three hundred million (300,000,000) gallons of toxic coal mine preparation plant waste into the Tug Fork and Big Sandy Rivers killing all life forms for one hundred (100) miles downstream. The coal slurry impoundment had been certified as safe on an annual basis by a so called "independent" certified professional engineer who was employed by the mining company under contract for at least six (6) years prior to the failure. The same "independent" engineering firm had regularly inspected the Martin County Coal slurry impoundment on a quarterly basis and certified that the dam was safe. Later investigation by MSHA engineers found that the mining company had lied in its application for approval regarding the foundation conditions at the bottom of coal slurry reservoir. A similar coal waste dam failure occurred in December 2012 at Robinson Run in Harrison County, W.Va. The coal slurry reservoir was being utilized as a disposal area for coal ash generated by a nearby power plant. The exact type of structure we are discussing today. The dam failed while the engineer who had repeatedly certified that the dam was safe was standing on the crest of the dam. A bulldozer operator assisting the engineer was drawn into the coal ash reservoir with his dozer and drowned. It took over a week to recover the man's body. This is only one tragic example of what will assuredly happen if coal ash dams are not rigorously regulated by independent government agencies with adequate authority to monitor engineering and construction of coal ash dams.

I am certain that the proposed legislation in its present form, without specific requirements for review of design, stringent geotechnical and hydrological engineering requirements, and vigorous enforcement by a federal regulatory agency will result in a catastrophic failure of a coal ash dam containment structure that will result in extensive loss of life and severe environmental damage that will be irreversible. There are thousands of such structures in the United States at this time and the failure of one or more of these dams is assured unless strict engineering standards are imposed. These standards are not costly and in fact can result in economic savings to the industry by reducing liability and streamlining construction and maintenance costs. This has been found true in the mining industry since 1977. If we do not ensure long term structural integrity, the result has already been observed in the massive failure in Kingston, Tennessee. The EPA completed a study of the structural integrity of over 400 coal ash dams, hundreds of which could cause loss of life or serious damage if a failure occurs. The EPA found that approximately twenty five percent (25%) were in "poor" condition. The EPA has sent letters to the owners of the dams requesting that the deficiencies be remedied, but there is no law or regulation that requires the owners to do so. I find this appalling forty years after the Buffalo Creek coal refuse dam failure. The people of Buffalo Creek warned their governor and at least six federal and state agencies that an unsafe dam existed at the headwaters of the stream that flowed by their homes. They were ignored. Surely, those of you who now have knowledge that these dangers exist in the year 2013 will not do the same.

I hope never again to see the result of inadequate and irresponsible regulation of a coal waste retaining structure as I did in 1972 on Buffalo Creek. I shall never forget the bodies wrapped in black toxic sludge or the faces and voices of the survivors who had lost all that was precious to them, forever.

Jack Spadaro
April 11, 2013

Mr. SHIMKUS. Thank you, sir, for your testimony.

I am going to ask unanimous consent that Mr. Hall be recognized for the first 5 minutes.

Mr. HALL. Thank you, Mr. Chairman.

Mr. SHIMKUS. Without objection, the gentleman is recognized.

Mr. HALL. Thank you very much, and it is very important to take—I thank you for it. It is—you make your usual request that we can submit letters in the future?

Mr. SHIMKUS. I have not made that statement yet, but without—with unanimous consent, people are—we will keep the record open for 5 days to receive questions and responses as per—10 days? Ten days. Without objection, so ordered.

Mr. HALL. Thank you. I yield back.

Mr. SHIMKUS. Shoot, I could have done that, Ralph.

Now I would like to recognize Mr. Tonko for 5 minutes.

Mr. TONKO. Thank you, Mr. Chair, and let me thank the witnesses for their testimony.

The proposal before us would establish an unprecedented regulatory structure wherein the specific technical requirements for coal ash disposal would be set in statute. I have serious concerns about that approach, not the least of which is the burden it puts on this committee to determine the appropriate technical specs for safe disposal.

In order to better inform the subcommittee, I would now like to ask some of the same questions of this panel. Mr. Spadaro, you are an engineer with very compelling evidence that you offered with the photos that you have displayed. Your experience in determining what criteria are necessary to assure the structural integrity of waste impoundments is telling, I am concerned that this proposal will not require impoundments to be designed for the full volume of liquid they will hold, and will not require the operating criteria currently applied to coal waste impoundments. So are those concerns justified?

Mr. SPADARO. Yes, sir.

Mr. TONKO. And do you agree that the proposal before us is deficient on structural integrity?

Mr. SPADARO. Yes, it is remarkably deficient. I can't believe that 40 years after the Buffalo Creek dam I am reading legislation that basically foregoes standard geotechnical practice that has been applied to dam construction for the past, really, 50 years. And so this bill is deficient in applying those standards.

Mr. TONKO. Now you have shared some very telling photos, but can you give a few brief examples of those deficiencies?

Mr. SPADARO. Yes. As I said, the rate—both the Surface Mining Control and Reclamation Act, and the Mine Safety and Health Act of 1977 were very specific in stating that standards should be established in the federal regulations through the regulation process, so I, as I said, I worked on the team of engineers and hydrologists who put together those regulations. We had input from the Corps of Engineers, the Soil Conservation Service, the engineers from within the specific agencies, and those people had the knowledge to determine what needed to be put into the regulations.

One of the main things is the requirements for foundation investigation, engineering analysis of the foundationaries of dams, engi-

neering analysis of the seepage patterns that the dams might create, and the geologic conditions in the areas where the dams are being constructed. Also, standards for compaction of the material, and daily inspection standards under the MSHA standards, and quarterly inspections by federal inspectors, as well as the certification by the corporate engineer. So you have a checks and balance system where not just one person is saying the dam is safe. And that has worked by and large very successfully. There are 650 coal refuse dams in the United States. We know of several failures, but I can assure you, without these standards, there would have been many more.

Mr. TONKO. Well, I think this is something that could be addressed by delegating rulemaking authority to the EPA to establish criteria that would meet a standard of protection, and rather than rescuing EPA as an agency, as has been suggested, it seems as though the concern should be with individuals, families, and communities that could be severely impacted.

Mr. Spadaro, if we had to lay it out in statutory terms, what are the minimum requirements in your view that should be included here to prevent another spill like that which happened in Kingston?

Mr. SPADARO. Well, I do recommend that the regulations be developed by EPA, and not just EPA, but a team of agencies with the expertise, as well as with input from industry. So I think the minimum standard would be that the dams be built using initially, and requiring initially, an evaluation of the stability of the foundation, the stability of the dam as it is being constructed, instrumentation of the dam with pisometers and slope inclinometers that can detect movement, minimum standards for compaction material, and minimum hydrologic standards, for instance, establishing design storms. We found in West Virginia we had to design many of the dams for the probable hydrologic consequences, the probable maximum storm, because there were large populated areas downstream. So you have to account for very large storms, as well as the structural integrity of the dams. Those things, at a minimum, should be included in any proposed regulations or legislation.

Mr. TONKO. Thank you, Mr. Spadaro. Thank you, Mr. Chair. I yield back.

Mr. SHIMKUS. Gentleman yields back his time.

Mr. Spadaro, not a question, but a comment. I was 12 in 1972, and I would hope engineering qualifications and standards have improved so much in the multiple decades, and that is why we trust the states to be able to figure that out. The other issue was, you are talking about a coal waste dam. We are talking about coal ash impoundments. They are two different issues, and I just want to put that on the record.

I want to start with Mr. Martineau. ECOS is who?

Mr. MARTINEAU. ECOS is the Environmental Council of State. We are essentially an organization of all my counterpart agencies. I am the commissioner of the Department of Environment and Conservation for Tennessee. The titles vary slightly, but we have 48 of the 50 States are members——

Mr. SHIMKUS. And the two who aren't, was I correct, Florida and South Dakota?

Mr. MARTINEAU. Florida and South Dakota.

Mr. SHIMKUS. So New York and Massachusetts——

Mr. MARTINEAU. Are all members.

Mr. SHIMKUS. —California, and they all went on record with this resolution twice, is that correct?

Mr. MARTINEAU. Yes.

Mr. SHIMKUS. Without objection?

Mr. MARTINEAU. I believe it was unanimous. Yes, it was unanimous.

Mr. SHIMKUS. Unanimous? California, Massachusetts, which I think is telling, and I think that is the importance of your organization, and I just wanted to make sure we have that on record.

The other thing—and I am—what is important, part of this whole debate came about because of this, beneficial reuse. And in the state of California, there were adds about concrete use that had fly ash, and they were targeting that reuse, and the whole reclassification. And for my colleagues, some of whom are new on this subcommittee, the importance is if we then turn this all into a toxic waste dump, you have got—and Mr. Cobb, I think your testimony talks about where do we put it and how do you manage it? So I just want to tie that into this debate, because we are now getting into the nitty gritty, but there are some macro parts of this debate, and that is why many of us think this is a great, actually, environmental response to get beneficial reuse and ensure that that occurs, which keeps our ability to place things in landfills in a limited amount.

Mr. Martineau, as an experience state regulator, do you think states are able to interpret the minimum program requirements in the bill to provide a permit program that is protective of human health and the environment?

Mr. MARTINEAU. Yes, I do.

Mr. SHIMKUS. What about this dam debate that we just had?

Mr. MARTINEAU. I think dams are obviously in context well beyond coal ash disposal sites, but the structural integrity of dams, I am not a dam expert—d-a-m—but those things are evaluated by states. I mean, EPA you heard earlier, they themselves went and looked at the 300 coal ash disposal sites and saw no immediate hazard, so I think——

Mr. SHIMKUS. No immediate hazard, and the EPA went on record as saying that?

Mr. MARTINEAU. Yes, I believe that was——

Mr. SHIMKUS. That was the testimony, yes, sir.

Mr. Cobb, as an experienced—I mean, back to you, Mr. Martineau. The draft legislation sets forth detailed federal requirements that would establish a baseline for coal ash management across the country. Do you believe the requirements set forth in the legislation will ensure that states develop effective environmental protective permit programs for coal ash management?

Mr. MARTINEAU. Yes, I believe they do. I think the discussion draft, the Senate version from last year covers the key elements of program for groundwater protection, for closure requirements, for structural integrity, and other requirements. And the thing it adds, which the Subtitle D program does not have, is that permitting

program, and then it provides that states have to certify the completion of those requirements to EPA, and they can evaluate those.

Mr. SHIMKUS. Thank you, and Mr. Cobb, I wanted to ask, as another experienced state regulator, do you think states are able to interpret the minimum program requirements in the bill to develop a permit program that is protective of human health and the environment?

Mr. COBB. Absolutely, Mr. Chairman. Quite frankly, that is what we do. We implement regulatory programs. We interpret——

Mr. SHIMKUS. You mean, you can do it without the EPA coming in?

Mr. COBB. I have confidence that we can, yes.

Mr. SHIMKUS. You are not so diligent—I mean, you are concerned about your state's citizens, and that is the job that you have, is that correct?

Mr. COBB. That is correct, because in addition to having the job of protecting human health and the environment, we also have the added incentive that we and or families and our friends live in these communities, so we have a vested interest.

Mr. SHIMKUS. And if there is, obviously, abuse, which I think some people fear, don't you think that the public would be aghast and may want to take retribution on politicians and those who have been appointed as commissioners of the environmental activities and throw them out of office? That is a political question. The answer is I would hope that response would be much better and the public would be outraged.

Ms. Bodine, when you were at the EPA, what was the prevailing view about coal ash regulation?

Ms. BODINE. As I talked about in my testimony, EPA didn't stop looking at coal ash with the 2000 regulatory determination, because, in fact, the determination said that Subtitle D regulations were warranted. But as I pointed out in my written and in my oral statement, the agency didn't have a risk assessment to support regulation. So the agency—we continued to work on the risk assessment and we continue to gather information, and did a report, an updated report on practices in the industry with Department of Energy, and also received a petition from environmental groups, received a voluntary plan from the industry. And we had a lot of information and so we put out a notice of date availability in 2007 to make sure that the public and everyone knew what information the agency had.

In preparing to release that, the staff briefed me on all the information that we had and that the agency had, and recommending that it all be put into the public record, which is what we did. But in that briefing, the consensus of the staff was that certainly not Subtitle C regulation was warranted, and the question being raised was given, you know, the information that was being developed, whether even Subtitle D regulation was warranted.

Mr. SHIMKUS. Great, thank you.

Now I am going to get this correct. I would like to recognize the new vice chairman sitting in, Mr. Green, for 5 minutes.

Mr. GREEN. Thank you, Mr. Chairman. I am not vice chairman, in fact, this year—well, I am now because for the first time I can run the Democratic side. But last year I was ranking member on

the subcommittee and learned much more about coal ash than I ever thought I would ever know. One of the—we drafted a similar bill that—and we got bipartisan support out of the House for—that said something similar to what this bill does, and I am hoping to be able to support it again, but I have some questions of each of you.

For our state regulators, Mr. Cobb and Mr. Martineau, given your position, what do you think would be the consequences of having CCR program run through the EPA instead of the state-led program designed in the Majority discussion draft?

Mr. MARTINEAU. Well one, I think as Ms. Bodine has said, EPA has grappled with this for 30 years and not come up with any solution, and they are still grappling with it. They don't know if it belongs in Subtitle D. If it is a Subtitle C regulation, that would be a disaster. We will have chaos. We think the appropriate mechanism is, as the statute sets up for, that the states control, much like they do regulating landfills under Subtitle D. And the thing about the legislation is, we can move forward once it is passed, just begin that implementation at the state level.

Mr. GREEN. Mr. Cobb?

Mr. COBB. Yes, and I would agree with Mr. Martineau's assessment there that one of the key differences is with the legislation, it addresses the policy issues, the other issues that have balled this whole issue up for 30 years. It charges the states with going forward with implementing a program, based on experience programs, so we get it implemented faster, we get the protections in place faster. It was mentioned earlier that it has been almost 5 years since Kingston. We still don't have a program in place.

Mr. GREEN. Yes. I think, you know, one of my concerns is that—and again, I realize we had testimony last Congress that, for example, Wisconsin recycles 97 percent of their coal ash, and now-Senator Tammy Baldwin actually supported the bill in the subcommittee and the full committee and on the floor because of that, but we know we have some problems with coal ash. The issue of an old permit disposal in the Great Lakes I think needs to be dealt with, and the—but Mr. Martineau, one of the issues that brought coal ash up originally was the issue of the wet storage, and Tennessee had that disaster. Has there been anything Tennessee has done under current Tennessee law that would deal with the problems of the weak dams and so we wouldn't see that? Now we don't have that in Texas, but I know a lot of states still do have wet storage.

Mr. MARTINEAU. Well yes, and I think first to put it in context, that surface impoundment that was the main part of the issue at Kingston, you know, had been storing coal ash since the 1950s, so you know, there were no regulations, federal, state, local, any of those environmental statutes across the board, so there was a landfill. And we have gone back, obviously, after Kingston, and that was before my term as commissioner, but the regulations were upgraded after that to basically design would require new landfills to meet basically the Class II industrial landfill sites, which require—collection, closure—cap closure like a traditional landfill. So yes, we definitely have upgraded the requirements——

Mr. GREEN. So Tennessee has done that since that disaster?

Mr. MARTINEAU. Yes.

Mr. GREEN. Were you able to deal with any of the previously impoundments? Do you have any authority to deal with, you know, a dam that may end up being weak and you get folks downstream to be concerned about it? Do you have the authority to be able to deal with that?

Mr. MARTINEAU. Yes, we did, and we ordered TVA to do assessments of all the other coal ash disposal sites at their various power plants, and with EPA we looked at those and certainly would have the authority to upgrade those. And as you said, now going forward, for the landfill they basically have to meet the Class II industrial landfill closure standards.

Mr. GREEN. Ms. Evans, I know you may have an opinion on that. You know, I would like to see—you know, coming from Texas it seems like it is in our blood that the states ought to deal with it, but if we are not dealing with it, then you know, it becomes a national issue and in this case, EPA I think has the authority, unless we set up a different structure, and that is what this legislation is about. What is your opinion?

Ms. EVANS. Well, I think the states have the ability to deal with this, but they don't always have the will. I think Tennessee and Alabama are lessons to us. Of course, we had the disaster in Tennessee in 2008, but following that, the Tennessee legislature did not change their statutes to address the structural stability of dams, and so it remains that structural stability requirements are not specifically applied to coal ash dams. And this is after the biggest toxic waste spill in the Nation.

Also, I would like to correct the record regarding the inspection of dams, specifically in Tennessee with TVA. When TVA inspected its dams, it found that half of them required repairs to ensure structural stability, and those repairs are underway or completed now. As far as the EPA inspections, there were urgent repairs that were noted in the inspection records. And in West Virginia, the West Virginia DEP inspected one dam where it was deemed unsatisfactory and needed urgent repair.

So the longer I sit next to Mr. Spadaro and hear him talk about his experience and what is needed, and knowing what is not out there regarding coal ash dams, it certainly scares me about what the states have not done.

Lastly, in the case of Alabama, Alabama did—the legislature did address coal ash in 2011; however, they did not institute any regulations for coal ash ponds. Most of the waste in Alabama, I believe, is disposed in coal ash ponds, not landfills. Alabama legislature made their landfill regulations stronger. They did not change regulations applicable to dams. So what we have got here are states that are not ready to jump on this problem, solve the issue of disposal, and we may have a delay at EPA, but I am convinced that we are going to have a delay in state legislatures. And being from the very liberal State of Massachusetts, we can't even get our gaps closed in the State of Massachusetts, which we have been trying literally for 10 years with the bill and the legislature.

Mr. GREEN. I have to talk to our colleague, Mr. Markey, about that.

Mr. SHIMKUS. That is right.

Mr. GREEN. Thank you.

Mr. SHIMKUS. And I would just note, Massachusetts is a member of ECOS. I would like to recognize Mr. Latta for 5 minutes.

Mr. LATTA. Thank you very much, Mr. Chairman, and again, thanks to our panel for coming in today. We appreciate your testimony.

If I could start with Ms. Bodine. Could I ask this question first? In your experience, what constitutes a standard of protection?

Ms. BODINE. Thank you. This is a question that has been raised by CRS in the evaluation of legislation, and the CRS analyst appears to be saying that the only standard of protection that Congress can put forth is something like protection of human health and the environment. And that is simply not accurate. Congress can establish performance standards that are, in fact, standards of protection. And I also have to note that while many of the earliest environmental statutes did say to EPA go and protect human health and the environment, Congress hasn't passed legislation that is that open-ended in a very long time. And that spurs concerns on both sides of the issue. You have had people worried that the agency would go too far in that, and then people worry that the agency—giving the agency discretion to decide what is protecting human health and the environment, that they wouldn't go far enough. And so you have seen statutes that have prescriptive language, prescriptive standards. I would just point out the hazardous and solid waste amendments of 1984, Congress, at that time, decided they didn't like what the agency was doing to protect human health and the environment from hazardous wastes, and put in, you know, very prescriptive technical requirements into the statute.

So yes, you can have technical criteria that are performance criteria, and that is a standard of protection. And that is in the draft legislation.

Mr. LATTA. Let me follow up with that. Do states also establish standard of protections for statutes, regulations, and programs that they implement?

Ms. BODINE. So the answer to that is, of course, yes. I could defer to my state colleagues here, but I would just point out that they have been doing this for years. The states regulate far more than the Federal Government regulates. They have state solid waste management programs, beneficial use programs. They regulate more waste as hazardous than the Federal Government has, and of course, there is also regulation of coal ash. So in many areas, in many programs, states are establishing and implementing their own protective standards.

Mr. LATTA. Thank you.

Mr. Martineau, let me ask this question. Mr. Stanislaus stated in his written testimony the timelines for development and implementation of state programs are necessary. Would the states be open to a reasonable implementation schedule?

Mr. MARTINEAU. Yes, I think that certainly makes sense to provide time for the states to pass legislation, adopt rules, whatever they need at the state level to get that permit program up and running or anything like that would make sense, and then the statute already had certain timelines in there for when you do the ground-

water monitoring requirements or when the thing has to be upgraded by a certain date or closed by a certain date. So those kinds of schedules all make sense.

Mr. LATTA. Thank you.

Mr. Cobb, same question.

Mr. COBB. Yes, I believe that we would be very amenable to that kind of thing, particularly for the operational requirements which can be implemented almost immediately or on an accelerated schedule and get the protections in place earlier. The more design-related considerations, in my opinion, would need to wait on the permits because that is changing the very fabric of how the units are built, and we need to make sure those standards are right before a facility begins constructing, so that they construct it properly.

Mr. LATTA. Let me ask a follow-up on that then. What would, you know, a timeframe could the states live with if there were a deadline for issuance of permits? Mr. Cobb?

Mr. COBB. Based on our evaluation of the universe that we have in Alabama where we know we have at least nine large facilities that will require permitting, looking at our current workloads and everything, we believe that 3 to 4 years after applications are submitted we will be able to have all of our permits in place.

Mr. LATTA. And Mr. Martineau, can I ask you the same question?

Mr. MARTINEAU. Yes, and I certainly can't speak for all the states on that, but I would think 2 years to set up the permit program, adopt any state rules that are needed through the state rulemaking process or legislative approvals, and then some period of time, 2 to 4 years, to get the permits in place probably makes sense, would be about right.

Mr. LATTA. Thank you.

Mr. Chairman, I yield back the balance of my time.

Mr. SHIMKUS. Gentleman yields back his time.

Chair now recognizes the gentleman from West Virginia, Mr. McKinley, for 5 minutes.

Mr. MCKINLEY. Thank you, Mr. Chairman. I have a whole host of questions here, but I think if we can focus in on Mr. Spadaro, please, if we could. I wonder if I didn't—maybe because of my hearing problem, maybe you misspoke or I misheard, because in your opening statement you made something about challenging the structural integrity, you thought that it was only to meet good community standards. Do you remember saying that?

Mr. SPADARO. I think—can you hear me now?

Mr. MCKINLEY. Yes.

Mr. SPADARO. In the——

Mr. MCKINLEY. Is that a yes or a no? Did you say—I think you said good community standards.

Mr. SPADARO. I said good engineering standards.

Mr. MCKINLEY. Yes, good engineering standards, and that is fairly typical with the industry. If you are—you understand that, I mean, that people use good engineering practices because it falls under—but let me go back to more—you are a licensed engineer?

Mr. SPADARO. No, I worked at the Federal Government for 30 years, but I ran the Dam Control Division——

Mr. MCKINLEY. That is oK, so you are not a licensed engineer. A couple things in your testimony that—in your written testimony I found curious. You made a couple statements, and just for the record, I would like to make sure that they are correct, because you are testifying before Congress. You said that the Robinson Run mine was utilized as a disposal for coal ash. You know that is false?

Mr. SPADARO. No, that is not false. There are—I am sorry, sir. It was used for disposal from both the power plant and the coal preparation——

Mr. MCKINLEY. For slurry. Not coal ash, slurry.

Mr. SPADARO. For slurry, and that is coal ash that is delivered to the reservoir on the form of slurry, sir.

Mr. MCKINLEY. I hope that you will be—apparently you will be under oath when——

Mr. SPADARO. Yes, I am under oath, and I understand that it was delivered in the form of slur.

Mr. MCKINLEY. They are not—it was not used for coal ash.

Secondly——

Mr. SPADARO. I am sorry, but it was a coal ash——

Mr. SHIMKUS. Would the gentleman suspend? The time is the gentleman from West Virginia.

Mr. MCKINLEY. You also said that—by implying, you said that 25 percent of the dams were in poor condition, but the reality in conversation with EPA that the EPA said that just because they are classified as poor does not mean that they are unsafe. It just means that they are not meeting certain guidelines in terms of studies of paper evaluation. So let's just make sure we understand, the 25 percent that are labeled as poor are not unsafe, they just have not met all the criteria.

Mr. SPADARO. I disagree with that statement.

Mr. MCKINLEY. Well, you can, and you are disagreeing with the EPA then.

Mr. SPADARO. Yes.

Mr. MCKINLEY. So also in regards to—you are aware that the Federal Government inspects dams. If they have any concern, they inspect them every 7 days, according to the federal regulations. Are you aware of that?

Mr. SPADARO. They are required—the dams are required to be inspected by the mine operator every 7 days.

Mr. MCKINLEY. And the—in West Virginia, you have all our coal impoundments, they fall under the Office of Surface Mining, MSHA, that you were involved with, and also the state DEP have inspections. It is done monthly, those inspections, so I do appreciate the fact that you were involved once as an engineer. I think you are out of touch——

Mr. SPADARO. No, sir, I have been regulating dams my whole career, and when I worked with the Office of Surface Mining, I wrote the federal regulations that are in this book. I wrote them in 1978. They are still in effect, and I have been enforcing those regulations——

Mr. MCKINLEY. You list yourself, sir, as—on your resume as the Engineer of the Year in 1993.

Mr. SPADARO. I was by the National Society of Professional Engineers.

Mr. MCKINLEY. We talked to them today and they said they have no record of that.

Mr. SPADARO. Well I am sorry, but I did receive it and I have the certificate to prove it.

Mr. MCKINLEY. If you could, I would like to see that if you could submit that for the record, because in 1993, there is no such thing, first, as the Engineer of the Year.

Mr. SPADARO. I was with the Federal Government——

Mr. MCKINLEY. Federal engineer, but that wasn't awarded to you unless you were the engineer—were you in the Air Force at the time?

Mr. SPADARO. No, I was working——

Mr. MCKINLEY. Because that is where it went in 1993. The Federal Engineer of the Year was an engineer in the Air Force, so——

Mr. SPADARO. Listen. I was awarded that award as an employee of the Federal Department of the Interior in 1993 by the National Society of Professional Engineers, and there was an award ceremony, sir.

Mr. MCKINLEY. If you would send that certificate in, I would like to see that and share it with the NSPE, because they have no record of you. You are not licensed in West Virginia, you are not licensed in Kentucky, but you are acting as though you are an engineer.

Mr. SPADARO. I have been qualified as an expert on dam safety in six federal courts in the past 30 years, and I am qualified every day in federal and state courts as an expert in dam——

Mr. MCKINLEY. I think the record shows that you are not a licensed engineer, and secondly, I agree with everything that has been said about the concern about the dam safety, and I think people have moved—what you discovered in '72 or '75, that is yesterday.

Mr. SPADARO. I investigated——

Mr. MCKINLEY. Actually moving in a way that we go ahead, and I am really glad to hear that there are other people—that we are moving on it, that there have been improvements with those standards and we can continue to do that. But some of the record that you are testifying to, that you are representing, is just factually incorrect.

Mr. SPADARO. That is not true. Everything I have said in my testimony is factually correct, and I have done dam safety investigations as recently as last year.

Mr. MCKINLEY. I look forward to your testimony on the Robinson Run when they determine that it did not include fly ash.

Apparently my time has run out, so I have to end at that. I yield back my time.

Mr. SHIMKUS. Gentleman's time is expired.

Chair now recognizes the gentleman from Mississippi, Mr. Harper, for 5 minutes.

Mr. HARPER. Thank you, Mr. Chairman, and thank each of you for being here and sharing your views on this very important issue to us, and if I may, is it Ms. Bodine or Bodine?

Ms. BODINE. Bodine, thank you.

Mr. HARPER. Bodine, thank you very much. Ms. Bodine, would you consider authority in the legislation for EPA to analyze at any time state permit programs and find programs deficient if they do not meet the minimum requirements of the federal backstop?

Ms. BODINE. Yes, I would consider that to be backstop authority. The way the proposed legislation, the draft legislation works is that EPA has the authority to evaluate the state programs and then if they are deficient, has the authority to then implement a federal permitting program in lieu of the state program, and that is a backstop.

Mr. HARPER. OK. The legislation sets out a detailed list of criteria that states must include in their permit programs. Is this approach completely unprecedented, or when has it been done before?

Ms. BODINE. So—and I talked a little about this earlier. The fact that Congress can set up in federal law specific criteria is not unprecedented, and again, has been done with very detailed statutory language in the hazardous waste context where Congress was setting out minimum technology requirements, indeed specifying the number of liners, for example, that would be—and that is all in federal statute, so the fact that you would have federal criteria established in federal law is not unprecedented.

Mr. HARPER. OK, thank you.

Mr. Cobb, how long have you been regulating solid and hazardous waste?

Mr. COBB. For 25 years.

Mr. HARPER. Based on that experience, those 25 years, does the legislation contain all of the necessary technical elements needed to establish a protective permit program?

Mr. COBB. Yes, sir, I believe it does because based on my experience both in hazardous waste and in solid waste, primarily in hazardous waste, going through the legislation, it appears to contain the things that we would need to be able to have a protective regulatory program.

Mr. HARPER. OK. Do you believe that the legislation allows states the latitude to go beyond the federal standards?

Mr. COBB. Absolutely. As I read the legislation, there is clearly the provision that allows states to go beyond the minimum national requirements.

Mr. HARPER. Now, would the legislation result in states developing or revising requirements for CCR management that would go beyond current waste management requirements?

Mr. COBB. Well, I can only speak for Alabama, but certainly, because as has been pointed out, we have only recently been able to regulate CCRs, so what we will be putting in place as a result of this legislation or EPA rules or whatever comes out, will certainly go far beyond what we have done in the past, and I would be very surprised, based on my experience in discussions with other states, if there would be any state that would not have to do some expansion of their programs beyond the current status.

Mr. HARPER. And I think you have answered it, but just so that I am sure, so would Alabama have to develop new requirements or make changes to existing requirements that may apply to coal ash?

Mr. COBB. Yes, sir. We have already incorporated coal ash into our landfill program, but we will have to add requirements, par-

ticularly for surface impoundments, for structural integrity, for any other units, and that is what we are ready to do. We are waiting on to see what the national requirement is to know how to put those in place so that we can do it, and we are ready to do it now.

Mr. HARPER. I yield back.

Mr. SHIMKUS. Gentleman yields back his time. Chair now recognizes the gentleman from Florida, Mr. Bilirakis, for 5 minutes.

Mr. BILIRAKIS. Thank you, Mr. Chairman. I appreciate it.

Mr. Cobb, a criticism of the legislation is that the flexibility in the bill would allow states to define what constitutes CCR landfill, surface impoundment, or other land-based unit to define what specific CCR structures state program conditions would be applied to. Why is it a good approach?

Mr. COBB. Sir, I believe that this is a good approach because it allows states the flexibility to tailor the regulations to what exists in their state. It allows us to make sure that the regulations are better responsive to individual state conditions, to state geology, to state climate in a way that often cannot be done with strictly rigid, uniform national requirements. It goes to the part of states being more stringent, of states having additional requirements. We need that ability to tailor the regs to make sure we can address what is in our state.

Mr. BILIRAKIS. Thank you.

Ms. Bodine suggests that these terms are well understood as the RCRA regulation content. Do you agree?

Mr. COBB. Yes, I would definitely agree with that. The terms such as landfill surface impoundment, land disposal unit, are used in all of the waste programs and regulations, and one of the things that you can take comfort in is we are regulators. As regulators, we like to have consistent definitions. We like to have consistency, because it enables us to regulate better and more consistently across programs. So yes, I believe that these terms are well understood and will be well represented.

Mr. BILIRAKIS. Thank you very much.

Ms. Bodine, based on your experience, would the approach set out in the discussion be successful at creating state permit programs that protect human health and the environment?

Ms. BODINE. I believe so, yes.

Mr. BILIRAKIS. Do you want to elaborate a little bit on it?

Ms. BODINE. I think that this may be the only way that we are going to get, you know, standards for coal ash across the country is through legislation, and that this is the—not only will it be successful, it may be the only avenue for success, and that goes back to my earlier discussion about the fact that EPA has not been able to create the record and have a risk assessment that justifies regulation, and so Congress can step in and say as a matter of policy and as a matter of congressional prerogatives, that they are going to set up a federal program. The legislation does that. We have heard from the state regulators saying yes, it has all the elements. Yes, we can implement it. And so now it is just a matter of getting it done, of having Congress act.

Mr. BILIRAKIS. Very good. Thank you very much.

I yield back, Mr. Chairman.

Mr. SHIMKUS. Gentleman yields back his time.

We want to thank this panel for coming and giving their testimony. I would like unanimous consent to submit three letters into the record—actually, four statements. Two letters from professional engineering firms regarding the appropriate dam safety standards for coal ash impoundments, one letter from a beneficial user, the Portland Cement Association, and a submission for testimony from the representative from North Dakota, Congressman Cramer.

[The information apears at the conclusion of the hearing.]

Mr. SHIMKUS. Without objection, so ordered, and the hearing is now adjourned.

[Whereupon, at 12:58 p.m., the subcommittee was adjourned.]

[Material submitted for inclusion in the record follows:]

WRITTEN TESTIMONY

BY CONGRESSMAN KEVIN CRAMER, NORTH DAKOTA (AL)

TO THE

HOUSE COMMITTEE ON ENERGY AND COMMERCE

SUBCOMMITTEE ON ENVIRONMENT AND THE ECONOMY

APRIL 11, 2013

Chairman Upton, Ranking Member Waxman, Chairmen Shimkus and Gingrey, Ranking Member Tonko, and members of the Subcommittee, thank you for this opportunity to provide testimony regarding this very important topic.

With our seven coal-fired electricity generation plants, the issue of disposal and beneficial use of coal combustion residuals (CCR) is imperative to my state's electricity ratepayers. North Dakota energy stakeholders have the capability to beneficially use 40% of CCRs, utilizing its unique characteristics for such purposes as cement replacement, road base/sub-base applications, sand blasting media, roofing shingles, winter ice control on roads, as well as to offset such materials as sand and gravel in constructions projects. High profile projects, such as the I-35 bridge reconstruction in Minneapolis and concrete footings for large wind farms, are just two examples of the benefits CCRs can play in rebuilding, and augmenting, our nation's infrastructure.

For those residuals that are unable to be utilized, the remainder is disposed in a safe and prudent manner, now solely regulated by the North Dakota Department of Health (NDDOH), Department of Waste Management. NDDOH effectively works with

the energy industry to investigate and solve disposal issues, as well as develop long-term solutions.

The designation of CCRs as hazardous waste would not only result in significant cost ramifications to the already overburdened electricity consumer, but would promote a regulation in defiance of common sense, thereby undermining its credibility and overall effectiveness.

Although the North Dakota Solid Waste Management Rules for coal combustion waste disposal follow the general model of the Resource Conservation Recovery Act Subtitle D criteria for municipal waste, the specific requirements are tailored for North Dakota's geology and CCRs. All standards proposed by this legislation are exceeded by current coal ash regulation by the NDDOH.

The Coal Ash Recycling and Oversight Act of 2013, and its amendments to the Solid Waste Disposal Act, is a superior alternative to the Environmental Protection Agency's (EPA) recommendations.

Attached for your consideration is House concurrent Resolution No. 3026 from the North Dakota Legislature, urging the EPA to refrain from enacting regulations that regulate coal combustion residuals as hazardous wastes and allowing the NDDOH to continue to regulate CCRs under its current regulatory structure. Also included is a pamphlet published by one of my state's energy stakeholders which explains the beneficial uses of CCRs.

Sixty-third Legislative Assembly of North Dakota
In Regular Session Commencing Tuesday, January 8, 2013

HOUSE CONCURRENT RESOLUTION NO. 3026
(Representatives Belter, Boe, Delmore, Delzer, Headland, Kreidt, Porter)
(Senators Carlisle, Dotzenrod, Lyson, Unruh, Wardner)

A concurrent resolution urging the United States Environmental Protection Agency to refrain from enacting regulations that place unreasonable economic burden on electric consumers living in the Northern Great Plains.

WHEREAS, over the course of the 2011-13 interim the United States Environmental Protection Agency considered whether to regulate coal combustion residuals as hazardous or nonhazardous wastes under the Resource Conservation and Recovery Act; and

WHEREAS, the North Dakota Congressional Delegation in conjunction with members of other delegations across the region introduced legislation clarifying that coal combustion residuals should be regulated by states and not be deemed hazardous wastes; and

WHEREAS, in March 2012 the United States Environmental Protection Agency released a decision on the federal regional haze program approving the State Department of Health's decision to require selective noncatalytic reduction technology at the Milton R. Young Station and the Leland Olds Station, but requiring the installation of other technologies for the Antelope Valley Station and the Coal Creek Station resulting in a federal implementation plan for the two units; and

WHEREAS, in December 2012 the United States Environmental Protection Agency issued a notice that it intended to reopen the North Dakota regional haze issue in response to a petition filed by a number of environmental groups; and

WHEREAS, in April 2012 the United States Environmental Protection Agency proposed new carbon dioxide emission standards requiring new coal-based electric generation units to meet an emission standard based on the carbon dioxide emissions of a combined cycle natural gas plant; and

WHEREAS, new lignite-based electric generation units will not be able to meet the proposed carbon dioxide emission standards until carbon dioxide capture technology is developed for widespread, commercial installation; and

WHEREAS, the United States Environmental Protection Agency stated in the April 2012 proposed rule that no notable carbon dioxide or other pollutant emissions changes or monetized benefits were anticipated with the new carbon dioxide emission standards; and

WHEREAS, the North Dakota lignite industry employs thousands of individuals and contributes over $3.5 billion in business activity in North Dakota each year; and

WHEREAS, if the United States Environmental Protection Agency continues to issue regulations that are not based on sound science and that will have significant impact on consumer electricity costs, the North Dakota lignite industry will struggle to provide low-cost, reliable electricity to the two million consumers served by North Dakota lignite-based generation across the Northern Great Plains; and

WHEREAS, under the present federal regulatory agenda, the state is in danger of losing high-paying jobs related to the lignite industry as well as revenue generated through taxes and business activity;

NOW, THEREFORE, BE IT RESOLVED BY THE HOUSE OF REPRESENTATIVES OF NORTH DAKOTA, THE SENATE CONCURRING THEREIN:

That the Sixty-third Legislative Assembly urges the United States Environmental Protection Agency to refrain from enacting regulations that regulate coal combustion residuals as hazardous wastes and allow the State Department of Health to continue to regulate coal combustion residuals under its current regulatory structure; and

That the United States Environmental Protection Agency support its March 2012 decision related to the state's regional haze implementation plan and delegate to the state the responsibility for working with the Antelope Valley Station and the Coal Creek Station to achieve the federal implementation plan; and

That the United States Environmental Protection Agency refrain from finalizing regulations for carbon dioxide emission standards which require coal to meet an emission standard based on the carbon dioxide emissions of a combined cycle natural gas plant and to refrain from proposing carbon dioxide emissions standards for existing coal-based electric generation units; and

That the Sixty-third Legislative Assembly urges the United States Environmental Protection Agency to work with the state, the North Dakota Congressional Delegation, and the North Dakota lignite industry to design regulatory programs that are based on sound science and that make economic sense for the consumers of North Dakota lignite; and

That the members of the Sixty-third Legislative Assembly support the efforts of the lignite industry to find common sense technology solutions that will facilitate the continuation of lignite-based electric generation; and

That the members of the Sixty-third Legislative Assembly support the efforts of the lignite industry to challenge regulations that will significantly impact the ability of the industry to continue to generate electricity from existing lignite-based plants; and

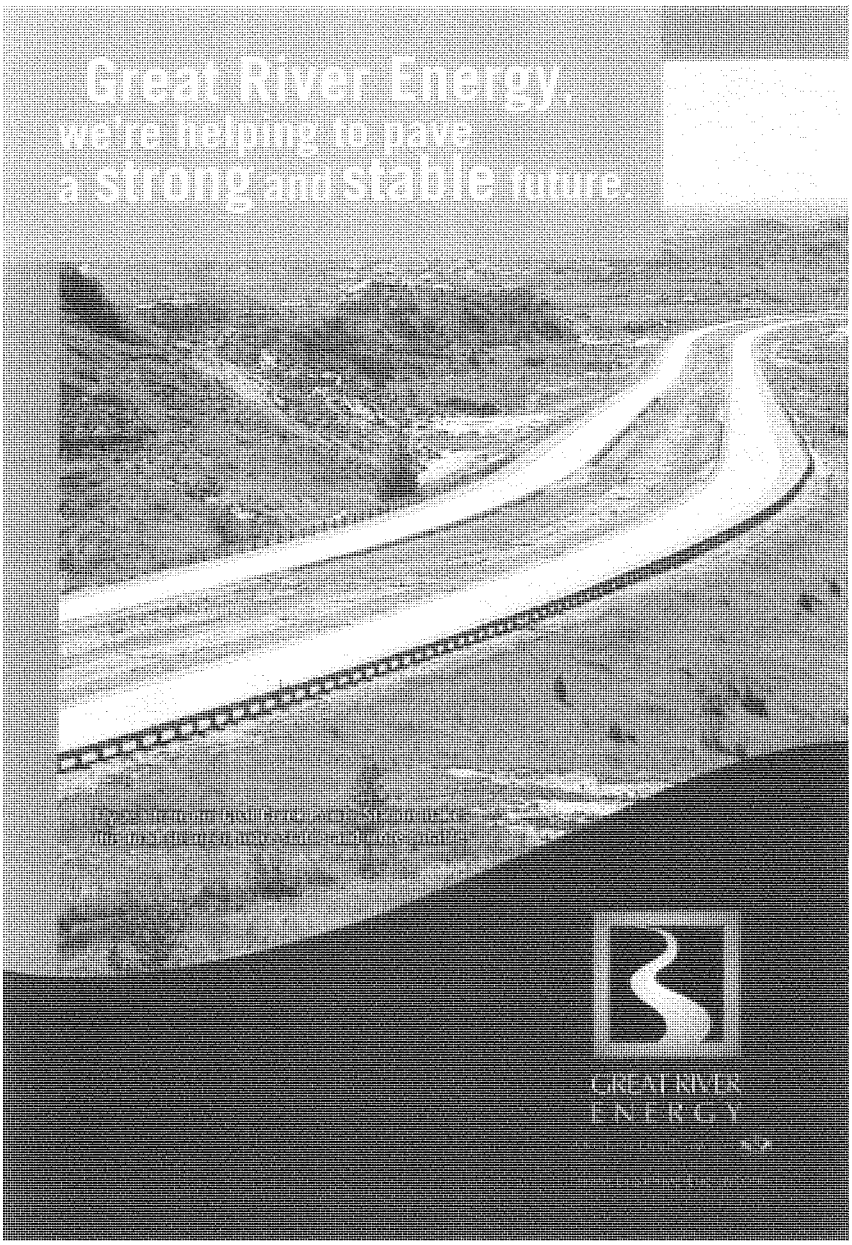
BE IT FURTHER RESOLVED, that the Secretary of State forward copies of this resolution to the President of the United States, the Director of the United States Environmental Protection Agency, each member of the North Dakota Congressional Delegation, the State Department of Health, and the Public Service Commission.

Speaker of the House

President of the Senate

Chief Clerk of the House

Secretary of the Senate


Great River Energy.
we're helping to pave
a strong and stable future.
GREAT RIVER
ENERGY

Build it better with fly ash

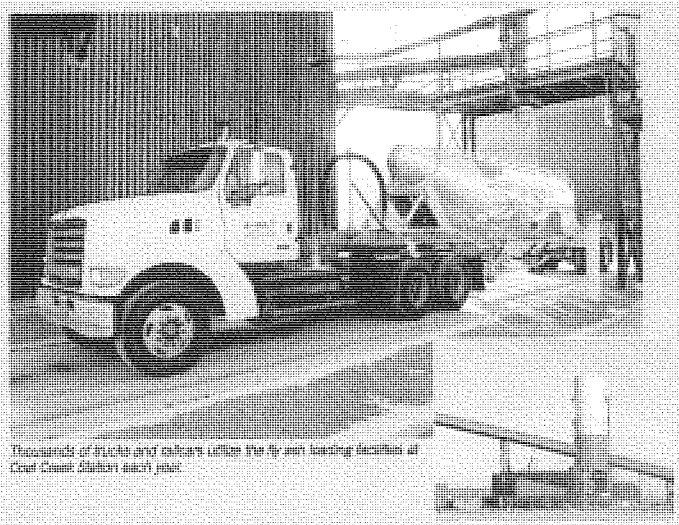
Fly ash is a by-product of generating electricity from coal. It's called fly ash because it could fly out of our power plant stacks. Instead, we collect it. Years ago fly ash ended up in landfills, but we were determined to find ways to use it that were good for our economy and environment. We succeeded. Fly ash is now improving the quality of our environment and contributing to the strength of our economy.

Fly ash doesn't look like typical ash. The particles are small and round, like tiny ball bearings. Add fly ash to concrete, and something amazing happens. The fly ash particles not only fill in tiny spaces in the concrete, they also react with water and other compounds to form a powerful glue. The result is concrete that's stronger and lasts longer.

Adding fly ash to concrete results in:

* Stronger, more durable roads.
* Concrete that's easier to work with due to the "ball-bearing" effect of the ash. It flows better, pumps better and fills forms more completely.
* Reduced bleeding at the edges of pavement.
* Reduced penetration of moisture, so concrete stands up better to rain and snow.
* Greater resistance to deterioration.
* Reduced concrete shrinkage.

Fly ash makes stronger, longer-lasting bridges, roads, sidewalks, curbs, foundations, commercial buildings and even homes. If it's made with concrete, it can be made better with concrete that's been strengthened with fly ash.

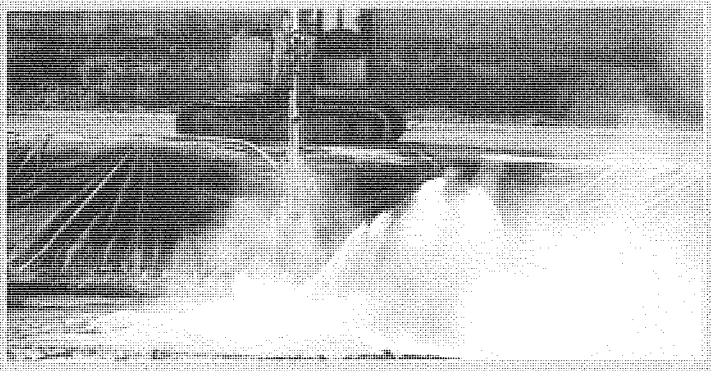


Thousands of trucks and cellars utilize the fly ash loading facilities at Coal Creek Station each year.

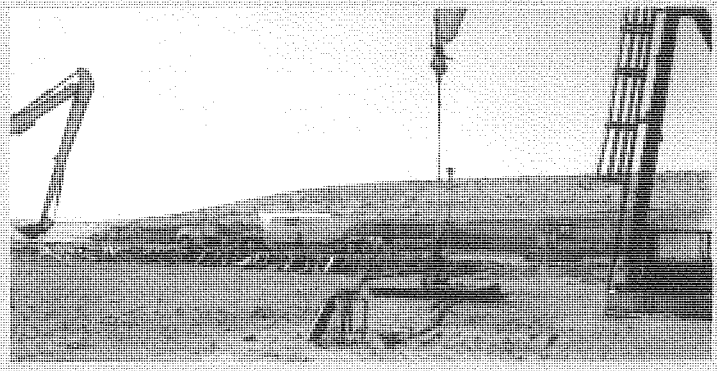
Fly ash stabilizes soil

Water runoff leads to erosion, and that creates economic and environmental problems for public, commercial and private facilities ranging from roads and sidewalks to parking lots, driveways and feedlots. The use of fly ash soil stabilizers to prevent such challenges have been expensive – until now.

Mixing fly ash with soil and water creates a binding effect. The fly ash acts as a stabilizer that holds the soil together. This creates a firmer foundation and prevents erosion. Because fly ash is much less expensive than other soil stabilizers, the use of fly ash results in reduced construction and maintenance costs due to the improved stability of the underlying soil.



Fly ash is used in soil stabilization projects in the oil fields in western North Dakota.



Marketing fly ash: Good for the environment

Environmental responsibility is one of the foundations of our mission at Great River Energy. Marketing fly ash helps us meet our commitment to the environment in several ways:

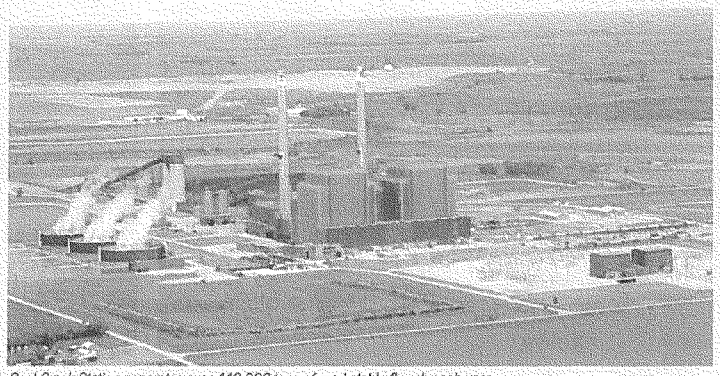
- Collecting the ash keeps our air clean and our skies blue.
- Finding innovative uses for the ash relieves the burden on our landfills. Landfill costs are reduced by up to eight dollars for every ton of fly ash that's sold.
- Adding fly ash to the soil strengthens it and also prevents erosion.
- Adding fly ash to concrete in place of cement reduces greenhouse gases like carbon dioxide.

Cement production is energy-intensive and releases greenhouse gases. Each ton of fly ash used in place of cement prevents one ton of greenhouse gas emissions. From 1997 to 2007, use of fly ash prevented three million tons of carbon dioxide emissions.

Environmental groups recognize the benefits of marketing fly ash, and have also recognized Great River Energy for our leadership in this field with prestigious awards, including:

- The U.S. Environmental Protection Agency's Outstanding Achievement Awards:
  - 2006 Overall Achievement Award
  - 2005 Environmental Achievement Award
- The World Environmental Improvement Award, presented by ISG Resources, Inc., for reducing global carbon dioxide emissions through the use of coal combustion products.
- Vision Award from the North Dakota Chamber of Commerce.

Great River Energy is a Champion of EPA's Coal Combustion Products Partnership and is committed to increasing the use of coal combustion products like fly ash. It's good for our environment and economy.



Coal Creek Station generates over 440,000 tons of marketable fly ash each year.

Marketing fly ash: Good for the economy

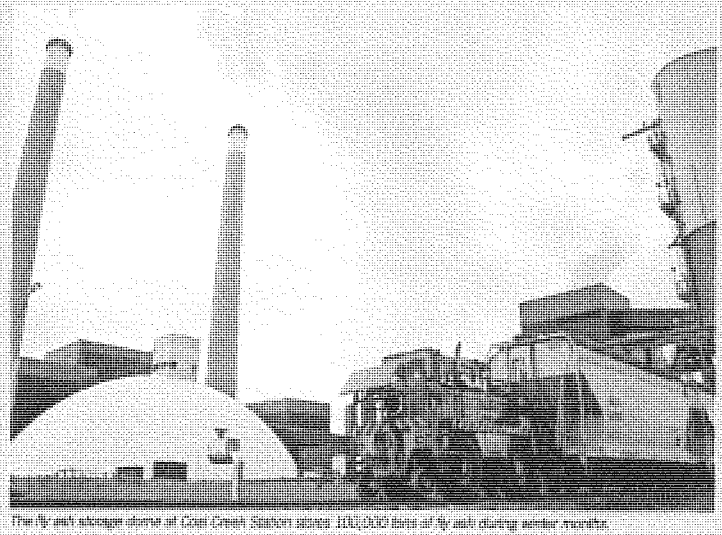
Marketing fly ash helps our economy grow in several ways:

* Revenues from fly ash sales help keep power costs down.
* Using fly ash in concrete reduces construction costs and prevents delays due to cement shortages.
* Stronger, longer-lasting concrete reduces the cost of rebuilding and repairing roads and bridges.

The market for fly ash has been growing steadily. In 1995, we sold 90,000 tons. Today, we are selling over 440,000 tons a year. Fly ash sales generate over $2.5 million in revenue to Coal Creek Station each year.

Due to the high demand for our fly ash, Great River Energy is now one of the largest customers of the Dakota Missouri Valley & Western Railroad. To keep up with demand, along with our partner, Headwaters Resources, we've added a rail silo, truck scales, ash loading facility, shuttle wagons, rail siding, private rail cars and fly ash storage terminals in the Denver and Minneapolis areas.

We've also constructed a storage dome at Coal Creek Station that holds up to 100,000 tons of fly ash. The dome allows us to store ash produced in the winter months to meet the higher demand in the summer construction season. The dome, made of course from concrete that contains fly ash, won the "Excellence in Concrete Award" presented by the North Dakota Ready-Mix & Concrete Products Association.



The fly ash storage dome at Coal Creek Station stores 100,000 tons of fly ash during winter months.

Our fly ash: High quality, high demand

The innovative techniques we employ at our Coal Creek Station, and our high-tech collection system, produce a fly ash product that's one of the best in the country. Customers even ask for it by name:

"Of all the fly ash we sell, the only product known directly by name by our customers is Coal Creek Station fly ash. They use it, and they use it in higher percentages."

– Bill Brown, technical services representative, central region, Headwaters Resources

We also promote the use of fly ash through projects like the Washburn Discovery Trail. This scenic multi-use trail near Washburn, North Dakota, includes four test sections using different percentages of fly ash in the concrete. The performance of these sections is being monitored and analyzed, and the results will be used to demonstrate the short-term and long-term benefits of using fly ash in concrete construction projects.

Great River Energy also works with research organizations, government agencies and universities to seek new uses and new markets for fly ash and other coal combustion products. Through partnerships with these organizations and with companies like Headwaters Resources, we've helped to turn fly ash from a discarded by-product to an in-demand commodity that improves the quality and durability of products ranging from construction materials to kitchen appliances, office workstations and even bowling balls. Products enhanced by fly ash include:

- Ceramic tiles
- Cultured stone
- Carpet
- Paint
- Insulation for stoves and refrigerators
- Ceiling and flooring tiles
- Lumber
- Bricks and masonry
- Shingles and roofing materials

Our high-tech, state-of-the-art collection system and our careful attention to detail in every step of the process ensure the high quality of our fly ash, and that adds quality and durability to items we use every day.

The Washburn Discovery Trail features test sections utilizing different concentrations of fly ash to demonstrate the short-term and long-term benefits of using fly ash in concrete construction projects.

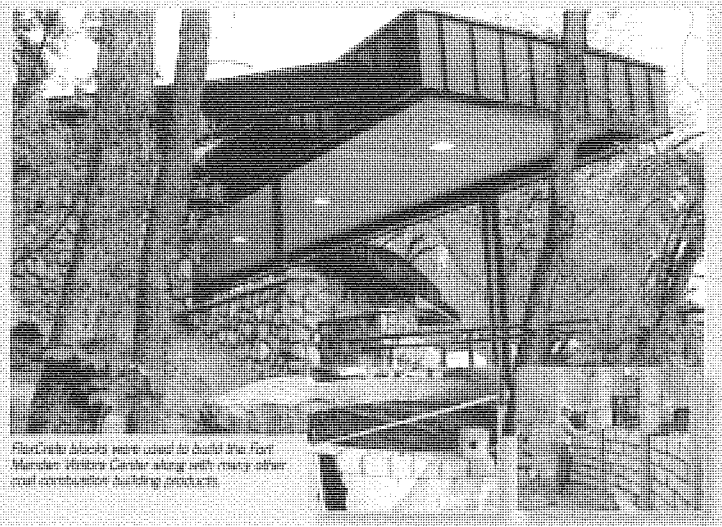
The future of fly ash

Great River Energy is moving forward to take advantage of the growing demand for construction products like FlexCrete, a strong, fiber-reinforced, aerated concrete made from 70 percent fly ash. FlexCrete has a number of advantages:

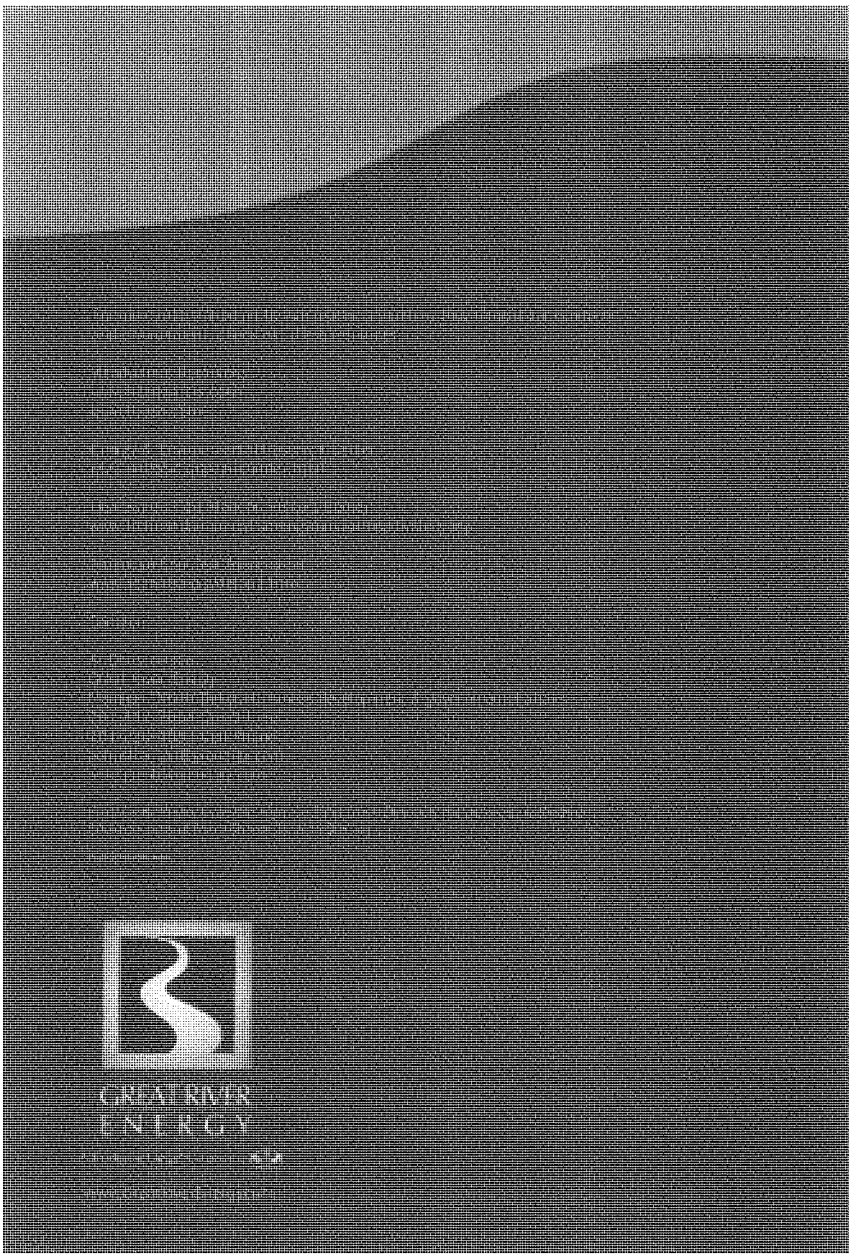
- Houses built with FlexCrete cost 30 percent less than those built with lumber.
- The product is light and easy to work with, and is available in blocks or panels.
- Low heating and cooling costs. The insulation factor of an average house built with conventional materials is rated at R-19. An 8-inch block of FlexCrete has R-value of 30 and a 12-inch block has R-value of 36.
- Excellent fire rating. Heating one side of a FlexCrete block to 2,000 degrees for four hours raised the temperature on the other side by just 11 degrees.
- Superior strength, even under extreme conditions. Following the fire test, the super-heated FlexCrete was sprayed with water and didn't shatter.
- Resistant to mold and mildew.

FlexCrete was used to build the Headwaters Fort Mandan Visitors Center, a national showcase for use of coal combustion products in building materials. FlexCrete is also being used in the construction of the National Energy Technology Training and Education Center at Bismarck State College.

Two thousand plus years ago, Romans used volcanic ash to construct magnificent and incredibly durable structures such as the Pantheon. Today, we're using fly ash to build better structures, a better infrastructure, a healthy environment and a stronger economy.



FlexCrete blocks were used to build the Fort Mandan Visitors Center along with many other coal combustion building products.


CREATIVE
ENERGY

PCA
Portland Cement Association

U.S. House of Representatives, Committee on Energy and Commerce,
Environment and Economy Subcommittee
On S. 3512 as a discussion draft, the Coal Ash Recycling and Oversight Act
Statement of the Portland Cement Association
April 11, 2013

The Portland Cement Association (PCA), which represents 26 U.S. cement manufacturers operating 79 plants in 34 states, and distribution facilities in all 50 states, welcomes introduction of legislation similar to S. 3512, the Coal Ash Recycling and Oversight Act of 2012. Cement makers are key stakeholders in any legislation intended to preserve the beneficial use and recycling of coal ash, aka Coal Combustion Residuals (CCRs), a goal that S. 3512 would achieve by pre-empting EPA classification of coal ash as hazardous waste under RCRA Subtitle C. Classification of coal ash as a hazardous waste, or even the regulatory uncertainty related to the stalled EPA rulemaking, would impact the recycling of CCBs, including that used by cement makers.

Coal ash recycling has remained flat in recent years at least in part due to the federal regulatory uncertainty, which S. 3512 would mitigate. For example, the amount of coal ash used in concrete production in 2011 was 11.7 million tons, up slightly from 11.0 million tons in 2010 but still below 12.6 million tons in 2008, before the EPA proposal. In addition to the 11.7 million of tons of coal ash recycled in the production of concrete, cement makers typically recycle an additional three million tons as a raw material in cement making. CCBs used in the cement manufacturing process serve as a substitute for key ingredients in cement, which would otherwise have to be mined. Coal ash used in concrete production, combined with the amount used by cement manufacturers as a raw material, accounts for more than 10% of the 130.7 million tons of the material produced in the country every year.

Cement manufacturers have endorsed previous bills that would prevent unnecessary regulation of CCRs, including S. 3512, and H.R. 2273, offered by Rep. McKinley (R-WV). Cement manufacturers believe that a legislative remedy pre-empting classification of CCBs as hazardous waste will not only help preserve high quality manufacturing jobs by curtailing unnecessary regulation, but also promote environmental stewardship by providing incentives for increased recycling of coal ash, or beneficial use. PCA is happy to continue to work with members of the subcommittee to put forth a bill that will address disposal of the material, thereby mitigating potential unforeseen impacts on beneficial use practices employed by manufacturers. PCA welcomes the opportunity to work with members of the committee to encourage passage of a balanced bill during the 113th Congress that will preserve jobs and promote recycling. For more information on cement manufacturers' support for S. 3512, please contact Bryan Brendle at (202) 719-1978. Thank you.

Geosyntec consultants

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Columbia, Maryland 21046
PH 410.381.4333
FAX 410.381.4499
www.Geosyntec.com

11 April 2013

The Honorable John Shimkus
Chairman, Subcommittee on Energy and Environment,
Committee on Energy and Commerce
U.S. House of Representatives
Washington, D.C. 20515

Subject: Comments to Discussion Draft of H.R. ____, Entitled "The Coal Ash Recycling and Oversight Act of 2013"

Dear Chairman Shimkus:

We are civil and geotechnical engineers with twenty-five years (Mr. Houlihan) and thirty years (Dr. Bachus) of experience in the design, permitting, construction, post-closure care, and redevelopment of waste disposal facilities. This experience includes significant work on landfills, including numerous coal combustion residual (CCR) landfills. Over the past twenty-five years, our firm, Geosyntec Consultants (Geosyntec), and we have witnessed and contributed to a substantial advancement of the state-of-the-practice in municipal solid waste management. These advances have resulted in standard practices for regulation, design, construction, and long-term care that are much more protective of human health and the environment than former standard practices. At today's hearing, the House of Representatives is considering a bill that is intended to advance the protectiveness of human health and the environment through improved management of residuals generated by the combustion of coal (i.e. coal combustion residuals, or CCRs). Our purposes in this letter are to support the proposed bill and to address some concerns raised by one of today's witnesses regarding implementation of the bill's provisions.

The Coal Ash Recycling and Oversight Act of 2013 - Discussion Draft (i.e., Draft Act) proposes to amend Subtitle D of the Resource Conservation and Recovery Act (RCRA) to include provisions for management and disposal of CCRs. The Draft Act establishes a Federal standard of protection of human health and the environment, implemented through CCR management regulations at the State level. Further, the Draft Act establishes controls for the design, groundwater monitoring, corrective action, closure, and post-closure care of CCR landfills, as well as location restrictions, air quality, financial assurance, surface water management, record keeping, and run-on and run-off control systems. In doing so, the Draft Act appears to address the objectives sought by EPA in the Proposed Rule (i.e., 75 FR 35128), which was to develop standards for a regulatory program similar to the Subtitle D regulatory program for municipal waste landfills. Work by USEPA and others, including our firm, have shown that landfills constructed and operated in compliance with the USEPA's Subtitle D regulations have performed well and are protective of human health and the environment.

We have also read the written statement of Mr. Jack Sparado to your subcommittee, and we share his desire to achieve a regulatory framework that will provide for safe operation of existing

CCR dams and containment systems. Mr. Sparado expressed several concerns that we would like to comment on, specifically his concerns regarding: (i) ***the need for regulation*** governing the design, permitting, construction, and post-closure care of CCR dams; (ii) ***the need for specific engineering standards of practice*** that constitute generally accepted, good engineering practices for the safe design, construction, and operation of CCR dams and containment structures; and (iii) whether an ***independent engineer's certification*** can be relied upon as a valid indicator of CCR dam and containment structure stability. Mr. Sparado's concerns appear to be focused on the stability of existing structures that will continue to be operated in the future, not new structures. These concerns are addressed below.

- *Regulation of CCR Dams and Containment Systems.* The Draft Act is intended to provide the type of regulation of CCR dams and containment systems that Mr. Sparado is advocating. Further, the Draft Act is specific regarding its intent for the State Permit Programs to provide the kind of clear, definitive, and enforceable laws that Mr. Sparado recommends. In this sense, the Draft Act addresses these concerns of Mr. Sparado. We concur with Mr. Sparad regarding the need for enforcement of the regulations.

- *The Need for Specific Engineering Standards of Practice.* Standards of practice exist for safe design, construction, and operation of CCR dams and containment structures, including stability assessments of existing structures. The available documents that describe the state of the engineering practice in this regard are numerous and include, for example, FEMA's *Federal Guidelines for Dam Safety*[1], the US Bureau of Reclamation's *Safety Evaluation of Existing Dams*[2], and USEPA's *Solid Waste Disposal Facility Criteria*[3]. In addition, there are numerous organizations in the United States that promote and publish standards of practice for the design and construction of safe dams [4], and also several organizations that promote and publish standards for the design of safe waste containment systems[5]. Although the standard of practice for these types of evaluations continues to evolve as they relate to CCR dams and containment systems, these existing referenced standards represent a valid basis for practice of the design and construction of CCR dams and containment systems. We believe that new standards specific to CRR dams are at this time unnecessary.

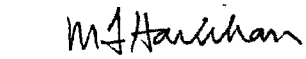
- *Validity of an Independent Engineer's Certification Statement.* The requirement for a licensed professional to certify that a structure's design or performance conforms to accepted engineering practices is common and is a reasonable component of a system of regulation. The requirements of nearly all States for continuing education of licensed

[1] U.S. Department of Homeland Security, Federal Emergency Management Agency, June 1979.
[2] US Department of the Interior, Bureau of Reclamation (Water and Power Resources Services), "Safety Evaluation of Existing Dams". Denver, CO, 1980.
[3] USEPA Document EPA530-R-93-017, November 1993.
[4] For example, the US Army Corps of Engineers, Association of State Dame Safety Officials, the US Bureau of Reclamation, and the American Society of Civil Engineers.
[5] For example, the Solid Waste Association of North America, Association of State and Territorial Solid Waste Management Officials, Electric Power Research Institute, USEPA, National Solid Waste Management Association, Geosynthetics Research Institute, Environmental Industries Association.

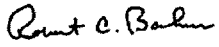
professional engineers promotes the availability of competent practitioners for this task. Of course, without agreement on the standard of practice, such certification could lack specificity and validity. However, as discussed in the previous paragraph, standards of practice do exist for the safe design, construction, and operation of CCR dams and containment systems. If the State regulations promulgated under the Draft Act reference these or similarly applicable standards of practice, then the engineer's certification statement will have specificity and validity. If promulgated in this way, the regulations would not leave the selection of design and maintenance criteria to the arbitrary judgment of an independent engineer, as postulated by Mr. Sparado, but instead would be identified and enforced by the regulatory body. As we understand it, the Draft Act provides for the identification and enforcement of such design and maintenance standards.

We would like to point out to the Committee that there are many parallels between the proposed legislation and the Subtitle D regulations that were promulgated n 1991 for municipal solid waste and which are included in Part 258 of Title 40 of the Code of Federal Regulations (40 CFR 258). Implementation of these regulations addressed waste management units and included a requirement for engineering certification of the design and construction of such units, similar to the requirements for certification in the Draft Act. Implementation of the regulations at the State level was accompanied by the development of standards of practice for engineers' use in fulfilling the requirements of the regulations. These standards were based initially on practices for similar structures (e.g., earth berms, low-permeability soil layers, engineered fabrics, etc.) and were adapted over time for specific use in the design, construction, and operation of municipal waste landfills. The success of this approach bodes well for the approach proposed in the Draft Act, which is expected to rely on the implementation approach of the Subtitle D regulations for municipal solid waste. Also, this body of knowledge represents a significant resource to engineers who will assess the stability of existing CCR containment systems and develop designs for new CCR containment systems when modifications are needed. Based on these considerations, we believe that the proposed legislation can result in an effective, enforceable regulatory framework for management of CCRs that is appropriately protective of human health and the environment.

Sincerely,



Michael F. Houlihan, P.E., DEE, D.GE, F.ASCE
Principal



Robert C. Bachus, Ph.D., P.E., D.GE
Principal

April 11, 2013

The Honorable John Shimkus Chairman
Subcommittee on Energy and Environment - Committee on Energy and Commerce
U.S. House of Representatives

Dear Chairman Shimkus:

Subject: Discussion Draft of H.R. S.3512, The Coal Ash Recycling and Oversight Act of 2013.

Chairman John Shimkus and Members of the Subcommittee:

On behalf of Civil & Engineering Consultants, Inc. (CEC), we appreciate the Subcommittee's consideration of our professional insights into the current industry engineering practices related to the management of Coal Combustion Residuals (CCRs), specifically regarding wet impoundments. CEC is a US consulting firm comprised of engineers, scientists, and environmental professionals providing services to the electric utility industry and other industrial clients for over 25 years lead by senior professionals with over 45 years industry experience. Our professional services include siting, design, construction, construction quality assurance and maintenance/monitoring of electric utility dams/impoundments utilizing a standard of care expected from licensed professionals.

The industry and engineers within the industry, have advanced design and operational management techniques and oversight based on past experiences, regulations, and considerations associated with impoundments. The Buffalo Creek failure of 1972 was a tragedy that occurred when no significant design requirements existed and inspections were not required. Although a coal mine refuse impoundment is not a CCR impoundment, ultimately, the failure of the dam was the result of the impoundment overtopping due to a lack of freeboard and emergency spillway in the design, not the construction process or design of the dike itself; this has been clearly documented by industry experts. Regardless, the industry's adherence to regulatory framework changed dramatically following that failure based on the development of a Dam Safety Program implemented by the States with requirements for hydraulic and geotechnical design, ranking systems based on criteria including downstream impacts, and inspection/maintenance and monitoring programs. By the late 1970s and early 1980s, CCRs were generally being disposed of in engineered facilities because of State agencies, and the fact that industry recognized that proper and safe waste disposal using time-tested engineering principles was just good business. To equate 1972 coal waste disposal practices (i.e., Buffalo

Creek) with current CCR disposal practices is not a rational comparison. It ignores decades of CCR disposal in properly designed, constructed, and operated facilities.

In a related note, the phrasing "recognized and generally accepted good engineering practices" as proposed in the legislation embraces/represents "the Standard of Care" which is the overriding measure of the performance of engineers in legal matters, such as would emanate from a failure of a structure designed by an engineer. The "Standard of Care" does vary by state and by the complexity of the design requirements and is subject to interpretation thereby reflecting the need for qualified engineers involved in the design, construction and ongoing maintenance and monitoring process. These facilities can be complex and the construction or engineering issues require special attention. Accordingly, professional engineers using time-tested industry accepted standards (e.g., safe design and operational standards provided by Army Corps of Engineers and the American Society of Civil Engineers, etc.) represent "recognized and generally accepted good engineering practices"; this approach is proven and adequate.

Furthermore, the reliance on an engineering standard of care will result in the development of safer facilities as compared to reliance on "prescriptive design requirements". When prescriptive requirements are legislated, all parties involved have a focus on achieving a specific numeric standard, rather than focusing on the overall objective for the facility and what design parameters would be appropriate. Although prescriptive regulations often use terms such as "a minimum factor of safety of 1.5", the majority of professional and industry representatives view such factors of safety as the goal to achieve. In fact, there are times when the factor of safety of 1.5 is not sufficient depending on the hazard of the structure. So, instead of a rational evaluation of an appropriate factor of safety for design of a facility, the design is focused on achieving a "prescriptive regulation" that may or may not be appropriate considering the site-specific conditions. In our opinion, the use of the language as proposed in the subject legislation (i.e., "recognized and generally accepted good engineering practices") is appropriate and results in safe and well-engineered CCR impoundments.

Very truly yours,

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.

Steven F. Putrich
Engineering Vice President

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JUL 12 2013

OFFICE OF CONGRESSIONAL
AND INTERGOVERNMENTAL RELATIONS

The Honorable John Shimkus, Chairman
Subcommittee on Environment and the Economy
Committee on Energy and Commerce
U.S. House of Representatives
Washington, DC 20515

Dear Chairman Shimkus:

Thank you for your letter of April 29, 2013, requesting responses to Questions for the Record following the April 11, 2013, hearing before the Subcommittee on Environment and the Economy entitled, "The Coal Ash Recycling and Oversight Act of 2013."

The responses to the questions are provided as an enclosure to this letter. If you have any further questions, please contact me or your staff may contact Carolyn Levine in EPA's Office of Congressional and Intergovernmental Relations at (202) 564-1859.

Sincerely,

Laura Vaught
Deputy Associate Administrator
for Congressional Affairs

Enclosure

cc: The Honorable Paul Tonko, Ranking Member
Subcommittee on Environment and the Economy

U.S. EPA RESPONSES TO QUESTIONS FOR THE RECORD
From the April 11, 2013 Hearing On
"The Coal Ash Recycling and Oversight Act of 2013"
Before the Subcommittee on Environment and Economy
Committee on Energy and Commerce
U.S. House of Representatives

Rep. Latta

Q1. Do you agree that the bill includes all of the constituents identified by the EPA as being of concern for coal ash?

We believe that the proper management of CCRs should include clear requirements that address risks associated with coal ash disposal and management, consideration of the best science and data available, adequate evaluation of structural integrity, protective solutions for existing as well as new facilities, and appropriate public information and comment.

The Discussion Draft contains provisions that address specific contaminants, particularly the requirement to monitor for the contaminants listed in 40 CFR Part 258. This requirement does address the contaminants that were specifically listed in the EPA's 2010 proposed regulation.

Q2. Doesn't the bill set a timeline for meeting the groundwater protection standards for surface impoundments that are incorrective?

The Discussion Draft includes a provision that establishes a timeline for a limited subset of surface impoundments to meet the groundwater protections standards. However, with one narrow exception[1], states are authorized to extend the 8-10 year cleanup deadlines without any time limits, which could potentially pose additional risk to human health and the environment. The requirements in subsection (c)(4) do not apply to any other surface impoundment (e.g., a clay-lined unit that is currently leaking, but not currently subject to a state corrective action requirement), or to any landfills.

Q3. Does the bill require financial assurance?

The Discussion Draft appears to require a state permit program to require financial assurance as currently described in subpart G of 40 CFR Part 258. The requirements apply only to units that receive CCRs after date of enactment of the legislation.

[1] States may not extend the clean up deadlines if there has been contamination of public or private drinking water systems attributable to a surface impoundment undergoing corrective action, unless the contamination has been addressed by providing a permanent replacement water system.

Rep. Johnson

Q1. Does CERCLA give EPA the authority to address inactive or abandoned impoundments or units?

CERCLA provides the EPA with the authority to respond to releases and threatened releases of hazardous substances and pollutants and contaminants from inactive or abandoned impoundments or units that pose an imminent and substantial endangerment to public health or the environment. CERCLA generally would not provide the EPA authority to establish preventive measures on a nationwide basis, e.g., closure requirements. Also, using CERCLA to address such units could shift the financial burden away from those responsible for contamination to the public taxpayers.

Q2. Also, Mr. Stanislaus, following Kingston, EPA inspected coal ash impoundments, some 600 of them, in fact, to make sure that they are structurally sound. You hired independent contractors who in the agency's own view are experts in the area of dam integrity. Do you agree with the findings of your staff that not a single coal ash impoundment was rated unsatisfactory and poses an immediate safety threat?

While it is true that no units were rated unsatisfactory, requiring emergency action, approximately 25% of the units were rated "poor."[2] The EPA has sent letters to the owners of the surface impoundments requesting that the deficiencies be remedied, but there is no law or regulation that requires the owners to do so. The owners voluntarily conducted the significant engineering studies to demonstrate whether the units were structurally sound. It is also important to note that these assessments were a one-time effort and a continuous monitoring program is necessary to verify structural integrity. Finally, please note that of the 144 units that have been rated "poor" to date, 11 were classified as high hazard and 69 were classified as significant hazard, meaning that in the event of a failure, loss of human life or damage to critical infrastructure is likely to occur.

Q3. Do you agree with the findings of your professional staff as well that the owners and operators of impoundments with identified deficiencies have responded responsibly by submitting response action plans?

Owners and operators have submitted action plans in response to final report recommendations. However, we would note that it is the responsibility of the owner or operator of the impoundments to implement the recommendations in the actions plans.

[2] EPA used five categories to rate the units: (1) *Satisfactory* (no existing or potential management unit safety deficiencies are recognized); (2) *Acceptable* (performance is expected under all applicable loading conditions (static, hydrologic, seismic) in accordance with the applicable criteria; minor maintenance items may be required); (3) *Fair* (acceptable performance is expected under all required loading conditions (static, hydrologic, seismic) in accordance with the applicable safety regulatory criteria; minor deficiencies may exist that require remedial action and/or secondary studies or investigations); (4) *Poor* (a management unit safety deficiency is recognized for a required loading condition (static, hydrologic, seismic) in accordance with the applicable dam safety regulatory criteria; remedial action is necessary or further critical studies or investigations are needed to identify any potential dam safety deficiencies); and (5) *Unsatisfactory* (considered unsafe; dam safety deficiency is recognized that requires immediate or emergency remedial action for problem resolution; reservoir restrictions may be necessary).

Rep. Tonko

Q1. And EPA's technical assistance states that under the previous language, dry landfills would not be required to comply with many of the operating criteria that cnrrently apply to municipal solid waste and would be applied to coal ash under EPA's proposed rule. Does this discussion draft fix that flaw with the previous proposal?

No. For example, the Discussion Draft does not incorporate all of the regulatory operating requirements now required of municipal solid waste landfills under RCRA.

Rep. Dingell

Q1. Do you believe this draft bill has the timelines and minimum legal standards of protection to ensure that proper program plans are implemented in the states? Yes or no.

With respect to timelines, the Discussion Draft available at the time this question was submitted included only one clear deadline for implementation of the substantive requirements: a deadline for states to require the installation of groundwater monitoring system (one year from a state's certification—or no later than four years from enactment). Although section (c)(4) appears to establish deadlines to clean up or initiate closure for certain surface impoundments, with one narrow exception, states have unlimited authority to extend these deadlines without any limits.

A revised bill has since been developed that includes additional deadlines: a four-year deadline for states to require compliance with (a) surface impoundment inspections; (b) run-on and run-off controls, and (c) fugitive dust controls. In addition, the revised bill establishes a seven-year deadline for the issuance of final permits.

With respect to the minimum legal standards, we would note the conclusions in the March 19, 2013 Congressional Research Service (CRS) report, "Analysis of Recent Proposals to Amend the Resource Conservation and Recovery Act (RCRA) to Create a Coal Combustion Residuals Permit Program," which concludes there are significant differences between this legislation and the approach used in the legislation applicable to municipal solid waste (MSW) programs. The report notes that the Discussion Draft establishes no formal role for the EPA and no direction to establish regulations or approve state programs. The CRS report concludes, among other things, that the approach in the legislation allows individual states to define key terms, such that states would define program applicability and the overall protections under the bill could vary from state to state; allows states to set their own deadlines for permit issuance and for compliance; and does not require state programs to meet a federal standard of protection.

Overall, we believe any final legislation needs to clearly address: (1) timelines for the implementation of state programs; (2) criteria, for the EPA to use to determine when a state program is deficient, (3) criteria for CCR unit structural integrity, (4) deadlines for closure of unlined or leaking units, including inactive or abandoned units, (5) the universe of CCR disposal units subject to a permit program, and (6) groundwater protection standards that address all constituents identified in H.R. 2218 that are contained in coal combustion residuals.

The EPA is available to provide further technical assistance to help ensure that the legislation includes necessary protections for human health and the environment.

Q2. Under EPA's proposed rule to establish requirements to address this issue, in your testimony you said that EPA received nearly [a] half million public comments, solicited public data, started drafting a methodology to evaluate the beneficial uses. Under the legislative proposal before us, would EPA have the authority to gather public comments, technical data, or develop methodologies in the future to improve the implementation of the program proposed in the bill? Yes or no?

No. It appears that the EPA's only role is to identify deficiencies in a state program after the state program has been implemented, or to implement a permit program for a state that chooses not to do so or that fails to address a program deficiency identified by the EPA. For example, certain provisions of the bill expressly restrict the EPA's authority to take actions to improve implementation of the program proposed in the bill. This includes the deferral clause in section (i)(2)(A), which, according to H.R. Rep. 112-226, "prohibits the Administrator from promulgating any additional regulations to regulate coal combustion residuals."

The EPA is available to provide further technical assistance to help ensure that legislation includes necessary protections for human health and the environment.

Q3. What four or five national standards do you believe should be specifically addressed and added to this legislation to ensure that there is national conformity amongst several states?

We believe any bill needs to clearly address defined timelines for the development and implementation of state programs; establish clear and strong criteria for the EPA to use to determine when a state program is deficient; establish criteria for CCR unit structural integrity; establish clear deadlines for closure of unlined or leaking units, including inactive or abandoned units, establish a clearly defined, nationally consistent universe of CCR disposal units, including large scale fill operations, which are akin to disposal, subject to a permit program and groundwater protection standards that address all constituents identified in H.R. 2218 that are contained in coal combustion residuals.

The EPA is available to provide further technical assistance to help ensure that the legislation includes necessary protections for human health and the environment.

Q4. Now do you believe this legislation as currently written would require these standards to be included in state program plans?

No, neither the Discussion Draft referred to in this question, nor the later introduced H.R. 2218, address all of these standards. The EPA stands ready to provide further technical assistance to help ensure that the legislation establishes a regulatory framework for managing CCRs in a nationally consistent manner that fully protects human health and the environment.

Rep. Capps

Q1. In technical assistance you provided to the committee last Congress, you identified multiple principal contaminants of concern in coal ash, including arsenic, cadmium, lead, mercury and many others. These heavy metals pose very serious threats to human health. Would you, for our hearing today, please identify briefly some of the health effects of these contaminants?

The Agency for Toxic Substances and Disease Registry (ATSDR) ToxFAQs,[3] the EPA Integrated Risk Information System (IRIS),[4] and the Toxicology Data Network (TOXNET) of the National Institutes of Health[5] are all sources of toxicological data on the hazardous constituents found in CCRs. For its proposed rule, the EPA identified potential constituents of concern associated with CCRs, including antimony, arsenic, barium, beryllium, cadmium, hexavalent chromium, lead, mercury, nickel, selenium, silver, and thallium. Based on the information in ASTDR's Tox FAQs, the EPA's IRIS system and TOXNET, the agency summarized the following significant health effects:

Antimony - Antimony is associated with altered glucose and cholesterol levels, myocardial effects, and spontaneous abortions. The EPA has set a limit of 145 ppb in lakes and streams to protect human health from the harmful effects of antimony taken in through water and contaminated fish and shellfish. [6]
Arsenic - Ingestion of arsenic has been shown to cause skin cancer and cancer in the liver, bladder and lungs.[7]
Barium - Barium has been found to potentially cause gastrointestinal disturbances and muscular weaknesses when people are exposed to it at levels above the EPA drinking water standards for relatively short periods of time.[8]
Beryllium - Beryllium can be harmful if you breathe it. If beryllium air levels are high enough (greater than 1,000 ug/m ^{3}), an acute condition can result. This condition resembles pneumonia and is called acute beryllium disease. [9]
Cadmium and Lead - Cadmium and lead have the following effects: kidney disease, lung disease, fragile bone, decreased nervous system function, high blood pressure, and anemia.[10]
Hexavalent Chromium - Hexavalent chromium has been shown to cause lung cancer when inhaled.[11]
Mercury - Exposure to high levels of metallic, inorganic, or organic mercury can permanently damage the brain, kidneys, and developing fetus. [12]
Nickel - The most common harmful health effect of nickel in humans is an allergic reaction. Approximately 10-20% of the population is sensitive to nickel. The most common reaction is a skin rash at the site of contact. Less frequently, some people who are sensitive to nickel have asthma attacks following exposure to nickel. Some sensitized people react when they consume food or water containing nickel or breathe dust containing it.[13]
Selenium - Selenium is associated with selenosis.[14]
Silver - Exposure to high levels of silver for a long period of time may result in a condition called arygria, a blue-gray discoloration of the skin and other body tissues.[15]
Thallium. - Thallium exposure is associated with hair loss, as well as nervous and reproductive system damage.[16]

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[3] http://www.atsdr.cdc.gov/toxfaq.html
[4] http://cfpub.epa.gov/ncea/iris/index.cfm?fuseaction=iris.showSubstanceList&list_type=alpha&view=B
[5] http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?HSDB
[6] *Ibid.*
[7] ATSDR ToxFAQs. *Available at:* http://www.atsdr.cdc.gov/toxfaq.html
[8] *Ibid.*
[9] *Ibid.*
[10] *Ibid.*
[11] *Ibid.*
[12] *Ibid.*
[13] *Ibid.*
[14] *Ibid.*
[15] *Ibid.*
[16] *Ibid.*

Additionally, several other adverse health effects associated with CCRs are the result of particulate matter inhalation due to dry CCR disposal. Human health effects for which the EPA is evaluating causality due to particulate matter exposure include (a) cardiovascular morbidity, (b) respiratory morbidity, (c) mortality, (d) reproductive effects, (e) developmental effects, and (f) cancer.[17] The potential for and extent of adverse health effects due to fugitive dusts from dry CCR disposal was demonstrated in the 2009 EPA report "Inhalation of Fugitive Dust: A Screening Assessment of the Risks Posed by Coal Combustion Waste Landfills—DRAFT," which is available in the EPA's rule docket.[18]

Finally, injury to human health may result from catastrophic failures of surface impoundments where high hazard potential exists. As defined in the proposed rule, a high hazard potential surface impoundment was defined as a "surface impoundment where failure or mis-operation will probably cause loss of human life." This definition follows the Hazard Potential Classification System for Dams, developed by the U.S. Army Corps of Engineers for the National Inventory of Dams.

Chairman Shimkus

Q1. Does CERCLA give EPA the authority to address inactive or abandoned coal ash impoundments/units? Why or Why not? Please explain.

a. Would EPA's authority under CERCLA be sufficient to address any inactive or abandoned coal ash impoundments that may pose a threat to public health or welfare or the environment?

CERCLA provides the EPA with the authority to respond to releases and threatened releases of hazardous substances and pollutants and contaminants from inactive or abandoned coal ash impoundments/units that may pose an imminent and substantial endangerment to public health or the environment. CERCLA generally would not provide the EPA authority to establish preventive measures on a nationwide basis, e.g., closure requirements. In addition, using CERCLA to address such units could shift the financial burden away from those responsible for contamination to the public taxpayers.

Q2. From information gathered as part of the Steam Electric Power Generating effluent limitation guidelines rulemaking, does EPA have information regarding the *location* of coal ash impoundments?

a. Please be specific in your answer as to specifically what information EPA has requested and from whom.
In 2010, as part of its proposed effluent limitation guidelines and standards efforts, the EPA transmitted questionnaires to approximately 700 steam electric power plants to solicit information regarding wastewater, surface impoundment, and landfill operations. In Part A of the questionnaire (Question A3-2), the EPA requested the latitude and longitude of ponds in degrees, minutes, and seconds. This portion of the questionnaire was sent to all steam electric generating plants.

[17] Source: EPA Office of Research & Development report "Integrated Science Assessment for Particulate Matter: First External Review Draft," EPA/600/R-08/139, 2008.
[18] www.regulations.gov Document ID: EPA-HQ-RCRA-2009-0640-0142

b. Please be specific about what information EPA currently has or expects to receive.

The EPA received responses from all the plants required to respond to Part A of the questionnaire, including the latitude and longitude of the ponds. The EPA does not expect to receive any additional responses to the questionnaire.

Q3. From information gathered as part of the Steam Electric power Generating effluent limitation guidelines rulemaking, does EPA currently have, for coal ash impoundments, specific information such as ground water monitoring data or other information regarding the performance of the unit?

a. Please be specific in your answer as to specifically what information EPA has requested and from whom.

In Part F of the EPA's 2009 Steam Electric Questionnaire (Questions F5-1 through F5-6), the EPA requested several pieces of information regarding the groundwater monitoring and performance of surface impoundments. This included whether the units performed groundwater monitoring, the year of the last monitoring event, average frequency of monitoring, number of times monitored in the past five years, whether and which constituents exceeded the MCL and/or state issued criteria, and whether and which constituents exceeded background concentrations. This portion of the questionnaire was sent to a subset of steam electric generating plants.

b. Please be specific about what information EPA currently has or expects to receive.

The EPA received responses from all of the plants required to respond to Part F of the questionnaire. Some plants claimed the responses as Confidential Business Information (CBI). The EPA is continuing to evaluate how to use this information due to these limitations. The EPA does not expect to receive any additional responses to the questionnaire.

Q4. How does EPA plan to coordinate the Steam Electric Power generating effluent limitation guidelines rulemaking and the rulemaking for Coal Combustion Residuals?

In the preamble to the proposed Steam Electric Power Generating effluent limitation guidelines (ELG) rulemaking, the EPA described its current thinking about how a final RCRA Coal Combustion Residuals (CCR) rule might be aligned and structured to account for any final ELG requirements. 78 Fed. Reg. 34,432, 34,441-34,442 (June 7, 2013). The EPA seeks to effectively coordinate any final RCRA requirements with the ELG requirements to minimize the overall complexity of these two regulatory structures, and facilitate implementation of engineering, financial and permitting activities. The EPA's approach would also be consistent with RCRA Section 1006(b) and with Executive Order 13563, "Improving Regulation and Regulatory Review" issued on January 18, 2011. The EPA's goal is to ensure that the two rules work together to effectively address the discharge of pollutants from steam electric generating facilities and the human health and environmental risks associated with the disposal of CCRs without creating avoidable or unnecessary burdens.

As described in the ELG preamble, the EPA is exploring two primary means of integrating the two rules: (1) through coordinating the design of any final substantive CCR regulatory requirements, and (2) through coordination of the timing and implementation of final rule requirements to provide

facilities with a reasonable timeline for implementation that allows for coordinated planning and protects electricity reliability for consumers.

Q5. Has EPA developed a risk assessment that supports a determination that coal ash should be regulated under subtitle C?

The EPA developed a risk assessment that supported a subtitle C regulation as part of the June 2010 proposed rule. The EPA solicited and received public comment on that risk assessment. As we have stated, however, both during and after the close of the public comment period, the EPA has received new information and data that have the potential to significantly affect the risk assessment. As the EPA recently explained in the Preamble to the proposed Steam Electric Power Generating effluent limitation guidelines, although a final risk assessment for the CCR rule has not been completed, reliance on the new data may have the potential to lower the risk assessment results by as much as an order of magnitude. If this proves to be the case, the EPA's current thinking is that the revised risks, coupled with the ELG requirements that the agency may promulgate, and the increased federal oversight such requirements could achieve, could provide strong support for a conclusion that regulation of CCR disposal under RCRA Subtitle D could be adequate.

Q6. RCRA typically requires an adequacy determination of State permit programs prior to State implementation. Do you see any value in having EPA review the adequacy of a State program after the State begins implementing it? Please explain why or why not.

Yes. The EPA's review would be beneficial to determine whether the states are adequately implementing the CCR permit program. However, the EPA's ability to conduct such a review would be predicated on having clear criteria for defining when a state program is deficient.

Q7. Please respond to the following questions in as much detail as possible. Please provide a detailed explanation of your answer:

a. Do you agree that the Discussion Draft contains a provision requiring liners?

Section (c)(2)(A) of the discussion draft requires new units and lateral expansions of existing units to meet the performance standard in 258.40. Although one provision in that regulation requires the installation of a composite liner, another provision allows states to authorize an alternative—including no liner at all—based on a determination that the alternative meets the regulatory performance standard. Also, the Discussion Draft imposes no requirements on inactive or abandoned units.

b. Do you agree that the Discussion Draft contains a provision requiring groundwater monitoring?

Section (c)(2)(B) requires that all "operating units (i.e., those that receive CCRs after enactment) meet the groundwater monitoring standards in subpart E of part 258. However, 40 CFR 258.50(b) allows states to suspend the groundwater monitoring system based on a determination that a performance standard has been met (i.e., demonstrate "no potential for migration from the unit to the uppermost aquifer.") Also, the Discussion Draft imposes no requirements on inactive or abandoned units.

c. Do you agree that the Discussion Draft has a deadline for the installation of groundwater monitoring?

The Diseussion Draft appears to have such a deadline – one year after the state submits a certification, or, in other words, no later than four years after enactment for units that are currently operating (i.e., those that receive CCRs after enactment). The Discussion Draft imposes no requirements on inactive or abandoned units.

However in order to ensure effective implementation of groundwater protection, the time frames for implementation of the corrective action requirements (i.e. requirements to cleanup contaminated groundwater) are also relevant. The Discussion Draft includes no deadlines for permit issuance or for ensuring the clean up or closure of leaking units or contaminated sites.

A more recent version of the bill, H.R. 2218, (subsequent to the Discussion Draft that is the subject of this question) does establish a seven-year deadline for states to issue permits, but no deadlines for ensuring that leaking units are closed[19] or that contaminated groundwater is remediated.

d. Do you agree that the Discussion Draft includes all of the constituents identified by EPA as being of concern for coal ash?

Section (c)(2)(B) of the Discussion Draft would require groundwater monitoring for the contaminants that were specifically listed in the EPA's 2010 proposed regulation.

e. Do you agree that the Discussion Draft sets a time limit for meeting groundwater protection standards for surface impoundments that are discovered to be leaking or are in corrective action on the date of enactment?

As discussed previously, although section (c)(4) appears to establish deadlines to clean up or initiate closure for certain surface impoundments, with one narrow exception, states have unlimited authority to extend these deadlines indefinitely. Nor does the Discussion Draft establish any deadline by which facilities must complete closure of such units. The Discussion Draft also imposes no requirements on inactive or abandoned units.

f. Do you agree that the Discussion Draft requires control of fugitive dust in the same manner as EPA did in the June 2010 Proposed Rule with the exception of the numeric limit?

Both the Discussion Draft and the EPA's proposed rule include a fugitive dust requirement. The primary difference between those requirements is that the EPA's June 2010 proposed rule included a specific numeric limit, while the discussion draft does not. Rather, the Discussion Draft requires that units not violate any applicable requirements developed under a State Implementation Plan (SIP) approved or promulgated by the Administrator pursuant to section 110 of the Clean Air Act.

[19] Although subsection (c)(4) appears to establish deadlines to clean up or initiate closure for certain surface impoundments, with one narrow exception, states have unlimited authority to extend these deadlines without any limits.

g. Do you agree that the Discussion Draft requires financial assurance?

Section (c)(2)(G) of the discussion draft appears to require a state permit program to require financial assurance as currently described in subpart G of 40 CFR Part 258. The requirements apply only to units that receive CCRs after date of enactment of the legislation.

h. Do you agree that the Discussion Draft contains location restrictions for coal ash management and disposal units?

The Discussion Draft contains a provision at Section 4011 (c)(1)(C) labeled "Location" that requires that the base of the coal ash unit be located at least two feet above the upper limit of the water table. In addition, section (c)(2)(E) of the Discussion Draft includes different sets of location restrictions for new and existing structures. Subsection (i) requires new structures and lateral expansions of existing structures to comply with the location restrictions in 40 CFR 258.11-258.15. Existing structures that continue to operate after the date of enactment need only comply with the requirements relating to floodplains and unstable areas (40 CFR 258.11 and 258.15).

Under the Subtitle D option in the EPA's June 2010 proposed rule, the EPA proposed standards that would restrict the location of new CCR landfills and impoundments (including lateral expansions) with respect to the location of the unit relative to the natural water table, to wetlands, fault areas, seismic impact zones, and unstable areas. The EPA's proposed Subtitle D option did not propose location restrictions for either new or existing units located in floodplains.

Under the EPA's proposed Subtitle C option, all CCR landfills and surface impoundments would be subject to location restrictions applicable to other subtitle C land-based units, including restrictions on placement in fault areas, 100-year floodplains, salt dome formations, salt bed formations, underground mines and caves.

i. Do you agree that the Discussion Draft contains requirements similar in nature to the June 2010 Proposed Rule, please explain.

The Discussion Draft contains requirements that address a number of the general issues and/or facility operations covered by the June 2010 Proposed Rule. Some of the requirements are similar to those included in the EPA's June 2010 Proposed Rule. For example, as discussed in the previous response, section (c)(2)(B) of the Discussion Draft would require groundwater monitoring for the contaminants that were specifically listed in the EPA's 2010 Proposed Rule.

However, many of the requirements in the Discussion Draft are less specific or detailed, and/or are subject to much longer implementation deadlines or none at all. For example, the June 2010 Proposed Rule would establish specific deadlines by which groundwater remediation (corrective action) and risk mitigation activities must occur. Similarly, the June 2010 Proposed Rule established specific deadlines for unit closure activities, and the closure of surface impoundments.

However, we believe any final legislation needs to clearly address: (1) timelines for the implementation of state programs; (2) criteria for the EPA to use to determine when a state program is deficient, (3) criteria for CCR unit structural integrity, (4) deadlines for closure of unlined or leaking units, including inactive or abandoned units, (5) the universe of CCR disposal units subject to a permit program, and (6) groundwater protection standards that address all constituents identified in H.R. 2218 that are contained in coal combustion residuals.

Q8. Following the incident at Kingston, EPA inspected coal ash impoundments- some 600 – to make sure that they are structurally sound. You hired independent contractors who, in the Agency's own words, "are experts in the area of dam integrity."

a. Do you agree with the findings of your staff that not a single coal ash impoundment was rated "unsatisfactory" and poses an "immediate safety threat"?

While it is true that no units were rated unsatisfactory, approximately 25% of the units were rated "poor" and either require remedial action, or further critical studies are needed to identify any potential dam safety deficiencies.[20] The EPA has sent letters to the owners of the surface impoundments requesting that the deficiencies be remedied, but there is no law or regulation that requires the owners to do so. The owners voluntarily conducted the significant engineering studies to demonstrate whether the units were structurally sound and/or significant construction of, for example, spillways to direct water overtopping. It is also important to note that these assessments were a one-time effort and that a continuous monitoring program is necessary to verify structural integrity. Finally, please note that of the 144 units that have been rated "poor" to date, 11 were classified as high hazard and 69 were classified as significant hazard, meaning that in the event of a failure, loss of human life or damage to critical infrastructure is likely to occur.

b. Do you agree with the findings of your professional staff that the owners of impoundments with identified deficiencies have responded responsibly by submitting response action plans? If not, please explain your answer.

Owners and operators have submitted action plans in response to final report recommendations. However, we would note that it is the responsibility of the owner or operator of the impoundments to implement the recommendations in the actions plans.

Q9. What standard(s) or criteria did/does EPA, or contractors hired by EPA, use to complete the Coal Combustion Residuals Impoundment Assessment Reports found at http://www.epa.gov/osw/nonhaz/industrial/special/fossil/surveys2/? Please be specific and include any documents provided to EPA personnel or contractors to assist or instruct them in conducting the assessments.

The independent evaluations of the impoundments storing coal combustion residuals were conducted using standard, accepted engineering practices, including a visual assessment of the site and each impoundment unit; interviews with facility personnel; a review of geotechnical reports and studies conducted by the company related to the design, construction, and operation of the units, if available; and a review of any past state or federal inspections of the units. While the EPA contractors did not conduct any physical drilling, coring, or sampling while on site, they did review studies which may have included such information. In developing the criteria for conducting the impoundment

[20] EPA used five categories to rate the units: (1) Satisfactory (no existing or potential management unit safety deficiencies are recognized); (2) Acceptable (performance is expected under all applicable loading conditions (static, hydrologic, seismic) in accordance with the applicable criteria. Minor maintenance items may be required); (3) Fair (acceptable performance is expected under all required loading conditions (static, hydrologic, seismic) in accordance with the applicable safety regulatory criteria; Minor deficiencies may exist that require remedial action and/or secondary studies or investigations); (4) Poor (a management unit safety deficiency is recognized for a required loading condition (static, hydrologic, seismic) in accordance with the applicable dam safety regulatory criteria; Remedial action is necessary; further critical studies or investigations are needed to identify any potential dam safety deficiencies); and (5) Unsatisfactory (considered unsafe; dam safety deficiency is recognized that requires immediate or emergency remedial action for problem resolution; reservoir restrictions may be necessary).

assessments, a standard rating system was needed to classify units regarding suitability for continued safe and reliable operation. The EPA modeled its impoundment condition rating criteria on those developed by the State of New Jersey.[21] The EPA also required its contractors to assign a hazard potential rating for each impoundment. This hazard potential classification system is based on existing federal guidelines.[22] In addition, the EPA directed its contractors to ensure that each assessment conforms to the federal guidelines and procedures for dam safety.[23] The EPA also required its contractors to complete a detailed inspection checklist as means to ensure that similar and complete information is collected at each impoundment storing coal combustion residuals. The EPA's checklist was generally modeled on a tailings and water impoundment inspection form developed by the Mine Safety Health Administration (MSHA).[24]

10. What standard(s) or criteria were used to develop the Safety Inspection Reports generated as a result of the assessments?

a. Please describe, in detail, EPA's on-site inspection that was part of the Coal Combustion Residuals Impoundment Assessment – including what criteria/standards were used to determine whether structures at the facilities were well maintained and in good condition, or not, at the time of the inspection.

b. Please describe in detail the criteria/standards used to analyze the integrity of dams and dikes at the facilities inspected.

Response to Questions 10(a) and 10(b): As discussed in the response to Question 9, the assessments of impoundments containing coal combustion residuals were completed by the EPA contractors who are experts in the area of dam integrity. Their assessments reflect the best professional judgement of the engineering firm and are signed and stamped by the professional engineer. The reports are based on a visual assessment of the site, interviews with site personnel, and the review of geotechnical reports and studies related to the design, construction and operation of those impoundments, if available.

Based upon the information provided in response to Question 9, the EPA required its contractor to conduct a field assessment of each impoundment and review and assess all relevant existing data concerning: (1) description of impoundment, including location, size, age, design and/or alterations to the design, and amount of residuals currently in the unit; (2) settlement; (3) movement; (4) erosion; (5) seepage; (6) leakage; (7) cracking; (8) deterioration; (9) seismicity; (10) internal stress and hydrostatic pressures in the unit or its foundations or abutments; (11) functioning of foundation drains and relief wells; (xii) stability of critical slopes adjacent to the unit; and (12) regional and site geological conditions.

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[21] New Jersey Department of Environmental Protection, "Guidelines for Inspection of Existing Dams," January 2008. The document can be accessed at http://www.nj.gov/dep/damsafety/docs/vicguid2.pdf.

[22] Federal Emergency Management Agency, "Federal Guidelines for Dam Safety: Hazard Potential Classification System for Dams," April 2004. This document can be accessed at http://www.ferc.gov/industries/hydropower/safety/guidelines/fema-333.pdf.

[23] Federal Emergency Management Agency, "Federal Guidelines for Dam Safety," April 2004. This document can be accessed at http://www.ferc.gov/industries/hydropower/safety/guidelines/fema-93.pdf. Mine Safety Health Administration, "MSHA Handbook: MSHA Coal Mine Impoundment Inspection and Plan Review Handbook," October 2007. This document can be accessed at http://www.msha.gov/READROOM/HANDBOOK/PH07-V-1(1)CoalImpoundmentInspectionHandbook.pdf. U.S. Army Corps of Engineers (USACE), "Engineering and Design – Slope Stability," October 31, 2003 (http://publications.usace.army.mil/publications/eng-manuals/EM_1110-2-1902_sec/toc.htm), and "Engineering and Design – Earthquake Design and Evaluation for Civil Works Projects," July 31, 1995.

[24] MSHA's checklist can be accessed at http://www.msha.gov/regs/complian/PILS/2009/PIL09-IV-1attach1.pdf.

The EPA's contractors were also required to provide an evaluation of (1) the adequacy of spillways; (2) effects of overtopping of the unit; (3) structural adequacy and stability of structures under all credible loading conditions; (4) review of static and seismic evaluations used to determine factors of safety; (5) soil, ground water, surface water, geology, and geohydrology characteristics associated with the unit, including hydrological data accumulated since the impoundment was constructed or last inspected; (6) history of the performance of the management unit through analysis of data from monitoring instruments; (7) quality and adequacy of maintenance, surveillance, and methods of unit operations for the protection of public safety; (8) location of schools, hospitals or other critical infrastructure within five miles down gradient of the impoundment; and (9) whether the impoundment is located within federally designated flood plains. In addition, the EPA required its contractor to evaluate the ability of the impoundment and any spillways to withstand the loading or overtopping which may occur from flooding events.

c. Please describe, in detail, the criteria/standards used to determine the recommendations that were part of the Site Assessment Reports (or Dam Safety Assessment Reports – or any other name by which these reports are identified).

The report recommendations reflect the best professional judgment of the EPA's contractors based on the contractor's field observations and assessment of the unit.

11. Does EPA believe that the MSHA requirements found at 30 CFR Part 77.216 are the appropriate standards for:

a. Inspecting and analyzing the *design* of impoundments/dams used to manage coal ash? Please explain and provide the citation(s) to the specific requirements EPA believes are applicable and explain why.

The EPA believes that the MSHA standards codified under 30 CFR 77.216 can reasonably be applied to coal ash impoundments since coal slurry impoundments (under MSHA jurisdiction) and coal ash disposal impoundments (under the EPA jurisdiction) have many engineering similarities, including that both materials are disposed of in slurry form, both impoundments rely on earthen embankments to retain water and slurries. The engineering design consideration for both types of impoundments are essentially the same since engineering risks are similar for such above ground earthen embankments. The EPA did not, however, assess the efficiency of liners in these units since the EPA was only assessing the structural stability of the impoundments. The specific MSHA requirements applicable to the design and inspection of coal ash impoundments are 30 CFR 77.216-2(a)(17) which requires certification by a registered engineer that the design of the impounding structure is in accordance with current, prudent engineering practices for the maximum volume of water, sediment, or slurry which can be impounded therein; and 30 CFR 77.216-3 which requires routine inspections of impoundments and correction of potentially hazardous conditions.

b. Inspecting and analyzing the *construction* of impoundments/dams used to manage coal ash? Please explain and provide the citation(s) to the specific requirements EPA believes are applicable and explain why.

In its proposal, the EPA adopted 30 CFR 77.216-2(a)(17) which requires certification by a registered engineer that the design of the impounding structure is in accordance with current, prudent engineering practices for the maximum volume of water, sediment, or slurry which can be

impounded therein. The EPA believes these requirements are also appropriate for the design and construction of coal ash impoundments which are similar to the coal slurry impoundments regulated by MSHA in that both types of impoundments impound large volumes of sediments, slurry and water. The EPA believes that both types of impoundments should be designed and constructed in accordance with current, prudent engineering practices.

c. Inspecting and analyzing the *continued operation and maintenance* of impoundments/dams used to manage coal ash? Please explain and provide the citation(s) to the specific requirements EPA believes are applicable and explain why.

In its proposed rule, the EPA adopted 30 CFR 77.216-3 which requires routine inspections of impoundments and correction of potentially hazardous conditions. MSHA established this requirement so that structural weaknesses in coal slurry impoundments could be identified and corrected to prevent catastrophic failures. The EPA believes the MSHA inspection requirements are also appropriate to identify structural weaknesses in coal ash impoundments to help prevent catastrophic failures similar to the TVA Kingston, Tennessee disaster.

d. Please explain why an inspection for appearances of structural weakness is necessary at intervals not exceeding 7 days?

The EPA has recognized the similarities between coal slurry impoundments and coal ash impoundments, as well as MSHA's nearly 40 years of experience regulating the design, construction and inspection of coal slurry impoundments. MSHA inspection requirements found at 30 CFR 77.216-3 require that all water, sediment, or slurry impoundments be examined at intervals not exceeding seven days (or as otherwise approved by the District Manager) for appearances of structural weakness and other hazardous conditions. As MSHA's Engineering and Design Manual for Coal Refuse Disposal Facilities states: "Routine inspections during operation of the facility allow for the identification of potential problems and resolution in a timely fashion." MSHA's regulations have prevented catastrophic failures of coal slurry impoundments since the regulations were promulgated. The EPA believes the MSHA inspection requirements are appropriate for coal ash impoundments.

e. What about the Federal Dam Safety Guidelines published by FEMA – does EPA believe that these requirements may be appropriate standards/criteria for analyzing design of impoundments/dams used to manage coal ash? For analyzing construction of impoundments/dams used to manage coal ash? For analyzing continued operation and maintenance of impoundments/dams used to manage coal ash?

The EPA also evaluated the Federal Guidelines for Dam Safety (Guidelines) published by FEMA. While the Guidelines encourage strict safety standards in the practices and procedures employed by the federal agencies or required of dam owners regulated by the federal agencies, they do not establish technical standards. The EPA believes the technical standards found in the MSHA regulations are more appropriate for the design, construction, operation, and maintenance of impoundments used to manage coal ash.

12. Does the Discussion Draft allow EPA to find a State Program deficient if the program does not meet the minimum requirements?

Section (d) of the Discussion Draft does not authorize the EPA to find a State program deficient at the time of the initial certification for any reason, including if the program does not meet the minimum requirements.

Section (d) does authorize the EPA to issue a notice of deficiency if the state is not implementing a permit program that meets the specification in subsection (c). However, to support a determination under 4011(d)(1)(D), the EPA would likely need to undertake a fact-specific examination of the state's implementation of its CCR program, including an evaluation of the state's individual permitting decisions and enforcement of the CCR program. We believe the evaluation would need to consider the overall implementation of the state's CCR program, and that one or two individual permit decisions or enforcement actions would not be sufficient to consider the state's program deficient. Further, taking action under this provision would be complicated by the fact that the regulations incorporated into the criteria allow states to establish regulatory alternatives or potentially to waive certain requirements.

a. Does the Discussion Draft allow EPA to take over a State permit program if the State does not correct identified deficiencies?

Subsection (e)(1)(B) authorizes the EPA to implement a CCR permit program if the state has failed to remedy identified deficiencies. It does not appear, however, that the Discussion Draft authorizes the EPA to implement a state permit program. Subsection (e)(4) restricts the EPA to implement and enforce only "the requirements of [the bill]." Thus, to the extent the state program varied from the minimum requirements of the Discussion Draft (e.g., was more stringent), the EPA does not appear to be authorized to implement or enforce such state requirements.

b. What criteria would EPA need to determine whether a State permit program is deficient?

Generally, where a state permit program does not meet the goals and requirements of the statute, that permit program could be considered deficient. Criteria for making this determination could include, for example: failure to issue permits; repeated issuance of permits that do not conform to the requirements of the statute; failure to comply with public participation; and lack of an adequate enforcement and compliance program. See also 40 CFR 271.22 for the EPA's criteria for withdrawing the subtitle C program and 40 CFR 239 for the criteria and procedures the EPA uses to review state Subtitle D programs prior to implementation and to withdraw determinations of adequacy after program implementation.

13. Does the Discussion Draft address the full volume of liquid to be stored in an impoundment?

Yes, Section 4011 (c)(1)(B)(i)(I) appears to require that an independent registered professional engineer certify that a coal combustion residuals unit be designed in accordance with recognized and generally accepted engineering practices for "containment of the maximum volume of coal combustion residuals and liquids appropriate for the structure." Section (c)(1)(B) also requires inspections by an independent registered professional engineer at least annually to assure that the "... design, operation, and maintenance of surface impoundments are in accordance with recognized

and generally accepted good engineering practices for containment of the maximum volume of coal combustion residuals and liquids which can be impounded ..."

Rep. Bill Cassidy

1. Coal fly ash has been used successfully for years in building materials and as fill material for roads without any negative incidents occurring. Over the last few years, the Obama Administration has been pursuing a strategy to declare it hazardous, having an adverse impact on our road and home building industries. Is this just another step in the life cycle of harassment of coal and domestic energy by the Obama Administration? The Administration is delaying Army Corps f Engineers permits for sites of coal mines, pushing new regulations on the mining of coal through their stream buffer zone and mine dust regulations, trying to stop the use of coal by the utilities through air regulations, and now it is trying to declare the waste product hazardous. The Obama Administration lacks the authority to outright make coal illegal so they are attacking the entire life cycle through regulations. This will cost American jobs; by the cost of energy and the materials made from coal ash byproducts.

The EPA proposed to maintain the Bevill exemption for "beneficially used" CCRs. The EPA proposed this approach in recognition of the fact that some uses of CCRs, such as encapsulated uses in concrete, and use as an ingredient in the manufacture of wallboard, provide benefits and raise minimal health or environmental concerns. The EPA continues to believe that the beneficial use of CCRs, when performed properly and in an environmentally sound manner, is the environmentally preferable outcome for CCRs.

On the other hand, unencapsulated uses have raised concerns and merit closer attention. For example, the placement of unencpasulated CCRs on the land, such as in road embankments or in agricultural uses, presents a set of issues that may pose similar concerns as those that caused the agency to propose to regulate CCRs destined for disposal. This includes the discovery of seven proven damage cases, involving the large-scale placement, akin to disposal, of CCRs, which occurred under the guise of "beneficial use." See 75 Fed Reg at 35146-148.

Rep. Henry Waxman

During a hearing in the Environment and the Economy Subcommittee in February on the role of States in protecting the environment, witnesses suggested that giving EPA the ability to take over a state permit program if it is deficient would constitute backstop enforcement authority. Such a significant step would go well beyond enforcing against a particular facility.

1. What is the process for taking control of existing state permit programs under RCRA?

With respect to RCRA Subtitle C, section 3006(e) and the EPA's regulations (40 CFR 271.23) establish the process for withdrawing authorization of state programs. The EPA regulations provide that the EPA may initiate withdrawal of an authorized state hazardous waste program on its own initiative or in response to a petition, and may conduct an informal investigation. The process requires a public hearing (under the regulations, a formal evidentiary hearing). If, after the hearing, the EPA Administrator decides that the state program has not been administered in conformity with the statute and regulations, the EPA must notify the state and list the program deficiencies. The Administrator must provide the state up to 90 days to correct the deficiencies, and if they are not

corrected, the Administrator will issue an order withdrawing the state program. Upon withdrawal of the state hazardous waste program, the state's hazardous waste regulations would no longer apply in lieu of the EPA's federal RCRA regulations, and the EPA would take over from the state the role of issuing RCRA Subtitle C permits to treatment, storage, and disposal facilities.

Under RCRA Subtitle D, section 4005(c), the EPA only approves state permit programs for two categories of non-hazardous waste disposal facilities - municipal solid waste landfills (MSWLFs) and those units that receive conditionally-exempt small quantity generator waste (CESQG facilities). Under EPA's Subtitle D permit program approval regulations, the EPA may initiate a withdrawal of an adequacy determination when it has reason to believe that a state program is no longer adequate, or the state no longer has adequate authority to administer and enforce such a program. See 40 C.F.R. 239.13. After notification by the EPA, the state has the opportunity first, to demonstrate to the EPA that its program continues to comply with the EPA's regulations, and second, to correct any deficiencies identified by the EPA. If this is not sufficient, the EPA can then publish a proposed withdrawal of adequacy in the Federal Register affording public comment, and the EPA may also conduct a public hearing. The EPA will thereafter publish its final decision and respond to significant comments. States can reapply for approval at any time after a determination of inadequacy.

It is important to note that finding a state permit program inadequate under RCRA Subtitle D, section 4005(c) has a different effect than withdrawing authorization of a state's Subtitle C program. A finding that a state permit program is inadequate under RCRA Subtitle D, section 4005(c) only authorizes the EPA to enforce the EPA's subtitle D MSWLF and CESQG regulations. The EPA does not assume implementation of the state program. Under RCRA Subtitle D, the EPA does not issue permits to solid (i.e., non-hazardous) waste disposal facilities, even in unapproved states; state laws do not operate in lieu of the federal RCRA regulations.

There is an additional implication to such a determination, the federal MSWLF and CESQG facility regulations provide more flexible standards to facilities in approved states. Thus, the EPA's withdrawal of approval of a state permit program under RCRA Subtitle D, section 4005(c) would have the effect of requiring MSWLF/CESQG facilities to comply with the more-prescriptive standards in the EPA's regulations and subject those facilities to the EPA enforcement if they violate the federal regulations. However, the facilities would still remain subject to state permitting and other state law.

2. How often does EPA take the dramatic action of taking control of a state permit program under RCRA?

To our knowledge, the EPA has never withdrawn authorization for a state permit program under subtitle C, nor initiated the formal procedures to disapprove (or make a determination of deficiency for) an approved state's municipal solid waste program under 40 CFR 239.13.

3. How does the process outlined in the discussion draft for taking control of a state coal combustion residual permit program compare to the process for taking control of existing state programs?

Unlike the process for withdrawing authorization under RCRA section 3006(e), the Discussion Draft does not require a public hearing. Section 4011(d)(1) requires that the EPA first provide the state

with written notice that details the deficiencies in the state's implementation of the CCR permit program, and grant the state an opportunity to remedy the deficiencies. In addition, subparagraph (d)(1)(B) requires the EPA to establish a deadline by which the deficiencies must be remedied "in collaboration with the state," and that is at least six months from the date of the notification. By contrast, RCRA section 3006(c) establishes a 90-day deadline for the state to remedy deficiencies. The Discussion Draft also grants states the right to judicial review in the DC Circuit pursuant to RCRA 7006(a).

STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
NASHVILLE, TENNESSEE 37243-0435

ROBERT J. MARTINEAU, JR.
COMMISSIONER

BILL HASLAM
GOVERNOR

May 13, 2013

Via First Class Mail and Electronic Mail to Nick.Abraham@mail.house.gov

The Honorable John Shimkus c/o Nick Abraham, Legislative Clerk
Committee of Energy and Commerce
House of Representatives
One Hundred Thirteenth Congress of the United States
2125 Rayburn House Office Building
Washington, DC 20515-6115

Dear Chairman Shimkus,

This letter responds to your request of April 29, 2013, which included additional questions from Members pertaining to my testimony on behalf of the Environmental Council of the States (ECOS) at the Thursday, April 11, 2013 hearing on a discussion draft entitled "The Coal Ash Recycling and Oversight Act of 2013." Attached please find the questions and my responses. Thank you again for the opportunity to testify before the Subcommittee on this important topic.

Please feel free to contact me should you have any additional questions.

Sincerely,

Robert J. Martineau, Jr.
Commissioner

Secretary-Treasurer
Environmental Council of the States

Attachment

Commissioner Robert J. Martineau, Response to Questions

1. The Honorable John Shimkus Questions

a. Do you think that State officials are in the best position to determine the specifics regarding dam design and construction? Please explain.

Yes. The primary reason is that states have been regulating dam safety for decades, with a few exceptions such as hydro-powered dams. States have had a long time to develop regulations for dams, and many states use guidance by federal agencies such as FEMA to help set state standards. It's important to remember that dam design and construction, in general, encompasses and raises issues well beyond coal ash regulation. States are in the best position to know about and understand the unique circumstances that may be at play with regard to dam structures, including surface impoundments that receive Coal Combustion Residuals (CCR) in their own state.

b. The incident at Kingston precipitated the Discussion Draft and the Proposed Rule- can you give us a summary of the lessons learned and what Tennessee Department of Environment and Conservation has done in the wake of Kingston?

Summary of lessons learned:

- CCR does not present a long-term toxicological threat to public health and the environment when managed properly. The most significant threat to humans is when ash particles become airborn, presenting inhalation and skin irritation problems for people who are exposed to it;
- CCR surface impoundments and landfills should be sited, designed, and constructed similar to RCRA Subtitle D Landfills and should have regular inspections to allow compliance issues identified to be addressed quickly;
- Existing CCR surface impoundments and landfills should be evaluated for structural stability and integrity. Structural deficiencies should be corrected and there should be consideration of closing those structures, with the most problematic structures closed first; and
- CCR can and should be managed as a solid waste. It can be beneficially reused and the cost to regulate as a hazardous waste is approximately ten times greater than regulation as a solid waste. There is not enough hazardous waste disposal space for the amount of material generated.

TVA had engineering companies search for the cause of the Kingston failure. TDEC staff and TDEC consultants reviewed the information produced. The TVA report discussed two reasons for failure:

- A slime layer between the bottom of the ash pile (about 90% fly ash and 10% bottom ash) and the top of the subsurface native material; and
- The landfill did not drain properly causing the ash to have a greater than expected level of water content.

As a part of TDEC's effort to determine the cause of the TVA Kingston ash release, an Advisory Board was convened to review TVA's root cause investigation to determine whether sound engineering principles were used in construction of the landfill; to review TVA's structural evaluations of other TVA facilities in Tennessee to ensure the use of sound engineering principles;

and to provide recommendations to TDEC for the future safe management of coal ash. The Advisory Board consisted of members from TDEC, EPA, the University of Tennessee engineering department, and Benham Consultants.

The root cause investigation that TVA commissioned concluded that four factors contributed to the dredge cell failure:

- The geometry and setbacks utilized in the placement of the wet ash;
- Increased loads due to higher fill;
- Unusually weak silt/ash slime foundation; and
- Hydraulically placed loose wet ash.

Tennessee's Advisory Board did not specifically agree or disagree with these conclusions. The Board concluded there was a lack of coordinated engineering design for raising the dredge cells over a period of decades and the properties of the coal ash were not adequately understood.

From TDEC's perspective, the most significant factor was the method of construction known as a dredge cell and the weak material properties of the ash used for construction. Loosely deposited sluiced fly ash, without the benefit of secondary consolidation, has been shown to perform in a manner more consistent with that of unconsolidated loose sand and silt. In addition, the weakness of the foundation beneath the dredge cells was a significant factor which contributed to the failure. Once the structural integrity of the landfill was compromised and the breach occurred at the north boundary of the landfill, the disposed ash was released. Because the ash in the landfill had a high moisture content, the ash behaved as a liquid and quickly spread across a large area covering the land surface in the immediate area and entering the Emory River and its tributaries. The effect was similar to pouring out a bucket of very thin cement mix; basically the released ash spread widely due to the amount of "wet" ash and the height of the landfill. The released ash followed the laws of gravity and moved to into the lowest surrounding areas.

i. Has the State analyzed the structural integrity of other disposal units and/or added additional requirements to the existing regulations?

TDEC issued two Commissioner's Orders to TVA after the Kingston incident. The first order required TVA to take immediate action to begin clean-up of the problems caused by the failure. The second order required TVA to investigate the structural integrity of the six other coal ash storage areas, both landfills and surface impoundments. TVA hired an environmental consulting company specializing in evaluating the structural stability of landfills and surface impoundments. TDEC and EPA approved of the approach taken by TVA to evaluate these structures. EPA also worked with the federal Bureau of Mines and used their expertise to assist with the structural stability analysis.

All parties agreed that a "dam safety factor" of 1.5 should be the standard for structural integrity for these structures. TVA found deficiencies at some of its facilities. TVA took actions to improve the structural stability of the surface impoundments and landfills that did not meet the 1.5 dam safety factor. The TVA Johnsonville surface impoundment was the coal ash storage facility that required the most extensive repair. While the TDEC Order required TVA to complete this work for all TVA surface impoundments and landfills in Tennessee, TVA did perform the analyses for its facilities in all states.

Since the TVA Kingston ash release, TDEC requires that any CCR waste that is to be disposed of in an existing Tennessee landfill be disposed of as a special waste, the landfill must have a synthetic liner and leachate collection system and TDEC and the landfill operator must agree to take the waste. Any new landfill or expansion of an existing landfill that will receive CCR waste must meet our Class II Industrial Waste Landfill requirements and standards which includes a geologic assessment, geologic buffer, synthetic liner, a leachate collection system, operations manual, closure plan, post closure plan and ground water monitoring. This is same criteria as a RCRA Subtitle D landfill, however, the Commissioner, may waive some permit requirements if the requirement does not provide additional public health and environmental protection.

In 2009, Tennessee amended the Tennessee Solid Waste Management Act so that it now requires any new landfill or any expansion of an existing landfill to have a synthetic liner and an approved "cap" before the landfill is closed.

TDEC has not made further changes to its regulation of CCRs, choosing to wait until EPA issues a final rule to make any additional changes. TDEC believes the changes it has made in policy and statute (as stated above) provide a greater level of public health and environmental protection than before the TVA Kingston ash release.

c. As a regulatory official, how do you define backstop authority? Does the Discussion Draft have a federal backstop?

When discussing the state operation of a delegated federal program, the federal role is usually reduced in favor of the day-to-day operations of the program at the state level. Federal programs set minimum standards states must adopt to become a delegated program and establish a minimum "level playing field" among the states. Also, there are times when complex, technical issues such as on a particular enforcement case can overwhelm a single state's ability to respond. For these reasons, states believe that a federal backstop is a necessary and useful presence. The Discussion Draft we addressed at the hearing provides what we would define as backstop authority in at least three ways: (1) EPA will operate the program in the event a state chooses not to; (2) EPA will conduct oversight of state programs and can, if necessary, assume control of the state program if the state cannot or will not operate it consistent with the goals of the legislation; and (3) EPA can assist the states with enforcement and/or technical assistance at a state's request.

2. The Honorable Henry A. Waxman Questions

NOTE: Many of the following questions address existing TVA facilities. TVA has committed to close existing CCR impoundments through a conversion to dry ash management. As TVA's National Pollutant Discharge Elimination System (NPDES) permits are renewed, TDEC has or will include a requirement for ash pond closure plans to address the transition from a coal ash wastewater settling pond to a closed dry storage facility. Joint review and approval of the closure plans occurs between the TDEC Divisions of Solid Waste Management and Water Resources, which is the NPDES permitting authority.

Ash pond closure plans address the TVA process of conversion to a dry ash handling system and include a post-closure plan with a groundwater monitoring plan. The plan and NPDES permit

include continuing dike inspections to address dike safety and safe dams issues. Presently, TDEC has approved TVA Ash Pond Closure Plans for Bull Run and Johnsonville Fossil plants. The Ash Pond Closure Plan for the Gallatin Fossil plant is under review. TVA has not yet submitted Ash Pond Closure Plans for Kingston, Cumberland, and Allen Fossil plans because the NPDES permits have not been re-issued.

According to pollution monitoring conducted by the Tennessee Valley Authority (TVA) and released under the Freedom of Information Act, levels of arsenic, boron, and manganese at the Tennessee Valley Authority Allen Fossil Plant in Memphis, Tennessee, have exceeded the Maximum Contaminant Level, the EPA child health advisory, and the EPA lifetime health advisory respectively. Additionally, monitoring for those and other pollutants appears to have been infrequent.

a. What action is your Department taking or will your Department commit to take to containing this contamination, and what is your timeline for doing so?

The Allen Fossil plant (ALF) has no permitted landfill regulated under the Tennessee Solid Waste Disposal Act, but has a wastewater impoundment with a NPDES permit. TDEC understands TVA is currently evaluating the future operational status of ALF. The NPDES permit renewal for ALF remains under review. TDEC intends to include, in the renewed permit, a permit requirement for an Ash Pond Closure Plan, which will include a groundwater monitoring plan that includes the location of the groundwater monitoring wells, chemical constituents to be monitored and the frequency of the monitoring. TVA has historically installed groundwater monitoring at ALF on a voluntary basis.

b. What action is your Department taking or will your Department commit to take to assess and clean up this contamination, and what is your timeline for doing so?

If the groundwater monitoring indicates chemical constituents above background levels, TVA would conduct groundwater assessment monitoring to determine whether an environmental release has occurred. If a chemical constituent statistically exceeds the Groundwater Protection Standard (e.g., the Maximum Contaminant Level (MCL)for drinking water), TVA is required to begin an environmental investigation and conduct environmental remediation to resolve the problem. An environmental cleanup would take into consideration the level and extent of soil and groundwater contamination, the site conditions and the exposure hazards to local citizens and the environment.

c. What action will your Department take to ensure that monitoring of these wells in the future is adequate so that any future contamination is detected and addressed?

As noted above, TDEC intends to include a requirement for an Ash Pond Closure Plan in the renewed NPDES permit, which includes continued groundwater monitoring pending ash pond closure. Post-pond closure, long-term monitoring will continue under provisions of the Tennessee Solid Waste Disposal Act.

At the TVA Bull Run Fossil Plant near Oak Ridge, Tennessee, monitoring has found high levels of arsenic, boron, cobalt, manganese, molybdenum, and sulfate. Rising levels of boron

and molybdenum were documented for some time, but TVA has since stopped monitoring for those pollutants.

a. What action is your Department taking or will your Department commit to take to containing this contamination, and what is your timeline for doing so?

The Bull Run Fossil plant has both a permitted fly ash landfill regulated under the Tennessee Solid Waste Disposal Act and a wastewater impoundment with a NPDES permit. Under the NPDES permit for ash pond discharges, TDEC has approved the TVA 2011 Ash Pond Closure Plan, which includes a groundwater monitoring plan that has the location of the groundwater monitoring wells, chemical constituents to be monitored and the frequency of the monitoring. The chemical cleaning pond has been closed. Fly ash is currently managed in a dry ash landfill. To complete conversion to dry ash handling, bottom ash and gypsum dewatering projects are scheduled for completion during 2015. To address ash pond stability, TVA completed, in 2013, the dike remediation at the ash pond and dry fly ash stack, including the ash pond spillway modification and a 7200 ft shoreline stabilization.

b. What action is your Department taking or will your Department commit to take to assess and clean up this contamination, and what is your timeline for doing so?

Pursuant to the Tennessee Solid Waste Disposal Act, the landfill is monitored by a groundwater monitoring program with a sampling plan that stipulates the chemical constituents to be monitored and the frequency of monitoring that is the equivalent to RCRA Subtitle D requirements. The landfill is currently in assessment monitoring, which means ground water results have indicated constituents above background levels. The Groundwater Protection Standard (e.g., the MCL) has not been exceeded. If a chemical constituent statistically exceeds the Groundwater Protection Standard (e.g., the MCL for drinking water), TVA is required to begin an environmental investigation and conduct environmental remediation to resolve the problem. An environmental cleanup would take into consideration the level and extent of soil and groundwater contamination, the site conditions and the exposure hazards to local citizens and the environment. TVA has historically installed groundwater monitoring at the impoundment on a voluntary basis.

As noted above, TDEC has approved the TVA 2011 Ash Pond Closure Plan, which includes a groundwater monitoring plan that has the location of the groundwater monitoring wells, chemical constituents to be monitored and the frequency of the monitoring. If the groundwater monitoring indicates chemical constituents above background levels, TVA would conduct groundwater assessment monitoring to determine whether an environmental release has occurred. If a chemical constituent statistically exceeds the Groundwater Protection Standard (e.g., the MCL for drinking water), TVA is required to begin an environmental investigation and conduct environmental remediation to resolve the problem. An environmental cleanup would take into consideration the level and extent of soil and groundwater contamination, the site conditions and the exposure hazards to local citizens and the environment.

What action will your Department take to ensure that monitoring of these wells in the future is adequate so that any future contamination is detected and addressed?

The landfill permit requires 30 years of post-closure care and monitoring. If a Groundwater Protection Standard is exceeded, the process described above would occur. Current NPDES permit requirements include continued groundwater monitoring pending ash pond closure. After ash pond closure, long term monitoring will continue under provisions of the Tennessee Solid Waste Disposal Act.

At the TVA Cumberland Fossil Plant in Cumberland City, Tennessee, monitoring has found high levels of arsenic, boron, cobalt, manganese, molybdenum and sulfate. Cobalt levels have been documented as high as ten times the Regional Screening Level and manganese levels have been documented as high as 100 times the health advisory level.

a. What action is your Department taking or will your Department commit to take to containing this contamination, and what is your timeline for doing so?

The Cumberland Fossil plant (CUF) has both a permitted landfill regulated under the Tennessee Solid Waste Disposal Act and a wastewater impoundment with a NPDES permit. The NPDES permit renewal for CUF remains under review. TDEC intends to include, in the renewed permit, a permit requirement for an Ash Pond Closure Plan, which will include a groundwater monitoring plan that includes the location of the groundwater monitoring wells, chemical constituents to be monitored and the frequency of the monitoring. TVA has historically installed groundwater monitoring at the impoundment on a voluntary basis. Fly ash is currently managed in a dry ash landfill. To complete conversion to dry ash handling, bottom ash and gypsum dewatering projects are scheduled for completion during 2020, according to TVA. To address ash pond dike stability, TVA is nearing completion, in 2013, for the remediation of the gypsum/dry stake dikes and stilling pond spillway replacement.

b. What action is your Department taking or will your Department commit to take to assess and clean up this contamination and what is your timeline for doing so?

Pursuant to the Tennessee Solid Waste Disposal Act, the landfill is monitored by a groundwater monitoring program with a sampling plan that stipulates the chemical constituents to be monitored and the frequency of monitoring that is the equivalent to RCRA Subtitle D requirements. The landfill is currently in assessment monitoring, which means ground water results have indicated constituents above background levels. The MCL has occasionally been exceeded; however, required analysis has demonstrated it has not been exceeded statistically. If a chemical constituent statistically exceeds the Groundwater Protection Standard (e.g., the Maximum Contaminant Level for drinking water), the permit requires TVA to begin an environmental investigation and conduct environmental remediation to resolve the problem. An environmental cleanup would take into consideration the level and extent of soil and groundwater contamination, the site conditions and the exposure hazards to local citizens and the environment.

For the impoundment, as noted above, TDEC intends to include the requirement for an Ash Pond Closure Plan, which includes a groundwater monitoring plan that has the location of the groundwater monitoring wells, chemical constituents to be monitored and the frequency of the monitoring. If the groundwater monitoring indicates chemical constituents above background levels, TVA would conduct groundwater assessment monitoring to determine whether an environmental release has occurred. If a chemical constituent statistically exceeds the Groundwater Protection Standard (e.g.,

the MCL for drinking water), TVA is required to begin an environmental investigation and conduct environmental remediation to resolve the problem. An environmental cleanup would take into consideration the level and extent of soil and groundwater contamination, the site conditions and the exposure hazards to local citizens and the environment.

c. What action will your Department take to ensure that monitoring of these wells in the future is adequate so that any future contamination is detected and addressed?

The landfill permit requires 30 years of post-closure care and monitoring and the above noted processes depending on the level of constituent detection. With regard to the impoundment, TDEC intends to include the NPDES requirement for an Ash Pond Closure Plan, which includes groundwater monitoring pending ash pond closure. After pond closure, long term monitoring will continue under provisions under the Tennessee Solid Waste Disposal Act.

At the TVA Gallatin Fossil Plant in Gallatin, Tennessee, monitoring around an abandoned ash pond has shown contamination with aluminum, beryllium, boron, cobalt, manganese, mercury, nickel, and sulfate.

a. What action is your Department taking or will your Department commit to take to containing this contamination, and what is your timeline for doing so?

The Gallatin Fossil plant has both a non-registered, closed impoundment (referred to in the questions as an "abandoned ash pond") and a wastewater impoundment with a NPDES permit. The closed impoundment has not operated since the 1970s and contains sluiced coal ash. Under the NPDES permit for ash pond discharges, TDEC is reviewing TVA's 2012 Ash Pond Closure Plan, which includes groundwater monitoring for the active ash pond area only. To complete conversion to dry ash handling, TVA has scheduled fly ash and gypsum projects (using a dry scrubber) for completion in 2017. Conversion of bottom ash to dry handling is proposed during 2019. To address ash pond dike stability, TVA proposes dike remediation and a spillway upgrade stabilization for completion during 2015.

b. Are the Department's authorities the same with respect to abandoned ash disposal sites as they are for active disposal sites? If not, how do they differ?

"Abandoned ash disposal sites" were never issued a permit under the Tennessee Solid Waste Disposal Act, but come under the provisions of the Act as unregistered disposal sites. Therefore, TDEC has the authority to require environmental investigation and clean-up pursuant to the Solid Waste Disposal Act. TVA has voluntarily installed groundwater monitoring at this site. TVA samples twice per year and submits the results to TDEC's Solid Waste Division. The monitoring is similar to the requirements for groundwater monitoring required at permitted Class I and II landfills.

c. What action is your Department taking or will your Department commit to take to assess and clean up this contamination, and what is your timeline for doing so?

For the active impoundment, as noted above, TDEC is reviewing the Ash Pond Closure Plan, which includes a groundwater monitoring plan that has the location of the groundwater monitoring wells, chemical constituents to be monitored and the frequency of the monitoring. If the groundwater

monitoring indicates chemical constituents above background levels, TVA would conduct groundwater assessment monitoring to determine whether an environmental release has occurred. If a chemical constituent statistically exceeds the Groundwater Protection Standard (e.g., the MCL for drinking water), TVA is required to begin an environmental investigation and conduct environmental remediation to resolve the problem. An environmental cleanup would take into consideration the level and extent of soil and groundwater contamination, the site conditions and the exposure hazards to local citizens and the environment. The same process would apply to the unregistered, closed impoundment. The current well network for the unregistered, closed impoundment is the equivalent of assessment monitoring, which means constituents have been detected above background levels.

d. What action will your Department take to ensure that monitoring of these wells in the future is adequate so that any future contamination is detected and addressed?

With regard to the impoundment, TDEC is reviewing TVA's Ash Pond Closure Plan, which includes groundwater monitoring pending ash pond closure. After pond closure, long term monitoring will continue under provisions under the Tennessee Solid Waste Disposal Act.

At the TVA Johnsonville Fossil Plant in Waverly, Tennessee, monitoring at an active ash disposal site has shown contamination with boron, cobalt, manganese, and sulfate. The same contaminants have been show in monitoring of a closed disposal site, with cobalt levels as high as ten times the Regional Screening Level. Another closed Disposal at the plant is not monitored.

a. What action is your Department taking or will your Department commit to take to containing this contamination, and what is your timeline for doing so?

According to TVA, the Johnsonville Fossil plant will be retired by 2017. The plant has two unregistered disposal sites and a permitted landfill, which is regulated under the Tennessee Solid Waste Disposal Act. The plant also has a wastewater impoundment with a NPDES permit. Both the unregistered disposal sites and the landfill are closed. One of the unregistered disposal sites has a monitoring system in place and TDEC understands TVA is developing one for the other. Under the NPDES permit for ash pond discharges, TDEC has approved TVA's 2011 Ash Pond Closure Plan, which includes groundwater monitoring. The chemical cleaning pond has been closed. To address ash pond dike stability, TVA completed dike remediation at the ash disposal area 2 and the causeway buttress in 2013.

b. Are the Department's authorities the same with respect to abandoned ash disposal sites as they are for active disposal sites? If not, how do they differ?

See the answer above for the same question with regard to the Gallatin Fossil plant.

c. What action is your Department taking or will your Department commit to take to assess and clean up this contamination, and what is your timeline for doing so?

Pursuant to the Tennessee Solid Waste Disposal Act, the landfill is monitored by a groundwater monitoring program with a sampling plan that stipulates the chemical constituents to be monitored and the frequency of monitoring that is the equivalent to RCRA Subtitle D requirements. The landfill is currently in assessment monitoring, which means ground water results have indicated constituents above background levels. If a chemical constituent statistically exceeds the Groundwater Protection Standard (e.g., the MCL for drinking water), TVA is required to begin an environmental investigation and conduct environmental remediation to resolve the problem. An environmental cleanup would take into consideration the level and extent of soil and groundwater contamination, the site conditions and the exposure hazards to local citizens and the environment. The process for the unregistered sites would be the same, although one does not currently have monitoring.

For the impoundment, as noted above, TDEC has approved the Ash Pond Closure Plan, which includes a groundwater monitoring plan that has the location of the groundwater monitoring wells, chemical constituents to be monitored and the frequency of the monitoring. If the groundwater monitoring indicates chemical constituents above background levels, TVA would conduct groundwater assessment monitoring to determine whether an environmental release has occurred. If a chemical constituent statistically exceeds the Groundwater Protection Standard (e.g., the MCL for drinking water), TVA is required to begin an environmental investigation and conduct environmental remediation to resolve the problem. An environmental cleanup would take into consideration the level and extent of soil and groundwater contamination, the site conditions and the exposure hazards to local citizens and the environment.

d. What action will your Department take to ensure that monitoring of these wells in the future is adequate so that any future contamination is detected and addressed?

The landfill permit requires 30 years of post-closure care and monitoring. Current NPDES permit requirements include continued groundwater monitoring pending ash pond closure. After pond closure, long term monitoring will continue under provisions of the Tennessee Solid Waste Disposal Act.

At the Kingston Fossil Plant, site of the 2008 catastrophic impoundment failure, monitoring continues to show contamination with cobalt, manganese, and selenium.

a. What action has your Department taken to address the root causes of the 2008 failure?

See answer to question 1.b in response to a question posed by the Honorable John Shimkus above.

b. What action has your Department taken to address ongoing contamination at the site?

TDEC, EPA and TVA analyzed the TVA Kingston ash to determine if it should be managed as a hazardous waste. Ash was analyzed for metals, polynuclear aromatic hydrocarbons, radioactive substances and other chemicals constituents. Samples were analyzed for total amounts in the ash and using the EPA Toxicity Characteristic Leaching Procedure. None of the samples analyzed had levels of chemical constituents that would classify the ash as a hazardous waste. TDEC recognizes that the

ash is exempted as a hazardous waste currently under the Bevill Amendment; however, even if the Bevill amendment was not in place, the ash did not meet any of the characteristics of a hazardous waste under RCRA Subtitle C.

Over 90% of the ash that entered the Emory River and its tributaries (more than 3.5 million yd^3) has been removed and disposed. EPA, TVA and TDEC are determining whether it is appropriate to remove the remaining ash given the impact the removal will have on fish and aquatic life. The ash remaining in the river does not present a toxicity hazard to fish and aquatic life. The impact of the ash release when it first occurred was primarily to "smother" fish and aquatic mechanisms.

Currently, TVA is preparing an on-site CERCLA disposal cell that will be used to dispose of the remaining ash on the land surface. The remaining ash, more than 2 million yd^3, will be placed in a structurally reinforced disposal cell. The disposal cell will include a subsurface perimeter wall that is approximately 30 ft wide and ranges from 30 to 70 feet in depth. The purpose of the subsurface wall is to ensure there are no further releases due to seismic activity. The CERCLA cell will have a synthetic liner at the surface to prevent migration of surface water into the ash disposal cell as well as a standard Subtitle D Municipal Solid Waste Landfill soil cover. Ground water monitoring wells will be located around the landfill with samples taken twice per year to detect any releases should they occur.

At this time more than 60% of the ash has been properly disposed. It is estimated that it will take 4 to 5 more years complete the clean-up. The primary control factor for time to completions is the successful construction of the subsurface wall around the perimeter of the CERCLA disposal cell.

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May 13, 2013

The Honorable John Shimkus, Chairman
Subcommittee on Environment and the Economy
Committee on Energy and Commerce
2125 Rayburn House Office Building
Washington, DC 20515

RE: "The Coal Ash Recycling and Oversight Act of 2013"
Questions for the record from: The Honorable John Shimkus and The Honorable Henry A. Waxman

Dear Mr. Shimkus:

Thank you for the opportunity to participate in this hearing. I have received your questions for the record request, and you will find my responses attached. These have been coordinated with the appropriate Departmental program staff and management.

If you have any questions concerning this matter, please contact me at 334-271-7739.

Sincerely,

Stephen A. Cobb, Chief
Governmental Hazardous Waste Branch
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enclosure

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The Honorable John Shimkus

1. **States have demonstrated the ability to implement similar permit programs.**

   a. **Wouldn't it just delay implementation of coal ash permit programs for States to have to go through the approval process twice?**

   Response: Yes, imposing another pre-implementation approval process will likely result in significant delays in the implementation of the coal ash permit program. It should be recognized that States like Alabama have repeatedly demonstrated our ability to implement both hazardous and non-hazardous waste programs to meet national standards. In fact, states are the primary implementers of such laws and regulations.

   At this point in waste regulation, a pre-implementation review is not an effective or efficient use of resources. Years can be spent talking about how best to implement a program and debating the nuances of various specific details before actually implementing the programs to protect human health and the environment; or we can proceed quickly with implementation, get the programs and protections in place, and hold those programs accountable for achieving the results and goals that are the primary purpose of the law in the beginning. The issue of how to best regulate CCRs nationally has been debated for many years – it's time to finally implement a program to do so.

   In the past, before States had any experience and track record in implementing programs such as these, a pre-implementation review made more sense. However, our past regulatory experience has also shown that the pre-implementation process is far too vulnerable to extended review and processing delays, as well as to workload priority and resource challenges These delays have been experienced due not only to technical discussions, but also to lengthy administrative and resource delays even when there are no technical disputes. It is better to implement the programs and get the environmental protection started earlier, and then review the results of that protection and make adjustments in real time as needed, which is the approach laid out in this bill.

   b. **In your opinion, is EPA prior approval necessary for State permit programs?**

   Response: No. See response to Question 1.a. for further details.

c. What has been your experience regarding the timing of the approval process and the process in general?

Response: First, I wish to note that EPA Regional Program staff and management routinely work closely with our program to ensure that delays in program authorizations do not impede the expedient implementation of regulatory requirements. This is largely accomplished by implementation of new program requirements based on the fact that they are routinely incorporated into the Department's regulations and implemented pursuant to applicable State law, regardless of whether they have completed the authorization process to enable them to be implemented in lieu of the federal requirement. This implementation partnership has worked well to ensure that gaps and delays in the processing of authorization packages do not result in undesirable consequences pertaining to the implementation of new or updated federal program requirements.

That said, it must be acknowledged that the pre-implementation process is replete with delays in processing authorization applications. To the best of my knowledge, ADEM's authorization application packages have historically and routinely been submitted in a timely manner. However, the review/approval process has consistently taken considerable time. ADEM's initial base program authorization for its Subtitle C program was received in December 1987, but initial authorization for the RCRA Subtitle C corrective action program was not received until April 1996, after several years of review and discussion back and forth between the State and EPA. ADEM's Subtitle C authorization history is provided in the attached Authorization Status Summary Table. Please note that the records regarding authorization submittal and approval dates are more complete for the period since 1999.

There are such significant delays in EPA's processing of authorization applications that the actual process is being rendered meaningless. In many instances, portions of the regulations upon which a given authorization application was based have been significantly changed or even been deleted by subsequent annual updates before the previous authorization application review/approval is completed. The delays have been attributed to the overall priority of authorization reviews in the agency's workload, frequent changes in personnel assigned to perform the reviews, technical or procedural questions, lack of training, etc. Through our interactions with other States, we have learned that the delays and experiences we have had are quite similar to those of other States, and in some cases we have apparently fared better than some of our sister States. As shown in the attached table, we are currently awaiting finalization of seven

authorization applications initially submitted to EPA on January 18, 2008, April 11, 2008, November 4,2008, May 29, 2009, June 1, 2010, June 1, 2011, and May 25, 2012.

Regarding ADEM's Subtitle D MSW program, it is my understanding that when the application for this program approval was submitted in the early-to-mid 1990's that it was processed and partial program authorization (minus the financial assurance component for which additional State legislative authority was required) was approved by EPA in a timely manner.

2. **As an experienced State regulator, do you think states are able to interpret the minimum program requirements in the bill to develop a permit program that is protective of human health and the environment?**

Response: Absolutely. We have considerable experience writing and implementing permit regulations based on both MSW and RCRA Subtitle C requirements, as well as other state and federal programs. We are environmental regulators, and a central part of our job as environmental regulators is to interpret the requirements of laws, both state and federal, and to write and implement regulations based on those laws that protect human health and that preserve and protect the environment. I believe this legislation will give us the needed policy directive and requirements that we need to build these programs. The similarity of the bills requirements to the MSW program will also help to ensure efficiency, effectiveness, and consistency of the regulatory programs, as this similarity gives us established and proven regulations and processes to build from, as opposed to having to start wholly from scratch.

3. **As a regulatory official, how do you define backstop authority? Does the discussion draft have a federal backstop?**

Response: To me, backstop authority is a safety net that is available in case the primary authority does not succeed. And yes, the bill does provide a backstop to the anticipated State permitting programs for CCRs. The EPA review of State programs as they are implemented, and the ability for EPA to take over implementation of the program in a State if the State does not address identified issues is a powerful incentive for States, and thus protection of the public interest in this issue, to ensure that their programs do indeed meet the objectives and requirements of the law.

4. **Opponents of the legislation claim that because the legislation does not include a specific "level of protection standard," States would be free to implement the bill's requirements in a manner meeting any standard of protection. They imply that States' latitude in implementing the requirements would result in programs that are not protective of human health and the environment – what's your response?**

Response: The central theme in all of our programs is to protect human health and the environment. This central theme may be expressed by slightly different words and phrases, but the message is the same – all of our jobs as regulators are designed and implemented to protect human health and the environment to ensure that ALL of our citizens are able to enjoy a safe, healthy, and productive environment.

In addition, the very fabric of the Solid Waste Disposal Act, including Subtitle D where this new law would reside, is about protecting human health and the environment, and that is true for our State laws and regulations as well. All of our jobs as regulators are to protect human health and the environment, and that's what we work to do every day. While it may be true that there can be some variations in how this concept is described and implemented, it is my anticipation and expectation as a State regulator that all of our programs will be designed to be protective.

We must not lose sight of the fact that as State regulators, in addition to the fact that we are protecting human health and the environment simply because that is what we are charged to do, we and our families, friends and acquaintances live, work, and play in the areas where the facilities we regulate are located, so we also have a vested personal interest in ensuring that our rules and regulations are protective of both human health and the environment we live in.

As an experienced State regulator who has helped set up regulatory programs, it is my expectation we will accomplish this by first identifying any specific requirements identified in the statute, such as the minimum standards included in this bill, and make sure those are included and addressed. In addition and as a part of that process, we would identify: 1) what systems/protections are needed to prevent releases to the environment; 2) what systems/protections are needed to prevent harmful exposures to people or the environment; 3) what provisions are needed to ensure adequate and appropriate monitoring and early warning systems are in place; and 4) what provisions are needed to ensure reporting and accountability measures are not only installed, but also operated and maintained.

This process would be accomplished while keeping a constant eye on the fact that the goal of all of these steps is to ensure that the end result is the protection of human health and the environment, or in the words of Alabama law, that all of our citizens are able to enjoy a safe, healthy and productive environment.

The Honorable Henry A. Waxman

At the Tennessee Valley Authority (TVA) Colbert Fossil Plant, in Tuscumbia, Alabama, TVA burns enough coal to produce almost 400,000 tons of ash each year. The ash is stored onsite in a dry landfill, an active wet impoundment, and an inactive wet impoundment. Groundwater monitoring data from the site, obtained from TVA through Freedom of Information Act request, shows groundwater contamination with contaminants from coal ash including lead and arsenic. Arsenic levels have been documented as high as seven times the maximum contaminant level under the Safe Drinking Water Act.

Additionally, residents living around the active impoundment have documented seepages from the impoundment into a nearby creek. Testing of those seepages has shown high concentrations of toxic metals. Citizens have sued TVA to try to put a stop to this ongoing contamination.

It seems that some actions have been taken to address contamination from a metal cleaning pond at the site, but not to address the contamination from onsite ash disposal or the seepages at the creek's edge.

1. **What action is your Department taking or will your Department commit to take to containing this contamination, and what is your timeline for doing so?**

   Response: The Alabama Department of Environmental Management filed a complaint against the Tennessee Valley Authority on April 12, 2013 for the discharge of pollutants associated with ash pond wastewater and/or other storage pond wastewater at the Colbert Fossil Plant to waters of the state. The complaint requests an Order that TVA take such actions as deemed necessary by the Department to address the unauthorized discharges. Any such actions and timeframes associated with those actions will be determined in the context of the litigation as approved by the court.

2. **What action is your Department taking or will your Department commit to take to assess and clean up this contamination, and what is your timeline for doing so?**

Response: See response to Question 1.

3. **What action will your Department take to ensure that monitoring of these wells in the future is adequate so that any future contamination is detected and addressed?**

Response: See response to Question 1.

At the TVA Widows Creek Fossil Plant, in Stevenson, Alabama, monitoring has shown contamination with boron, cobalt, manganese, and sulfate. Manganese levels were documented at levels as high as 100 times the EPA lifetime health advisory level.

4. **What action is your Department taking or will your Department commit to take to containing this contamination, and what is your timeline for doing so?**

Response: My response to this question is based upon my inquiry and discussions with Department management and staff with current regulatory authority over this facility. It is not wholly clear from the information provided whether the question is referencing surface water concerns, or groundwater concerns. Therefore, our response is divided to address both possibilities

The Alabama Department of Environmental Management is not aware of any surface water data for boron, cobalt, manganese, or sulfate in exceedance of established water quality criteria as a result of the operations at the Widows Creek Fossil Plant. The Department will continue to monitor the compliance status of the facility and the surface water quality in the surrounding area and if any issues are noted the appropriate actions will be taken to protect human health and the environment.

Regarding groundwater, unlike the TVA Colbert facility, there is no current groundwater monitoring requirement under any ADEM program at the TVA Widows Creek facility. Thus the Department is not in possession of any current groundwater information such as what appears to be referenced in the question. If such information is provided, the Department will expeditiously evaluate the information provided, conduct appropriate investigations, and take appropriate

actions to ensure that any contamination is addressed in a timely, appropriate and protective manner.

Nevertheless, the Department is initiating its own fact-finding process to determine the appropriate response under current State and federal law and regulations. If the data referenced in this question can be provided to the Department, it will greatly aid in our evaluation of this matter.

In addition, if this information points to a coal combustion residuals related souree, the Department will be better able to respond to this and similar situations using the increased authorities and requirements provided by "The Coal Ash Recycling and Oversight Act of 2013" as discussed in the April 11, 2013 hearing. Therefore, the Department encourages the expeditious enactment of this important legislation to provide Alabama and other States with better and more robust tools with which to effectively and expeditiously prevent, respond to and address these situations.

5. **What action is your Department taking or will your Department commit to take to assess and clean up this contamination, and what is your timeline for doing so?**

Response: See response to Question 4. Based upon the results of the investigation of the matter referenced in the question and the results of the Department's pending inquiry regarding the facts, the Department plans to initiate an appropriate response using the authorities at its disposal. At this time, it is not possible to identify a specific timeline until the Department is able to determine the facts, but this process has been started as a result of this inquiry and complaint. As with the response to Question 4, prompt enactment of "The Coal Ash Recycling and Oversight Act of 2013" as discussed in the April 11, 2013 hearing will provide the Department with better and more robust tools with which to effectively address this matter.

6. **What action will your Department take to ensure that monitoring of these wells in the future is adequate so that any future contamination is detected and addressed?**

Response: See response to Question 4. Based upon the results of the investigation of the matter referenced in the question and the results of the Department's pending inquiry regarding the facts, the Department plans to initiate an appropriate response using the authorities at its disposal. At this time, it is not

possible to identify a specific timeline until the Department is able to determine the facts, but this process has been started as a result of this inquiry and complaint. As with the response to Question 4, prompt enactment of "The Coal Ash Recycling and Oversight Act of 2013" as discussed in the April 11, 2013 hearing will provide the Department with better and more robust tools with which to effectively address this matter.

Alabama HSWA RCRA Authorization History

Cluster	Checklists	Changes to Federal RCRA Program	Effective Date in Alabama Regulation	Date mailed to EPA	Date these changes were published or authorized for Alabama in Federal Register	Notes
XXII	228	07/01/11-06/30/12	3/26/13	application under development		
XXI	226-227	07/01/10-06/30/11	4/3/12	5/25/12		
XX	223-225	07/01/09-06/30/10	3/31/11	6/1/11		
XIX	219-221	07/01/08-06/30/09	3/30/10	6/1/10		
XVIII	216-218	07/01/07-06/30/08	3/31/09	5/29/09		EPA Sent Comments 2/1/12 We responded 2/16/12
XVII	214-215	07/01/06-06/30/07	5/27/08	11/4/2008 *		EPA Sent Comments 1/24/12 We responded 2/6/12
XVI	209-213	07/01/05-06/30/06	4/3/07	4/11/0/8		
XV (revised)	205-208	7/1/04-6/30/05	4/4/06	1/18/08	Checklist 206 only Published 04/02/08 Effective 6/2/08	Checklists 207 & 208 were not published and the StATS data shows no effective date
XV	206-207	7/1/04-6/30/05	4/4/06	7/14/06	Checklist 206 Effective 6/2/08	AG statement mailed July 18, 2007
XIV	203-205	07/01/03-06/30/04	3/31/05	7/1/05	Published and Effective 9/13/2006	
XIII	200-202	07/01/02-06/30/03	5/27/04	2/18/05	Published 06/02/05 Effective 08/01/05	
XII	194-199	07/01/01-06/30/02	4/17/03	6/23/04	Published 03/15/05 Effective 05/16/05	
XI	188-193	07/01/00-06/30/01	3/15/02	?	Published 03/15/05 Effective 05/16/05	has checklist 192A
X	181-187	07/06/99-06/30/00	4/13/01	?	Published 03/15/05 Effective 05/16/05	Public Hearing 12/14/2000

*EPA did not release the authorization checklists until well after our normal submittal time

Alabama HSWA RCRA Authorization History

Cluster	Checklists	Changes to Federal RCRA Program	Effective Date in Alabama Regulation	Date mailed to EPA	Date these changes were published or authorized for Alabama in Federal Register	Notes
IX	171-180	09/01/98-06/30/99	3/31/00	6/27/00	Published 03/15/05 Effective 05/16/05	
VIII	160-170	07/01/97-08/31/98	4/2/99	7/26/99	Published 03/15/05 Effective 05/16/05	
VII		7/1/96-06/30/97	3/27/98	7/1/98		
VI		7/1/95-6/30/96	3/28/97	7/1/97		
V					2/10/98	
IV					2/10/98	
Recycled Used Oil Management Standards RCRA III					2/10/98	
CAMU and Temporary Units RCRA III					6/24/96	
BIF; Admin Stary for Coke Ovens RCRA II					6/24/96	
Burning HW in BIF Corrections and Technical Amendment II - RCRA II					6/24/96	
Burning HW in BIF Corrections and Technical Amendment - RCRA II					6/24/96	
Corrective Action for Injection Wells HSWA II					6/24/96	

*EPA did not release the authorization checklists until well after our normal submittal time

Alabama HSWA RCRA Authorization History

Cluster	Checklists	Changes to Federal RCRA Program	Effective Date in Alabama Regulation	Date mailed to EPA	Date these changes were published or authorized for Alabama in Federal Register	Notes
Corrective Action Beyond Facility Boundary HSWA II					6/24/96	
Corrective Action - HSWA I					4/15/96	letter requesting interim final authorization for CA sent 7/26/94
RCRA III					10/13/95	
BIF (RCRA I)					10/13/95	
RCRA II					1/13/95	
RCRA I (w/o BIF)					4/4/94	
HSWA II & Organic Air					11/23/93	
HSWA I (w/o CA)					5/17/93	
Non-HSWA VI					5/17/93	
Radioactive Mixed Waste (Non-HSWA III)					5/17/93	
TCLP (HSWA II)					12/21/92	
Non-HSWA V					12/21/92	
Availability of Information (Non-HSWA I)	3006(f)			8/6/91	7/12/92	
Non-HSWA IV					7/12/92	
Non-HSWA III					1/28/92	
Non-HSWA II					1/28/92	
Non-HSWA I					1/28/92	
Pre-HSWA					12/22/87	

*EPA did not release the authorization checklists until well after our normal submittal time

Hearing on "The Coal Ash Recycling and Oversight Act of 2013"
April 11, 2013

Responses of Susan Parker Bodine to questions for the record from the Honorable John Shimkus:

1. As a former regulatory official, how do you define backstop authority? Does the Discussion Draft have a federal backstop?

Backstop authority exists where one entity can take action if another entity fails to act. In the context of federal environmental laws, I define federal backstop authority as authority for EPA to take action where a state agency has failed to act. This is the backstop authority that EPA has under Subtitle D of RCRA. EPA has no separate enforcement authority in states with approved Subtitle D programs. EPA can regain enforcement authority by taking away state program approval. This also is the backstop authority provided by the Discussion Draft.

I would contrast backstop authority with over-filing. Over-filing occurs where a state has taken action, but EPA chooses to second-guess the state action and take its own action. Subtitle D of RCRA does not give EPA the authority to over-file. In fact, the case law is mixed on whether EPA has over-filing authority related to the management of hazardous wastes under Subtitle C. *Compare Harmon Indus. v. Browner*, 191 F.3d 894 (8th Cir. 1999) (holding that EPA may not over-file in RCRA Subtitle C cases given the unique statutory language that state programs operate "in lieu of" the federal program), *with United States v. Power Eng'g Co.*, 303 F.3d 1232 (10th Cir. 2002) (holding that EPA may over-file in RCRA Subtitle C cases).

2. Please explain the steps EPA would have to take to legally issue a new regulatory determination for coal ash.

First, it is unclear whether or not EPA has authority to issue a new regulatory determination. Congress required the determination authorized under the Bevill amendment to be made by a date certain. Subsequent changes to a determination would undermine that congressionally mandated deadline. However, assuming that EPA can change a regulatory determination, any new determination must still meet the requirements of section 3001(b)(3)(C). Thus, any new regulatory determination must be based on information developed or accumulated pursuant to a study conducted under section 8002(n) of RCRA which has to be submitted to Congress. In its 2000 regulatory determination EPA cites 3001(b)(3)(C) as the authority for its action. The 2010 proposed rule does not mention 3001(b)(3)(C) and EPA does not claim to be acting under that authority --- that is EPA's only authority for making a regulatory determination for coal ash.

3. Please explain the steps EPA would have to take to issue a legally defensible rule under Subtitle C.

An EPA regulation listing waste as hazardous must meet the criteria established by Congress under section 3001(a). These criteria, promulgated at 40 C.F.R. 261.11(a), are as follows:

> (a) The Administrator shall list a solid waste as a hazardous waste *only* upon determining that the solid waste meets one of the following criteria:

(1) It exhibits any of the characteristics of hazardous waste identified in subpart C.

(2) It has been found to be fatal to humans in low doses or, in the absence of data on human toxicity, it has been shown in studies to have an oral LD 50 toxicity (rat) of less than 50 milligrams per kilogram, an inhalation LC 50 toxicity (rat) of less than 2 milligrams per liter, or a dermal LD 50 toxicity (rabbit) of less than 200 milligrams per kilogram or is otherwise capable of causing or significantly contributing to an increase in serious irreversible, or incapacitating reversible, illness. (Waste listed in accordance with these criteria will be designated Acute Hazardous Waste.)

(3) It contains any of the toxic constituents listed in appendix VIII and, after considering the following factors, the Administrator concludes that the waste is capable of posing a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported or disposed of, or otherwise managed:

(i) The nature of the toxicity presented by the constituent.

(ii) The concentration of the constituent in the waste.

(iii) The potential of the constituent or any toxic degradation product of the constituent to migrate from the waste into the environment under the types of improper management considered in paragraph (a)(3)(vii) of this section.

(iv) The persistence of the constituent or any toxic degradation product of the constituent.

(v) The potential for the constituent or any toxic degradation product of the constituent to degrade into non-harmful constituents and the rate of degradation.

(vi) The degree to which the constituent or any degradation product of the constituent bioaccumulates in ecosystems.

(vii) The plausible types of improper management to which the waste could be subjected.

(viii) The quantities of the waste generated at individual generation sites or on a regional or national basis.

(ix) The nature and severity of the human health and environmental damage that has occurred as a result of the improper management of wastes containing the constituent.

(x) Action taken by other governmental agencies or regulatory programs based on the health or environmental hazard posed by the waste or waste constituent.

(xi) Such other factors as may be appropriate.

Coal ash does not exhibit a hazardous characteristic and is not fatal to humans in low doses. Thus, EPA can only list coal ash as a hazardous waste based on a determination that coal ash poses a "substantial present or potential hazard to human health or the environment." EPA must support such a determination with a risk assessment. However, has not developed a risk assessment that can support this determination for coal ash.

In my written testimony I point out the flaws in EPA's risk assessment that have been identified by peer reviewers. These issues suggest the risk associated with coal ash is less than estimated by the EPA risk assessment. EPA has never addressed the issues raised by the peer review. In briefs filed in court EPA has acknowledged these issues and has said that it wants to take more time with its coal ash rulemaking so that it can address them. In fact, in a December brief, EPA said that after considering the new information it has on coal ash facilities, the risks in its risk assessment could change by an order of magnitude. I anticipate the direction of that change will be down – showing a reduced risk.

Given the flaws in the risk assessment identified in a peer review, and EPA's admission that its risk assessment is wrong by an order of magnitude, if EPA tried to issue a final rule that regulated coal ash as a hazardous waste based on its record, that rule would be very vulnerable to a claim that the rule is arbitrary and capricious.

FRED UPTON, MICHIGAN
CHAIRMAN

HENRY A. WAXMAN, CALIFORNIA
RANKING MEMBER

ONE HUNDRED THIRTEENTH CONGRESS

Congress of the United States
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April 29, 2013

Ms. Lisa Evans
Senior Administrative Counsel
EarthJustice
21 Ocean Avenue
Marblehead, MA 01945

Dear Ms. Evans:

Thank you for appearing before the Subcommittee on Environment and the Economy on Thursday, April 11, 2013, to testify at the hearing on a discussion draft entitled "The Coal Ash Recycling and Oversight Act of 2013."

Pursuant to the Rules of the Committee on Energy and Commerce, the hearing record remains open for ten business days to permit Members to submit additional questions for the record, which are attached. The format of your responses to these questions should be as follows: (1) the name of the Member whose question you are addressing, (2) the complete text of the question you are addressing in bold, and (3) your answer to that question in plain text.

To facilitate the printing of the hearing record, please respond to these questions and requests by the close of business on Monday, May 13, 2013. Your responses should be e-mailed to the Legislative Clerk in Word format at Nick.Abraham@mail.house.gov and mailed to Nick Abraham, Legislative Clerk, Committee on Energy and Commerce, 2125 Rayburn House Office Building, Washington, D.C. 20515.

Thank you again for your time and effort preparing and delivering testimony before the Subcommittee.

Sincerely,

John Shimkus
Chairman
Subcommittee on Environment and the Economy

cc: The Honorable Paul Tonko, Ranking Member,
Subcommittee on Environment and the Economy

Attachment

EARTHJUSTICE
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By Email

May 21, 2013

The Honorable John Shimkus
Chairman
Subcommittee on Environment and the Economy
Committee on Energy and Commerce
c/o Nick Abraham, Legislative Clerk
2125 Rayburn House Office Building
Washington, DC 20515

NickAbraham@house.gov

Re: Responses to questions submitted by the Honorable Henry A. Waxman

Dear Mr. Shimkus:

Thank you for the opportunity to provide answers to questions submitted as a follow-up to my testimony before the Subcommittee on Energy and Environment on April 11. This letter provides my responses to questions submitted by the Honorable Henry A Waxman concerning the discussion draft entitled "The Coal Ash Recycling and Oversight Act of 2013." For your convenience, I have repeated Representative Waxman's question (in bold), followed by my answer.

Recent reports by the Congressional Research Service (CRS) analyzing legislative proposals to address coal ash disposal have raised serious concerns about the efficacy of recent bills.

1. **Do you concur with conclusions reached in the CRS reports about weaknesses in H.R. 2273 and S. 3512?**

Yes, I concur with the conclusions reached in both Congressional Research Service (CRS) reports about the weaknesses in H.R. 2273 and S. 3512.

2. Please describe what the most significant weaknesses with those bills are, in your view.

CRS described numerous critical problems in H.R. 2273 and S. 3512. The unequivocal conclusion of the CRS was that the bills lacked a clear purpose[1] and would not ensure state adoption and implementation of minimum standards "necessary to protect human health and the

[1] Congressional Research Service, *H.R. 2273 and S. 3512: Analysis of Proposals to Create a Coal Combustion Residuals Permit Program Under RCRA*, (Dec. 5, 2012) (hereinafter "2012 CRS Report), Summary.

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environment."[2] CRS found that S.3512's approach to regulation of coal ash was "unprecedented" in environmental law.[3] The bills depart from benchmark environmental statutes in important ways that significantly harm their effectiveness as vehicles to protect health and the environment nationwide. Among the most significant weaknesses identified by CRS are the following:

1. Failure to Establish a Protective Standard

The 2013 CRS Report identified the failure of the coal ash bills to establish a national protective standard, stating "[t]here 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."[4] The reports could not be any clearer in pointing out that the unprecedented approach of the bills, whereby "[e]ach state arguably could apply its own standard of protection."[5]

The practical impact of no protective standard is that the EPA would have no authority to assert the failure of a state to protect human health or the environment as a "program deficiency." CRS explains, "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."[6] CRS observes that, unlike the federal municipal solid waste permit program, the bill would curtail EPA oversight to an exceptionally narrow range of issues. CRS writes, "EPA would not be authorized to identify as a deficiency the program's adequacy to enforce federal statutory standards or to assess the level of protection the program may provide."[7]

2. Failure to Establish Minimum Federal Standards

The bills fail to establish minimum federal standards for the management and disposal of coal ash under state permit programs. The 2013 CRS Report concluded that the bills would "allow individual states to define key terms.... Hence program applicability could vary from state to state, depending on how each state defines those terms."[8] The Report explained:

> 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

[2] 2012 CRS Report, Summary.
[3] 2012 CRS Report at 2.
[4] 2013 CRS Report at 38. *See also,* 2012 CRS Report at 30.
[5] 2013 CRS Report, Summary at page 3.
[6] *Id.*
[7] 2012 CRS Report at 25.
[8] 2013 CRS Report, Summary at page 2.

> of protection, *states might promulgate and implement regulations according to a state-established standard of protection, which might vary from state to state.*[9]

CRS specifically pointed out that this failure to establish minimum federal standards could result in programs that are far less protective than state requirements pertaining to municipal solid waste landfills. CRS concluded "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."[10]

According to CRS, key directives critical to program implementation are either missing from or ambiguously defined in S. 3512 (the discussion draft). Ambiguous directives would be subject to a state's interpretation of those requirements (e.g., a definition of entities subject to the permit program and deadlines for existing facilities to obtain permits). CRS explained, "Due to the questions regarding how states may implement it, a CCR permit program would be similar to the program to regulate Municipal Solid Waste (MSW) landfill criteria, *only in states that choose to implement it as such.* That level of uncertainty *defeats the purpose of a permit program* and would not be consistent with other permit programs created under RCRA."[11]

3. Absence of Federal Backstop Authority

The CRS reports are unequivocal about the failure of S. 3512 to provide EPA with "backstop authority." The 2013 CRS Report stated that the bill "would not provide EPA with authority to backstop state programs to regulate CCR facilities."[12] Similarly, the 2012 CRS Report was crystal clear, stating,

> The proposed amendments to RCRA include no directive to EPA to determine whether state CCR permit programs are adequate to enforce the statutory standards or to assess whether the programs would result in necessary protections. Instead, EPA would be required to notify states of deficiencies in a narrow range of program requirements. Given other limits to EPA's role in state implementation of a CCR permit program, EPA would have no federal backstop authority to implement federal standards comparable to its authorities established under other environmental law, including RCRA. Regardless of whether a state chose to adopt a CCR permit program, *EPA would have no authority to compel states to adopt and implement the program according to provisions in the proposed amendments to RCRA.*"[13]

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[9] 2013 CRS Report at 16. Emphasis added.
[10] 2013 CRS Report at 37.
[11] 2012 CRS Report at 21-22. Emphasis added.
[12] 2013 CRS Report at 9.
[13] 2012 CRS Report at 2. Emphasis added.

4. Inadequate Requirements for Wet Impoundments

Both CRS reports concluded that the requirements concerning structural stability of coal ash impoundments in S.3512[14] are not equivalent "in detail or scope" to the safeguards proposed by the EPA to ensure the structural stability of dangerous coal ash dams.[15] According to CRS, the EPA modeled its proposed coal ash impoundment standards on the Mine Safety and Health Administration (MSHA) regulations for "water, sediment, or slurry impoundments and impounding structures" set forth at 30 C.F.R. §77.216.[16] According to CRS, the EPA's decision to draw from the MSHA safety standards was based on its belief that records compiled by MSHA for its rulemaking 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."[17]

CRS pointed out that S. 3512 lacked standards equivalent to the EPA's proposed criteria, which "included more detailed requirements comparable to the MSHA standards."[18] In fact, the structural integrity section of the bill is riddled with gaps that render it wholly insufficient to prevent future potentially deadly dam failures. S. 3512 (the discussion draft) does not require owner/operators of coal ash dams to submit inspection reports to their state regulatory agencies, even when serious deficiencies are found. The bill also does not require public disclosure of inspections. Nor does the bill require an owner/operator to remedy deficiencies in a timely manner or require the state to order them to do so—no matter what was uncovered in an annual inspection.[19] Lastly, there is no requirement that these annual inspections begin one year, five years, or even decades after enactment of the bill. Their timing is wholly dependent on when a state begins to implement its permit program, which is entirely discretionary to the state.

However, even if the bill required annual inspections to begin immediately, the usefulness of these inspections is extremely suspect. The bill simply requires that an engineer, hired by the utility, certify that the design of the structure is "in accordance with recognized and generally accepted good engineering practices."[20] The bill does not require engineers to employ federal standards in this certification, submit such certification to the state or EPA, or make such certification public. If the engineer cannot certify that the "construction and maintenance of the structure will ensure dam stability,"[21] *the bill requires no further action* by the utility or the state. Lastly, the bill does not require *the state or EPA* to ever inspect dams, even if such impoundments are found to be unstable or in urgent need of repair, regardless of the size, age, condition or hazard potential of the dam.

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[14] *See* §§ 4011(c)(1)(B) and 4011(c)(1)(A).
[15] 2012 CRS Report at 24. *See also*, 2013 CRS Report at 39.
[16] *See* proposed 40 C.F.R. Section 257.71, "Design criteria for existing CCR surface impoundments." U.S. Envtl. Prot. Agency, "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.
[17] 2013 CRS Report at 27. See 75 Federal Register 35128, at 35243, June 2010.
[18] 2013 CRS Report at 30.
[19] *See* Section 4011(c)(1)(B).
[20] *See* § 4011(c)(1)(B)(i)(I).
[21] *Id.* § 4011(c)(1)(B)(i)(II).

5. Failure to Set Deadlines for Permit Issuance

The CRS reports observed that the bills would "establish no explicit deadlines for the issuance of permits or for facility compliance with applicable regulations."[22] Since S.3512 establishes *no* deadlines for permit issuance, states have no deadlines for imposing the requirements set forth in the "revised criteria." The absence of a deadline renders the bill nearly meaningless. Since almost all the requirements applicable to coal ash dumps are effective only through state permits, compliance with needed safeguards can be delayed indefinitely. S. 3512 contains very few self-implementing requirements. Further, without a deadline for states to issue permits, EPA oversight is an empty promise, and in the absence of permit issuance, citizen enforcement of standards is legally impossible.

6. Failure to Require Adequate Fugitive Dust Controls

Neither H.R. 2273 nor S. 3512 require the control or prevention of airborne coal ash sufficient to protect the health of communities residing near coal ash impoundments and landfills. According to CRS, the EPA found risks and actual evidence of human exposure from "fugitive dust emissions, when fine particulates in the dried ash become airborne as at landfills or large-scale fill operations."[23] Yet the bills simply direct a state agency to "address" wind dispersal of coal ash, but fail to provide a standard for air quality analogous to the EPA's proposed health-based federal requirement that fugitive dust not exceed 35 ug/m3.[24] The bills also fail to include the federal minimum "cover material requirements" mandated at municipal solid waste landfills.

3. Are those weaknesses addressed in the discussion draft that was the subject of the April 11th hearing?

No. Although the two CRS reports were crystal clear in their identification of numerous significant deficiencies in H.R. 2273 and S. 3512, none of the weaknesses was addressed in the discussion draft. The discussion draft that was the subject of the April 11, 2013 hearing is identical to S. 3512. The failure to amend the discussion draft to close any of the substantial gaps and problems identified in the two reports by the nonpartisan Congressional Research Service is quite remarkable.

According to CRS, the term "federal backstop enforcement authority" is widely understood to mean explicit authority provided to the Environmental Protection Agency (EPA) to enforce standards at individual facilities in a state authorized by EPA to implement and enforce federal standards.

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[22] 2013 CRS Report, at Summary.
[23] 2012 CRS Report at 14. *See also,* 2013 CRS Report at 25.
[24] *See* § 4011(c)(1)(D).

4. Do you concur with CRS's definition of that term?

Yes, I concur with CRS' definition of "federal backstop enforcement authority." It is my understanding that this is the common meaning of the term.

As we heard at a hearing in the Environment and the Economy Subcommittee in February, under the proven model of environmental delegation to the states, EPA retains backstop enforcement authority, as defined by CRS, to ensure that every citizen in the United States is receiving a minimum level of protection from environmental risks. This backstop authority allows EPA to step in and enforce requirements at a noncompliant facility, when a state is incapable, unable, or unwilling to do so. This authority is especially important when environmental harms are disproportionately borne by traditionally disenfranchised groups, like low-income communities.

5. Can you describe whether contamination associated with coal ash disposal disproportionately harms vulnerable communities, and, if so, how?

Contamination of water and air associated with unsafe disposal of coal ash, as well as the adverse impacts of dam failures, disproportionately harms low income communities. These vulnerable communities are more heavily impacted because coal ash landfills and impoundments are more often located in impoverished neighborhoods. The location of coal ash dumps in such communities raises issues of environmental justice, because low income neighborhoods tend to rely more on groundwater as their sole source of drinking water, are less likely to have access to medical care and insurance, and are much less likely to have resources to legally assert their right to uncontaminated water and air.

The following table lists the 15 largest coal ash-generating states, based on 2004 data[25] and indicates the percentage of coal ash impoundments in low income communities. On average for the 15 states, nearly 70 percent of the impoundments are located in zip codes where the communities are impoverished according to U.S. Census Bureau statistics.

[25] *See* U.S. EPA, Regulatory Impact Analysis for EPA's Proposed Regulation of Coal Combustion Residues Generated by the Electric Utility Industry, Office of Management and Budget (OMB) Review Draft 148-65 (2009), *available at* http://www.regulations.gov/search/Regs/home.html#document.
Detail?R=0900006480a51278 at 224-25, 235-36.

State	State Rank by CCR Generation	Number of Impoundments in Poverty Areas	Total Number of Impoundments	Percentage of Impoundments in Poverty Areas
PA	1	44	94	46.8%
TX	2	60	104	57.7%
OH	3	61	73	83.6%
WV	4	20	49	40.8%
KY	5	34	58	58.6%
IN	6	60	96	62.5%
FL	7	25	52	48.1%
GA	8	41	48	85.4%
NC	9	28	40	70.0%
NM	10	31	31	100.0%*
IL	11	55	94	58.5%
AZ	12	52	62	83.9%
TN	13	16	16	100.0%
AL	14	26	31	83.9%
MO	16	24	50	48.0%
Average				**68.5%**

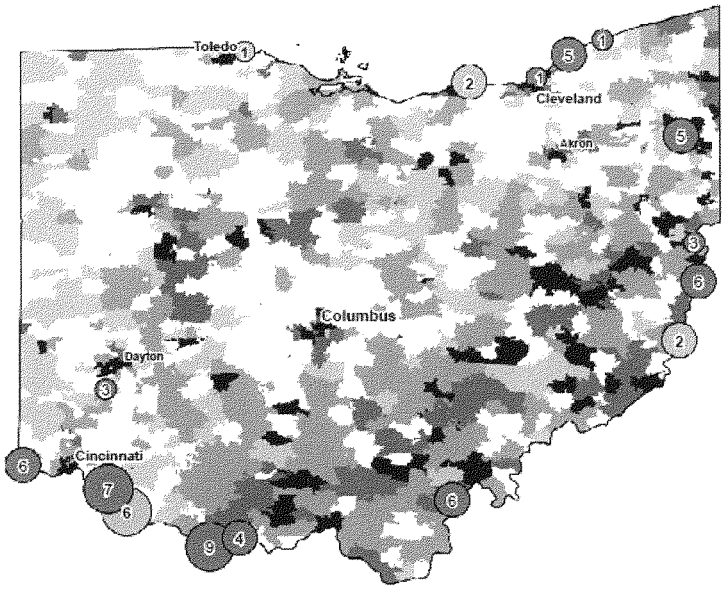
According to the 2007 Economic Census, families living on less than $20,000 annually are impoverished. Poverty analyzed by Zip Code Tabulation Area (ZCTA), based on the U.S. Census Bureau's 2007-2011 American Community Survey 5-Year Estimates for ZCTAs. "Poverty Area" defined as a ZCTA with a poverty level above the state average.
* NM data based on 2000 census data due to incomplete 2007-2011 eensus data.

To illustrate further, the following are maps of landfills and impoundments in Ohio, Georgia and Tennessee, in which, respectively, 83.6 percent, 85.4 percent and 100.0 percent of the state's coal ash impoundments are located in low income communities.

Coal Ash and Environmental Injustice

Poverty and the Location of Coal Ash Impoundments and Landfills in Ohio

EARTHJUSTICE



Eighty-four percent (84%) of impoundments and landfills are located in areas with poverty levels above the state average.

Coal Ash Impoundments and Landfills**

- Above Average Poverty
- Not Above State Poverty Average*

Percent of Individuals Below Poverty Line

- 0 - 14.80%*
- 14.81 - 20%
- 20.01 - 30%
- 30.01 - 40%
- 40.01 - 100%

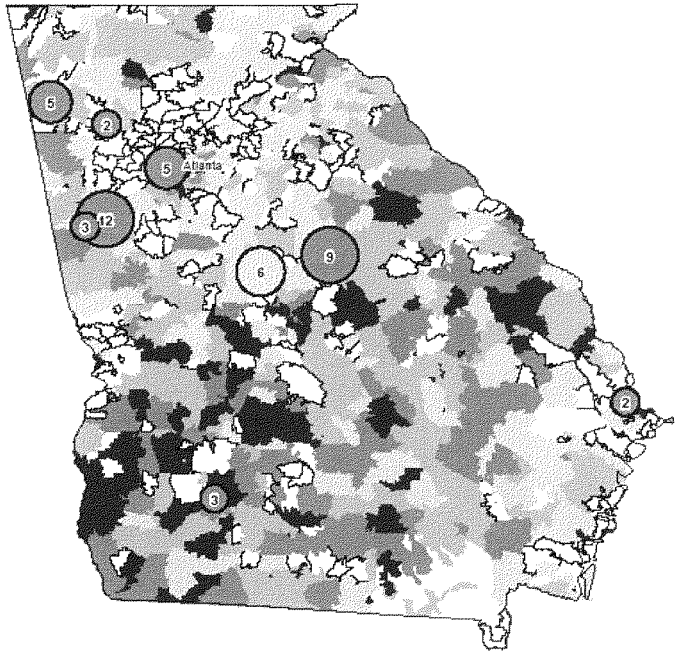
*Ohio's state-wide individual poverty level is 14.8%. According to the 2007 Economic Census, families living on less than $20,000 annually are impoverished. Poverty displayed by Zip Code Tabulation Area, based on the U.S. Census Bureau's 2007-2011 American Community Survey 5-Year Estimates for Zip Code Tabulation Areas.

**Coal ash impoundments and landfills located by longitude and latitude. Data provided by US EPA. CGT.

Coal Ash and Environmental Injustice

Poverty and the Location of Coal Ash Impoundments and Landfills in Georgia

EARTHJUSTICE



Eighty-five percent (85%) of impoundments and landfills are located in areas with poverty levels above the state average.

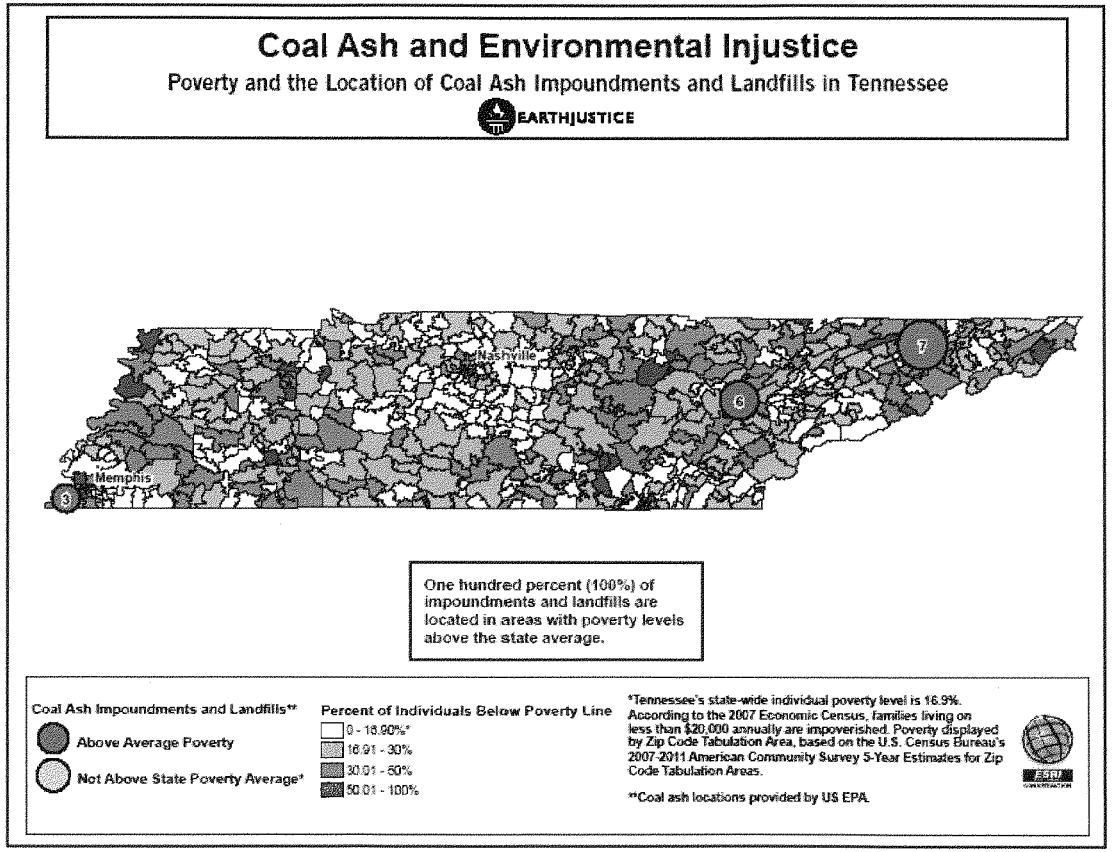
Coal Ash Impoundments and Landfills**

- Above Average Poverty
- Not Above State Poverty Average*

Percent of Individuals Below Poverty Line

- 0 - 16.50%*
- 16.51 - 25%
- 25.01 - 35%
- 35.01 - 45%
- 45.01 - 100%

*Georgia's state-wide individual poverty level is 16.5%. According to the 2007 Economic Census, families living on less than $20,000 annually are impoverished. Poverty displayed by Zip Code Tabulation Area (ZCTA), based on the U.S. Census Bureau's 2007-2011 American Community Survey 5-Year Estimates for ZCTAs.
**Coal ash locational data provided by US EPA.


Coal Ash and Environmental Injustice
Poverty and the Location of Coal Ash Impoundments and Landfills in Tennessee
EARTHJUSTICE
Nashville
Memphis
3
6
7
One hundred percent (100%) of impoundments and landfills are located in areas with poverty levels above the state average.
Coal Ash Impoundments and Landfills**
Above Average Poverty
Not Above State Poverty Average*
Percent of Individuals Below Poverty Line
0 - 16.90%*
16.91 - 30%
30.01 - 50%
50.01 - 100%
*Tennessee's state-wide individual poverty level is 16.9%. According to the 2007 Economic Census, families living on less than $20,000 annually are impoverished. Poverty displayed by Zip Code Tabulation Area, based on the U.S. Census Bureau's 2007-2011 American Community Survey 5-Year Estimates for Zip Code Tabulation Areas.
**Coal ash locations provided by US EPA
ESRI

This disparity in the siting of coal ash landfills and impoundments in low income communities has far reaching consequences. Not only are impoverished communities more likely to have their health, property and environment harmed by coal ash contamination, but there is likely to be less recourse to adequate and enforceable safeguards in the states posing the greatest potential for harm. In many of the states that generate the largest volumes of coal ash and have the greatest disproportionate impact, state regulatory programs are the weakest. For example, until 2011, Alabama had no regulations pertaining to coal ash, and despite statutory changes in 2011, the state still does not regulate coal ash impoundments.[26] Ohio excludes virtually all coal ash from regulation by classifying it as "nontoxic" and, therefore, exempt.[27] Georgia regulations fail to require liners, groundwater monitoring, or even inspections at their many coal ash impoundments, and the state permits the siting of dumps directly in the water table. New Mexico exempts coal ash entirely from regulation as a solid waste.[28] Texas excludes all coal ash that is disposed of on-site (defined as anywhere within 50 miles of the place of generation) or destined for beneficial reuse (the vast majority the state's coal ash) from regulation.[29] Indiana regulations do not require groundwater monitoring at all of the state's impoundments and landfills, and the state has few requirements for ensuring dam safety, including no requirement that dams be designed by a professional engineer, inspected or bonded. With few exceptions, state programs in the largest coal ash-producing states are grossly deficient and lack many basic requirements for ensuring safe coal ash disposal. To make matters even more urgent, the number of coal ash impoundments in these top 15 coal ash-generating states comprises over 78 percent of the total number of impoundments in the United States.

6. Is federal backstop enforcement authority necessary to address that disparate impact?

Yes, federal backstop enforcement authority is necessary to ensure that disproportionate harm does not occur to the nation's most vulnerable communities. It is especially critical that federally enforceable minimum standards exist in states where utilities generate large amounts of coal ash, where there is disparate impact to low income communities, and where there is a history of state failure to establish baseline safeguards to protect such communities.

By way of example, one can look to the harm that occurred to the low income and predominantly black community of Uniontown, Alabama, which is discussed in more detail at the end of this document. Approximately 4 million tons of coal from the 2008 TVA disaster in Harriman, Tennessee was shipped to the Arrowhead Landfill in Uniontown for disposal in 2009. Despite complaints and legal actions by the affected residents near the landfill, the Alabama Department of Environmental Management did not intervene to address severe air and water pollution problems. The EPA was unable to address the problems at the landfill because there was no right of enforcement of state municipal solid waste regulations.

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[26] Ala. Admin. Code r. 335-13-1-.03(12) (2010).
[27] Ohio Admin. Code 3745:27-01(S)(23) (2010).
[28] N.M. Code § 20.9.2.7(S)(9) (2010).
[29] 30 Tex. Admin. Code §§ 335.2(d); 335.1(138)(H) (2010).

The Congressional Research Service has found that S. 3512, which is identical to the discussion draft examined at the April 11th hearing, does not include federal enforcement backstop authority.

7. **Do you agree with that conclusion?**

Yes, the discussion draft does not include federal backstop authority.

Much attention has been given to the conclusions reached by EPA in the 2000 determination on coal combustion residuals, but very little has been paid to the study underlying it. That study was based on congressionally mandated criteria that went beyond risk and included criteria unrelated to health effects, such as the impact of regulation on the competitiveness of coal as a fuel source.

8. **In your view, would a scientific study of the health and environmental risks of coal ash, uninfluenced by congressional policy preferences favoring fossil fuels, demonstrate that subtitle C regulation of these wastes is merited?**

Yes, a scientific study that specifically evaluates the health and environmental risks of coal ash would conclude that subtitle C regulation is indeed warranted. The two reports to Congress completed pursuant to Sections 3001(b)(3)(C) and 8002(n) of RCRA in 1988[30] and 1999[31], considered many factors in addition to the health and environmental risks of coal ash. Specifically, Section 8002(n) mandated that the Reports to Congress consider cost, recycling, and the "impact of [disposal] alternatives on the use of coal."

However, if one evaluates the health and environmental impacts of coal ash, particularly in light of the changing toxicity of the waste due to increased Clean Air Act pollution control requirements, its increasing volume, the lowering of the arsenic standard for drinking water, and the newly-developed leach test that more accurately determines the behavior of coal ash, it would be clear that subtitle C regulation is merited.

In many important ways, the Reports to Congress in 1988 and 1999 are very seriously outdated. First, little was known about the actual universe of coal ash landfills and impoundments when the two reports were written. The 1999 report estimated that there were approximately 561 to 618 coal ash landfills and impoundments in total in the United States.[32] The EPA discovered in 2012, however, that there are actually 1,070 impoundments and approximately 335 landfills, an increase of about 2.5 times the number of disposal units.[33] Second, little was known about the condition of the waste units, including the employment of

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[30] U.S. EPA, Report to Congress on Wastes from the Combustion of Coal by Electric Utility Power Plants (EPA530-SW-88-002), February 1988

[31] U.S. EPA, Report to Congress on Wastes from the Combustion of Fossils Fuels (EPA530-R-99-010), March 1999, available at http://www.epa.gov/osw/nonhaz/industrial/special/fossil/regs.htm.

[32] U.S. EPA, Report to Congress on Wastes from the Combustion of Fossils Fuels (EPA530-R-99-010), March 1999 at 3-21.

[33] The utility industry self-reported information on coal ash disposal units in response to a 2010 Information Collection Request sent to all steam electric power generating plants by the EPA's Office of Water. *See* http://water.epa.gov/scitech/wastetech/guide/steam-electric/index.cfm

safeguards such as liners and monitoring. The absence of these safeguards increases considerably the risk and magnitude of harm, and EPA now has data revealing greater numbers of unlined and unmonitored dumps. Third, the issue of structural stability of coal ash dams was never mentioned in either Report to Congress, despite the fact that failures pose grave threats to health and the environment. The Reports to Congress also did not consider the widespread use of coal ash as "structural fill" in gravel pits, quarries and landfills, although the EPA now recognizes these practices as forms of potentially dangerous waste disposal. Lastly, the issue of environmental justice is never addressed in the 1988 report, and the 1999 report mentions environmental justice in a single paragraph, raising only the potential impact on subsistence farmers and their children.[34]

The outdated Reports to Congress also did not benefit from the considerable advance in research concerning coal ash. In the 25 and 14 years, respectively, since EPA's 1988 and 1999 Reports to Congress were published, EPA studies and other scientific research have produced a growing body of evidence that overwhelmingly support a subtitle C regulation. Evidence in four areas in particular demonstrates heightened risk from coal ash to human health and the environment: (1) the increasing toxicity of coal ash due to greater capture of metals and improvement in the accuracy of leach tests; (2) an EPA risk assessment that describes extremely high human and ecological risks; (3) dramatically elevated health risks from arsenic exposure; and (4) the increasing number of documented cases of coal ash contamination. The first category is discussed in response to Question 9, below. The other three areas of concern are summarized below.

1. EPA's Human and Ecological Risk Assessment of Coal Combustion Wastes

Neither the Reports to Congress in 1988 and 1999 nor the regulatory determination in 2000 were based on risk assessments for coal ash. In fact, the EPA completed its first risk assessment for coal combustion waste in 2007 and updated this assessment in 2010. The EPA's Human and Ecological Risk Assessment of Coal Combustion Wastes (draft) (April 2010) provides confirmation of the high risks presented by the mismanagement of coal ash disposed in landfills and surface impoundments.[35] The risks described in this assessment are, in fact, *extremely high* when compared with the EPA's target level of protection of human health and the environment.

The results of this risk assessment should have great bearing on the classification of coal ash as a subtitle C waste. For EPA's subtitle C listing determinations, the Agency defines the target level to be an incremental lifetime cancer risk of no greater than one in 100,000 (10^{-5}) for carcinogenic chemicals and a hazard quotient of 1.0 for noncarcinogenic chemicals.[36] The 2010 coal ash risk assessment found that at the 90th percentile, the management of coal ash in unlined or clay-lined landfills and impoundments results in risks greater than the listing criteria

[34] U.S. EPA, Report to Congress on Wastes from the Combustion of Fossils Fuels (EPA530-R-99-010), March 1999 at 2-5.

[35] *See* Office of Solid Waste & Emergency Response, EPA, Human and Ecological Risk Assessment of Coal Combustion Wastes 2-4 (draft) (Apr. 2010) [hereinafter 2010 Risk Assessment].

[36] *Id.* EPA uses these same target levels in other EPA listing decisions. *See, e.g.*, Final Rule for Nonwastewaters from Productions of Dyes, Pigments, and Food Drug and Cosmetic Colorants (70 Fed. Reg. 9144), *available at* http://www.epa.gov/wastes/law-regs/state/revision/frs/fr206.pdf)

"generally used in EPA's listing determination procedure."[37]

Specifically, the EPA found:

- 90th percentile risk estimates, for arsenic from unlined surface impoundments are as high as 1 in 50 (2000 times EPA's target goal) and non-cancer effects estimates for cobalt were as high as 500 (500 times the target hazard quotient);[38]

- 90th percentile risk estimates, for arsenic, antimony and molybdenum that leak from unlined landfills, reveal individual lifetime cancer risk is as high as 1 in 2000, 50 times EPA's target goal.[39]

Additional risks above the EPA's benchmark for both 90th and 50th percentile estimates for lined and unlined landfills and surface impoundments are summarized in the preamble to the 2010 proposed rule and set forth in the risk assessment. These risks are from a long list of chemicals harmful to human health and the environment, including, selenium, boron and lead, in addition to the toxic metals mentioned above.

Clearly the human health and ecological risks found by the EPA far exceed target levels for listing. However, in numerous ways, the EPA's risk assessment actually *underestimates* risks significantly. Despite the high risks acknowledged by the EPA, the risk assessment nevertheless failed in several critical ways to assess fully and accurately the scope and scale of the risks posed by coal ash. Deficiencies of the 2010 assessment include the failure to consider multiple pathways of exposure, underestimation of synergistic risks of toxic chemicals (cumulative impacts and concurrent exposure), failure to evaluate risk from ingestion of hexavalent chromium, underestimation of lead exposure risks, underestimation of risks from fugitive dust[40], failure to assess risk to fish and wildlife posed by the "attractive nuisance" of impoundments and contaminated wetlands, and failure to evaluate accurately the risk of cancer from arsenic exposure (discussed in more detail, below).

2. Risk of Arsenic Exposure from Coal Ash

Arsenic is one of the most potent carcinogens known to man, causing multiple types of cancer in humans. Arsenic exceeding federal drinking water standards (maximum contaminant levels (MCLs)) or water quality standards has been found at a significant number of coal ash contaminated sites, often at very high levels.[41] For example, recent monitoring data from an unlined South Carolina impoundment at the Santee Cooper Grainger Generating Station identified arsenic at 3000 parts per billion in the groundwater, a concentration 300 times the allowable level in drinking water.[42] Arsenic released to groundwater from coal ash dumps can flow to public well fields or private wells and poison drinking water. Further, the release of coal

[37] *Id.*
[38] 75 Fed. Reg. at 35,145.
[39] *Id.*
[40] *See* EPA, Inhalation of Fugitive Dust: A Screening Assessment of the Risks Posed by Coal Combustion Waste Landfills, [draft], (Sept. 2009) (Docket ID No. EPA-HQ-RCRA-2009-0640-0142).
[41] http://earthjustice.org/features/campaigns/in-harm-s-way-coal-ash-contaminated-sites
[42] http://www.myrtlebeachonline.com/2013/05/06/3473365/environmentalists-to-hold-public.html

ash contaminants to surface water often results in the contamination of sediment at the bottom of rivers and reservoirs.[43] Over years, such deposits of arsenic can be substantial and result in periodic "eruptions" of the toxic metal into the water column causing violation of water quality criteria.[44] Because arsenic is a potent carcinogen, it is essential to minimize its presence in our aquifers, reservoirs, lakes and streams.

The EPA, however, significantly underestimated the cancer risks to human health from arsenic by relying on an outdated cancer slope factor in its 2010 risk assessment. The cancer risks associated with arsenic ingestion were a principal factor in the risk assessment's conclusion that there are potentially significant risks to human health from coal ash disposal.[45] The two key exposure pathways considered in the human risk assessment were (1) ingestion of groundwater contaminated by migration of a hazardous coal ash constituent, and (2) consumption of fish caught by recreational fisherman from surface waters impacted by contaminants migrating from coal ash disposal sites. A major finding of the draft document was that "[a]rsenic in certain types of [waste management units] managing certain types of CCR may present lifetime cancer risks above EPA's range of concern to highly exposed groundwater users."[46] Similarly, the risk assessment concluded that lifetime cancer risks exceeding the EPA's range of concern were associated with ingestion of fish impacted by arsenic arising from surface impoundments.

The risk assessment, however, reached its conclusions regarding these arsenic-associated risks by relying on a cancer slope factor for arsenic ingestion of 1.5 $(mg/kg\text{-}d)^{-1}$ obtained from EPA's IRIS database. That slope factor, which was first published in IRIS in 1988, is based on a study solely of the *prevalence of skin cancer* in a population ingesting arsenic in drinking water. Its use has long been acknowledged by multiple offices of EPA and the broad scientific community to yield a gross underestimate of the actual cancer risk posed by inorganic arsenic ingestion. This is because inorganic arsenic, in addition to causing skin cancer, also causes cancer of the lung and bladder in humans. For example, in 2000-2001, the EPA's Office of Water used independent estimates of arsenic-induced lung and bladder cancer, rather than estimates derived from the IRIS cancer slope factor, as a basis for lowering the maximum contaminant level for arsenic in drinking water from 50 µg/L to 10 µg/L.[47]

Although the 2010 risk assessment included a nonspecific acknowledgement that "some benchmarks in IRIS are quite dated,"[48] the narrative contained no explicit indication that use of the IRIS cancer slope factor for arsenic would substantially underestimate the cancer risk. By contrast, the "Regulatory Impact Analysis For EPA's Proposed RCRA Regulation Of Coal Combustion Residues (CCR) Generated by the Electric Utility Industry" (hereafter "RIA") issued by the EPA on April 30, 2010 did explicitly state that "the skin cancer based risk assessments no longer represent the current state of the science for health risk assessment for

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[43] Ruhl, L, Vengosh, A, Dwyer, GS, Hsu-Kim, H, Schwartz. The impact of coal combustion residue effluent on water resources: a North Carolina example, Environ Sci Technol. 2012 Nov 6;46(21):12226-33. doi: 10.1021/es303263x. Epub 2012 Oct 15. *available at* http://sites.nicholas.duke.edu/avnervengosh/files/2011/08/es303263x1.pdf

[44] Id.

[45] 2010 Risk Assessment, at 4-40.

[46] *Id.* at ES-10 (stating that EPA's stated range of concern for excess cancer risk was 10^{-6} to 10^{-4} (page ES-2)).

[47] Arsenic in Drinking Water: Final Rule, EPA-815-Z-01, 66 Fed. Reg. 6976 (Jan. 22, 2001).

[48] 2010 Risk Assessment, at 4–56.

arsenic."[49] Consequently, the RIA contained an impact analysis based in part on the findings of the National Research Council report "Arsenic in Drinking Water: 2001 Update," which yielded a combined cancer slope factor for lung and bladder cancer of 26 $(mg/kg\text{-}d)^{-1}$—a factor 17.3 times the IRIS cancer slope factor.[50] Further support for use of a upwardly revised cancer slope factor for inorganic arsenic ingestion arises from another recent document produced by the EPA National Center for Environmental Assessment entitled, "Toxicological Review of Inorganic Arsenic In Support of Summary Information on the Integrated Risk Information System (IRIS)."[51] Although still under review by the EPA Science Advisory Board, this externally peer-reviewed final draft derived an identical new oral cancer slope factor of 25.7 $(mg/kg\text{-}d)^{-1}$.

Medical toxicologist Dr. Michael Kosnett[52] and three scientists, Allan H. Smith, MD. PhD,[53] Kenneth P. Cantor,[54] and Marie Vahter,[55] who together served on the Subcommittee on Arsenic in Drinking Water of the Natural Research Council (for either or both of the 1999 and 2001 National Academy of Sciences reports) drew the following conclusion from EPA's use of the outdated cancer slope factor of 1.5 $(mg/kg\text{-}d)^{-1}$:

> Because estimates of lifetime cancer risk increase linearly with the CSF [cancer slope factor], a direct consequence of the draft CCR risk assessment's utilization of a CSF of 1.5 $(mg/kg\text{-}d)^{-1}$ instead of 26 $(mg/kg\text{-}d)^{-1}$ is an underestimation of the cancer risk associated with each CCR disposal scenario by a factor of 17.3 (i.e. 26 ÷ 1.5). Accordingly, a revision of the risk assessment utilizing the CSF of 26 derived in Appendix K4 of the RIA is indicated at this time. In addition to reinforcing EPA's current draft conclusions regarding the health risk of CCR disposal, use of the alternative CSF may elevate the risk associated with some additional disposal scenarios, such as ingestion of fish impacted by certain CCR landfills, into EPA's stated range of concern.

3. Increasing Number of Documented Cases of Coal Ash Contamination

One measurement of the increased risk to human health and the environment is the significant increase in the number of contaminated coal ash sites. In 1999, only seven contaminated sites ("damage cases") were documented in the Report to Congress.[56] Today, using the same criteria to define a documented "damage case," that number has risen to 203 coal ash-contaminated sites in 37 states – a 29-fold increase.[57] At these sites, coal ash has poisoned drinking water, destroyed entire fish populations, killed scores of livestock, created myriad superfund sites, sickened families and destroyed livelihoods.[58] These sites include leaks, major

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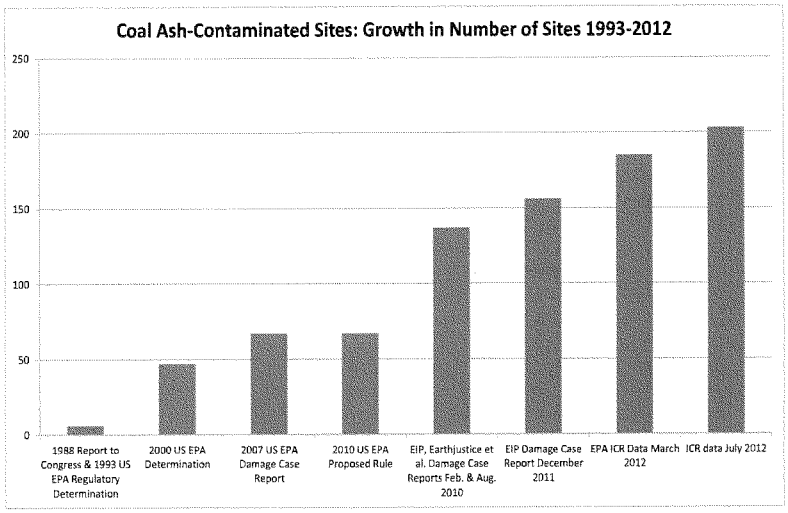
[49] 2010 RIA, at 256, & Appendix K4.
[50] *See* 2010 RIA, at 120, & Appendix K4, at 263–66.
[51] National Center for Environmental Assessment, EPA, *Toxicological Review of Inorganic Arsenic In Support of Summary Information on the Integrated Risk Information System (IRIS)* (EPA/635/R-10/001) (Feb. 2010).
[52] *See* http://yosemite.epa.gov/sab/SABPEOPLE.NSF/WebPeople/KosnettMichael?OpenDocument.
[53] Professor of Epidemiology, School of Public Health, University of California, Berkeley.
[54] Epidemiologist, Division of Cancer Epidemiology and Genetics, National Cancer Institute, Bethesda, MD.
[55] Professor, Institute of Environmental Medicine, Karolinska Institute, Stockholm, Sweden.
[56] 65 Federal Register at 32224 (May 22, 2000).
[57] *See* http://earthjustice.org/features/campaigns/in-harm-s-way-coal-ash-contaminated-sites.
[58] See EPA, Proposed Rule, Coal Combustion Residuals from Electric Utilities, 75 Fed. Reg. 35,128 (proposed

spills, and the pervasive contamination of underground drinking water sources. The contamination includes toxic metals at concentrations hundreds of times safe drinking water standards and involves chemicals hazardous to humans or aquatic life in small doses, including arsenic, cadmium, chromium, lead, mercury and selenium. The damage at most of the newly identified sites is largely unmitigated, and it represents present disposal practices, not just historic practices. Furthermore, these 203 contaminated sites do not even include those communities that have been inundated with airborne coal ash dust, of which there are dozens located throughout the U.S. Lastly, these cases of documented water contamination are likely to be only a small percentage of the coal-ash contaminated sites in the U.S., because most coal ash impoundments and many coal ash landfills do not conduct groundwater monitoring, so water contamination largely goes undetected.

The graph below depicts the steep rise in the documentation of coal ash contaminated sites since the 1988 Report to Congress:



1988 Report to Congress & 1993 US EPA Regulatory Determination: U.S. EPA. Nov. 1988. *Wastes from the Combustion of Coal by Electric Utility Power Plants—Report to Congress*. EPA-530-SW-88-002. U.S. EPA Office of Solid Waste and Emergency Response. Washington, DC; Final Regulatory Determination on Four

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June 21, 2010); Environmental Integrity Project (EIP), Earthjustice, & Sierra Club, In Harm's Way: Lack of Federal Coal Ash Regulations Endangers Americans and their Environment (Aug. 26, 2010), available at http://environmentalintegrity.org/news_reports/documents/INHARMSWAY_FINAL3.pdf; EIP and Earthjustice, Out of Control: Mounting Damages from Coal Ash Waste Sites (Feb. 24, 2011), available at http://earthjustice.org/sites/default/files/library/reports/ej-eipreportout-of-control-final.pdf; Office of Solid Waste, EPA, Coal Combustion Waste Damage Case Assessments (July 9, 2007).

Large-Volume Wastes From the Combustion of Coal by Electric Utility Power Plants, 58 Fed. Reg. 42,466 (Aug. 9, 1993)

2000 US EPA Determination: Regulatory Determination on Wastes from the Combustion of Fossil Fuels; Final Rule, 65 Fed. Reg. 32,213 (May 22, 2000)

2007 US EPA Damage Case Report: U.S. EPA. *Coal Combustion Waste Damage Case Assessments* (July 9, 2007)

2010 US EPA Proposed Rule: Hazardous and Solid Waste Management System; Identification and Listing of Special Wastes; Disposal of Coal Combustion Residuals From Electric Utilities, 75 Fed. Reg. 35,128 (June 21, 2010)

EIP, Earthjustice et al. Damage Case Reports Feb. & Aug. 2010: Environmental Integrity Project and Earthjustice. *Out of Control: Mounting Damages From Coal Ash Waste Sites* (Feb. 2010); Environmental Integrity Project, Earthjustice and Sierra Club. *In Harm's Way: Lack of Federal Coal Ash Regulations Endangers Americans and Their Environment* (Aug. 2010)

EIP Damage Case Report December 2011: Environmental Integrity Project, *Risky Business: Coal Ash Threatens America's Groundwater Resources at 19 More Sites* (Dec. 2011)

EPA ICR Data March 2012: U.S. EPA ICR Data 3/2012 (Response to FOIA Request to EPA)

EPA ICR Data June 2012: U.S. EPA ICR Data 7/2012 (Response to FOIA Request to EPA)

Lastly, if one employed the existing RCRA regulatory criteria for evaluating whether a solid waste should be listed as a hazardous waste, there is clear support for a listing under subtitle C. The EPA's hazardous waste listing criteria is set forth at 40 C.F.R. § 261.11(a). Particularly relevant is Section 261.11(a)(3)(i)-(xi), which establishes that the Administrator shall list a solid waste as a hazardous waste upon determining that the solid waste:

> contains any of the toxic constituents listed in appendix VIII [which includes arsenic, lead, cadmium, selenium] and, after considering the following factors, the Administrator concludes that the waste is capable of posing a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported or disposed of, or otherwise managed:
>
> > (i) The nature of the toxicity presented by the constituent.
> > (ii) The concentration of the constituent in the waste.
> > (iii) The potential of the constituent or any toxic degradation product of the constituent to migrate from the waste into the environment under the types of improper management considered in paragraph (a)(3)(vii) of this section.
> > (iv) The persistence of the constituent or any toxic degradation product of the constituent.
> > (v) The potential for the constituent or any toxic degradation product of the constituent to degrade into non-harmful constituents and the rate of degradation.
> > (vi) The degree to which the constituent or any degradation product of the constituent bioaccumulates in ecosystems.
> > (vii) The plausible types of improper management to which the waste could be subjected.
> > (viii) The quantities of the waste generated at individual generation sites or on a regional or national basis.
> > (ix) The nature and severity of the human health and environmental damage that has occurred as a result of the improper management of wastes containing the constituent.
> > (x) Action taken by other governmental agencies or regulatory programs based on

the health or environmental hazard posed by the waste or waste constituent.
(xi) Such other factors as may be appropriate.

Public interest groups, in their comments on the 2010 proposed coal ash rule, evaluated coal ash in detail using the above criteria and concluded that there is ample and sound justification for a subtitle C listing.[59]

In the 2000 determination, EPA determined that coal ash contains more than 40 toxic constituents, and that those constituents can degrade and migrate into groundwater.

9. My understanding is that the leaching test used by EPA to complete the 2000 determination has been criticized by EPA's Science Advisory Board and the National Academy of Sciences. Can you explain these criticisms and their significance?

It is essential to note that the EPA's 2000 determination relied upon a leaching procedure, the Toxicity Characteristic Leaching Procedure (TCLP) test, which has since been demonstrated to be inaccurate and irrelevant for determining the toxicity of coal ash. Since 2000, a more accurate testing method, the Leaching Environmental Assessment Framework (LEAF), has confirmed the toxicity of coal combustion wastes. Beginning in 2006, the EPA's Office of Research and Development (ORD) published a series of three reports that examined the fate of mercury and other heavy metals in coal ash to ensure "that emissions being controlled in the flue gas at power plants are not later being released to other environmental media" such as drinking water sources, rivers and streams.[60] The EPA describes the results of the ORD studies at some length in section I.E.2. of the preamble to the 2010 Proposed Rule.[61]

Central to these ORD studies is the rejection of the older leach test, the TCLP. Historically, estimating metal release from coal ash has been based on the results of a single-point extraction test, the TCLP, which was designed to simulate a single "mismanagement" or near-surface disposal scenario.[62] For nearly two decades, however, the EPA Science Advisory

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[59] *See,* Earthjustice *et al,* Comments on Hazardous and Solid Waste Management System; Identification and Listing of Special Wastes; Disposal of Coal Combustion Residuals From Electric Utilities; Proposed Rule, Docket ID No. EPA-HQ-RCRA-2009-0640 (Nov.19, 2010), *available at* http://earthjustice.org/sites/default/files/us_epa_proposal_disposal_coal_comb_residue.pdf

[60] EPA, Office of Research and Development, *Characterization of Coal Combustion Residues from Electric Utilities—Leaching and Characterization Data* (EPA/600/R-09/151) at ii (Dec. 2009), *available at* http://www.epa.gov/nrmrl/pubs/ 600r09151/600r09151.html (citing EPA, *Characterization of Mercury- Enriched Coal Combustion Residuals from Electric Utilities Using Enhanced Sorbents for Mercury Control* (EPA–600/ R–06/008) (Feb. 2006), *available at* http://www.epa.gov/ORD/NRMRL/pubs/600r06008/600r06008.pdf); *and* EPA, *Characterization of Coal Combustion Residuals from Electric Utilities Using Wet Scrubbers for Multi-Pollutant Control* (EPA–600/ R–08/077) (July 2008), *available at* http://www.epa.gov/nrmrl/pubs/600r08077/600r08077.pdf.

[61] 75 Fed. Reg. at 35,139–42.

[62] Susan A. Thorneloe, EPA, et al., *Evaluating the Fate of Metals in Air Pollution Control Residues from Coal-Fired Power Plants*, 44 *Envtl. Sci. Technol.* 7,351, 7,351 (Aug. 31, 2010), *available at* http://pubs.acs.org/doi/pdfplus/10.1021/es1016558 [hereinafter Thorneloe, *Evaluating the Fate of Metals*] (citing C. Senior,S. Thorneloe, B. Khan, & D. Goss, *Fate of Mercury Collected from Air Pollution Control Devices*, Envtl. Mgmt 15–21 (2009); *and* J. Kilgroe et al., Contr*ol of Mercury Emissions from Coal-Fired Electric Utility Boilers: Interim Report* (EPA-600/R-01-109) (Dec. 2001) (prepared for the Office of Research & Dev., Nat'l Risk Mgmt & Research Lab.)).

Board (SAB) has identified significant problems with the accuracy of the TCLP. In 1999, in fact, the SAB wrote a pointed letter to EPA Administrator Carol Browner, criticizing EPA's continued reliance on the TCLP, stating definitively "it is time to make improvements."[63] In unequivocal terms, the SAB stated "**The Committee's single most important recommendation is that EPA improve leach test procedures, validate them in the field, and then implement them.**"[64] In 2006, the National Academy of Sciences also acknowledged the inaccuracy of the TCLP and weighed in with explicit criticism of its use for testing coal ash.[65]

Since at least 2006, the EPA itself has acknowledged the need for a more sensitive test that would vary the pH of the leaching solution because of the range of field conditions that coal ash is exposed to during disposal and reuse.[66] For example, coal ash is frequently placed in contact with acid mine drainage and co-disposed with acidic coal refuse (pyrites). Both of these common disposal scenarios expose coal ash to a wide range of pH conditions that can accelerate leaching of toxic metals. Recognizing the importance of having a robust, mechanistic environmental assessment methodology, the EPA conducted a review of available methods, sought Science Advisory Board input, and ultimately selected the tiered assessment approach of the Leaching Environmental Assessment Framework (LEAF).[67]

The EPA relies on LEAF for the latest testing of a wide range of coal ash generated by plants employing air pollution controls. This is not the first time, however, that the EPA opted not to use the limited TCLP for a leach test evaluating waste material at the pH levels that the waste is actually likely to encounter when disposed.[68] Using the LEAF test, the EPA tested 73 different types of coal ash from 31 coal-fired boilers.[69] The results of the tests were dramatically different from the TCLP tests of similar types of coal ash. While TCLP test results rarely exceeded the toxicity characteristic for metals (the level at which a waste is deemed a "hazardous" waste[70]), the LEAF test confirmed that coal ash can leach metals, such as arsenic, barium, chromium and selenium, at levels that far exceed federal thresholds established for hazardous waste.

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[63] Letter from EPA, Science Advisory Board, to Carol Browner, Administrator, EPA, Re: "Waste Leachability: The Need for Review of Current Agency Procedures" (Feb. 26, 1999), *available at* www.yosemite.epa.gov/sab/sabproduct.nsf/.../$File/eecm9902.pdf.

[64] *Id.* (emphasis in original)

[65] Nat'l Research Council, Nat'l Academies, Managing Coal Combustion Residues in Mines 123–29 (2006), *available at* http://books.nap.edu/catalog.php?record_id=11592#toc.

[66] *See* EPA, *Characterization of Coal Combustion Residues from Electric Utilities Using Wet Scrubbers for Multi-Pollutant Control* (EPA/600/R-08/077) (July 2008), *available at* http://www.epa.gov/nrmrl/pubs/600r08077/600r08077.htm, *and* EPA, *Characterization of Mercury-Enriched Coal Combustion Residues from Electric Utilities Using Enhanced Sorbents for Mercury Control* (EPA-600/R-06/008) (Feb. 2006), *available at* http://www.epa.gov/nrmrl/pubs/600r06008/600r06008.pdf.

[67] Thorneloe, *Evaluating the Fate of Metals*, at 7351.

[68] *See* 75 Fed. Reg. at 35,139, fn. 11 (referencing EPA's use of multi-pH leach testing in support of listing a mercury bearing sludge from VCM–A production), 65 Fed. Reg. 67,100 and EPA/600/R–02/019 (Sept. 2001), Stabilization and Testing of Mercury Containing Wastes: Borden Catalyst.

[69] 75 Fed. Reg. at 35,139.

[70] *See* 40 C.F.R. § 261.11.

EPA LEAF Test Results[71]

Table ES-2. Leach results for 5.4 ≤ pH ≤ 12.4 and at "own pH" from evaluation of thirty-four fly ashes.

	Hg	Sb	As	Ba	B	Cd	Cr	Co	Pb	Mo	Se	Tl
Total in Material (mg/kg)	0.01 - 1.5	3 -14	17-510	590 - 7,000	NA	0.3 - 1.8	66 - 210	16 - 66	24 - 120	6.9 - 77	1.1 - 210	0.72 - 13
Leach results (µg/L)	<0.01 -0.50	<0.3 - 11,000	0.32 - 18,000	50 - 670,000	210 - 270,000	<0.1 - 320	<0.3 - 7,300	<0.3 - 500	<0.2 - 35	<0.5 - 130,000	5.7 - 29,000	<0.3 - 790
TC (µg/L)	200		5,000	100,000		1,000	5,000		5,000		1,000	
MCL (µg/L)	2	6	10	2,000	7,000 DWEL	5	100		15	200 DWEL	50	2

Note: The shade is used to indicate where there could be a potential concern for a metal when comparing the leach results to the MCL, DWEL, or TC. Note that MCL and DWEL values represent well concentrations; leachate dilution and attenuation processes that would occur in groundwater before leachate reaches a well are not accounted for, and so MCL and DWEL values are compared to leaching concentrations here to provide context for the test results and initial screening.

Table ES-3. Leach results for 5.4 ≤ pH ≤ 12.4 and at "own pH" from evaluation of twenty FGD gypsums.

	Hg	Sb	As	Ba	B	Cd	Cr	Co	Pb	Mo	Se	Tl
Total in Material (mg/kg)	0.01 – 3.1	0.14 – 8.2	0.95 – 10	2.4 - 67	NA	0.11 – 0.61	1.2 – 20	0.77 – 4.4	0.51 - 12	1.1 - 12	2.3 - 46	0.24 – 2.3
Leach results (µg/L)	<0.01 -0.66	<0.3 - 330	0.32 - 1,200	30 - 560	12 – 270,000	<0.2 - 370	<0.3 - 240	<0.2 – 1,100	<0.2 - 12	0.36 – 1,900	3.6 - 16,000	<0.3 – 1,100
TC (µg/L)	200	-	5,000	100,000	-	1,000	5,000	-	5,000	-	1,000	-
MCL (µg/L)	2	6	10	2,000	7,000 DWEL	5	100	-	15	200 DWEL	50	2

Note: The shade is used to indicate where there could be a potential concern for a metal when comparing the leach results to the MCL, DWEL, or TC. Note that MCL and DWEL values represent well concentrations; leachate dilution and attenuation processes that would occur in groundwater before leachate reaches a well are not accounted for, and so MCL and DWEL values are compared to leaching concentrations here to provide context for the test results and initial screening.

Specifically, the EPA found, at the highest leach level for particular coal ash types:

- Arsenic, a potent carcinogen, leached from fly ash at a concentration 1,800 times the federal safe drinking water standard, more than 3 times the threshold established for hazardous waste and over 76 times the level of previous leach tests (TCLP);[72]
- Antimony, which damages the heart, lung and stomach, also leached from fly ash at a

[71] EPA, Office of Research and Development, *Characterization of Coal Combustion Residues from Electric Utilities—Leaching and Characterization Data* (EPA/600/R-09/151), at xiv (Dec. 2009), available at http://www.epa.gov/nrmrl/pubs/600r09151/600r09151.html (the highlighted numbers are identical to those highlighted in the EPA Report).

[72] 75 Fed. Reg. at 35,141–42.

concentration 1,800 times the federal safe drinking water standard and over 900 times the level of previous TCLP tests;[73]

- Chromium, which can cause cancer and stomach ailments, leached from fly ash at a level 73 times the federal safe drinking water standard, over 1.5 times the threshold for hazardous waste, and 124 times the level of previous TCLP tests;[74]
- Selenium, which causes circulatory problems in humans and is a bioaccumulative toxin extremely deadly to fish, leached from fly ash at nearly 600 times the federal drinking water standard, 29 times the threshold for hazardous waste and nearly 66 times the level of previous TCLP tests;[75] and
- Selenium also leached from FGD gypsum at 320 times the federal drinking water standard and 16 times the threshold for hazardous waste.[76]

Previous leach data in the EPA's 1999 Report to Congress[77] and test data produced by the utility industry[78] have never revealed such high concentrations of pollutants because they used single point leach tests that could not mimic the conditions under which coal ash is actually disposed.[79] It is important to note that the above data and the additional data found in the preamble of the proposed rule are not preliminary data. The data have been peer reviewed, and results were published in *Environmental Science and Technology* on August 30, 2010.[80]

Furthermore, the EPA indicates in the preamble that the very high leaching values found by using the LEAF test may still not accurately characterize the full leaching potential of the waste. The EPA admits there is a potential underestimation by the LEAF test because actual field conditions for coal ash disposal can exhibit a pH below the lowest bound of the test's pH range.[81]

In the 2000 determination, EPA found that there was sufficient evidence that adequate controls were not in place at coal ash disposal sites. This was the case, in part, because the states that did require liners for wet impoundments did not apply that requirement to impoundments that were already in use.

10. Under the discussion draft considered at the April 11 hearing, would liner requirements apply to impoundments that are already in use?

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[73] *Id.*
[74] *Id.*
[75] *Id.*
[76] *Id.*
[77] *See*, for example, U.S. EPA, Report to Congress on Wastes from the Combustion of Coal by Electric Utility Power Plants (EPA530-SW-88-002), February 1988 and U.S. EPA, Report to Congress on Wastes from the Combustion of Fossils Fuels (EPA530-R-99-010), March 1999, available at http://www.epa.gov/osw/nonhaz/industrial/special/fossil/regs.htm.
[78] *See*, for example, Electric Power Research Institute, Sustainable Management of Coal Combustion Products, Recent EPRI Research, October 16, 2009, at page 8, submitted to Office of Management and Budget on October 16, 2009, available at http://www.whitehouse.gov/omb/2050_meeting_101609/.
[79] For a more detailed discussion of the EPA's LEAF test results and comparison to data from TCLP testing, see Attachment 7, Lisa Evans, *Failing the Test: The Unintended Consequences of Controlling Hazardous Air Pollutants from Coal-Fired Power Plants* (May 2010).
[80] Thorneloe, *Evaluating the Fate of Metals*, at 7,351.
[81] 75 Fed. Reg. 35140.

No, the liner requirements set forth in Section 4011(c)(1)(A)(i) apply only to "new structures, and lateral expansions of existing structures, that first receive coal combustion residuals after the date of enactment of this section." Since coal ash impoundments are most often expanded via vertical, not lateral expansion, the liner requirement would apply to very few existing coal ash impoundments. Consequently, existing unlined impoundments would continue to operate without liners. The discussion draft contains no retrofit requirement.

In addition, since under the discussion draft, states are free to define "structures" in any manner they see fit, it is possible that some states will choose to omit some types of coal ash impoundments from the definition of "structure." For example, states may exempt units of a particular size or height, or units that contain certain types of coal ash such as bottom ash, flue gas desulfurization sludge or other wastewater impoundments. Because the discussion draft does not define "structure," one cannot be sure how the requirement in Section 4011(c)(1)(A)(i) will be applied. Lastly, there is nothing in the discussion draft to prevent a state from exempting all coal ash surface impoundments from the definition of structure. If states choose to do so, the EPA would have no recourse under the discussion draft.

11. Does leaving these impoundments unlined pose risks to human health and the environment?

Yes, leaving impoundments unlined poses serious risks to human health and the environment. In 2010, the EPA released a national-scale risk assessment entitled Human and Ecological Risk Assessment of Coal Combustion Wastes[82] that analyzed different coal ash disposal methods and the risks they pose to human health by releasing pollutants like arsenic to groundwater. The EPA concluded that "[t]he assessment does confirm that there are methods to manage CCRs safely, although it calls into question the reliability of clay liners, especially in surface impoundments, and *it points to very high potential risks from unlined surface impoundments*."[83] The EPA found that the highest risk was posed by arsenic leaching from unlined surface impoundments where coal ash and coal refuse were co-disposed—a cancer risk of 1 in 50.[84] This risk is 2,000 times higher than EPA's target protection level for human health of a cancer risk no greater than 1 in 100,000.[85]

In addition to arsenic, the 2010 Risk Assessment found that disposal of coal ash in unlined surface impoundments, particularly when coal ash is co-disposed with coal refuse, also results in risk to human health well above the EPA's benchmarks for numerous toxic constituents, including cadmium, lead, and selenium. Boron, cobalt, molybdenum, and nitrate/nitrate also showed elevated risk to human health.[86]

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[82] Office of Solid Waste & Emergency Response, U.S. Envtl. Prot. Agency ("EPA"), Human and Ecological Risk Assessment of Coal Combustion Wastes (draft) (Apr. 2010) [hereinafter 2010 Risk Assessment].
[83] U.S. EPA, Hazardous and Solid Waste Management System; Identification and Listing of Special Wastes; Disposal of Coal Combustion Residuals From Electric Utilities; Proposed Rule, 75 Fed. Reg. 35,128, 35,144 (proposed June 21, 2010) (to be codified at 40 CFR Parts 257, 261, 264 et al.) (emphasis added) [hereinafter 2010 Proposed Rule].
[84] *Id.* at ES-7.
[85] *Id.* at 1-3; *see also* 2010 Proposed Rule, at 35,144.
[86] *See generally* 2010 Risk Assessment. For additional detail, *see* Environmental Integrity Project and Earthjustice, Coming Clean: What the EPA Knows about the Dangers of Coal Ash (May 2009), *available at*

Unlined surface impoundments also pose devastating risks to ecological receptors. The EPA's 2010 Risk Assessment also reviewed impacts to individual organisms, and disposal scenarios where there was a risk of impacts to individual organisms were given a hazard quotient ("HQ") greater than 1.[87] Unlined surface impoundments were estimated to have HQs well above 1 for several pollutants, indicating high risks to aquatic organisms—2,375 for boron, 22 for lead, 13 for arsenic V, 12 for selenium VI, 6 for cobalt, and 3 for barium.[88]

Furthermore, most of the more than 200 coal ash damage cases involve the migration of toxic constituents to groundwater.[89] Comments submitted by Earthjustice in response to EPA's 2010 Proposed Rule included Appendix F, which describes the scope of this migration at damage cases involving groundwater contamination.[90] In many instances, the levels of constituents in the groundwater far exceed drinking water standards and the constituents in the groundwater travel far from the disposal site. Data indicate that constituents have also migrated from unlined landfills.

12. Please describe some of the new evidence of risk from coal ash since the 2000 determination?

Since the 2000 determination, a plethora of new information has arisen detailing risks to human health and the environment from coal ash disposal practices nationwide, including additional damage cases, an EPA risk assessment detailing the risks of various exposure pathways, ratings showing many dams given "poor" structural stability scores, additional evidence of harm from fugitive dust, and many notice of intent to sue letters and lawsuits alleging harm to human health and the environment.

1. Over 200 Coal Ash Damage Cases in 37 States

Whereas the May 2000 determination had identified only 11 proven coal ash damage

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http://www.earthjustice.org/sites/default/files/library/reports/final-coming-clean-ejeip-report-20090507.pdf.

[87] 2010 Risk Assessment, at ES-3.

[88] 2010 Risk Assessment, at 4-29, Tbl. 4-21; *see also* 2010 Proposed Rule, 75 Fed. Reg. at 35,146; U.S. EPA, "What Are the Environmental and Health Effects Associated with Disposing of CCRs in Landfills and Surfaee Impoundments?" (undated), http://rfflibrary.files.wordpress.com/2010/05/epa-hq-rcra-2009-0640-0004.pdf (cited in 2010 Proposed Rule, 75 Fed. Reg. at 35,146).

[89] *See* Environmental Integrity Project (EIP), Risky Business: Coal Ash Threatens America's Groundwater Resources at 19 More Sites (Dec. 12, 2011); U.S. EPA, Proposed Rule, Coal Combustion Residuals from Electric Utilities, 75 Fed. Reg. 35,128 (proposed June 21, 2010); Environmental Integrity Project (EIP), Earthjustice, & Sierra Club, In Harm's Way: Lack of Federal Coal Ash Regulations Endangers Americans and their Environment (Aug. 26, 2010), available at http://environmentalintegrity.org/news_reports/documents/INHARMSWAY_FINAL3.pdf; EIP and Earthjustice, Out of Control: Mounting Damages from Coal Ash Waste Sites (Feb. 24, 2011), available at http://earthjustice.org/sites/default/files/library/reports/ej-eipreportout-of-control-final.pdf; Office of Solid Waste, EPA, Coal Combustion Waste Damage Case Assessments (July 9, 2007).

[90] Comments of Earthjustice, et al., U.S. EPA, Hazardous and Solid Waste Management System; Identifieation and Listing of Special Wastes; Disposal of Coal Combustion Residuals From Electric Utilities; Proposed Rule, 75 Fed. Reg. 35,128, 35,144 (proposed June 21, 2010) (to be codified at 40 CFR Parts 257, 261, 264 et al.) (Docket ID No. EPA-HQ-RCRA-2009-0640), at Appendix F: J. Russell Boulding, "Analysis of EPA and EIP/Earthjustice Damage Cases: The Extent of Damage from CCR Disposal is Significant, Pervasive and Growing."

cases and 25 potential damage cases,[91] additional assessments using EPA data and documentation submitted to EPA from public interest groups have brought the current list of coal ash damage cases to over 200.[92]

2. Risk Assessment Shows Exposure to Cancer-Causing Chemicals and Other Toxic Pollutants through Groundwater and Surface Water Pathways

The EPA released a draft risk assessment of coal combustion wastes in 2010 assessing exposure pathways to humans and the environment. Among the findings in this report was the conclusion that the cancer risk to humans from exposure to arsenic in groundwater from an unlined coal ash impoundment that also disposes of coal refuse can be as high as 1 in 50, compared to EPA's target threshold of no greater risk than 1 in 100,000.[93] The EPA noted in the preamble to the 2010 Proposed Rule that the Agency's Human and Ecological Risk Assessment of Coal Combustion Wastes (April 2010) provides "further confirmation of the high risks presented in the mismanagement of CCRs disposed in landfills and surface impoundments."[94] The 2010 risk assessment was discussed at length, above, in response to Question 8.

3. Many Dams Given "Poor" Ratings for Risk of Structural Breach

In the aftermath of the TVA Kingston coal ash disaster, EPA has been assessing dams at coal ash impoundments, and an alarming number of dams that are likely to cause "high" or "significant" damage to lives and property have also been given "poor" ratings for structural integrity. Following an Information Collection Request from EPA, most coal ash impoundments have been given hazard ratings (less than low, low, significant, or high) to represent potential risks to the community if they were to breach: a "significant" hazard rating represents a possibility of property, infrastructure and environmental damage; and a "high" hazard rating represents a probable loss of human life should the impoundment fail.[95] EPA then had experts in dam stability visually assess the high and significant hazard dams (as well as some less than low or low hazard dams) and rate the structural integrity of each as either "satisfactory," "fair,"

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[91] Office of Solid Waste, U.S. EPA, Coal Combustion Waste Damage Case Assessments 2–3 (July 2007), http://graphics8.nytimes.com/packages/pdf/national/07sludge_EPA.pdf.

[92] *See* Environmental Integrity Project (EIP), Risky Business: Coal Ash Threatens America's Groundwater Resources at 19 More Sites (Dec. 12, 2011); U.S. EPA, Proposed Rule, Coal Combustion Residuals from Electric Utilities, 75 Fed. Reg. 35,128 (proposed June 21, 2010); Environmental Integrity Project (EIP), Earthjustice, & Sierra Club, In Harm's Way: Lack of Federal Coal Ash Regulations Endangers Americans and their Environment (Aug. 26, 2010), available at http://environmentalintegrity.org/news_reports/documents/INHARMSWAY_FINAL3.pdf; EIP and Earthjustice, Out of Control: Mounting Damages from Coal Ash Waste Sites (Feb. 24, 2011), available at http://earthjustice.org/sites/default/files/library/reports/ej-eipreportout-of-control-final.pdf; Office of Solid Waste, EPA, Coal Combustion Waste Damage Case Assessments (July 9, 2007). *See generally* Earthjustice, In Harm's Way: Coal Ash Contaminated Sites, http://earthjustice.org/features/campaigns/in-harm-s-way-coal-ash-contaminated-sites. *See also* U.S. EPA, Information Request Responses from Electric Utilities (Jan. 13, 2012), http://www.epa.gov/osw/nonhaz/industrial/special/fossil/surveys/ (follow link to Database Results (Excel)).

[93] Office of Solid Waste & Emergency Response, U.S. Envtl. Prot. Agency ("EPA"), Human and Ecological Risk Assessment of Coal Combustion Wastes (draft), at ES-7 (Apr. 2010).

[94] 75 Fed. Reg. at 35,144.

[95] U.S. EPA, *Hazardous and Solid Waste Management System; Identification and Listing of Special Wastes; Disposal of Coal Combustion Residuals from Electric Utilities*, Proposed Rule, 75 Fed. Reg. 35,128, 35,130 (Jun. 21, 2010).

"poor," or "unsatisfactory."[96]

Although assessments are still ongoing, EPA has assessed 492 coal ash impoundments.[97] Of those 492, more than one third – 144 dams – have been given a "poor" rating for structural integrity.[98] Of these 144 poor-rated dams, 11 are high hazard and 69 are significant hazard dams.[99] At least one utility was asked to make "urgent" repairs relating to structural stability after inspection of the dam at Dominion's Chesapeake Energy Center in Chesapeake, VA.[100] In addition, a high hazard dam that had previously breached was again found in poor condition at the Indianapolis Power and Light Company's Eagle Valley Generating Station in Martinsville, Indiana.[101]

4. Risks to Human Health and the Environment from Fugitive Dust

In 2009, the EPA completed a screening assessment of the inhalation risks posed by disposal of coal ash in landfills to determine whether the National Ambient Air Quality Standards (NAAQS) for particulate matter could be violated at such landfills. Entitled, "Inhalation of Fugitive Dust: A Screening Assessment of the Risks Posed by Coal Combustion Waste Landfills," EPA's assessment found that daily cover was necessary to prevent violations of NAAQS at coal ash disposal sites.[102] The report found that daily dust controls, which EPA regulations do not currently require, are necessary to control the "excess levels of particulates" resulting from coal ash landfill operations.[103]

Particle pollution, especially fine particles, contains microscopic solids or liquid droplets that can lodge deep into the lungs and cause serious health problems.[104] Numerous scientific studies have linked particle pollution exposure to a variety of problems, including decreased lung function, asthma, bronchitis, irregular heartbeat, and premature death in people with heart or lung disease.[105]

5. Additional Evidence of Risk Detailed in Citizen Lawsuits and Notice of Intent to Sue Letters

Several lawsuits and notice of intent to sue letters filed by citizens throughout the country are alleging harms caused by pollution from coal ash disposal sites and have also introduced new

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[96] U.S. EPA, Coal Combustion Residuals Impoundment Assessment Reports (last updated Apr. 10, 2013), http://www.epa.gov/osw/nonhaz/industrial/special/fossil/surveys2/index.htm.
[97] *Id.* (Click on "Summary Table for Impoundment Reports (XLS)").
[98] *Id.*
[99] *Id.*
[100] Dam Safety Assessment *available at* http://www.epa.gov/osw/nonhaz/industrial/special/fossil/surveys2/index.htm.
[101] Dam Safety Assessment *available at* http://www.epa.gov/osw/nonhaz/industrial/special/fossil/surveys2/index.htm.
[102] U.S. EPA, Inhalation of Fugitive Dust: A Screening Assessment of the Risks Posed by Coal Combustion Waste Landfills (draft), 11 (Sept. 2009) (ORCR Docket ID No. EPA-HQ-RCRA-2009-0640-0142 (filed May 13, 2010).
[103] *Id.*
[104] U.S. EPA, Fine Particle ($PM_{2.5}$) Designations, www.epa.gov./pmdesignations/basicinfo.htm (last visited May 20, 2013).
[105] *Id.*

evidence of the risks posed by coal ash disposal.

For example, the Environmental Integrity Project (EIP) and the University of Maryland Environmental Law Clinic sent a notice of intent to sue letter to GenOn on behalf of Defenders of Wildlife, Chesapeake Climate Action Network, Patuxent River Keeper, and Sierra Club for Clean Water Act violations at the Brandywine Coal Ash Landfill. Following the notice letter, the Maryland Department of the Environment (MDE) filed suit itself against GenOn.[106] In January 2013, MDE and GenOn filed a consent decree in federal court requiring GenOn to clean up pollution at three coal ash disposal sites – the Faulkner Landfill, the Brandywine Landfill, and the Westland Landfill.[107] The agreement requires GenOn MidAtlantic to pay a civil penalty of $1.9 million to MDE and requires cleanup of groundwater and surface water, use of the best technology available to clean up discharges, evaluation of drinking well impacts and, if impacted, clean up of well water, and submission of a fugitive dust plan.[108]

In addition, after the Southern Environmental Law Center filed suit against South Carolina Electric & Gas on behalf of the Catawba Riverkeeper for violations of environmental laws at the Wateree Station, the parties reached a settlement that requires SCE&G to remove its coal ash from coal ash ponds and transport it to lined and properly engineered landfills.[109]

Residents of Juliette, Georgia have also filed a mass tort case in January 2013 against Georgia Power Co., alleging that coal ash from two coal ash impoundments at the Robert W. Scherer coal plant has made them sick and constituted negligence, nuisance, and trespass by "invad[ing]" their homes and exposing them to "extremely toxic and hazardous substances released to the air, soil, and groundwater."[110]

Also, in May 2011 the EIP and Public Justice sent FirstEnergy Generation Corp. a notice of intent to sue on behalf of the Little Blue Regional Action Group (LBRAG) for groundwater and surface water pollution caused by the largest coal ash impoundment in the nation, the Bruce Mansfield Plant's Little Blue Run Impoundment.[111] LBRAG alleged harms that included violations of the Resource Conservation and Recovery Act, and Pennsylvania Clean Streams

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[106] Press Release, Envtl. Integrity Project, et al., Groups Support MDE Settlement Clean Up GenOn's Toxic Coal Ash Pollution in Charles, Montgomery, and PG Counties (Jan. 14, 2013), http://www.environmentalintegrity.org/news_reports/documents/011413_GenOn_FINALCoalAshsettlementjointnewsrelease.pdf.

[107] Consent Decree, State of Md. Dep't of the Envt. v. GenOn MD Ash Mgmt., LLC, Civil Action Nos. 8:11-CV-01209-PJM, 8:10-CV-00826-PJM, 8:12-CV-[ ] (Jan. 2, 2013), http://www.environmentalintegrity.org/news_reports/documents/2013_01_02_71-1_ConsentDecree.pdf.

[108] *Id.*

[109] Catawba Riverkeeper, SCE&G and Catawba Riverkeeper Reach Setlement on Coal Ash Storage, http://www.catawbariverkeeper.org/issues/coal-ash-1/sce-g-and-catawba-riverkeeper-reach-settlement-on-coal-ash-storage (Aug. 20, 2012).

[110] Kristen Lombardi, Ctr. for Public Integrity, "As EPA Delays New Coal Ash Rules, Residents Turn to the Courts for Relief," http://www.publicintegrity.org/2013/02/22/12223/epa-delays-new-coal-ash-rules-residents-turn-courts-relief.

[111] Letter from Lisa Widawsky Hallowell, Attorney, Envtl. Integrity Project, to Anthony Alexander, President, FirstEnergy Corp., Re: Notice of Violations and Notice of Intent to Sue for Violations at the Little Blue Run Coal Ash Impoundment (May 30, 2011)

Law, and the federal Clean Water Act.[112] In July, just before the end of the 60-day notice period under the Clean Water Act and Clean Streams Law, the Pennsylvania Department of Environmental Protection (DEP) filed suit in federal court against FirstEnergy and simultaneously proposed a consent decree.[113] In the lawsuit, DEP recounted extensive evidence of the release of pollutants from the impoundment, concluding that:

> Constituents contained in the solid waste disposed of in the Impoundment may present a potential that human health and environmental receptors would be exposed to a risk of harm, in the near term and the future, if remedial action is not taken. These conditions 'may present an imminent and substantial endangerment to health or the environment,' as that term is used in Section 7002(a)(1)(B) of RCRA, 42 U.S.C. § 6972(a)(1)(B).[114]

The settlement requires closure of the impoundment, imposes an $800,000 penalty and includes stipulated penalties for failure to comply with various surface water, groundwater, and air monitoring requirements contained in the consent decree.[115]

Additional examples of additional citizen lawsuits and notice letters of intent to sue (NOIs) include a lawsuit filed by the Southern Environmental Law Center on behalf of the Cape Fear River Watch, Sierra Club, Waterkeeper Alliance, and Western North Carolina Alliance to require cleanup of groundwater contamination from 14 unlined North Carolina coal ash ponds,[116] a lawsuit filed by the Waccamaw Riverkeeper against Santee Cooper for arsenic seeping into groundwater from coal ash ponds at the Grainger coal plant,[117] and an NOI filed by the Catawba Riverkeeper against Duke Energy for illegally discharging arsenic, cobalt, boron, barium, strontium, manganese, zinc, and iron into Mountain Island Lake from the Riverbend Plant's unlined coal ash lagoons.[118]

13. Given this evidence, in your view, are enforceable federal requirements necessary to protect human health and the environment from this waste?

Yes.

14. Should those requirements meet a legal standard of protection, such as the current standard for municipal solid waste – protection of human health and the environment?

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[112] *Id.*

[113] Consent Decree, Commonwealth of Pa. Dep't Envtl. Prot. v. FirstEnergy, Civil Action No. 2:12-cv-01061-NBF, at 5 (Dec. 14, 2012).

[114] Commonwealth of Pa. Dep't Envtl. Prot. v. FirstEnergy, Civil Action No. 2:12-cv-01061-NBF (July 27, 2012).

[115] Consent Decree, Commonwealth of Pa. Dep't Envtl. Prot. v. FirstEnergy, Civil Action No. 2:12-cv-01061-NBF (Dec. 14, 2012).

[116] Press Release, Groups in Court to Stop Groundwater Contamination from Toxic Coal Ash Waste (Jan. 8, 2013), http://www.southernenvironment.org/newsroom/press_releases/groups_in_court_to_stop_groundwater_contamination_from_toxic_coal_ash_waste.

[117] Sammy Fretwell, "Santee Cooper Plant Discharges Spark Federal Lawsuit," *The State* (Apr. 29, 2013) *available at* http://www.thestate.com/2013/04/29/2748309/santee-cooper-coal-plant-discharges.html.

[118] Nick Needham, "Riverkeeper: Duke Energy Allowing Toxic Leaks into Catawba River," wbtv.com, (Mar. 26, 2013), http://www.wbtv.com/story/21797969/lawsuit-duke-energy-allowing-toxic-leaks-into-catawba-river.

Yes, any bill addressing coal ash should contain a standard of protection that is at least as stringent as the federal protective standard governing municipal solid waste landfills, which requires the protection of human health and the environment. Without a federal protective standard, Congress cannot guarantee that every community in every state is provided with the same protection from toxic releases. Absent a protective standard, states may implement permit programs that fail to protect the health and environment of American communities. The intent of RCRA is to ensure the safety of all citizens from unsafe disposal of solid and hazardous waste. Whether under subtitle C or subtitle D, the intent is to create a baseline of federal requirements that will protect the nation's health and environment. The discussion draft radically amends RCRA to abandon this critical goal of national consistency and baseline protection, and it would allow states to implement permit programs without meeting any federal standard. As stated earlier in this response, many states have chosen not to regulate coal ash or to regulate its disposal very inadequately. The discussion draft would not change the status quo.

15. Would the discussion draft considered at the hearing hold state coal ash permit programs to such a legal standard of protection?

No, the discussion draft would not hold state coal ash permit programs to any legal standard of protection. As the CRS Report (twice) explained, the absence of a standard of protection is "unique among all federal environmental law."[119] The CRS report explained:

> Federal standards promulgated under RCRA include directive from Congress to EPA that the regulatory criteria meet a particular standard of protection. When those standards are required to be implemented using a permit program, that directive is that the standards be those necessary to protect human health and the environment. There is no explicit directive in Section 4011 that Permit Program Specifications, assumed to be the equivalent of federal standards, achieve a certain level of protection. The absence of any directive or indication that the program has some objective to achieve a standard of protection is unique among all federal environmental law.[120]

When the Tennessee Valley Authority coal ash impoundment in Kingston, Tennessee, failed, it released 5.4 million cubic yards of toxic sludge, blanketing the Emory River and 300 acres of surrounding land, and creating a Superfund site that could cost up to $1.2 billion to remediate. The sludge from that spill was removed and disposed of in a municipal solid waste landfill in Perry County, Alabama, over the protests of local residents. There are reports that residents became sick from foul smells and off-gassing from the waste.

16. What are some of the issues residents around the Perry County, Alabama landfill have experienced?

Beginning in 2009, approximately 4 million tons of coal ash were excavated from the

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[119] 2012 CRS Report at 23.
[120] *Id.*

spill site in Harriman, Tennessee and deposited in the Arrowhead Landfill in Uniontown, Alabama. Because of poor dust and odor suppression during the dumping of the TVA ash, residents living near the Arrowhead Landfill suffered serious health problems, including respiratory illness (including irritation of the upper respiratory tract), headaches, dizziness, nausea and vomiting from the fugitive dust and emission of unhealthy levels of hydrogen sulfide.

Several homes are within 100 feet of the landfill where the dumping occurred. Residents complained that fugitive dust from the facility contaminated their homes, porches, vehicles, laundry and plantings. In addition, runoff from the landfill into roadside ditches running through residential and agricultural areas were found to contain arsenic at more than 80 times the health standard. Despite many hundreds of acres of available landfill space distant from residential properties, the coal ash was stacked very close to homes in a large mound 60 feet high.[121]

Uniontown is located in Perry County, Alabama's poorest county, where over 35 percent of the population fall below the poverty line. In Uniontown, 88 percent of residents are African-American and almost half (45.2 percent) live in poverty. The median income in Uniontown is $17,473, and the unemployment rate is 17 percent. The population in the census blocks surrounding the landfill range from 87 to 100 percent African-American. In January 2012, 54 poor black residents of Perry County filed a civil rights complaint against the Alabama Department of Environmental Management pursuant to Title VI of the 1964 Civil Rights Act. The complaint alleged that Alabama environmental regulators violated the civil rights of predominantly poor and black residents by renewing the permit issued to operators of the landfill.

In addition, since 2009, numerous lawsuits were filed on behalf of residents alleging violations of federal environmental laws, including the Clean Air Act, Clean Water Act and the Resource Conservation and Recovery Act. Most of the actions were unsuccessful due to the bankruptcy of the landfill's owners. In 2010, Uniontown residents filed a lawsuit, Abrahams et al. v. Phill-Con Services, LLC et al., in U.S. District Court for the Southern District of Alabama, against the landfill's operator, asserting claims including negligence, nuisance and trespass resulting from construction and operation of the landfill.

17. My understanding is that Alabama regulators allow the use of coal ash as daily cover at the landfill. Did the decision to allow the use of coal ash as daily cover exacerbate or mitigate issues of concern for the residents of Perry County?

In 2009, nothing in the permit for coal ash disposal in the Arrowhead Landfill required the owner or operator of the landfill to take any specific precautions to eliminate the threat of airborne ash. While the permit did require placement of "daily cover," the permit specifically allowed the use of *coal ash* as an "alternative daily cover material" to cover the TVA ash.[122] Consequently, it would have been permissible for coal ash to be placed on the TVA ash as "cover." Clearly, if this occurred, it would not have been effective in controlling fugitive and

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[121] Photographs of the residences and landfill can be viewed at the website of photographer, Carlan Tapp: http://www.carlantapp.com/livinginash/index.html

[122] *See* Section III.H.2. of the Permit Modification for the Arrowhead Landfill, dated July 20, 2009, http://www.arrowheadlandfill.com/Solid%20Waste%20Permit.pdf.

toxic dust blowing from the landfill. However, it is not known if the landfill owners actually used coal ash as cover. It is known, nevertheless, that residents of Uniontown complained for years of dust and odors coming from the landfill into their homes.

Furthermore, there were several additional significant permit deficiencies that diminished the level of protection of residents from coal ash disposed in the Arrowhead Landfill. These included:

1. The Operating Permit's Groundwater Monitoring Parameters Were Inadequate to Protect Health and the Environment in Perry County

Groundwater monitoring parameters for the Arrowhead Landfill do not include several contaminants found commonly in leachate generated by coal ash disposal. According to Table IV.3 of the Permit Modification for the Arrowhead Landfill, the parameters to be monitored on a semi-annual basis are those parameters listed in Appendix I of Chapter 335-13-4 of the Alabama Administrative Code. These parameters do *not* include boron, manganese, molybdenum or sulfate, four very common coal ash pollutants. It is critical to monitor for these common coal ash contaminants, because these chemicals are often the first to leach from ash, thereby constituting an early warning that that a landfill is leaking. Addressing releases immediately can prevent more dangerous contaminants, like arsenic, from migrating off-site.

2. The Operating Permit's Post-Closure Requirements Fail to Require At Least 30 Years of Post-Closure Monitoring

According to Section VIII of the Permit Modification for the Arrowhead Landfill, the length of the period of post-closure groundwater and surface water monitoring is left to the discretion of the Alabama Department of Environmental Management (ADEM). It is essential, however, for the protection of the community that at least 30 years of post-closure groundwater and surface water monitoring be required at the Arrowhead Landfill. According to the EPA's Human Health and Ecological Risk Assessment for Coal Combustion Wastes, the risk of leachate migration and contamination of underlying groundwater increases with time. Therefore monitoring must continue for a substantial period after disposal ends to make sure that pollutants do not migrate from the landfill and contaminate the underlying groundwater or surface water. According to the operating permit and Alabama regulations, the ADEM has authority to further decrease the length of the post-closure care period. *See* ADEM Rule 335-13-4-.20(3)b.

18. Have those residents been able to address these issues to protect their air and water?

No, the residents to date have not been able to adequately address these issues. Residents have contacted the EPA and ADEM about the problems they faced to no avail, according to their attorney, David Ludder. The EPA did not sufficiently address complaints regarding fugitive dust, odors, potential exposure to radiation, contaminated runoff, and the need for increased groundwater monitoring.

19. Have they been able to recover damages for the impairment of their air and water?

Limited damages covering the period of coal ash disposal operations are expected to be paid shortly due to a settlement of a case filed in 2010.

20. Does the experience of residents around the Perry County landfill suggest that municipal solid waste landfills, operating under state programs in accordance with the MSW disposal criteria under RCRA, can safely accept coal ash?

No. The damage that occurred to the health and well-being of residents living near the Arrowhead Landfill in Perry County illustrates the great risk of relying on state municipal waste regulations to protect citizens near coal ash dumps. The Alabama municipal solid waste landfill regulations were ill equipped to deal with the fugitive dust and hydrogen sulfide emissions from the landfill. Furthermore, while the immediate air hazards have abated because the coal ash dumping has stopped, long term threats posed by the disposal of the 4 million tons of ash remain. Alabama's municipal solid waste groundwater monitoring parameters still do not include the most common coal ash contaminants, and post-closure groundwater monitoring can be terminated at the discretion of state regulators. Thus, contamination of the underlying aquifer could occur without detection and future problems may escape detection because of the early termination of monitoring.

The Arrowhead Landfill is a subtitle D solid waste landfill permitted by the Alabama Department of Environmental Management and governed by Alabama law. In 2009, Alabama did not have any laws specific to coal ash disposal. When things went wrong, and the health of residents was being harmed, the State did not take appropriate action, and the EPA claimed it had no authority. There is reason to believe that future coal ash disposal in the landfill – or in other municipal solid waste landfills –will encounter similar problems.

Thank you for this opportunity to provide additional information on this important issue.

Respectfully submitted by:

Lisa Evans
Senior Administrative Counsel
Earthjustice

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CHAIRMAN

HENRY A. WAXMAN, CALIFORNIA
RANKING MEMBER

ONE HUNDRED THIRTEENTH CONGRESS

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April 29, 2013

Mr. Jack Spadaro
Mine Safety & Health and
Environmental Expert
P.O. Box 442
Hamlin, WV 25523

Dear Mr. Spadaro:

Thank you for appearing before the Subcommittee on Environment and the Economy on Thursday, April 11, 2013, to testify at the hearing on a discussion draft entitled "The Coal Ash Recycling and Oversight Act of 2013."

Pursuant to the Rules of the Committee on Energy and Commerce, the hearing record remains open for ten business days to permit Members to submit additional questions for the record, which are attached. The format of your responses to these questions should be as follows: (1) the name of the Member whose question you are addressing, (2) the complete text of the question you are addressing in bold, and (3) your answer to that question in plain text.

To facilitate the printing of the hearing record, please respond to these questions and requests by the close of business on Monday, May 13, 2013. Your responses should be e-mailed to the Legislative Clerk in Word format at Nick.Abraham@mail.house.gov and mailed to Nick Abraham, Legislative Clerk, Committee on Energy and Commerce, 2125 Rayburn House Office Building, Washington, D.C. 20515.

Thank you again for your time and effort preparing and delivering testimony before the Subcommittee.

Sincerely,

John Shimkus
Chairman
Subcommittee on Environment and the Economy

cc: The Honorable Paul Tonko, Ranking Member,
Subcommittee on Environment and the Economy

Attachment

The Honorable Henry A. Waxman

Since 1978, coal waste impoundments have been covered by regulations that you helped develop to protect surrounding communities and ensure their safe operation. In the 2010 proposed rule on coal combustion residuals, EPA proposed applying those regulations to coal ash impoundments as well.

1. How are the threats to safety and the environment posed by coal ash impoundments similar to those posed by coal slurry impoundments?

You testified that the MSHA requirements and OSM requirements in effect since 1978 have helped to reduce the incidence of serious and fatal dam failures of coal slurry impoundments.

2. Would those regulations make coal ash impoundments safer?

3. If applied at the time, would the regulations have provided warning of dangerous conditions at TVA's Kingston Fossil Plant and perhaps prevented the massive failure?

Following the Kingston disaster, EPA hired professional engineers to assess the stability of many of the nation's largest coal ash impoundments. During the period from 2009 to 2013, EPA contractors inspected over 400 coal ash dams, and their assessment reports are not publicly available.

4. Do those assessment reports raise concerns about the stability of these impoundments?

Your testimony cites the incidence of "poor-rated" dams in assessment reports by EPA contractors. Many of these dams are rated "poor" because of the absence of a geotechnical engineering analysis that assesses structural stability.

5. What is involved in such an assessment, and what risks does one address?

MSHA regulations require weekly visual safety inspections of coal slurry impoundments by a qualified dam safety expert.

6. Why are weekly inspections required?

7. Should weekly inspections be required for coal ash impoundments?

The 1972 Buffalo Creek disaster killed 125 people and injured 1100 more. The people living below the impoundment were not warned of the risk, even as officials with the mining company using the impoundment documented rising water levels and cracks in the embankment. Alerted by a concerned resident, the Deputy Sheriff went to inspect the impoundment, but was assured by mining company officials that the dam was safe. That sheriff later testified that if the mining official "had known that dam was going to break, and informed us of that, then, hell, I don't think anybody would have got drowned. Chances are we could have got everybody out, me and the other patrol car."

8. Should owners and operators of coal ash impoundments be required to monitor their impoundments so that potentially hazardous conditions can be identified in a timely manner?

9. Should owners and operators of coal ash impoundments be required to, immediately upon discovering a potentially hazardous condition, notify state and local first responders?

10. Should owners and operators of coal ash impoundments be required to, immediately upon discovering a potentially hazardous condition, notify, prepare to evacuate, and evacuate if necessary local residents, personnel, and any other people who be affected by the hazardous condition?

11. Should owners and operators of coal ash impoundments be required to, immediately upon discovering a potentially hazardous condition, take action to eliminate the potentially hazardous condition?

Subcommittee on Environment & the Economy
Response Regarding Coal Ash Dam Safety from Jack Spadaro
June 23, 2013

The Honorable John Shimkus, Chairman
Subcommittee on Environment & the Economy

Dear Chairman Shimkus:

The following are my responses to questions from the Honorable Henry A. Waxman regarding my testimony before the subcommittee on April 11, 2013:

1. The threats to safety and the environment posed by coal ash impoundments that are similar to those posed by coal slurry impoundments are the threats of massive failure of unregulated dams that contain by-products that are full of heavy metals and are dangerous to human beings. The coal slurry dam failure at Buffalo Creek in Logan County, WV killed 125 people and left 4,000 people homeless. Many of the existing coal ash dams in the United States have not received the essential scrutiny during construction and operation. Failure of the dams will assuredly cause loss of life and property. The MSHA and OSM criteria that have been used in the coal fields to regulate the construction of coal slurry impoundments could be used as the criteria for construction and maintenance of coal ash dams. These criteria have been by and large very effective since 1978.

2. If the coal ash dams were regulated in a manner similar to the coal slurry impoundments, with adequate geotechnical and hydrological standards, the coal ash dams would be made much safer.

3. If the MSHA and OSM standards had been utilized at the TVA Kingston, Tennessee Fossil Plant the dam failure would not have occurred. Compaction requirements, drainage control requirements, and instrumentation and monitoring would have prevented the TVA dam failure.

4. The EPA assessment regarding the stability of large coal ash impoundments established that most of the dams are not properly constructed and pose a hazard to the public. Failure of the coal ash dams will result in loss of life. Geotechnical evaluations involving drilling into the dams to sample and determine the strength of the materials will be required to evaluate long term stability. Instrumentation such as piezometers to determine internal water levels will also be necessary.

5. The assessments should be conducted by qualified geotechnical and hydraulic experts such as those professionals at the U.S. Army Corps of Engineers or the Bureau of Reclamation who have years of experience evaluating the structural integrity of earthen dams. There are also numerous geotechnical engineering firms in the United States who are capable of conducting the required evaluations. Each dam should be evaluated by conducting drilling and soil sampling, testing the materials, determining the phreatic levels within the dams, and then performing slope stability analysis to determine the long term conditions for the dams. Following the Buffalo Creek disaster, hundreds of such analyses were performed on coal waste dams throughout the United States. The owners were required to make the necessary modifications to the structures to protect downstream residents. A hydrological analysis was also necessary to route storm waters through the reservoirs. Modifications were made to increase the size of emergency spillways to accommodate the appropriate design storms. Most structures in the coalfields were modified to accommodate the probable maximum storm. These kinds of evaluations should be performed on the existing and proposed coal ash impoundments. Weekly evaluations of dams and annual certifications by qualified geotechnical engineers is a must but cannot be a substituted for regular mandatory safety standards enforced by a government entity with authority to require the necessary standards.

6. Weekly inspections are required because even well constructed dams can develop seepage and stability problems that if left uncontrolled can cause dam failures. Weekly inspections are essential for long term maintenance of earthen dams such as coal ash dams. Coal ash is particularly susceptible to failure by "piping" because it is a fine grained

material that will liquify easily and fail rapidly as was evident at the TVA Kingston Tennessee coal ash dam.

7. MSHA requirements ensure that downstream residents should be evacuated if a serious stability problem develops at a coal waste dam. Coal ash dam owners should be required to monitor the dams and develop a warning system for residents.

8. State and local officials should be notified by owners of coal ash dams if stability problems are discovered. Formal and effective notification and evacuation plans are essential for protection of the public, but the most effective protection will be provided by using sound engineering practices in constructing and maintaining coal ash dams. Additionally, disaster preparedness exercises should be conducted through local, state, and federal entities to further ensure the safety of the public. These exercises are conducted regularly across the nation to prepare emergency responders in a simulated catastrophe event. The owners must be held accountable for ensuring the safety of the coal ash dams and the public. A strong regulatory process for permitting and operating dams is absolutely necessary.

9. The regulatory authority should be able to require the owners and operators to take the necessary actions to modify and stabilize the dams should problems develop. Both MSHA and OSM can order the modifications of a dam to ensure long term stability and the protection of the public.

Jack Spadaro
June 23, 2013

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