

January 8, 2010

To: Mr. Cass R. Sunstein, Administrator  
Office of Information and Regulatory Affairs  
US Office of Management and Budget  
Washington, DC

Regarding: EPA proposed regulation of coal combustion wastes

Dear Mr. Sunstein,

My colleagues and I, who have undersigned this letter, have a combined 100+ years of research experience on the environmental fate and toxic impacts of coal combustion wastes (CCW). We have studied everything from minnows to alligators and we have a full understanding of the toxic pollution that has taken place and the ecological risks that exist. Make no mistake about it, CCW is a deadly poison to fish and wildlife, and a threat to human health when improperly managed. We are writing to point out and correct some major flaws and misrepresentations in the reports that have been put forward by the Electric Power Research Institute (EPRI, see references 1 & 2) regarding environmental damage from CCW, the hazards posed by current disposal practices, and the cost to implement a "C" designation for regulating CCW.

Despite virtually no federal or state requirement for monitoring of CCW disposal sites, numerous damage cases have come to light simply as a result of the general public or public advocacy groups.....they noticed that something wasn't right with the surrounding environment. Subsequent investigative research by the academic community has been instrumental in identifying and characterizing toxic impacts and ecological risks of CCW. The power industry has largely been in a reactionary mode, responding to contamination issues after they were pointed out, and typically when mandated by the states. Of course, some pollution events have been so extensive and destructive that the problem is immediately obvious to all, the latest being the massive ash spill at the TVA-Kingston Fossil Plant in December of 2008, which will cost ratepayers billions for cleanup efforts.

Even though there has been no systematic or comprehensive monitoring of CCW disposal, information sufficient for a technical evaluation has emerged for about 89 sites. USEPA reviewed this information during the period 1999-2009 and concluded that 80% (71 of 89) either had proven damage (off-site groundwater, surface water, and/or ecological impacts) or potential damage (contamination above relevant standards in groundwater has been documented on-site, extent of off-site movement not determined yet; see USEPA reference 3 and subsequent). The implications of this finding are immense. Only 89 sites were evaluated, yet 80% are an environmental hazard and include DRY as well as wet disposal. Multiply this percentage by the number of CCW disposal sites across the country (2000+) and you will get a perspective on the extent of the problem. There are literally hundreds of hazardous coal combustion waste sites out there, very few of which have been monitored or investigated at all.

The EPRI reports cited previously make several statements, inferences, and conclusions that misrepresent facts and falsely downplay the ecological impacts and risks associated with CCW disposal. We wish to correct these fallacies.

(1) Fallacy of disposal type.....EPRI implies that "it's only a problem with wet disposal".

In fact, dry disposal can be just as deadly as wet disposal unless composite landfill liners (most often, today's new facilities are using inadequate "CCB liners" instead of true landfill liners), impermeable caps, and leachate collection AND treatment systems are used. Most states do not require this level of control and thus numerous "dry" sites are producing highly hazardous leachate which is not treated before draining into off-site groundwater and surface water (for example, the Dominion Power golf course "dry" dump in Chesapeake, VA, see reference 4; or "dry" mine fills, see reference 5; or "dry" landfills such as Pines Alternative Superfund Site).

(2) Fallacy of age.....EPRI concludes that "it's only a problem at old sites where old disposal practices were used". In fact, new and proposed coal combustion waste disposal complexes pose grave, unacceptable risks to the environment. For example, the US Fish and Wildlife Service recently issued a biological assessment for the proposed Desert Rock Energy Project, NM (USFWS, see reference 6). It points out that even with the use of DRY waste disposal, off-site migration of selenium would pollute the San Juan River and poison two federally listed endangered fish.....the Colorado pikeminnow and razorback sucker. This pollution will happen because of a failure of the Navajo Nation EPA and US Office of Surface Mining to require adequate containment measures for coal combustion waste....i.e., composite liners, impermeable caps, leachate collection AND treatment systems. Major pollution issues have developed from post-2000, state-approved "dry" disposal practices; for example, in mine fills (see reference 5). Moreover, many of these "dry" sites are simply open dumps that are approved as "structural fills" and they are completely unregulated and unmonitored.

(3) Fallacy of location.....EPRI contends that "it's only a problem on utility's property".

In fact, there are numerous well documented cases of significant off-site migration of pollution and resultant impacts to fish and wildlife. For example, the Gibson Coal Plant, IN, polluted a wildlife refuge (see reference 7). USFWS is now involved in an on-going cleanup/remediation. Pollution from the Savannah River site contaminated wetlands and deformed amphibians for miles (see reference 8). The Colstrip Plant, MT, and many other facilities have contaminated off-site groundwater in addition to surface water (see reference 9). This will perpetuate hazardous conditions because once groundwater is polluted, it creates a seepage plume that can move toxic materials into surface water and expose fish and wildlife for decades and over considerable distances.

- (4) Fallacy of the “permits”.....EPRI asserts that “utility industry pollution from CCW is controlled in permit regulations for modern disposal sites”. In fact, at the large majority of permitted CCW disposal or management sites, relevant criteria for the control or monitoring of constituents of concern in CCW are simply not being specified in the permits. This includes the failure to enforce drinking water standards or state groundwater standards for RCRA metals as corrective action standards in groundwater, and failure to set effluent limits in surface discharges that would prevent exceedances of surface water quality standards for ash constituents. Not only are there no limits to prevent concentrations of heavy metals and other highly hazardous substances (e.g., selenium) from increasing to harmful levels in waters receiving drainage from the large majority of CCW placement areas, there is often not even a requirement to monitor for these constituents in the CCW itself.
- (5) Fallacy of EPA criteria.....EPRI often states that “our industry’s discharges meet EPA guidelines”. In fact, EPA’s aquatic life criterion for selenium, one of the most toxic CCW pollutants, is not protective at all.....and their own research shows that less than half of the currently permissible level of 5 parts-per-billion (ug/L) can be toxic (see reference 10). A CCW/selenium expert workshop held in 1998 recommended that EPA use tissue-based criteria, and EPA is moving to do that (see references 11-12). So, if EPRI and the coal utility industry say they are meeting EPA’s criterion for selenium, they are simply stating that they are poisoning fish and wildlife “legally”. An excellent example of this is the recent Kingston TN ash spill. Selenium levels in the Emory River are well below 5 ug/L, yet fish contain toxic concentrations in their tissues (see reference 13). Remarkably, and despite the documented hazard at this site, there is no limit for selenium in the NPDES permits for any discharges from the Kingston Plant, including the ash disposal cell that discharges into the Emory River next to the one that collapsed and filled the river with coal ash.
- (6) Fallacy of no effects.....EPRI often asserts “we have no evidence of biological effects”. EPRI uses this statement as a way to “confirm” there is no problem. This form of word trickery is used to persuade the uninformed that there is no problem by turning the ABSENCE OF DATA into a “finding” when, in fact, EPRI/Industry haven’t even monitored to see if there is a problem. Having no evidence of adverse effects is totally different than evidence of no effects.

Compare these “findings”.....only the latter is scientifically correct.

(A) No monitoring/assessment (no data) = no evidence of effects => no problem

(B) Proper monitoring/assessment (data) = evidence of no effects => no problem

Statement A is called the Null Fallacy.....it produces a false “no effect” finding.

Don't be fooled by this tactic....demand to see the DATA that show no effects. You will soon discover that problems DO exist at most sites where detailed biological monitoring and assessment have taken place....even though only a small fraction of CCW disposal sites have been investigated at all.

(7) Fallacy of cost.....EPRI alleges that "the cost of CCW disposal under a "C" hazardous waste regulation would be too expensive". In fact, the cost of the "unregulation" that exists now is out of control and even more expensive. Case after case shows that cleanup and mitigation costs are millions (e.g., Gibson, Colstrip, etc.) to over a billion dollars (TVA-Kingston) per site. These cleanup and mitigation efforts can only be partially effective. Also, these costs do not include the perpetual maintenance costs of toxic leachate from landfills that don't have composite liners and leachate collection and treatment (at least 75% of existing landfills don't even have composite liners according to EPA, see reference 9). States are not requiring adequate liner/leachate/treatment standards for existing or planned landfills (e.g., Desert Rock). Thus, landfill hazards are an inevitable and increasing cost. Also, remember that OVER 99 PERCENT of CCW disposal sites HAVE NOT been technically evaluated. Based on what science tells us from the tiny fraction that have been studied, the cost of as-yet unrecognized or ignored harm to human health and wildlife can be reasonably anticipated to exceed all the previously mentioned costs combined.

CONCLUSIONS: Fish and wildlife are being poisoned by the toxic leachate from CCW.....the more we look, the more cases we find. Consequently, ecological liability and associated costs are on the rise. So-called "improvements" in disposal and management of CCW touted by EPRI and the coal power industry are based on a series of claims that are empirically disprovable fallacies. The future is grim unless fundamental, far reaching changes take place in the way CCW is regulated and controlled. Furthermore, designating "wet" disposal as hazardous while exempting "dry" is not the answer because dry disposal merely moves the pollution problem from one place to another, but does not lessen the threat unless composite liners and leachate collection and treatment systems are used. Most states DO NOT require this level of pollution abatement. The facts speak for themselves. Some of the most destructive and pressing environmental problems with CCW are not "in the distant past" but are taking place NOW using "state approved" disposal practices. Threats and impacts are not being addressed by the coal power industry and they will not go away. They will be a recurring, escalating problem unless adequate regulatory controls are put in place. State efforts are inadequate....federal regulatory oversight is necessary. Experience shows that CCW's will need to carry a hazardous waste "C" designation if they are to be regulated and disposed in a manner that will afford adequate protection to fish and wildlife, as well as humankind.

In the interest of sound environmental protection, we urge you to carefully consider and reflect on the information in this letter. After 40+ years of "getting it wrong" by the coal power industry and states, the Office of Management and Budget and EPA have a golden opportunity to "get it right" as federal regulations for CCW are finalized. Please let us know if you have questions. We would be glad to meet with you and discuss our

information in more detail if that would be helpful.

Sincerely,

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#### Technical Qualifications Statement

Dr. A. Dennis Lemly

I have spent over 30 years investigating the effects of aquatic pollution from coal combustion wastes (CCW). I have extensive experience conducting field and laboratory research on selenium, which is one of the most toxic trace elements in CCW. My studies

have focused on aquatic cycling, bioaccumulation, and effects on fish. These studies include intensive investigations of the two most substantial cases of selenium pollution that have taken place in the USA: (1) Belews Lake, North Carolina, where 19 species of fish were eliminated due to selenium in CCW, and (2) Kesterson Marsh, California, where thousands of fish and aquatic birds were poisoned. My career began in the late 1970's with studies of the landmark pollution event at Belews Lake, which established the fundamental principles of selenium bioaccumulation and reproductive toxicity in fish resulting from CCW. In the 1980's, I was a research project manager for the U.S. Fish and Wildlife Service, directing studies that determined impacts of selenium from agricultural irrigation drainage on fish and aquatic birds at Kesterson and in 14 other western states. In the 1990's, the emphasis of my research shifted to the development of methods and guidelines for hazard assessment and water quality criteria for selenium, which led to the publication of a reference book (see item 42 below). This handbook contains the first comprehensive assessment tools for evaluating selenium pollution from CCW on an ecosystem scale. I have consulted on selenium contamination issues ranging from CCW landfill leachate in Hong Kong to mountaintop removal coal mining in West Virginia. I provide the methods and technical guidance necessary to identify, evaluate, and correct aquatic selenium problems before they become significant toxic threats to fish and wildlife populations. I have Masters and Doctorate degrees in biology from Wake Forest University.

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