



March 25, 2009

Mr. Matt Hale
Director, Office of Resource Conservation and Recovery
United States Environmental Protection Agency
1200 Pennsylvania Ave NW
MC 5301P
Washington, DC 20460

Dear Mr. Hale,

The American Coal Ash Association strongly opposes any designation of coal combustion products (CCPs) as hazardous waste. We believe it would have significant and long lasting effect upon society's willingness to beneficially re-use fly ash and other CCPs by destabilizing their markets. Regulatory schemes that would designate these materials as hazardous for purposes of disposal will stigmatize them and eliminate many examples of environmentally and socially sound beneficial use. CCP disposal standards can and should be addressed without unnecessarily stigmatizing resources with high potential for safe beneficial use as a preferred alternative to disposal. We welcome dialogue with the Agency and the environmental community to ensure that future regulatory frameworks promote the safe beneficial re-use of CCPs.

We understand one strategy being discussed for improving disposal standards could involve designating CCPs as "hazardous waste" when bound for disposal, but exempting CCPs from the hazardous waste designation when used beneficially. As described in detail in the Appendix to this letter, ACAA contacted the states of Pennsylvania, Maryland, Virginia, Florida, Delaware, North Carolina, Colorado, Tennessee, Georgia, Michigan, North Dakota, Wyoming, Indiana, Illinois, and Montana. Of the responses received to date, every state indicated that beneficial use of CCPs would not be permitted under current regulations if they were to be designated hazardous, even only if for the purposes of disposal. Iowa and Wyoming both indicated they were not at all in favor of a hazardous determination because of the complications it would bring to the state regulatory agency. To remove the opportunity to conserve natural resources or reduce greenhouse gasses by designating CCPs as hazardous would be a reversal of environmentally sound policies in place for three decades. This would have a devastating effect on the beneficial use of these valuable resources.

ACAA believes that a hazardous waste designation in any setting is not supported by nearly three decades of EPA study and formal determinations marked by strong scientific integrity. In

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addition to the EPA itself, members of academia, state agencies, the Department of Energy, the Federal Highway Administration, the Department of Agriculture, the Recycled Materials Resource Center, the Electric Power Research Institute, the Utility Solid Waste Activities Group, electric utilities and many others have repeatedly evaluated the constituents found in CCPs (such as fly ash, bottom ash, boiler slag and air emission control residues). Using the criteria outlined in Subtitle C of the Resource Conservation and Recovery Act (RCRA) CCPs have been evaluated for toxicity, ignitability, corrosivity and reactivity and been found to be well below the criteria in Subtitle C that would require a hazardous classification.

CCP Utilization Progress Since the 2000 Determination

On May 22, 2000, the EPA published its Regulatory Determination on Wastes from Fossil Fuels - Final Rule in which the agency concluded that these materials “do not warrant regulation under subtitle C of RCRA and is retaining the hazardous waste exemption under RCRA section 3001(b)(3)(C).” The determination also discussed an issue raised wherein the electric utility and ash utilization industries indicated that they believed subjecting any CCPs to a subtitle C regime would place a significant stigma on these materials, the most important effect being that it would adversely impact beneficial reuse. Industry stated that the concern was that, even though beneficially reused CCPs would not be hazardous under the contemplated subtitle C approach, the link to subtitle C would nonetheless tend to discourage purchase and re-use of the materials. In the determination the EPA also stated, “We do not wish to place any unnecessary barriers on the beneficial uses of these wastes, because they conserve natural resources, reduce disposal costs and reduce the total amount of waste destined for disposal.”

In 2009, that concern has not changed and is even greater. In 1999, CCPs utilization was estimated to be 30% or approximately 30 million tons annually. In 2008, that number had risen to 43% and 56 million tons annually, nearly double the tonnage reported in 1999. This is a remarkable achievement considering total tonnage of CCPs produced has grown significantly during the same period.

The “Waste” Stigma

If the EPA were to assign a hazardous waste designation for CCPs, even for the limited purpose of disposal operations, we believe it would have a devastating effect on the beneficial use of the resource. Producers, marketers and users of CCPs would be confronted with myriad new uncertainties and perceived risks associated with marketing, handling, transporting and utilizing CCPs. By impeding the beneficial use of CCPs, a hazardous waste designation would have the unintended consequences of dramatically increasing the volumes of material disposed and eliminating the significant environmental, economic, and sustainability benefits accomplished by beneficial use.

CCP disposal standards can and should be addressed without unnecessarily stigmatizing resources that have the high potential for safe beneficial use as a preferred alternative to

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disposal. We are not aware of any beneficial uses where properly managed CCPs were proven to have had an adverse impact on public health or the environment.

EPA and others have consistently recognized that consumers of beneficially used CCPs are highly sensitive to concerns about the materials they are using. For example:

- In the U.S. Department of Energy's 1993 Report to Congress titled "Barriers to the Increased Utilization of Coal Combustion/Desulfurization By-Products by Government and Commercial Sectors," the agency identified "restrictive regulation of fly ash as a solid waste" as an institutional barrier to CCP utilization.
- In a 1998 update to the DOE report, the Energy and Environmental Research Center reported that adoption of beneficial use guidelines by states continued to be impeded in some areas by an "overly cautious approach."
- Beginning in 2002, at beneficial use summits sponsored by the EPA and hosted by EPA regional offices, a recurring theme discussed at these summits was the barrier that was found in many states by regulating industrial byproducts, including CCPs, as "wastes" rather than products. The perception that a waste could not have the same characteristics or benefits as a virgin material were cited in many presentations given by members of industry, state agencies and end-users.
- In the International Energy Agency's January 2005 report on "Benefits and Barriers in Coal Ash Utilisation," the Agency writes that "Fly ash utilisation is hindered where it is regarded as a waste or by-product."
- In EPA's June 2008 Report to Congress on Increasing Usage of Recovered Mineral Components, end user perception of health and safety issues is clearly identified as a barrier to increasing CCP utilization.
- On October 7, 2008, EPA issued a new final rule that streamlines regulation of hazardous secondary materials to encourage beneficial recycling and help conserve resources. In explaining the rule change, EPA wrote: "By removing unnecessary regulatory controls, EPA expects to make it easier and more cost-effective to safely recycle hazardous secondary material." These actions recognize that hazardous waste designations impose requirements that create significant barriers to efficient recycling. Furthermore, the streamlining of regulations under the October 2008 final rule only pertains to recycling on-site or under tightly controlled conditions and would not be responsive to the widely dispersed beneficial use pathways that have been developed for CCPs.
- Just last week, the Iowa Department of Natural Resources wrote to EPA urging the Agency not to designate CCPS as hazardous waste, explaining that such regulation is not supported by

the data, and cautioning that such action “has the potential to put an end to many beneficial uses” for coal combustion wastes in Iowa.

Historical Successes

The development of broad-based partnerships, regionally and nationally, supporting the safe beneficial use of CCPs is one of the greatest success stories of American environmental policy. Industry and environmental regulators have cooperatively and effectively focused on the common goals of reducing landfill use and building a “green supply chain” for construction materials. That green supply chain has, in turn, created enormous benefits in conserving natural resources, reducing energy usage, improving quality of finished products, and reducing greenhouse gas emissions. The increase in beneficial use of nearly 30 million tons annually since the Final Rule in May 2000 shows the measurable impact that partnerships promoting proper CCP use can have. Besides avoiding as much as 115 million tons of greenhouse gases through the use of fly ash in concrete products, approximately 402.3 million tons of CCPs have been diverted from disposal since 2000. Of this large number, a similarly large number of other materials were not extracted, processed and used since these CCPs were available and used instead.

In 2003, the EPA, in partnership with the Department of Energy, the Federal Highway Administration, the Utility Solid Waste Activities Group and the American Coal Ash Association created the Coal Combustion Products Partnership, or C²P². In the last three years, the US Department of Agriculture- Agriculture Research Service, the Electric Power Research Institute and the National Ready Mix Concrete Association have joined C²P². The stated purpose of this partnership is “... to help promote the beneficial use of Coal Combustion Products (CCPs) and the environmental benefits that result from their use.” The C²P² website identifies a number of specific environmental benefits for the partnership including: greenhouse gas and energy benefits; benefits from reducing the landfilling of CCPs; reducing the need to mine virgin materials as well as performance and economic benefits. Each of these benefits is described in detail, which argues strongly to making sure that beneficial use continues.

In 2004, EPA Region 3 in partnership with the Federal Highway Administration founded the Green Highways Initiative (now known as the Green Highways Partnership (GHP)). This effort, which is focused in the Mid-Atlantic region of the United States, emphasizes the need for watershed-driven storm water management, conservation and ecosystem management, and recycling and re-use of industrial byproducts. In the four plus years of its efforts, the GHP has formed alliances with organizations such as the AASHTO Center for Environmental Excellence, the Maryland State Highway Administration, the Industrial Resources Council, the National Ready Mix Concrete Association, the American Concrete Pavement Association, state departments of environment or natural resources, contractors and academia. The common goal of all partners is a more sustainable method of designing, building operating and maintaining our nation’s transportation systems. Incorporating CCPs, and other industrial materials, is but one part of this strategy.

Any proposals to regulate disposal of CCPs as “hazardous waste” threaten to undo this progress. This letter will illustrate that nearly 30 years of technical study with high scientific integrity has concluded that there is no basis for a hazardous waste designation for CCPs – for disposal or beneficial use. Similarly, going back to 1980, years of federal regulatory determinations have also concluded that a hazardous waste designation is unwarranted. And most importantly, a hazardous determination would undo and nearly completely stop beneficial uses for all CCPs.

America Needs to Use CCPs Today Even More

In his Order on Scientific Integrity dated March 9, 2009, the President of the United States indicated that “Science and the scientific process must inform and guide decisions of my Administration...” As stated in the paragraphs above, extensive scientific study under the direction of Administrations of both Democrats and Republicans has concluded that beneficial use of CCPs is safe for public health and the environment. Furthermore, there is no scientific evidence to support a hazardous waste designation for CCPs in any setting – beneficial use or disposal.

EPA is well aware of federal efforts that recognize and support a green supply chain that, for example, promotes fly ash re-use as a partial replacement for portland cement. Wherever concrete is used, fly ash should be used to improve the concrete product making it not only green and less costly but also more durable and less permeable. Executive Order 13423, “Strengthening Federal Environmental, Energy, and Transportation Management” requires federal agencies to purchase green products and services, including recycled content products. Federal Comprehensive Procurement Guidelines (CPGs) and Environmentally Preferable Purchasing (EPP) encourage and assist federal agencies in purchasing environmentally preferable products and services. The Ronald Reagan Building is cited as a case study in which used fly ash was used in concrete for the construction of this facility. Federal concrete projects used an estimated 5.3 million metric tons of coal fly ash in 2004 and 2005 combined. The increases in beneficial use have occurred despite the ongoing resistance by project owners to implement CPG and EPP guidelines. If such use was required as part of a broader national strategy, then beneficial use of CCPs could grow even more rapidly.

These examples of federal purchasing guidelines are helping set a model for a new “green supply chain.” Architects, builders and project owners follow not only federal leadership they also adhere to construction recommendations like Leadership in Energy and Environmental Design (LEED) and the Green Globes Initiatives to promote more sustainable construction. The passage of the recent stimulus package and funding for infrastructure construction demand implementation of practices that address lifecycle costs and long term durability attributes that CCPs can provide in many applications. Besides reducing the need for landfill space and conserving other natural materials, CCPs can offset carbon dioxide emissions and are generally less expensive than competing materials.

In 2005, the American Coal Council performed an economic assessment of the impact that the CCP industry has on the nation's economy. At that time, it was estimated that the combined direct and indirect economic benefits that CCPs provided was approximately \$4.5 billion. That number has grown substantially since 2005 since production and utilization has increased nearly 10% and green building has expanded even more since the study was completed. This incorporation of CCPs into the "green supply chain" has created jobs and has been used in countless sustainable projects that illustrate the long term benefits of products containing CCPs as well as reducing green house gasses and providing locally available materials to many sites. Reducing the amount of waste generated in this nation, while reducing the costs of projects and conserving other materials for higher values of use are essential elements of a more sustainable America.

In a recent report by the Freedonia Group on March 17, 2009, it was reported that recycled-content (e.g., fly ash, blast furnace slag) concrete sales reached \$9.5 billion in 2008, representing 15 percent of green building materials demand. That capped a climb from \$6.4 billion in 2003, equivalent to an 8.3 percent annual growth rate. Demand for recycled content concrete is forecast to grow 8.4 percent per year to \$14.3 billion in 2013, accounting for an increasing share of total concrete used. This growth of fly ash in concrete products would be severely limited, if not eliminated, by a hazardous classification.

Some Consequences of a Hazardous Label for CCPs

Any effort to regulate disposal of CCPs as hazardous waste would have catastrophic effects on the ability to maintain, much less increase, the beneficial use of the materials. New barriers to beneficial use would be erected because:

- State regulator resistance to beneficial use of materials otherwise designated hazardous
- Heightened consumer resistance to beneficial use of materials with a hazardous waste stigma
- Operational complications created for CCP producers, marketers and consumers

We have included in the Appendix to this letter specific examples of the impact we have already seen upon beneficial use as a result of news media accounts that have inaccurately labeled CCPs as "toxic" or "hazardous." We have also contacted a number of producers, marketers, end-users and state agencies that have offered opinions to us as to what they think a hazardous determination (even if just for disposal) would have on future beneficial use. These statements are also included in the Appendix as are a number of pieces of correspondence, mainly in the form of emails that ACAA has received concerning this issue.

ACAA is aware of no regulatory precedent for a material that is regulated in one setting as a hazardous waste for disposal while being allowed in substantially the same form in other settings as a widely available construction material. Rules drafted, but never adopted, for cement kiln dust may be cited as a potential example. However, the beneficial use pathways for cement kiln dust (CKD) differ substantially from the pathways used by CCPs. In the case of CKD, the regulations anticipated that the material would never leave the possession of the cement manufacturers that created it. Therefore, higher standards for disposal could possibly be assumed to create incentives for the cement manufacturers to reuse CKD in their own operations. In the case of CCPs, the reuse pathways are mostly external to the producer. There are no precedents for industries avoiding handling materials as hazardous waste on their own properties by dispersing the materials to hundreds or thousands of properties owned by others.

The European Union also has addressed the issue of beneficial use of CCPs as part of its development of a Waste Framework Directive. The barrier to beneficial use created by a “waste” classification was clearly discussed in a 2005 paper by the United Kingdom Ash Quality Association that concluded: “In fact, the directive is in danger of having the opposite effect – to reduce the existing use of byproducts and suppress the development of new means of and recycling.”

A significant consequence of a hazardous waste designation would be that the United States would have millions more tons of hazardous waste to dispose of every year as resources would no longer be desirable for beneficial use. In addition to increasing the need for additional highly engineered hazardous waste landfills, the loss of beneficial use applications would eliminate economic benefits of reuse, further exhaust natural mineral resources, and significantly curtail environmental practices that today reduce the United States greenhouse gas emissions footprint by approximately 15 million tons per year. There are currently only 21 hazardous waste facilities permitted in the United States, many of which are located nowhere near electric generating stations or industrial boilers. ACAA is assuming that any rulemaking for CCPs would affect other production units such as industrial and commercial boilers that produce essentially the same type of CCPs in their generating, process heat or manufacturing operations.

There are no commercial hazardous waste disposal sites in Montana, North Dakota, Minnesota, Wisconsin, Iowa, Missouri, Kentucky, Tennessee, North Carolina or 23 other states. Each site is limited by permit to specific daily tonnages and total acres of space to receive hazardous materials. The construction of new sites would be costly, if even possible, given widespread public opposition to hazardous waste disposal in most communities.

State Regulatory Implications of a Federal Hazardous Designation

Beneficial use of CCPs depends on acceptance by state environmental regulators, usually in the form of Beneficial Use Determinations. A federal designation of CCPs as hazardous waste

would disqualify CCPs from consideration for beneficial use in every state jurisdiction surveyed by the American Coal Ash Association so far.

In states where beneficial use of CCPs is permitted by regulations or even exempted, ACAA is of the opinion that a hazardous determination for CCPs in disposal would curtail use in these same states. During the week of March 9, ACAA contacted the states of Pennsylvania, Maryland, Virginia, Florida, Delaware, North Carolina, Colorado, Tennessee, Georgia, Michigan, North Dakota, Wyoming and Montana. Of the responses received to date, every state indicated that the beneficial use of CCPs would not be permitted under current state regulations if they were to be designated hazardous, even only if for the purposes of disposal. The Appendix to this letter cites statements made by these state agencies.

Resistance by Producers, Marketers and End-Users

Likewise, ACAA polled many of its member producers and marketing firms. Their responses were the same as the states. A hazardous determination would eliminate beneficial use. Their statements, emails or letters are also cited in the appendix to this letter.

In informal conversation, ACAA also discussed this issue with some firms or organizations that did not want to place their comments in writing, since the idea of a hazardous designation was simply speculation at this point in time. However, some of their statements are illustrative of our concern.

A large wallboard manufacturer stated, for example, were FGD gypsum to be designated hazardous for the purposes of disposal that would eliminate that firm's use of FGD gypsum entirely. Their logic is the designation of hazardous for any ingredient in wallboard production would make the wallboard likewise hazardous and they will not produce a product that could be perceived as hazardous, even if testing were to demonstrate it is not. The liability issues around such a convoluted arrangement would be far too great to chance on continuing under such a scenario.

At the American Concrete Institute's Board Advisory Committee on Sustainable Development meeting held in San Antonio on March 15, 2009, this question was posed to the members: "If CCPs were to be designated as hazardous by the EPA, what would be ACI members' reactions?" The responses were almost unanimous. Any such designation would virtually eliminate the use of fly ash in concrete, despite the fact that fly ash is bound in the matrix. The perception that portland cement concrete contained "hazardous" constituents would stop ready mix producers, specifiers, concrete products manufacturers and others from incorporating fly ash in their various concrete applications. One member stated it would be a dangerous precedent since some of the characteristics of fly ash (pH, chemical composition, etc.) are similar to the same characteristics of portland cement. Another person stated that since supplementary cementitious materials, such as fly ash, are an important part of the sustainable nature of concrete, removing fly ash from concrete products would set back efforts to reduce the cement

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industry carbon footprint (elimination as raw feed for clinker, elimination of FGD gypsum in the finishing process, no more blending of fly ash and portland cement at the kiln, no more blending of fly ash and cement at the ready mix producers facilities, etc.)

Similarly, at the ACI Committee 232.2 (Fly Ash in Concrete) meeting on March 16, 2009 the same question was posed to those members. Similarly, members were assertive in their reply that any designation of hazardousness to fly ash would eliminate that use of fly ash in almost all concrete applications. The perception of risk to those not familiar with the properties and characteristics of concrete would necessitate countless efforts to re-educate end-users about the actual risk. Already producers of concrete products are being questioned about fly ash safety based on widely distributed media coverage of the Kingston event. Committee members also described questions they are receiving about the anticipated impact of mercury capture on fly ash use. There is a fear that using any fly ash involved in mercury capture processes will expose workers to health risks associated with mercury. There have been questions about off-gassing of mercury for fresh and hardened concrete, as well as concerns about the leaching of mercury for de-constructed concrete. These examples about mercury are indicative of the far greater reaction the industry would see were fly ash to be considered hazardous for any situation.

Operational Impacts of a Hazardous Waste Designation

Discussions of a hazardous waste designation for CCPs often focus on the “truck scenario”: If a truck leaving a power plant turns left to go to a disposal site, the material is hazardous; if it turns right to go to a beneficial use application it is not. This scenario is not that simplistic and does not reflect reality, wherein a hazardous designation creates costs, risks, and requirements at numerous stages of the product life cycle. For instance:

- Insurance and Indemnity - Insurance costs and requirements for hazardous wastes are higher and more complex than for non-hazardous industrial byproducts. Furthermore, indemnification issues between producers, marketers and consumers of CCPs would complicate the ability to accomplish beneficial use.
- Retroactive liability – to classify CCPs as hazardous would raise questions about all the previous projects where CCPs were used in small or large scale projects. Would land reclamation activities, soil stabilization projects, pavements, wallboard products, grouts and numerous other applications now require removal and disposal to make that project safe? The average citizen as well as public officials would no longer accept materials now considered hazardous to be used in commercial applications, not to mention the fears that would be raised about past uses. Class action lawsuits against producers, marketers, contractors, and end-users would be overwhelming, as demonstrated by the “Chinese wallboard” and “sulfate” issues discussed below under Market Reaction Examples.

- Regulatory Oversight - What oversight would the Occupational Safety and Health Administration and other worker safety organizations provide in overseeing worker exposure to CCPs? Would increased protective gear be required, or unnecessarily perceived to be needed, for workers handling CCPs at various levels of the product distribution chain? What other worker training would be required? Issues related to hexavalent chromium in portland cement have been seen to generate widespread concern among workers, despite health risk information demonstrating this is not a serious concern in most typical situations.
- Transportation - Would trucks and railcars transporting CCPs be required to carry hazardous waste placarding, lading paperwork and perform related transportation agency licensing and notifications? What clean-up standards would be enforced in the event of spills? Will all drivers now be required to obtain additional licenses to haul hazardous wastes, when going to a landfill or to a utilization location? Would transport vehicles (truck, rail and/or barge) have to be cleaned between the shipments of different commodities? How would clean-up residues be handled?
- Facility Handling – Would coal-fueled power plants be required to implement new operational procedures now that they are producing materials that could be treated as hazardous wastes? Would operational activities need oversight similar to those found at a nuclear power plant since the plant now produces and handles “hazardous” substances? Would CCPs be regulated differently at a concrete batch plant or other manufacturing facility? In the event of spills, would CCPs face stricter clean-up requirements than for other products with similar chemical constituents, such as cement? Could incidental spill clean-up wastes be sent to local MSW landfills or would they be required to go to hazardous waste landfills?
- Secondary Waste - What would be the regulatory status of products containing CCPs that need to be disposed? For instance, a small amount of concrete is almost always disposed after completing a job. If that concrete contains coal fly ash, would its disposal be governed by hazardous waste regulations? Furthermore, when structures containing CCPs are demolished, would their disposal be governed by hazardous waste regulations? What about sample shipping and testing laboratory requirements? Would labs need to be certified for hazardous waste handling? How would disposal of samples after testing be handled?
- Secondary Product Types - If CCPs are combined with other materials prior to marketing as a product, will those materials be affected by the regulatory status? For instance, will the production of blended cements be discouraged because inclusion of the CCPs may result in higher insurance and regulatory exposure?

- In-place Worker Exposure - Would enhanced worker protection be required if products containing CCPs were modified during their useful life? For instance, what would be the impact on concrete cutting and coring operations?

Effects of Operational Impacts on CCP Producers

The combined effects of the operational impacts of a hazardous waste designation would discourage producers of CCPs from seeking beneficial uses. CCP producers would have little or no incentive to widely distribute a material that is already designated hazardous in one setting and may later be determined hazardous in other settings. To do so would expose producers to risks of widely dispersed clean-up operations and potential individual and class action litigation.

One of the reasons for a significant increase in CCP beneficial use rates since EPA's 2000 Final Regulatory Determination has been the reliance of CCP producers on EPA's decision. The Final Regulatory Determination was issued after a vigorous public discussion that gave industry confidence that matters pertaining to a hazardous waste designation were settled and that they could move forward on beneficial use implementation with little fear of retroactive liability. Many CCP producers began increasing capital investments in facilities needed to direct CCPs to beneficial use rather than disposal. Wisconsin is often cited as a model state for beneficial use of CCPs. Clearly defined state regulations encouraging beneficial use have supported the development of a robust market for CCPs in a manner protective of the public health and environment. Similar policies in states like Pennsylvania and Texas have shown that encouraging beneficial use is a powerful incentive to producers and marketers of CCPs.

If EPA now reverses its Final Determination with respect to CCP disposal, CCP producers will likely have little confidence in their ability to rely on any assurances by the Agency that beneficial use applications will remain classified as non-hazardous. Risk of retroactive liability will return as a significant decision-making factor when evaluating resources devoted to promoting beneficial use.

Effects of Operational Impacts on CCP Marketers

The increased costs associated with transporting, handling, permitting, recordkeeping, and indemnifying materials that may be deemed hazardous would negatively alter the economics of marketing CCPs. Even more difficult would be overcoming the stigma associated with selling a product that is considered hazardous in other settings (See Market Reaction Examples below)

Effects of Operational Impacts on CCP Consumers

Consumer attitudes toward CCPs would be negatively affected on two levels. Manufacturing consumers – such as ready mixed concrete producers – would be less likely to use a product that carries the risk of increased regulatory scrutiny or worker exposure issues (as stated by the wallboard manufacturer and members of ACI committees discussed above). End use consumers that already require extensive education on the health and environmental safety of CCP beneficial use would likely abandon consideration of the products entirely. Brief discussions with several LEED accredited professionals have speculated that architects would no longer request fly ash in concrete because of perceived risks.

Three Market Reaction Examples

The effort to increase beneficial use of CCPs is already negatively affected by misinformation about health and safety issues and by popular news media stories that mischaracterize CCPs as “toxic” or “hazardous.” An official designation of CCPs as hazardous in any setting will only exacerbate the issue. A regulatory double standard would discourage CCP producers from distributing materials into a marketplace that could be rife for speculative litigation. Although it is difficult to determine the exact marketplace reactions, we offer three examples of situations wherein the tainting of CCPs with a label of “toxic” or with some widely held perception has had a negative impact on the industry.

California CHPS

The California Collaborative for High Performance Schools (CHPS) has established a green rating system, similar to LEED that provides guidance to CHPS members that want to increase their use of recycled content materials in their sustainable construction practices. Section ME4.1, “Recycled Content,” contains the following text:

“For California school projects, credit is not offered under this credit for concrete containing fly ash with a concentration of mercury more than 11 ppb (0.011 mg/L) as determined by a Waste Extraction Test (WET) used by the Department of Toxic Substance and Control (DTSC) found in California Hazardous Waste Code Title 22, Chapter 11, Appendix II WET procedures. For non-California school projects mercury concentration should not be more than 5.5 ppb (0.0055 mg/L) as determined by a Toxicity Characteristic Leaching Procedure (TCLP) following EPA 7470A.”

In this example, CHPS has singled out a perceived negative characteristic of fly ash and imposed a unique condition that is not applied to any other construction material. For

example, other materials that might contain mercury, such as granite, stone, aggregates, portland cement, ceramics, etc. are not included in this precaution. Common items, such as lighting fixtures, contain higher amounts of mercury that could conceivably be released in a school, but they are not included in similar warnings. The CHPS motivation is to discourage use of fly ash from coal fueled power plants, rather than a genuine concern in protecting human health. Testing data from EPRI, Ohio State University, the University of Nevada-Reno and other sources was provided to CHPS to help them understand the actual risk (almost non-existent) to building occupants from mercury that might be found in the concrete matrix. Industry arguments were to no avail. This stigmatizing of fly ash is a modest example of the complications that would arise from a hazardous designation. The CHPS note in this section is being replicated in other similar CHPS programs and as recently as March 2009, was found in the draft Colorado CHPS guide.

Florida Wallboard

In Ft. Myers, Florida a class-action complaint was filed on January 30, 2009 in U.S. District Court charging wallboard made by the Knauf Company was "inherently defective" and claims this Knauf drywall is made from fly ash, compounds of which combine with moisture to form sulfuric acid that can corrode copper tubing and electrical wiring. About 10 million sq ft of Knauf-made drywall was used in the state between 2004 and 2006, according to the complaint. ACAA has discussed this lawsuit with the Gypsum Association which has been following the issue closely. Both Associations understand that the Chinese drywall was made from gypsum ore (not FGD gypsum) and DOES NOT contain fly ash. Furthermore, no wallboard produced in North American is made using fly ash. There is speculation that the attorneys for the lawsuit have deliberately included fly ash in the complaint because it tends to portray negative connotations, given the incident in Tennessee in December. Despite attempts to persuade attorneys to remove "fly ash" as part of the argument (since it is not present in that wallboard), they have refused. Media coverage about fly ash in the US has used inflammatory words such as "toxic sludge" or "hazardous waste" which furthers the goals of the class action claimants, despite the fact that no fly ash is contained in the Chinese wallboard or any other wallboard used in the US. These types of misperceptions about wallboard have spread to other parts of the country as reported by ACAA members.

California Sulfate Attack

In California beginning in the mid-1990s, there were numerous lawsuits based on allegations of sulfate attacks on concrete foundations. Several law firms were successful in winning suits wherein homeowners were supposedly experiencing defects in their

concrete foundations due to damage resulting from sulfate chemicals in soils that were in contact with concrete. Arguments were successfully made that suppliers used excessive water when mixing the concrete and that the wrong types of cement was used. However, in 2006 a California judge ruled that the plaintiffs seeking more than \$5 million in damages in that particular case had failed to demonstrate that the defendant concrete suppliers had actually supplied defective concrete. Since the beginning of the lawsuits in the 1990s, nearly \$1 billion in settlements had taken place. The judge also rejected the decisions of previous lawsuits allowing the defendants to recover the expenses they incurred for expert witnesses. At the heart of the lawsuits was the question, whether or not the foundations had actually been damaged or weakened by sulfates in the soil and if so, had this endangered the structures themselves. The judge concluded that there was insufficient evidence to prove the concrete supplied by the defendants was improperly proportioned or contained a type of cement unsuitable for the service. The judge further noted that when a method of presenting evidence is “veiled in the clothing of objective science” it may be difficult for juries to evaluate complex data. Furthermore he said that when controls are lacking linked to general scientific acceptance, juries may be inappropriately swayed by expert opinion based upon junk science, potentially leading to unsupported conclusions.

Conclusions

We believe the three examples cited above of market reactions to alleged risks related to mercury in fly ash, fly ash in wallboard and sulfate attack indicate the grave risk to beneficial use were CCPs to be classified as hazardous in some manner. To overturn nearly thirty years of scientific evaluations, assessments, investigations and evidence to the contrary would set back decades of beneficial use. CCP disposal standards can and should be addressed without unnecessarily stigmatizing resources with high potential for safe beneficial use as a preferred alternative to disposal. Improved methods of disposal, appropriate regulatory oversight and characterization of CCPs with their intended application will allow beneficial use to be safely conducted in the future. Encouraging beneficial use, which commensurately reduces the need for landfill is a far better method of regulatory action. The numerous examples of incentives and support from government agencies that could increase beneficial uses described in the June 2008 Report to Congress offer positive incentives that would increase CCP utilization. To remove the opportunity to conserve natural resources or reduce greenhouse gases by designating CCPs as hazardous would be a reversal of environmentally sound policies in place for three decades.

Any decision the EPA makes about a hazardous designation has international implications as well. The C²P² program and the Green Highways Partnerships have been recognized by international CCP managers as leading the way toward sustainable construction. The strong encouragement by the EPA has been cited by members of ECOBA (European Coal Byproducts Association), CIRCA (Canadian Industries Recycling Coal Ash) and others as outstanding examples of governmental support that should be replicated across the globe. In many ways,

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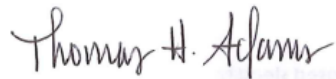
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the United States is viewed as a leader in responsible CCP management by virtue of the numerous state and federal guidance documents promoting beneficial use.

We have attempted to portray some of the consequences and the implications we believe that a hazardous determination would have upon CCPs and the nation. The extraordinary costs associated with such a decision are difficult to quantify, but they would be measured in billions of dollars and in job losses of tens of thousands. Sustainable practices would be affected across the nation and natural resources of this nation depleted even more rapidly than seen now.

We thank you for your time and consideration of this information. We are available at your convenience to discuss any information contained within.

Sincerely,

A handwritten signature in black ink that reads "Thomas H. Adams". The signature is written in a cursive style.

Thomas H. Adams
Executive Director

Copies:

M. Vickers
R. Dellinger
P. Grevatt
R. Kinch
T. Degeare
J. Sager

Appendix to ACAA Letter to Matt Hale dated March 25, 2009

This appendix contains a number of statements from organizations and individuals that ACAA contacted during March. These individuals or organizations were asked to provide ACAA information about what they thought a determination of "hazardous" for CCPs, even if just for purposes of disposal, would have on beneficial use. Please note these statements are personal opinions of the entities indicated.

Also included are examples of communications received unsolicited from CCP users concerned about characterizations of fly ash in media accounts of the Kingston incident.

From State Regulators

From the Commonwealth of Pennsylvania

Dave,

I wanted to run your question by folks in our Bureau of Waste Management before responding.

(1) If something is declared hazardous waste, even if the laws permitted its beneficial use, it would not be beneficially used simply because of public opposition. We get opposition for things that are not hazardous. I don't know how we could defend the beneficial use of something that was declared hazardous.

(2) Here's a comment I received from our Waste program:

"If coal ash was listed as hazardous waste and the general, current hazardous waste regulatory scheme remained as it is, it would be difficult to continue beneficial uses, especially where the use involves placement on the land. There are certain beneficial-use-like exclusions in the current hazardous waste regulations (i.e. using hazardous waste as an effective substitute for commercial products, etc.), however, none of those exclusions allow placement on the land or incorporation into products that are placed on the land unless many other hoops are gone through (like demonstrating that the hazardous constituents have undergone a chemical reaction so as to become inseparable by physical means, and meeting the land disposal restriction standards)."

(3) Here's another comment from our folks in the Waste program concerning what EPA would have to go thru to list ash as hazardous:

EPA would, in (his) opinion, have a long, uphill battle since their own listing regulation at 40 CFR Part 261, Subpart D states that "*the Administrator will indicate his basis for listing the classes or types of wastes listed in this subpart by employing one or more of the following Hazard Codes:*

- Ignitable Waste (I)*
- Corrosive Waste (C)*
- Reactive Waste (R)*
- Toxicity Characteristic Waste ... (E)*
- Acute Hazardous Waste (H)*
- Toxic Waste (T)*

Appendix VII identifies the constituent which caused the Administrator to list the waste as a Toxicity Characteristic Waste (E) or Toxic Waste (T) in §§ 261.31 and 261.32."

There are no "codes" to cover the hazard associated with damming up a billion gallons in an inadequate structure. I guess we will see what they are thinking as far as attempting to apply the hazardous waste regulations.

(4) The ash that we beneficially use in PA in no way comes even close to exceeding the limits for the 8 RCRA metals. Below is a comparison of the RCRA leaching limits & our own requirements for beneficial use.

RCRA mg/L (TCLP)	PA Beneficial Use mg/L (SPLP)
Ag 5.0	2.5
As 5.0	0.25
Ba 100.0	50
Cd 1.0	0.125
Cr 5.0	2.5
Pb 5.0	0.375
Se 1.0	1.0

If EPA were to declare all ash as hazardous I'm curious as to what their basis would be. Despite claims to the contrary, we have not seen pollution from beneficially used ash. Last year PA used over 11 million tons of ash in the mining program. With the amount that's been used for mine reclamation in PA, if it were going to pollute we should be seeing pollution. We aren't.

From the State of Maryland

Dave-

My answer is speculative, as your question notes. My opinion is that any designation of a waste as hazardous would definitely stigmatize the ability to reuse or recycle the material to the maximum extent practicable. My sense is that if there were a federal designation as hazardous, any reuse/recycling would have to be done within the confines/construct of Subtitle C requirements. If EPA were to make such a designation, my personal opinion is that it would be incumbent on the Agency to provide additional criteria/guidance on how the materials can or should be beneficially used within Subtitle C. Since Subtitle C is a delegated program, my sense is States are going to have their hands tied somewhat within the constraints dictated by EPA. I am not aware of a circumstance where a waste is designated as hazardous if disposed

but non hazardous if beneficially used. Am not saying it does not occur, but that I don't know of any instance where it is occurring.

Be aware my response is purely my opinion and has not been vetted with legal counsel or technical staff.

From the State of Michigan:

Michigan currently regulates coal ash as a solid waste under Part 115, Solid Waste Management, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA). Michigan's program for Solid Waste Management has been in place since 1978. These regulations were amended in 1993 when Michigan became an approved state under the Resource Conservation and Recovery Act (RCRA) Subtitle D program. Based on the analytical information that we have seen on coal ash, we believe that the levels of contaminants contained in coal ash are similar in nature to those found in cement kiln dust, wood ash, foundry sands, paper mill wastes, or steel mill waste. With the promulgation of the 1993 rules, we consider all these waste to be low-hazard industrial waste (i.e. they leach less than ten percent of the hazardous waste limits when using the appropriate leaching tests.) Low-hazard industrial waste in Michigan may be disposed of in a landfill that has less-stringent design standards than a landfill taking either industrial or municipal solid waste, or it may be disposed of in a permitted surface impoundment.

Michigan currently has eight sites that accept only coal ash and/or associated wastes from coal-fired power plants. Four of the facilities are surface impoundments, and four are solid waste landfills. Coal ash is also disposed of in combination with other wastes in numerous low-hazard industrial waste landfills, industrial landfills, and municipal solid waste landfills located throughout the state.

The four active surface impoundments were all in existence prior to the enactment of Michigan's Solid Waste Management Act in 1978, and were "grandfathered in" without necessarily meeting the current requirements for the design and siting of such facilities. Three of the four surface impoundments are in the process of closing and/or converting to dry handling systems.

The statutory provisions of Part 115, of the NREPA also exempt coal ash from regulation as a solid waste under certain conditions when the ash is used as:

- a component of concrete, grout, mortar, or casting molds;
- a raw material in asphalt for road construction;

- aggregate or road or building material that will be stabilized or bonded by cement, limes or asphalt; or
- a road base or construction fill that is covered with asphalt, concrete, or other material approved by the state.

RCRA Subtitle C wastes in Michigan are currently regulated under Part 111, Hazardous Waste Management, of the NREPA. The regulation of coal ash under full RCRA Subtitle C would end the current beneficial uses of coal ash. Existing surface impoundments and landfills would be subject to more stringent design standards and would require either retrofitting of existing landfills (if even possible) or closure of those disposal facilities. Neither of these options could be implemented immediately.

Michigan currently has regulations in place governing the reuse and disposal of coal ash that are protective of public health and the environment. If coal ash were determined to be subject to regulation under Subtitle C, it would necessitate considerable changes to Michigan solid and hazardous waste regulations. Such changes would likely be subject to considerable opposition from any industry and/or municipality that generates coal ash waste and would likely lead to increased costs for energy generation and for businesses or industries utilizing the material.

From the State of Florida:

Dave,

If EPA decided to declare coal ash a hazardous waste, I suspect the beneficial use of coal ash would stop in Florida unless EPA also created some special exemptions. For example, I imagine cement plants that take coal fly ash may have to be permitted as hazardous waste treatment facilities and this would likely be difficult even if the cement plants wanted to do it. I also think it is unlikely we would allow folks to build roads with a hazardous waste. So we would be left with some sort of disposal. But last time I checked Florida does not allow hazardous waste disposal facilities, so that would mean generators would either have to ship the ash out of state or do some sort of on-site treatment to render it non-hazardous. I guess whether or not it could be treated to be non-hazardous would depend on the reason EPA gives for calling it a hazardous waste in the first place. And what about the existing on-site ash disposal areas around the state? Would these now become hazardous waste disposal facilities needing cleanup or HW permits?

I think we all agree that the TVA coal ash spill in Tennessee is a terrible mess. EPA needs to determine if we have other slurry impoundments like this that may fail in the country and work on preventing that, of course. Maybe they should provide more materials and training on how

to do good inspections for these facilities. Also, can the power plants that have slurry impoundments just convert from a wet to a dry process? Encouraging changes in the power generation process may be a better solution than trying to define coal ash as a hazardous waste. But maybe I just don't know the details well enough.

I will copy others who know more about the HW world than I do who may want to comment also.

From the State of Virginia:

Hi, Dave,

xxxxx has asked that I respond to you in regards to the use of CCPs. If EPA were indeed to reverse their prior position and decided to regulate CCPs as a hazardous waste under the RCRA Subtitle C authorities, it is very likely that Virginia would no longer allow these materials to be beneficial reused under our Coal Combustion By-Products Regulations (9 VAC 20-85) and there would also be no beneficial reuse allowances our Virginia Solid Waste Management Regulations (9 VAC 20-80), as well. And there is no speculation on what/if any effect the 2008 DSW ruling would have on some reuse potential if CCPs were declared hazardous waste (by the way, Virginia has yet to decide on seeking authorization for that rule).

From the State of Iowa:

Listing coal combustion byproducts as a hazardous waste would eliminate beneficial use in Iowa per Iowa Administrative Code (IAC) 567-Chapter 108. Iowa's beneficial use regulations pertain to "solid by-products," which expressly exclude hazardous wastes. Thus, if coal combustion byproducts were regulated as a hazardous waste, they could not be beneficially used in Iowa and an entire beneficial use market would be eliminated. In addition, Iowa has no hazardous waste landfills, which means all the coal combustion byproducts that were being beneficially used would have to be exported (easily over one million tons per year) to a hazardous waste landfill in Peoria, Illinois. If this facility was not available, Iowa utilities would have to seek a disposal in a hazardous waste landfill more than one state away (i.e. Colorado, Oklahoma, Indiana are the next closest).

From the State of Indiana:

Regulating coal combustion byproducts as hazardous waste would effectively end beneficial use in Indiana. Iowa State statute (IC 13-19-3-3) exempts nine uses from regulation as a solid waste. The statute directs that the coal combustion byproducts are “(A) not included in the definition of hazardous waste or is exempt from regulation as a hazardous waste under 42 USC 6921”. EPA's designation of coal ash a hazardous waste would effectively remove this material from the beneficial use portion of the Indiana statute.

From CCP Producers

From AES ILP Indianapolis, IN :

There probably would be no further beneficial use in Indiana. We have a statute (IC 13-19-3-3) that exempts nine uses from regulation as a solid waste. The statute requires that the CCP “(A) is not included in the definition of hazardous waste or is exempt from regulation as a hazardous waste under 42 USC 6921”. I suppose EPA could make disposal a hazardous waste, but also exempt use under 6921, but discussions I have had with marketers, even that legal fix would probably not allay the “stigma” fear. I am pretty sure it would prevent IPL’s use/disposal at coal mines, which is very important to us, especially if they phase out ponds for disposal. I haven’t research this, but I think there are ASTM issues that would arise with use as a raw material to make cement as cement replacement in concrete under C-618. These are our two major ash uses. An even bigger problem for us would be use of FGD gypsum as raw material in manufacture of wall board. We believe we can sell/use all of our approximately 600K tpy gyp (and maybe more). If we have to put this in a landfill, it would be not only an economic disaster (not only for us but the board manufacturers who would have to go back to mining more rock gyp), but also in my view an indefensible environmental travesty to dispose something that is useful, especially when coming from an environmental agency who changed name OSW to Resource Conservation and Recovery.

From ARRIPA, Harrisburg, PA:

“If EPA or PADEP classifies CFB coal ash as hazardous waste; the tax free conversion of PA’s second largest environmental problem (AML-AMD) into alternative energy, as well as its correlating labor force and economies that have been providing such benefits for several decades, will likely disappear.”

From We Energies, Milwaukee, WI:

Mr. Thomas H. Adams, Executive Director
American Coal Ash Association
15200 E. Girard Avenue, Suite 3050
Aurora, CO 80014

The purpose of this letter is to express our serious concern regarding the potential impacts to our successful coal combustion products utilization program at We Energies if coal combustion products were to be labeled a "hazardous" substance. The valuable mineral resources contained in coal combustion products need to be matched nationally to environmentally sustainable practices rather than destined for disposal. A hazardous label will be extremely harmful to these efforts. Product information is already recorded on Material Safety Data Sheets for users. Our industry also already provides required information under the federal Toxics Release Inventory (TRI) reporting requirements. The addition of a "hazardous" label will likely have the effect of creating an unwarranted concern for potential users. The net effect will be an increase in the amount of these mineral resources wasted and disposed, and at the same time create an increase in the mining of essentially the same "natural" minerals with associated environmental production impacts.

We Energies has worked diligently to develop, and patent several beneficial uses for virtually all of our fly ash, bottom ash and flue gas desulfurization gypsum in recent years. In fact we have gone so far as to recover previously disposed materials from landfills at times to meet customer demand for these commodity resources. Our fly ash is primarily utilized as a cementitious material in the production of concrete, and controlled low strength materials for the construction industry. Smaller amounts are also used for soil stabilization, full depth (in-situ) recycling of asphalt pavements, raw feed material for cement manufacturing, and for mine subsidence prevention. Our bottom ash materials are used primarily as an alternative to mined aggregates for use as bases for concrete/asphalt pavements and foundations. Some bottom ash is also used as raw feed material for cement manufacturing. Our flue gas desulfurization (FGD) gypsum has essentially all been used from the first day of production in wallboard manufacturing, and more recently also in agriculture. All of these uses essentially replace mined materials of the same composition, or manufactured materials with their own environmental impacts.

- The preservation of natural mined gypsum, sand, stone, and cement raw feed materials (clay, shale and limestone) for use by future generations, and elimination of the environmental impacts associated with additional mining operations.
- The complete use of residual energy in higher carbon coal ashes for cement production, or concrete quality fly ash production preserves mined coal for future use.
- The significant energy and fuel used in the kiln production of cement and lime can be conserved and offset by fly ash use in concrete and other products.

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- The various emissions associated with cement and lime production (including approximately one ton of CO₂ emitted for each ton produced) can be offset with each ton of fly ash utilized.

The following are patents held by We Energies for CCP Activities:

Carbon dioxide sequestration in foamed controlled low-strength materials (7,390,444)

Mercury removal from activated carbon and/or fly ash (7,217,401)

Ammonia removal from fly ash (6,945,179)

Electrically conductive concrete and controlled low-strength materials having carbon fibers (6,821,336)

Ammonia removal from fly ash (6,755,901)

Coal combustion products recovery process (6,637,354)

Electrically conductive concrete and controlled low-strength materials (6,461,424)

Re-burning of coal ash (5,992,336)

In conclusion, we acknowledge the need for improved safety and inspection of disposal facilities where warranted in light of the failure at TVA and other locations. However, a "hazardous" label on coal combustion products will be counter-productive as it is likely to discourage the safe, beneficial use of these materials, create more disposal, increase demands on limited disposal facilities, dedicate more land to disposal with associated impacts, increase mineral resource mining, and at the same time severely damage the numerous existing proven beneficial uses to society of these valuable mineral resources.

From Ameren Energy, St. Louis, MO:

Tom,

Over the years, Ameren has been very proactive in pursuing and developing beneficial use opportunities for our ash materials. Our ash is currently used in many beneficial use applications ranging from engineered structural fill, cement replacement in concrete, cement kiln feedstock, concrete and asphalt filler, flowable fill applications, soil drying and amendment, mine reclamation applications, grit blasting, and roofing shingles. All these applications have been engaged by Ameren and our ash customers based on the principle that ash is non-toxic, non-hazardous, and a less expensive alternative to other resources. A reclassification of ash as hazardous or toxic would severely impact Ameren's beneficial use options, ultimately resulting in significantly higher operating costs for our plants. Our ash customers would also be impacted as they would have to switch to possibly higher cost material alternatives.

Though we have no formal correspondence in hand at this time to share, we have discussed with several of our cement replacement customers the potential impact a “hazardous” reclassification of fly ash would have on their ash use. They have stated emphatically that it would “kill” the use of fly ash as a cement replacement in concrete. During 2008, nearly 35 percent of Ameren’s total ash production was utilized as a cement substitute in concrete. With a reclassification this beneficial use option would most likely be eliminated for Ameren’s fly ash materials.

A reclassification would also severely limit and probably eliminate Ameren’s ash use and interest in structural fill projects, mine reclamation, soil drying and amendment, flowable fill, concrete filler, grit blasting and roofing shingle applications. The hazardous classification would impose regulatory barriers that would end many of these applications, and the remaining ones would have to be evaluated to determine whether continuing to participate in these applications is a prudent business strategy in light of reclassification. Depending on project timing and year, these applications have utilized in the range of 35 to 60 percent or more of Ameren’s total annual ash production.

Based on discussions with our customers, cement kiln feedstock maybe the only viable beneficial use application that may survive after a reclassification. Some cement kilns are permitted to handle hazardous wastes whether or not ash that has been reclassified hazardous could be used in kilns near our plants is unknown. One of our current cement kiln customers indicated that they are not currently permitted to accept hazardous waste feedstock materials. It’s possible that they could seek a permit modification. But there are costs associated with seeking the permit and ultimately accepting and operating with a hazardous waste. They could decide that there are less expensive, lower risk alternative materials available and not pursue ash use. During 2008, about 8 percent of Ameren’s total ash production was utilized as cement kiln feedstock.

One thought to keep in mind is that none of Ameren’s ash customers have to use ash in their projects or product applications. All things equal, our customers use ash because it offers a less expensive alternative to other materials ultimately providing them with lower project and/or operating costs. If ash is reclassified as hazardous, the perceived risks and higher costs associated with using ash become high as compared to other materials. Our ash has not changed (makeup or constituents), but the hazardous labeling will assign unnecessary costs to using ash. Ameren’s customers will simply turn to lower cost, lower perceived risk materials. The switching costs to our customers to utilize alternative materials in lieu of ash are expected to be very low.

Obviously for Ameren and the industry, the costs associated with ash reclassification would be very high. Ash materials that once generally represented a revenue source for the Company would possibly become a very high operational cost item. Disposal costs and options are not known with reclassification. But even if we were allowed to utilize the remaining ash disposal capacity at our plants, this space would be quickly depleted with the ash volumes that would now be placed in these facilities. Existing contracts with ash customers, marketers, contractors, and transportation organizations would possibly have to be either force majeure or renegotiated. Past ash beneficial use applications, projects,

products, and on-site ash disposal facilities may all need to be re-evaluated and possibly mitigated in light of a reclassification. The costs and risks for the Company and industry could be very high.

I believe one of the most important concepts that the ACAA needs to communicate here, and hopefully the regulators will understand this message, is that ash customers do not have to use ash materials. There are alternative materials available. By classifying ash as toxic or hazardous, ash customers will simply switch to lower perceived risk, non-hazardous materials and not deal with ash. I believe it is as simple as this.

I hope you find this quick write-up helpful. Please let me know if you need additional information or have questions.

From Public Service of New Hampshire, Manchester, NH:

Nothing new to you, but ash reuse is difficult enough with the solid waste stigma. I can't even imagine that it's possible to continue burning coal if they elevate the regulatory status. It's not possible to "stabilize" that volume of "hazardous waste" and landfill capacity would disappear. I doubt we could operate our plants due to worker protection standards if the coal dust blowing about was classified as a "toxic material." Last month the NHDES requested my input on an ASTSWMO survey regarding impoundments. NHDES is on our side and support regulation at the state level

From Progress Energy, Raleigh, NC:

Dave and Thomas,

Should CCBs be classified as a hazardous waste, we don't believe that any of Progress Energy's CCBs generated from our North Carolina, South Carolina or Florida plants would be used in our ongoing or future beneficial re-use applications. Our current beneficial reuse projects include concrete, Portland cement, structural fill projects, concrete block, wallboard and a variety of products utilizing cenospheres.

Information regarding FDEP's Solid Waste Regulations and industrial by-products is provided below. We are unaware of any North or South Carolina State Regulations.

http://www.dep.state.fl.us/waste/quick_topics/rules/documents/62-701.pdf

Florida Rule Chapter 62-701.220 **General Applicability**

Industrial byproducts, if

1. A majority of the industrial byproducts are demonstrated to be sold, used, or reused within one year;

2. The industrial byproducts are not discharged, deposited, injected, dumped, spilled, leaked, or placed into or upon any land or water so that such industrial byproducts or any constituent thereof may enter other lands or be emitted into the air or discharged into any waters, including ground water, or otherwise enter the environment such that a threat of contamination in excess of water quality standards and criteria or air quality standards is caused; and

3. **The industrial byproducts are not hazardous wastes;**

Please feel free to contact me if you have any questions

From AEP, Columbus, OH:

In an interview with an AEP CCP Manager, he pointed out there areas of concern that AEP has on the issue of hazardous designation:

- CCPs are not hazardous and there is ample data to demonstrate it
- End-users have already contacted AEP asking about the hazardousness of CCPs and their perception that will have to stop using them because of it
- Corporately, he doubts that company attorneys will permit AEP to continue marketing materials that are considered hazardous for disposal, but not for beneficial use. The liability risks to the corporation are too great.

From CCP Marketers

From the SEFA Group, Lexington, SC

Tom,

To follow-up on our phone conversation this afternoon – The SEFA Group is very concerned about the “unintended consequences” and the overall negative dynamic that would impact the beneficial reuse of coal fly ash **IF** coal fly ash were designated as a hazardous waste. We do not think that the facts support such a designation and we think that the negative connotations associated with such an aspersion would be ruinous for The SEFA Group – and for the Fly Ash Industry.

The SEFA Group is a marketer of coal fly ash; that is what we do. We have been in business since 1976. We have spent over 40 years developing a market for coal fly ash as a quality-enhancing additive for concrete. During the last four decades we have worked closely with our customers to change their perception of our product from “fly trash” – something that can be used in concrete to make it cheaper – to fly ash, a key ingredient for concrete that needs to be used in order for concrete to maximize its

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potential for strength and durability. All that we have built – our customers, our reputation, our business, our industry – would disappear overnight, **IF** coal fly ash were designated as a hazardous waste.

The SEFA Group is a marketer of coal fly ash – that is how we derive our revenue. Our employees have jobs because we have developed a market for fly ash in concrete construction. Our employees would lose their jobs, **IF** coal fly ash were designated as a hazardous waste.

Of course, we have heard the refrain that this designation would ONLY apply to fly ash that would be disposed – a feeble attempt to make a distinction between disposal and utilization. However, the truth (and the perception) remains that The SEFA Group would become a purveyor of hazardous material and our customers would drop us like a hot potato, **IF** coal fly ash were designated as a hazardous waste.

From our customers' perspective, if coal fly ash that is disposed at a power plant is considered hazardous, then they would consider fly ash delivered to their concrete plants to be hazardous. They would be exposing their employees to the health hazards associated with handling a hazardous waste. During the normal course of their employees' daily duties, they handle/use specification-grade fly ash to produce ready-mix concrete. Therefore, they have asked us a reasonable question – "what is my liability if I continue to use fly ash in my concrete."

From our customers' perspective, if fly ash is considered hazardous, then they would be exposing their customers to the health hazards associated with hazardous waste. Why would their customers want the hospitals and the schools that they build to be built with a hazardous material? What is their liability? What is the risk for their children who will attend these schools?

Tom, let us know what we can do to keep this destructive designation from being applied to fly ash. The facts do not support such a designation.

From Lafarge, NA, Herndon, VA:

In a personal conversation in San Antonio, Tom Adams talked with a senior executive of Lafarge. That person stated that Lafarge was very concerned about a potentially hazardous designation for coal ash. Since Lafarge uses and markets large volumes of CCPs in cement manufacturing, wallboard production and to end users, they see a potentially devastating downturn in these markets if CCPs are in some manner considered hazardous.

The following is a marketer's internal memo sent to senior managers of major ready mixed concrete

<Dear Producer>

Date: January 21, 2009

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Subject: Fly Ash –Current Environmental Issues Related to its' Use in Ready Mix Concrete

Executive Summary

Over the course of the past several weeks it has become apparent that there is increasing concern regarding the future viability of fly ash. This is largely due to the recent events which have drawn attention to the storage of coal ash and groundwater contamination. In addition, there is pending legislation regarding control of mercury emissions from coal burning power plants.

On December 24, 2008, a spill of approximately 1 billion gallons of coal ash sludge occurred at the Kingston Fossil Plant outside of Knoxville, Tennessee. On December 31, 2008, a \$54 million class action lawsuit was awarded to residents of Gambrills, Maryland due to contaminated groundwater from coal ash deposition in a sand and gravel quarry. These recent events have reignited a debate as to whether classify coal ash as a hazardous waste, especially, if future regulations require mercury to be captured within the fly ash.

Fly ash, for use in concrete, will be required to be processed as the mercury emission reduction regulations become effective for coal burning power plants which may affect its' **quality, availability and cost**. This federal reduction requirement will most likely not go into effect for several years; however, state authorities may adopt requirements sooner. Carbon treatments are the most efficient methods to remove the mercury, necessitating power companies and/or fly ash marketers to install carbon treatment or carbon removal equipment to maintain acceptable fly ash quality.

We will continue to monitor this situation and update you as information becomes available.

Legislation

Mercury is found in coal that is utilized at coal burning power plants and has not historically been a regulated emission. In 2000, the Clinton administration decided to initiate an expensive plan to regulate mercury emissions from power plants. The decision culminated a lengthy process that began with the 1990 Clean Air Act Amendments, which required the Environmental Protection Agency to evaluate mercury and other toxic emissions to determine if they warranted more stringent regulation.

On December 14th, 2000, the EPA announced that mercury emissions from coal fired plants pose significant hazards to public health and must be reduced. The agency proposed mercury regulations in 2003 and would issue final rules by December 2004. If fully implemented in 2005, the rules were projected to reduce mercury emissions by nearly 50% from 1990 levels.

In March 2005, the EPA removed Coal- and Oil-Fired Electric Utility Steam Generating Units from mercury emission requirements, stating that their original findings “lacked foundation and because recent information demonstrates that it is not appropriate or necessary to regulate coal and oil-fired Utility Units”.

On February 8, 2008, a three-judge panel on the U.S. Circuit Court of Appeals for the District of Columbia ruled the EPA violated the Clean Air Act in 2005 when it exempted coal-burning power plants from the act's most stringent requirements for cleaning up hazardous pollutants. This decision means the EPA must start over in crafting a regulation to cut mercury emissions. The judges also invalidated the agency's plan to adopt a "cap and trade" program to cut mercury emissions from power plants. The program would have allowed power plants to buy and sell mercury pollution credits.

As a result of the court’s decision, it is likely the EPA will develop a Maximum Achievable Control Technology (MACT) standard, which will require every oil or coal based power plant to install mercury specific controls. This rule making could take several years to finalize and might not require emission reductions for more than 5 years*. However, some states may be incorporating the mercury reduction requirement locally, before the EPA develops national regulations. * Source: Edison Electric Institute

Environmental

Power plants in the United States emit a small amount of mercury compared to natural processes and non-U.S. manmade sources. Once released, mercury vapor travels long distances and deposits in distant locations. It is estimated that only 20% of mercury emitted by U.S. power plants is deposited locally.

Human exposure to elemental mercury (Hg) directly emitted from power plants is not harmful. To become a human health hazard, mercury must undergo a complex transformation into the compound methylmercury (MeHg), which must be ingested, primarily through fish, in a sufficiently large dose. It is not possible to quantify how much MeHg in fish results from electric utility plants, therefore, the EPA does not know whether reducing mercury emissions from power plants will reduce MeHg levels in fish.

Current controls in place for other regulated pollutants, sulfur dioxide (SO₂) and nitrous oxide (NO_x) have already reduced the mercury levels. As a result, mercury levels have declined significantly from 77 tons in 1995 to 40 tons today from coal and oil fired Utility Units.

Mercury Removal Technology

There are many technologies available to control mercury emissions from a power plant. The most cost effective and efficient (> 90% removal) method is the use of activated carbon injection (ACI) which absorbs the mercury and is then transferred along with the fly ash. This

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elevates the carbon content (and mercury content) of the fly ash rendering it unusable for concrete unless it is further processed. This process results in elevated levels of mercury in the fly ash.

Fly ash marketers/suppliers either currently have or are developing technology to treat or remove the elevated carbon levels that result from this mercury removal process. These include:

Boral - Fly Ash Carbon Treatment (FACT)

Headwaters - In Development

SEFA - removal using Staged Turbulent Air Reactor (STAR)

Separation Technologies (STI) - removal electrostatically

Effects on Concrete

There are two main concerns regarding concrete containing fly ash with elevated levels of carbon and mercury.

1. How does the activated carbon affect concrete performance?

2. Do the elevated levels of mercury in the fly ash pose any performance or health risks? If the activated carbon is not removed or treated, it is impossible to entrain adequate air into the concrete rendering it unusable. Several studies have been conducted regarding the elevated mercury levels in fly ash and shown to be of no concern when encapsulated in concrete. The highest emission levels occur during initial curing and progressively reduce as the concrete hardens. Interestingly, concretes containing no fly ash had the highest level of mercury emission rates when compared to concretes containing fly ash of any kind. This is primarily due to the improved permeability when fly ash is incorporated into the concrete mixture. In any case, only a very small percentage of the mercury was released and does not pose any health concerns.

Miscellaneous emails from end users

From: <Community Advocate>

Sent: Wednesday, January 21, 2009 8:07 AM

To: <CCP Marketer>

American Coal Ash Association
15200 East Girard Avenue, Suite 3050, Aurora, CO 80014-3955
Phone - 720 870 7897, Fax - 720 870 7889, info@acaa-usa.org
www.acaa-usa.org

Subject: FW: Fly ash - <Project Site>

Dear <Marketer>:

I exchanged emails with you last April as I was collecting information about the suitability of a fly ash/soil mixture for the refurbishment of trails in an inner city nature park in <Location>. Over the course of that investigation, I was sent and read the ACAA booklet about soil stabilization with self-cementing coal fly ash. I also read numerous documents available on the web, and was in touch with Dr. <Local University Professor>, who sent me material from a study he had conducted about soil leachates from coal by-product-containing road construction materials.

Recently, however, the articles attached below have stirred up a lot of local concern again about whether we should be using fly ash in the park. My reading of all of these materials is that it does not pose any danger to humans or animals and that there is minimal danger from leachate. However, I am not sure that I can convince all of these people. Could you help me to formulate a statement that might allay their fears?

I appreciate any help.

Best wishes, <Community Advocate>

From: <Interested Third Party>

Sent: Wednesday, January 21, 2009 6:56 AM

To: <Community Advocate>

Subject: Fly ash - <Project Site>

<Advocate>,

When you reported to the <Local Club> concerning plans to use fly ash to build up trails in <Project Site> I recalled there had been some historic concerns expressed upon its environmental impact, but assurances you offered at that time, as I recall, of its inert and safe nature was accepted as fact.

Recent events with the fly ash spill at the TVA project has brought renewed attention to the issue and a Google search has revealed several articles referring to the product as containing concentrations of arsenic, heavy metals and carcinogens. A search of the EPA website was not readily helpful or revealing.

I feel a responsibility to bring these concerns to your attention, however, given the immediate implications concerning comments concerning it being a safe product to use when handled properly and in the right applications and encourage you to explore the true safety of the product before utilizing it to build up pathways in <Project Site>.

This is copied to two folks I understand that serve on your <Project Site> Board, as well as, the President of <Project Board> as you serve in the environmental chair position of that latter organization.

Two representative articles from the media are copied below for your information.