



## **BIG ISSUES** in Coal Ash Disposal

The Environmental Protection Agency (EPA) is currently receiving public comments on its proposed regulations for coal ash handling and disposal. PSR strongly supports the option called “Subtitle C,” which would create uniform, federally enforceable standards that would greatly strengthen protections for human health.

PSR encourages all members to submit comments on coal ash and health. We encourage you to consult our fact sheet on [common toxicants in coal ash](#) and our [basic coal ash FAQ](#).

In addition, we outline below **five big issues that the EPA needs to take into account** as it formulates new regulations. You may want to incorporate some of these points in the comments you send.

Please email the EPA now at [rcra-docket@epa.gov](mailto:rcra-docket@epa.gov) to register your thoughts.

### **1. Effects of multiple contaminants**

Coal ash typically contains more than a dozen toxic heavy metals, including arsenic, selenium, mercury, lead, molybdenum, chromium and boron. These heavy metals pose serious threats to human health. However, even though coal ash routinely contains a mix of contaminants, the EPA has not examined their possible interactions.

This is important because concurrent exposure to multiple contaminants can increase the risk to health. It can intensify existing effects, or can create new effects due to interactions and synergies. This is most likely where multiple contaminants affect the same organ system, or where several contaminants share a common mechanism of toxicity. Either could occur with the mix of contaminants in coal ash.

***Policy recommendation:*** EPA coal ash risk assessments should take into account the potential for increased harm due to cumulative effects or possible interactions among multiple contaminants. Not to do so runs the risk of underestimating the threat to human health.

### **2. Long latency periods**

Heavy metals are elements. They do not disintegrate or disappear; rather, they remain in the environment until they are physically moved elsewhere. Thus, they can damage human health over the long term. Many of the most severe health effects caused by coal ash exposure have long latency periods (the time that elapses from exposure until the onset of illness). Such outcomes as neurological diseases, heart disease, and cancer may take years, even decades, to manifest.

Take one well-documented example: People who drink well water contaminated with arsenic, which is commonly found in coal ash, can develop cancer of the urinary tract (bladder, kidneys and ureters). Scientific studies of naturally occurring arsenic in groundwater have found that people exposed from birth to arsenic in drinking water may face an increased risk of urinary cancer decades later -- even if they stop drinking the contaminated water.

***Policy recommendation:* Reliance on short-term health assessments is insufficient to determine whether exposure has caused harm. Due to long latency periods, long-term study is often necessary to identify health outcomes. For example, it is too soon after the Kingston, TN coal ash disaster – which occurred in December 2008 – to declare that that spill had no health consequences. Rather, long-term monitoring of victims is needed to identify health effects of many long-latency diseases, including cancer.**

### **3. Accurate tools for measuring toxicity**

PSR is concerned about the EPA's continued use of the Toxicity Characteristic Leaching Procedure (TCLP) to measure the leaching of toxic chemicals from coal ash.

The TCLP is an EPA laboratory procedure used to determine how much a metal will "leach" or leave a solid substance and dissolve in water. It seeks to mimic what would happen to coal ash when it contacts water, such as rain or groundwater. When measured using the TCLP, coal ash rarely exceeds the thresholds established by the EPA as hazardous. However, there is reason to think that the TCLP significantly *underestimates* the degree of leaching. The EPA's own Science Advisory Board said that the test did not accurately predict coal ash toxicity, in part because it failed to include important variables such as the acidity of the environment. The National Academy of Sciences raised similar concerns.

A new, more accurate test shows leachate levels to be much higher, even *exceeding hazardous waste thresholds* in some cases. Yet the EPA still refers to the TCLP as a meaningful way of measuring leachate, allowing coal ash apologists to claim that coal ash is less dangerous than it really is.

***Policy recommendation:* The EPA should adopt the most accurate procedures available for analyzing coal ash toxicity, so as to create an accurate understanding of the potential for harm to human health. It should discontinue use of inadequate tools such as the TCLP.**

### **4. Vulnerable populations**

Several populations are especially vulnerable to harm from coal ash. Yet the EPA has not taken steps that would provide adequate safety for these populations.

- Workers who handle the ash – loading it, unloading it, trucking it from a power plant to a dump site – may be exposed to large amounts of airborne coal ash particles, placing them at risk for inhalation of chromium and arsenic, both of which can cause lung cancer. Similar risks may exist for residents who live near dry ash landfills. However, airborne toxicants are not taken into account in defining coal ash damage sites. Frequently, workers and nearby residents get no special warnings or protection from airborne ash particles.

- Children eat more, breathe more, and drink more per unit of body weight than adults do. They also engage in hand-to-mouth behaviors that may lead them to ingest coal ash toxicants that adults would not normally ingest. Finally, because they weigh less, a small exposure to a toxicant represents a larger dose for them. All these factors make children more susceptible to harm from coal ash. Yet no special safeguards or standards exist to protect them.
- Environmental justice communities may also be at higher risk. Poor and minority communities are frequently subjected to greater exposures to environmental toxins. In addition, they may suffer greater vulnerability due to the impacts of stress, poverty and inadequate diet, and may receive inadequate health treatment. The net result, all too often, is heightened health disparities between these communities and other, more privileged ones.

***Policy recommendation:*** The EPA should assure that toxicity thresholds are relevant to vulnerable populations and that vulnerable populations are adequately protected from coal ash. It should consider airborne paths to exposure in reaching its findings in regard to risk assessment and damage sites.

## **5. Unencapsulated reuse of coal ash**

Some uses of recycled coal ash appear to pose an unacceptable degree of risk for leaching. Those uses where coal ash does not bond chemically with other substances, but is used in the environment in essentially untreated form – for example, as cinders on snowy roads and running tracks, as structural fill, or as mine fill – expose the coal ash to rain, snow and surface waters. The potential for leaching exposes nearby populations to unnecessary risks from multiple coal ash toxicants.

***Policy recommendation:*** The EPA should restrict the recycling of coal ash to uses where the ash is chemically unable to leach toxicants into the environment. While recycling is not on the agenda under the regulations currently proposed, PSR looks forward to working with the EPA in the future to end unsafe recycling practices.

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Email the EPA now at [rcra-docket@epa.gov](mailto:rcra-docket@epa.gov) with your comments. Not sure what your comments should say? Check our [tips](#) on how to file coal ash comments.