Below are working comments from the interagency review of the draft rule titled, "Standards for the Management of Coal Combustion Residuals (CCR) Generated by Commercial Electric Power Producers." This document contains comments from OMB, CEQ, the Army Corps of Engineers, DOE, DOI, DOT, TVA, and USDA.

Note these interagency concerns with the draft rule:

- Regulation of CCR under Subtitle C could have negative impacts on the reuse (beneficial use) of these materials and may create liability concerns related to past reuse of these materials in applications such as construction and agriculture, and these implications have not been fully explored in the draft rule or supporting materials.
- The draft rule does not distinguish between different types of coal combustion residuals (e.g. boiler slag, bottom ash, flue gas desulphurization), and each of these waste streams has different chemical and physical characteristics.

OMB Overall Comments/Recommendations for Proposed CCR Rule

- Organization: Organization of proposal does not clearly present options and alternatives in a manner that allows public or readers to clearly discern distinctions between the options. EPA should consider <u>highlighting up front in the option</u> <u>presentation what is consistent across the proposals</u>, then clearly delineate distinctions and discrepancies between various options.
 - Need to clearly state two problems this rulemaking addresses.
- **State Regs:** EPA approaches this rulemaking as a means to fill state regulatory gaps. The preamble repeatedly cites a need for federal enforcement and permitting. However, of the proven damage cases cited, the majority were addressed through state administrative action. EPA <u>never clearly articulates in the document what the actual need is for federal enforcement and permitting</u> beyond what states could provide if empowered under Subtitle D (limited discussion on p. 153). If Subtitle C option to be pursued, recommend explicit text on what necessitates these two Subtitle C elements.
 - Further, EPA cites existing state regulations as an uncertainty. Given part of the rationale for presenting this rule is state regulatory gaps, EPA needs to address this omission and <u>develop a full assessment of existing state regulatory regimes</u> rather than the anecdotal presentation in the draft proposed rule.
- **Beneficial Use:** EPA cites in the preamble the optimal waste management scheme for CCRs is beneficial use, yet the "preferred option" would potentially result in adverse impacts on beneficial use markets. This approach merits broader reconsideration at a policy level:
 - Proposed rule invites comments on alternative approaches, but a proposed rule with a preferred option alone may have unintended consequences on beneficial reuse, even if an alternative option is selected for final.
 - EPA provides no evidence for assertions that rulemaking under Subtitle C will not have an impact on beneficial reuse (see for example second sentence on p.

88). <u>Clarify the basis for this assumption/view.</u> EPA explicitly states "we are unconvinced that stigma alone will drive people away from the use of valuable products" (p. 88); there is evidence in the housing market that hazardous stigma does drive buyers away. Does EPA have evidence to the contrary to substantiate this assertion? If so, please cite the relevant academic studies.

- <u>All references to ACAA data (trends, totals, etc.) need to be updated to the</u> 2008 survey provided to OMB and available on the website.
- <u>Are beneficially used materials considered hazardous in second life?</u> Or will they be considered only solid waste since previously reused? Since this presents a major question as to the liability of the materials presented under EPA's preferred option, this approach must be addressed in the preamble.
- **Damage Cases** (p. 58 and throughout): The presentation of damage cases pursuant to CFR 261.11(a)(3)(ix) does not align with EPA's presentation in the preamble. CFR explicitly states to denote "nature and severity" as factors, but EPA routinely aggregates all damage cases and provides little notation on severity. The discussion frequently diverges to wrap in potential damage cases as well, even when there is question as to the causality ("the improper management of waste containing the constituent") or severity. <u>Recommend EPA cite only proven damage cases</u>.
 - Use of MCLs in damage cases needs to be clarified whether these are CFR 261 appendix I MCLs, current MCLs, or MCLs in place at the time of first documented damages.
 - Recommend adding appendix to document for proven damage cases current as of the rulemaking. Without such a compilation, readers will be forced to bundle together various documents (which will presumably all be in the docket).
 - P. 42 use of damage cases as presented relative to 2000 determination offers no substantive information about new developments.
 - Specify damage cases are confined to 9 states. At least one of those states (MD) has since modified state regulations to enhance oversight of ash management. Other states may have also modified, but EPA has not compiled evidence to denote.
- **Manifesting:** EPA estimates an additional 1.25 million manifests per year as a result of this rule. Need to verify BRS and RCRAinfo would have the capacity to manage this influx (as a matter of implementation).

Subtitle C HW Requirements

 Post-closure is required for 30 years. Assuming landfill lifetimes of 20 years, liability coverage does not jibe with EPA's projected time-to-peak concentrations in RA models (t=70).

Other Preamble Comments

• Strike all references to "sham" recycling. This terminology does not present clearly what EPA's intent is for the regulation. Please insert in lieu of phrasing distinguishing between encapsulated and un-encapsulated uses.

- Page 9, in the definition of beneficial reuse, can EPA better define "in excess quantities"? This definition may imply that cement/clinker feed are technically included.
- CCR landfill definition includes quarries, sand and gravel mines, and pits. This would impact electric utilities in west that send waste back to sites that came from (p10), but the impacts do not seem to be captured in the RIA in terms of newly accrued costs to otherwise backfill quarries to meet topography requirements as regulated by SMCRA.
- What is the basis for discussing "potential damage cases" when these are defined as "not been demonstrated" (Page 13)? These are all cases where either the results were ambiguous or causality cannot be established and should be removed from the factual conclusions presented in the preamble. <u>Recommend complete removal of references</u> to "potential damage cases."
- Page 30, "This indicates that, while arsenic levels are typically well below the TC, risks from release in landfills and impoundments may still be high." Please clarify what is meant by "high".
- Page 31 second paragraph says "a series of reports have been (or are being) developed...": these are internal EPA documents. Need to determine status, relevance, and degree of incorporation. If referenced ORD reports are not yet complete, include ETAs.
- Page 32-41, it is not clear why all this discussion on the draft leach testing is in the preamble. As this is a draft analysis the agency has not completed, it may be more appropriate to have a technical memo in the docket providing a description of the draft results and then discussing agency plans for releasing a formal draft for peer review and public comment. It seems that expert and public comments on this preliminary analysis will be quite helpful to the agency as EPA works to creating a draft document. The gist of the analysis is that some leaching may be underestimated. It also seems that EPA is not confident that the MCL and DWEL values are appropriate comparison points- again this is something that can be greatly informed by peer review and public comment. A short paragraph discussing potential implications would be best for the preamble. Discussion requesting comment and talking about the peer review path forward would also be helpful.
- Page 36 footnotes 10 and 11 do not align with uses in text. Need to switch.
- Page 52-55, as per comments on the risk assessment below, the level of detail provided regarding the RA conclusions should be enhanced. Please see comments above. Some other specific comments include:
 - Page 52 please make mention of where the response to public comments can be found
 - Please clarify that there is no typical cancer target level that EPA uses in listing decisions. EPA generally uses the 10⁻⁴ to 10⁻⁶ risk range for cancer. This should be clarified in multiple places throughout the preamble.

- Suggest replacing language that says "very high potential risks" and similar language (eg "still well above", "well into the future") with the specific risk finding (value and percentile risk that is referred to).
- Please clarify that the draft fugitive dust screening is not in the 2009 risk assessment, but is a separate evaluation. Please also be clear throughout the preamble that this is a draft analysis.
- As mentioned below for the RA, when discussing findings, EPA should also discuss any conservatisms/underestimates in the model assumptions so that readers can understand how well the RA findings represent true risks (at both the 50 and 90th percentiles). This information is very important for risk managers. Just giving the numbers allow without characterizing the assumptions is a major limitation that could be easily corrected.
- Page 53 second paragraph: revise references to As as constituent with highest risk since this was the only carcinogen of concern in analysis.
- Page 60/61: Consider adding two tables to this end of this section. The first table would be a comparative summary table of the proven damage cases in 2000, 2007, 2009. Below is an example, where GW means a groundwater and SW means surface water.

| Location/Effect | 2000 Damage Cases (10) | | 2007 Damage Cases (24) | | 2009 Damage Cases (27) | |
|--------------------------------------|----------------------------|-------------------|----------------------------|----------------------|--------------------------------------|----------------------|
| | Human Health (10 GW) | Ecological (0) | Human Health (16 GW) | Ecological (8 SW) | Human Health (17 GW) (2 SW) | Ecological (8 SW) |
| Surface Impoundments (unlined) | 5 | 0 | 5 | 8 | 5 | 8 |
| Surface impoundment failure | 1 (liner failure) | 0 | 1 (liner failure) | 0 | 1 (liner failure) 2 (SW) | 0 |
| Landfills (unlined) | 2 | 0 | 4 | 0 | 4 | 0 |
| Sand and Gravel Pits (unlined) | 2 | 0 | 6 | 0 | 7 | 0 |

The second table would provide, for the 27 proven damages cases of 2009, a summary of the major impacts of the damage case. For example, information may include the volume and/or size of the failure, number of affected people (if human health involved), mitigation efforts, mitigation costs, and other relevant information to provide a brief summary of the information contained in the supplemental materials on the damage cases.

- Page 63/65: should avoid presenting state survey data as percents and present as counts instead. Even more useful would be counts of total impoundments regulated under each criteria relative to the universe.
- Page 64: please insert *n* for surveyed surface impoundment unit permits in second paragraph
- Page 65: note on 30% of CCRs being unregulated by states is based on dated estimates of units, production, and state regulatory regimes. How would this be updated to fit the universe known today?
- Page 66/Footnote 31: This language does not present any evidence/data on the change in raw number of coal-fired power plants. The text also dismisses distinctions between new facilities, new pollution units/technologies, and greater use of subbituminous coal which has a lower carbon content (thus greater ash content). Reference EIA data on coal consumption by type.
- Page 67: please include a citation on origin of referenced disposal/utilization data.
- Page 67, please ensure that the liner data presented is consistent with the presentation in exhibits 3A and 3B in the RIA.
- Page 68 and elsewhere, as per comments on the RA, when discussing the agreement between the damage cases and risk modeling it would be helpful to be more specific in describing the correspondence between the two.
- Page 69, it is unclear what EPAs conclusion regarding unencapsulated fill is based upon. Are the examples provided all proven damage cases?
- Page 69: please clarify in explicit text whether "general fill" is inclusive of highway embankments (per FHWA/DOT)
- Page 69: EPA says data was gathered on "mismanagement" at 140 sites. Why aren't these considered damage cases? Was this alleged mismanagement or confirmed "mismanagement"? If these are not proven damage cases, recommend removal from preamble.
- Page 70: reference to EU reuse is this inclusive of uses EPA is not considering beneficial? If the beneficial use is relevant, EPA should <u>insert discussion of EU</u> <u>regulatory structure that enables greater reuse rates</u>.
- Page 71 discussion of increased disposal should note disposal may increase the exposure estimated in the RA.
- Page 72: rephrase usage of "chilling" and replace with "adverse" in last sentence of first paragraph
- Page 73, should "RQ" be "HQ"? Please also clarify that 10⁻⁵ is not a bright line criteria for hazardous waste listings.
- Page 74 last sentence: the conclusion presents faulty logic since technically no regulations were ever imposed. Presumably had a Subtitle D regime been implemented as presented as an alternative in this document, many if not all of the damage cases could have been avoided.

- Page 75: please explain what is meant by "shown to have catastrophic impacts on human health and the environment if not properly controlled"; would it be more accurate to remove "human health"?
- Page 75: provide citation for "recent research indicates that traditional leach procedures may underestimate the actual leach rtes of toxic constituents..."
- Page 75: replace "re-use of these wastes" with "re-use of these residuals"
- Page 76: please insert language describing how EPA would address stigma per last sentence on pPage 75-6.
- Page 79 and 80, please clarify that the "new science on metals leaching" is based upon a draft preliminary analysis.
- Page 81: premature to call benefits "enormous" when agency does not attempt to quantify within the base proposal
- Page 82: please state what number of proven damage cases involved large scale placement.
- Page 86: are state beneficial use programs really distinguishing between "risks" or "hazards"? This seems to be an overstatement
- Page 86: strike reference to "legitimate" beneficial use. Under EPA's definitions there is not a need for this distinction, (nor is this term notionally defined within the preamble)
- Page 88: please add clarifying language to the first sentence of the opening paragraph to better distinguish the discussion turns from CCR regulation to CCP regulation.
- Page 109, please clarify that the fugitive dust analysis is a draft. It also seems unclear why EPA would be relying on such a preliminary "conservative screening analysis" (language from EPA's description) to make a regulatory determination. It would seem that based on the screening analysis, EPA would then seek more site specific data to conduct a more refined analysis rather than going directly to a regulatory determination based on these conservative results.
- Page 109: the 11 requirements used to list subtitle C wastes under 40 CFR 261.11(a)(3) are linearly presented in the initial listing but diverge to group the characteristics in the discussion. From the public's perspective in following the document, the more beneficial way to present this information would be to maintain the linear presentation. Such a presentation also affords the Agency the opportunity to adequately present evidence for each of the criteria.
- Page 116, in describing the RfD, please use the true definition which takes the magnitude of uncertainty into account.
- Page 117-118, and 205-208, in describing the effects of the metals, EPA has
 paraphrased information from the ATSDR documents and in some cases taken it out
 of context. We suggest that this section be re-written to more accurately reflect the
 likelihood of the effects at specific doses. For instance, the ToxFAQ for cobalt states:
 "Cobalt can benefit or harm human health. Cobalt is beneficial for humans because it
 is part of vitamin B12. Exposure to high levels of cobalt can result in lung and heart

effects and dermatitis. Liver and kidney effects have also been observed in animals exposed to high levels of cobalt." EPA's characterization does not mention that these effects are seen at high doses, nor does it mention the beneficial effects. All this is important for risk managers. Thus we suggest revising each of the characterizations. EPA may also want to look at the endpoints used in the RfDs to see if they are protective of, or similar to, the endpoints that ATSDR mentions as being of greatest concern.

- Page 120, states: "The data in Table 3 shows that many of these metals are contained in CCRs at relatively high concentrations, such that if CCRs were improperly managed, they could leach out and pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported or disposed of or otherwise managed. The risk assessment that was conducted confirms this finding,..." Can EPA be more specific regarding how the risk assessment confirms this finding. Is it confirmatory for all the metals?
- Page 121 states: "the risk assessment demonstrates that if CCRs are improperly managed, they have the potential to present a significant hazard to human health and the environment." What does EPA mean by "significant hazard"?
- Page 122-127, as previously mentioned, in characterizing the risk assessment it would be helpful to see: increased specificity in language, both the 50th and 90th percentile findings presented on equal footing, clarity about whether each exceedance likely represents a true risk, and EPAs confidence in each value.
- Page 131/2 mismanagement identifies potential damage cases as part of the reasoning; if these aren't confirmed damages how are they relevant here?
- Page 131 references to antimony and thallium at LOC in RA but not in damage cases consider addition of text indicating implication that RA is overly conservative.
- Page 132 the NPL listing discussion implies that all of the damage cases where NPL was applied were done solely due to coal ash. This is not the case. Amend language to indicate in some cases other chemicals of concern resulted in NPL listing (defer to damage case documentation/EPA on specifics).
- Page 132/3 –indication that TVA did not manage waste in a manner consistent with industry practice. Evidence suggests size of unit and height/integrity of dike were all factors in the breach, and yet were not consistent with average industry practices. Language here should at least acknowledge TVA's management may not be indicative of the broader universe rather than the broad presumption EPA offers which is that all impoundments are similar to TVA Kingston.
- Page 133/4 point (X) regarding action taken by other entities should be broken into a separate section . There's no context given to indicate or even suggest the severity of the administrative orders and CAs cited.
- Page133 EPA provides implications for additive and synergistic effects, but those considerations are not built into the analysis because they are largely unknown. How then can this be considered a relevant factor in the "other" category?
- Page 143 specify timing of Congressional reference in final paragraph

- Page 150, regarding fugitive dust controls, since EPA only conducted a conservative draft screen, is this requirement justified? Can EPA consider other regulatory options here- for instance site specific monitoring before requiring dust control measures based on the screening analysis which has not yet been peer reviewed?
- Page 155 clarify in discussion of existing HW landfill capacity that the annual capacity is significantly less; modifications to annual capacity would require modifications to existing permits
- Page 158, can EPA better define a "reasonable probability of damage"?
- Page 160 EPA references the recent impoundment stability study saying issues were identified. If we can't use the better data in the RIA, why is it mentioned here?
- Page 170 specify benefits of explicit federal permitting and enforcement and quantification used to note they "outweigh any identified disruptions of state programs...[etc]"
- Page 182 language in the 3rd paragraph implies surface impoundments are mandated to be closed under this rule. Should this be a reference to unlined units not brought into compliance? Or somehow otherwise clarified?
- Page 183 what is the rationale for the specific extension period created for time-toclosure?
- Page 197, it would be helpful if EPA could clarify if the RQ's are pre-existing values determined sometime in the past, or if these are new determinations made specifically for this rulemaking.
- Page 198, EPA suggests a 1 pound RQ for CCRs based on mercury and arsenic. The justification for considering mercury is unclear as in the majority of samples tested, weren't the mercury levels below detection limits?
- Page 199 Table 3 are the minimums reflected non-detects? If so, indicate as footnote. Basic statistics would benefit from addition of σ_i to table to better define distributions.
- Page 204 third bullet expand question on ben use beyond incentives to other mechanisms for expansion.
- Page 205, in discussing public health impacts, this would be the correct place to discuss the confidence in how well the risk assessment predicts true arsenic and chromium risks. Please also clarify if the chromium risks are cancer or non-cancer risks. It was our understanding that chromium did not produce a cancer risk but it is mentioned in this section on cancer rates. There should be a similar discussion in the non-cancer risk section as well.
- Page 206, please provide more clarity of what constitutes "near" when stating that 6 million people live near affected coal-fired power plants.
- Page 219, or in Section VII, please provide a table that summarizes the costs and benefits of the preferred option and the alternative options.

Comments on RIA

The EPA's Regulatory Impact Analysis makes use of a broad set of data about baseline coal combustion residues (CCR) disposal facilities, their engineering controls, and existing state law. The scope and depth of the data EPA has assembled is impressive and provides the base for what we hope will ultimately be a comprehensive analysis of the costs and benefits of alternative approaches for regulating disposal of CCR, as required by EO 12866 and OMB Circular A-4. However, the current RIA does not yet appropriately quantify the benefits and costs of alternative regulatory approaches, as detailed in the following comments.

- EPA has not quantified the human health benefits. To comply with OMB Circular A-4, EPA should, at a minimum, estimate the total number of cancer cases expected to be averted by the rule. This calculation will require information about the population of well water drinkers within the 1-mile radius from a CCR disposal facility for which EPA estimated a distribution of cancer risks in its Risk Assessment (RA). Attached is a spreadsheet with a rough calculation by OMB of cancer cases averted. Discounted at an annual rate of 3%, we estimate that the proposed rule will avert 0.5 cancer cases at a cost-per-life-saved of \$59 billion.
- 2. What EPA calls "Community Safety Benefits" would be more accurately termed "Benefits from Avoided Cleanup of Spills," as that is what is quantified. The term "Community Safety Benefits" is too broad, since it conceptually would include the "Health Benefits" which are in a different category.
- 3. EPA's quantification of the Benefits from Avoided Cleanup of Spills (pp. 148 160) uses baseline predicted case frequency and damages per case estimates that are not appropriately matched. The damages per case of 103 acres x \$3.4 million to \$4.4 million per care = \$350 million to \$453 million is based on averaging just two historical cases: the unprecedented Kingston TVA spill in Dec. 2008, which released 10 million tons of CCR, and a much smaller, probably more typical spill of 80 tons of CCR. The frequency of 31% of known cases involving surface water, wetlands, and dust requiring cleanup x 1.08 cases per year is based on the 66 cases that occurred from 1948 to 2008. The implicit assumption that justifies multiplying these frequency and damage-per-case numbers is that the damage-per-case estimate was the average damages per case in the historical damages cases from 1948-2008. Because the damages per case estimate is the average of just two of those cases, including what is undoubtedly by far the largest of the historical cases, it is biased dramatically upwards.

Another problem is the earlier period going back to 1948 is a poor proxy for the baseline frequency of damage cases in the future as there are far more CCR disposal units now (leading it to be downward biased) but better engineering controls now (leading it to be upward biased).

A better estimate would be to take only the last 20 years (1988-2008) and estimate the cleanup costs associated with each damage case in the last 20 years (this will require

judgment by the EPA's analysts to put a dollar figure on each case based on the quantitative and qualitative information EPA has about each case), average those damages, divide by 20, and use that as the expected baseline annual cleanup costs.

4. EPA is implicitly assuming that the proposed rule will eliminate all future damage cases. What is the justification for this assumption? A better way to calculate the reduction in risk of damage cases resulting from the rule would be to calculate the frequency of damage cases per CCR disposal facility in states that have robust engineering control requirements and in states that have relatively loose engineering control requirements. The effect of the rule is likely to be to lower the frequency of damage cases in states with loose CCR regulations to the level of that of states with robust CCR regulations.

Another way to look at the effect of the rule is to focus on the phasing out of surface impoundments. The rule may thereby reduce the risk of spills at surface impoundments but have little effect on the risk of damage cases at landfills. If that is right, then the estimate of the Benefits from Avoided Cleanup of Spills (pp. 148-160) should model that appropriately.

Whatever the best approach is to estimating the risk reduction caused by the proposed rule, EPA should spell out the logic, the underlying assumptions, and the justification for these assumptions.

5. The EPA should incorporate estimates of the loss of beneficial use from designation of CCR as hazardous under state laws prohibiting beneficial use of hazardous wastes should be presented in the main estimates of costs, not as a "Sensitivity Analysis" on pp. 133-134, as the best estimate of the costs of the rule includes this reduction in beneficial use.

The EPA has not considered a range of regulatory approaches, including more and less stringent alternatives, as required by A-4. Rather, it has considered only whether to use subtitle C or subtitle D to establish the same set of regulatory requirements. In addition to considering whether subtitle C or subtitle D is more appropriate for CCR, EPA should consider a range of engineering control requirements, including a relatively minimal set of requirements, as well as a stringent set of requirements, and estimate the costs and benefits of each of these alternative approaches. Such an analysis is essential to compliance with EO 12866 and A-4.

RIA – Benefits

• Damage cases – reliance on potential but unproven damage cases overstates likely damages throughout, particularly since the context of these cases is removed from the

discussion altogether. That is, there are no reference points for quantities of ash, exposures, or risks from the damage cases. At the very least the terminology throughout the documents often dispenses with "potential" damage case and lumps all cases together, "potential" and "proven". This distinction should be maintained throughout. Exhibits 7A and 7B should be broken into these distinctions. A column specifying this should be added to Exhibit 7E's unit-by-unit summary.

- Exhibit 3H: where are the unit values for mercury and lead coming from? They are not in the referred citation.
- Page 161, characterizes the central tendency estimate as one that represents typical conditions. This seems to be an oversimplification of what EPA has done in the risk assessment for CCW as the many assumptions used likely lead to an overestimate of risk even at the 50th percentile. Please clarify.

RIA – Beneficial Use and EJ

- Universe of impoundments in RIA accounts for less than half of the impoundments identified in the CERCLA action. Can EPA clearly acknowledge this deviation in the uncertainties?
- **Beneficial Use Assumptions:** Beneficial use assumptions/definitions/affected industries include minefill, which EPA programmatically has excluded from the definition of beneficial use. Based on ACAA estimates, assumptions need to be revised to 38% beneficial use in 2007 (49.3 M tons).
- **Ch. 5 ZCTA references:** p.100 and subsequent discussions referencing zip code populations must clearly delineate these are ZCTA-based, not zip code based. While Census loosely bases ZCTA on USPS zip codes, the two are often not equal and the terminological differentiation is important for readers to understand.
 - **Populations in Ch. 5:** use of ZCTAs does not acknowledge or characterize spatial variation among coal-burning codes. Why did EPA not conduct the analysis at the census tract level.
- **EJ Analysis**: For the analysis of children as well as the analysis of minority and lowincome populations, has EPA had this approach peer reviewed? If not, we suggest referring to the analysis as draft, requesting specific comment on the analysis, and planning a robust peer review of the approach.
- **EJ Analysis:** the discussion presents descriptive figures only and lacks any relevant statistical analysis. <u>Are the differences identified for low-income and minority ZCTAs statistically significant</u> (or is the variance from the state average significant in coal-present ZCTAs?)?
- **EJ Analysis:** the summary is clear to draw a distinction between ceasing surface impoundments and geotechnical requirements on landfills. Those impacts would not be universal or equally distributed across states and clearly EPA recognizes that, but the methodology estimates by facility not by operable units. How does the transition from SIs to landfills distributionally impact children, minorities and low-income? That is,

if the locational data were disaggregated to distinguish between disposal method, is there a noticeable distinction in the descriptive results presented by EPA?

 No apparent analysis of adverse impacts of beneficial use market on small businesses.

RIA-Sensitivity Analysis

- Ben Use Market Stigma: Are there any studies from HQ universe EPA could use as a proxy to determine likely impact? Given this is the preferred management practice identified by the agency, potential impacts from the selected option have broad policy-level impacts here.
 - Scenario 3 (pp.132-3) claims 33% loss under option 3 but doesn't include an impact for wallboard.
 - Ben use Scenario 4 (pp. 133-4) is a certainty based on existing state regulations. This loss of beneficial use should be quantified and incorporated in the RIA.
- Trending of beneficial use rates is problematic. The projections incorporate minefill and large fill operations, which EPA is not determining to be beneficial use.
- Discussion of future trends in ash production is minimal (note increase in subbituminous coal utilization concurrent with increased use of scrubber/abatement technologies). Would benefit from a presentation of EIA coal use and ACAA/ARIPPA ash production rates together to derive ash content, then consider that as a proportion of EIA-projected coal consumption.
- P.134 scenario #5 cites an average annual rate of change of CCR beneficial use of 5.7 percent between 2001 and 2009. If this is a reference to the linearly trended data on p.53 it overstates the rate of growth in beneficial use and should clarify the distinction between a rate of change in rates and a rate of change in total quantity re-used.
- Section 6D re impacts on HW landfills discussion implies impacts would only occur if beneficial use markets adversely affected. However, there are a number of other circumstances that would likely result in additional use of HW landfill capacity, such as corrective action incidents. This section should acknowledge additional scenarios which may result in stressors on HW landfill capacity.
- State technical and administrative burden estimates are strikingly low given the volume and universe of TSDs added to the regulatory regime under Subtitle C. How EPA derived these estimates is not clear. <u>Please insert text providing the basis for the estimates offered.</u>

Draft Risk Assessment (dated Aug 31 2009) and Response to Peer Review Document Comments

• In many places, in all the documents, EPA states that the point of departure for a hazardous waste listing is 10⁻⁵. It is unclear why EPA insists creates this bright line. The

typical cancer risk range evaluated is 10⁻⁴ to 10⁻⁶. While the dye and pigment proposal discusses EPAs policy, this discussion does not include the creation of a bright line at 10⁻⁵ but instead discusses the many factors that are considered in the evaluation. Suggest revisions to this language throughout both documents (as well as the RIA and preamble). The focus should be on the range of acceptable risks (10⁻⁴ to 10⁻⁶). More recent OSWER rules have used language that does not create this bright line and could be referred to for providing template language (eg FO19 wastes). We suggest this language be used in the risk assessment, preamble and RIA.

- Throughout the executive summary (and then the preamble of the proposal), the language is not as specific as it could be regarding findings. Similar changes are suggested for section 4.5 (summary and conclusions).
 - For example, the following edits are to some language on page E4. We would like to see similar clarifying edits throughout the exec summary as much of the language is not specific enough. "CCW risk assessment results at the 90th percentile suggest that the management of CCW in unlined or clay-lined WMUs result in risks greater than the risk criteria of 10⁻⁵ for excess cancer risk to humans (90th % cancer risk of XX for arsenic) or an HQ greater than 1 HQ for ecological effects to both human and ecological receptors (90th % HQ for humans of XX for chemical X, 90% HQ for ecological effects of XX for chemical X). At the 50th percentile the risks were XXXYXYYY). While still above the criteria(give specific 90th and 50th percentile values for human health and ecological effects), clay-lined units tended to have lower risks than unlined units. However, it was the composite-lined units that effectively reduced risks from all pathways and constituents below the risk criteria."
 - Similarly, EPA should clarify that the risks are for codisposed wastes and discuss that they are lower by a factor of X when there is not codisposal.
 - Similarly, when talking about the time it takes to reach peak concentrations, more specific language should be used. EPA should always specific the percentile they are referring to and for example, instead of saying "less than a 100 years" provide the specific value and the 50thile.
 - EPAs discussion of uncertainties is very helpful. We suggest expanding this to include discussion of major assumptions and the impact these assumptions likely have on the overall risk characterization.
 - EPA should also have a discussion in the exec summary characterization section and conclusion section that discusses whether or not these risk values are likely true risks, overestimates, or underestimates (see more specific suggestion belowa summary of this section should be in the exec summary).
- The risk assessment is missing a critical section which evaluates how confident EPA is that the numbers represent a realistic scenario or true prediction of risk. This could include a discussion, not only of the uncertainties, but also a discussion of all the assumptions made (eg were they overestimates, best estimates, or likely underestimates) and discussion of whether EPA thinks a HQ of, for example, 2 or 20 represents a true risk for the groundwater to drinking water and gwater to surface water pathways. For each

chemical for which there is an exceedance of a risk threshold there should be this discussion. For the HQ exceedances (eg thallium, Molybdenum, nitrate, cobalt, boron, selenium, cadmum and lead), there could be a generic discussion of the assumptions/inputs and possible conservatisms and then for each chemical, EPA should discuss the specific health benchmark that was used and what impact that may have on the outcome. For instance, EPA has always said the RfD values are generally health protective. OMB can provide standard language that EPA has used in the past regarding this discussion. If a particular chemical has uncertainty factors of 3000 applied, and IRIS has low confidence in this value, if the HQ is 30, EPA may want to discuss how this may not represent a true risk. Similarly for the values above 10⁻⁵ (the arsenic values) EPA should also discuss their confidence in this value and its likelihood of representing a true risk. This discussion should be added for both the human and ecological receptors. This discussion is very important for the risk managers. Bringing it forward to section 4.5 is of critical importance

- Some of the possible conservatisms we noted in the risk assessment that could be part of this discussion include:
 - Use of 100% As⁺³
 - Assumption that all metals are 100% bioavailable to ecological receptors (what about bioavailability to ground and surface water?)
 - Inputs on landfill/impoundment types are from 1995 and technologies have improved
 - All waste units were assumed to be at the property line
 - Compaction of landfill wastes over time was not considered
 - EPA used a well distance distribution that is protective for LF and SI
 - All receptors were assumed to be in the plume
 - Assumed all water ingested came from wells
 - Adult angler data were used for children
 - Cancer slope factors are upper bounds on risk- true risk could be zero
 - Treatment of non-detects as being ½ the detection limit (impacts 50%ile risks)
 - For ecological endpoints 90th percentile waste pore water values were used.
- As a footnote to all the tables please clarify that values are only presented for chemicals that exceed a risk criteria. Otherwise, readers won't understand why, for example, table ES-2 only presents arsenic values.
- In table ES-3, its not clear why the arsenic +3 and +5 values are the same for the codisposed scenario.
- Page ES-9 states that the risk results are largely consistent with the damage cases. It would be helpful if EPA did more to clarify the exact comparison that was made.
- Has EPA created a summary of public comments and a response to these comments? Similar to the document created for the peer review comments, this would be very useful. Alternatively, EPA could respond to public comments on the risk assessment in the

preamble, but it may be cleaner to keep it separate. On page 1-1 it would be helpful to mention to readers where the response to public comments can be found.

- Section 1.3.3, where EPA presents the risk criteria, please also mention that EPA evaluated the cancer risk range of 10⁻⁴ to 10⁻⁶. Throughout the document, wherever EPA mentions that the risk criteria were exceeded, EPA should also provide the specific cancer risk value and the percentile of the distribution that it references.
- Section 1.3.5, it would be helpful here, or perhaps elsewhere, if there was some discussion regarding the prevalence of codisposed CCW and coal refuse verses typical conventional CCW disposal.
- Page 3-4 suggested edits:
 - "At exposures increasingly greater than the RfD, the potential for adverse health effects <u>may</u> increases although this potential cannot be quantified."
 - "The CSF is an upper-bound estimate (approximating a 95 percent confidence limit) of the increased human cancer risk from a lifetime exposure to an agent. <u>Because this is an upper-bound estimate, true risk is likely lower, and could be as</u> <u>low as zero."...</u>
- Page 3-6, more clarity in the CSCL discussion would be helpful. What is the source of these values? Are they peer reviewed? Are they conservative screening values? What did the expert reviewers on the risk assessment say about this approach?
- Can EPA provide any discussion on whether the arsenic found in groundwater is expected to be of the +3 or +5 speciation? Similarly, what about the different forms of selenium? These discussions would be informative to add to section 4.1.1.
- More detail on the development of the surrogate risk attenuation factors and how they
 were used would be helpful. Was there a specific charge question that asked the peer
 reviewers to comment on this approach? If so, were reviewers supportive? More
 discussion on whether exceeding a HQ of 1 using this approach represents a true risk
 would be helpful. It's not clear if this approach is health protective or perhaps
 underestimates true risk.
- Damage case comparison/review:
 - EPAs comparison of the risk assessment results to the damage case findings seems to be a bit too simplistic. Instead of simply providing just a check mark for whether or not a damage case showed the effect (human health, cosmetic or state std exceedance) in at least one damage case, it would be useful to provide the number of damage cases that showed this (eg say 4/16 if 4 of 16 of the damage case showed something). It would also be helpful to clarify if the landfill or impoundment was lined or unlined in the damage case. This simple change will provide a lot more information to the decision makers and will more fully inform the comparison.
 - \circ In addition, the response to comment shows only the table at the 90% percentile, it would be helpful to see a similar table comparing the 50th percentile risk results.

- Page 4-24 talks about chemicals where the damage case assessments and risk assessment agree and disagree. More clarity on how EPA is defining agreement would be helpful here.
- Figure 4-1, it is not clear that the correct speciations are provided for arsenic and selenium.
- Section 4.2.5, in the discussion of ecological damage cases, a discussion showing a comparison to the risk assessment results (as was done for human health) appears to be missing.
- Page 4-38, this states that ecosystem degradation is proceeding at an unprecedented rate. For such a strong scientific statement, it would be helpful if EPA added a citation.
- As suggested by the peer reviewer (section 8.3 of the peer review report), providing the full distribution of probabilities, as well as the final cancer risk over the Monte Carlo generated distribution of risks and discussion of this value, would be helpful and informative to risk managers. While EPAs risk characterization handbook does not require this, it is unclear why this would be a rationale for not presenting informative information, which EPA has, which is recommended by the expert reviewers. Perhaps presentation in an appendix would be helpful.

Comments on the Fugitive Dust Analysis

• It would be helpful to clarify in the analysis that this is a draft document that has not been peer reviewed. We recommend that EPA talk about the peer review plan and explicitly ask for comments on the analysis. We hope that the peer review will be complete before any final rule relies on this analysis. We would be happy to work with the EPA to ensure that the charge to reviewers is sufficiently robust to inform the use of this draft analysis in a rulemaking.

CEQ Staff Comments

General Concerns:

Lack of meaningfully different alternatives for CCR regulation (general comment): The three alternatives proposed by EPA for CCR regulation all require the same engineering controls, leading to costs (and presumably benefits) that are extremely similar. There is minimal discussion of other options that might provide a more meaningful alternative to the proposed regulations. Are there intermediate regulatory options and/or better enforcement of existing regulations that could achieve most of the benefits at lower cost? It would be helpful to see more consideration and analysis of any feasible intermediate options.

In particular, the land disposal treatment standard "sub-option" seems to contribute >75% of the costs of the regulation. How integral is this component to the overall proposal? What

benefits does this sub-option result in by itself? How much would be lost if the sub-option were not included? Presenting separate cost estimates with and without the sub-option seems to imply that land disposal treatment is "optional," but I am unable to confirm from the text of the preamble whether or not this is really the case.

Bottom Line:

- it will be very expensive to regulate CCR with likely little environmental benefit based on what has been presented thus far
 - less expensive approaches could include enforcement of annual inspections which would provide much greater environmental benefits relative to those proposed
- approximately 2.5 million tons per year currently managed as subtitle C hazardous materials for disposal, this rule would add on the order of 130 million tons per year to this inventory
 - current waste management industry likely does not have the capacity to effectively manage such a volume of waste on top of what it already manages
 - likely some facilities be required to shut down temporarily, or permanently, due to the lack of viable hazardous waste disposal options

Practicality Issues:

Dire Limits to Beneficial Uses of CCRs:

- EPA will likely limit any exclusion from hazardous waste regulation for only those beneficial uses that involve full encapsulation of CCRs into a finished product
 - It's not clear if end-of-life disposal of encapsulated materials will have to be treated as hazardous
 - Other existing beneficial uses such as those involving land application or other unconfined uses such as structural fill, agricultural use, soil amendment will likely be subject to hazardous waste regulation

Poor Ability for Industry to Meet Subtitle C Compliance:

- *De Minimis* CCR releases, such as permitted fugitive emissions, process related releases, transportation releases, and process/transportation remainders would constitute improper hazardous waste disposal and subject facilities to non-compliance
- Accidental releases during handling operations would be subject to hazardous waste clean-up
- Dewatering operations and waste streams would require hazardous waste treatment
 - Leachate management would have to approach a zero tolerance level

- However, the waste streams likely of most concern are those produced during equipment maintenance and water purification, such as metal and boiler cleaning wastes
- treatment options are available for these wastes that would render them nonhazardous without major costs or disruptions to the utilities
- Existing management and storage units, such as baghouses, precipitators, scrubbers, hoppers, containers, sumps, and related devices would be subject to meet hazardous waste compliance
 - o retrofitting existing units not well discussed in the proposed rule
 - It's not clear if end-of-life disposal of encapsulated materials will have to be treated as hazardous
- Off-site disposal would likely be required for many facilities to manage subtitle C CCR due to the inability of on-site capacities to meet demands
 - Transportation issues are high (vehicles to handle are special, attendants require training and must conduct very specific safe-handling operations)
- Current workforces in affected industries would be required to meet hazardous material worker protection/training requirements (power plants, drywall manufacturers)
 - Health threat to employees need re-evaluation and new program implementation for worker protection to meet subtitle C compliance

How the current impact analysis by EPA reflects issues such as those listed in this section is not clear. Do EPA estimates include the full scope of subtitle C regulation, including the cost of closure of existing sites not in compliance with subtitle C? Moreover, the Federal and state roles for control and enforcement are not clear at this time.

Recommendation: The Agency should re-examine if Subtitle C regulation is warranted, in accordance with Section 3004(x) EPA, and focus in on the special characteristics of such waste, the practical difficulties associated with implementation of such requirements, and site-specific characteristics.

Specific Comments:

Baseline beneficial use (RIA section 3B):

p. 51-52: Are the costs of transporting CCR (or any other costs that may be incurred by displacing other materials with CCR) reflected in the economic analysis of beneficial use?

p. 55 (exhibit 3H): The GHG benefits should be monetized using the interagency-approved SCC range of estimates.

p. 55 (exhibit 3H): The inclusion of energy and water costs along with air and water pollution costs in this table is confusing. The reduced air and water pollution costs are the environmental externalities associated with beneficial reuse. Energy and water are inputs

with market prices, and their costs are already implicitly reflected in the estimates of the economic benefits of beneficial use in exhibit 3E. It is misleading to summing up the avoided water and energy costs along with avoided air and water pollution costs to come up with a total estimate of environmental benefits. Energy and water should probably be removed from exhibit 3H, but if they are left in, they should not be monetized and summed with the pollution costs. The total monetized environmental benefit would then sum up to \$19.6B, not \$24.6B.

This issue comes up again on p. 135 in the discussion of the impacts of the rule on beneficial use. The estimate of baseline beneficial use economic and environmental benefits seems incorrect—seems like it should be \$21.9 billion (\$19.6B envir + \$2.3B econ), not \$24.6B.

Impact of rule on beneficial use (RIA section 6C): We agree that it is important to ensure that rule does not have a negative impact on beneficial use, e.g., through triggering state restrictions on reuse. However, if beneficial use is not explicitly restricted under federal or state law in response to a subtitle C designation, it seems likely that beneficial use will *increase* as a result of the rule because regulated firms will have an incentive to promote beneficial reuse and lower the selling price of CCR (even to zero or below) in order to avoid costly treatment and disposal. EPA acknowledges this possibility but does not quantify this potential impact. By quantifying three other scenarios in which regulation has a negative impact on beneficial use, the BCA gives the impression that a decrease in beneficial use is the most likely outcome.

Would it be possible for EPA to do a quantitative analysis of the impact on beneficial reuse under the scenario in which cost-avoidance causes an increase in beneficial use? E.g., EPA could examine how the proposed reg would change the price at which regulated firms sell CCR, or perhaps make the simplifying assumption that regulated firms give away CCR at no cost, and determine the impact on beneficial use. Additional discussion on the barriers to increasing beneficial reuse would be helpful here, since based on the cost data provided by EPA, it seems like it would be economic to reuse virtually all CCR, but clearly that is not happening.

On p. 131, EPA notes that ACAA claims that a designation of CCR as hazardous waste will stigmatize beneficial uses. Did EPA also gather information from the users of CCR to gain insight into whether they would, in fact, reduce their use of CCR in response to a subtitle C designation? The ACAA may not be an unbiased source of information on this point.

<u>Benefits analysis (RIA chapter 7)</u>: We acknowledge that monetizing the benefits of avoided land and water contamination is a complex analytical challenge. With that in mind, it is important to provide a robust benefits analysis that gives some quantitative indication of what impact the proposed regulation is likely to have on CCR-related contamination. The benefits chapter only provides a partial quantitative estimate of the *baseline* damages from current CCR management practices—with no indication of how those damages would change if the proposed regulations were implemented. Using baseline damages as a benefit estimate implies that the regulations would completely eliminate the risk of catastrophic releases or ground/surface water contamination, but EPA does not present any evidence to support such a claim. The salient question is, what is the estimated impact of this rule on the risk of a catastrophic release or water contamination? The BCA provides no sense of the extent to which the regulations reduce these risks, and how the three proposed options differ in their impact on risk.

In addition, the discussion of benefit categories is confusing. "Community benefits" are not a distinct category apart from health and ecological benefits. We understand that it is difficult to estimate health and ecological impacts and that EPA is using damage cases to proxy for partial benefits. However, it is not accurate to label avoided damages as a separate benefit category called "community benefits." In theory, if health and ecological damages could be accurately estimated, summing them up with community benefits would be double counting.

We recommend that EPA first discuss conceptually the categories of benefits that the rule is expected to yield (e.g., health, ecological, aesthetic). EPA can discuss why it may not be possible to estimate each benefit category empirically. EPA can then follow up with the partial empirical estimate of benefits based on damage cases, explaining that this estimate includes some aspects of health and ecological damages but is by no means comprehensive.

Army Corps of Engineers

Comments on Section V, C - Special Requirements for Stability of CCR Surface Impoundments:

- two approaches for assuring structural stability are mentioned: an alignment with the MSHA Standards (which seems appropriate) and alignment with NPDES Permits (does not seem appropriate as impoundment structures do not lend themselves to the simple compliance techniques that NPDES relies upon).

- the section indicates that federal agencies, including the Department of Defense, were coordinated with and I was not aware that this occurred.

- the suggested size limitations on what constitutes a jurisdictional structure appear appropriate

- the requirement for periodic inspections every 7 days is excessive and unnecessarily costly: recommend MSHA inspection frequencies be followed

- regulatory responsibilities, particularly by the state for non-federal impoundments, are not clearly defined.

Department of Energy

1. General Comment

Significant data exist on the environmental effects of current disposal and utilization practices involving coal combustion residuals (CCRs). DOE believes that EPA should emphasize the results of real-world data when considering any regulations involving CCRs. Technical data that DOE used to support past analysis were obtained from studies in which the National Energy Technology Laboratory (NETL) played a direct role, either through in-house research or funding of external research projects. DOE continues to believe that the regulation of these practices under RCRA subtitle C as hazardous waste is unwarranted, and supports the continued collection of information to help resolve EPA's concerns regarding CCRs.

The Risk Assessment (RA) further confirms that improperly lined units are the prime cause of environmental damage and human exposure, including certain non-encapsulated uses (sand and gravel pits) as well as unlined surface impoundments and landfills. As more evidence is gathered, this position is further solidified. DOE is in agreement that these units that lack liners and show potential problems should no longer be used.

EPA ruled in 2000 that a Subtitle C designation was unwarranted, and all available evidence supports the conclusions made at the time. Continued evidence does show that unlined units have caused environmental damage; however, the promulgation of this Subtitle C regulation to treat all CCRs as hazardous waste does not appear to be justified, especially when, as mentioned by EPA in the preamble, the disposal practices at power plants have shown a history of improvement and are continuing to improve. The benefits of CCR regulation under Subtitle C are not apparent and DOE urges EPA to fully understand the implications of such a regulation before going forward with the current proposed designation. We appreciate the opportunity to comment and look forward to working with you to improve regulatory solutions to this issue.

2. Preamble, Page 63, Joint EPA/DOE Study, 1994-2004

In the Regulatory Determination (RD) of 2000, which DOE agreed with, EPA decided to regulate CCRs as a Subtitle D waste, stating that "The Agency has determined that industry practices are moving toward increased use of control measures (liners, covers, etc.) and groundwater monitoring." This statement is further reinforced by the 2006 joint DOE/EPA report¹ on recent disposal practices. The 2006 report found that 97% of newly permitted landfills and 80% of newly permitted surface impoundments require groundwater monitoring, compared to 88% of landfills and 65% of surface impoundments permitted between 1985 and 1994. Similarly, virtually all newly permitted facilities included appropriate liners – 55 of 56 surveyed units, with one surveyed landfill receiving inert bottom ash that the state determined did not need a liner. This compares with liners installed in 75% and 60% of those landfills

¹ Coal Combustion Waste Management at Landfills and Surface Impoundments, 1994-2004. Available publicly at: http://www.osti.gov/bridge Page 21 of 46

and surface impoundments, respectively that were established between 1985 and 1995, which appears to be the timeframe which is the source of EPA's concern.

Despite the indication of better disposal practices, the proposed rule advocates Subtitle C regulations. This is in direct opposition to the 2000 RD that Subtitle C regulations were unwarranted, when EPA determined "that it is unlikely that Subtitle C would effectively address the problems associated with the four large-volume fossil-fuel combustion wastes without imposing unnecessary controls."

3. Preamble, Pages 63-65, Joint EPA/DOE Study, 1994-2004

The statistics cited regarding the number of states covered in the joint EPA/DOE study is misleading. Although it is true that this report "only provided a review of 11 states", it is more important to note that, by using coal fired generation capacity as a proxy, the 56 units surveyed encompass at least 63% of the total universe of new or expanded units. Similarly, on Page 65, the percentage of states requiring groundwater monitoring, liners, etc., are mentioned, but not the percentage of impoundments.

4. Preamble, Page 71, Effect on Beneficial Uses of CCRs

Despite EPA's assumption to the contrary, there are strong possibilities that the Subtitle C regulation would cause significant harm to the beneficial-use industry. Indications from industries, which use CCRs, are that a Subtitle C declaration would severely hamper beneficial-use applications. Utilities will be unwilling to sell what is in some situations a hazardous material, whether it maintains the Bevill exemption or not. Similarly, companies that sell products using CCRs fear the stigma created by such a designation would lead to an undesirable product and may lead to potential lawsuits over the use of a hazardous material in their product, even if there is an exemption for encapsulated uses. The movement away from beneficial uses of CCRs would also cause a larger volume of material to require disposal, placing greater pressure on those units, which are currently being used, and causing more units to be permitted.

In general, the CCRs currently being used for commercial purposes are from plants that are located in close proximity to the users. For many plants, the high transportation costs make commercial utilization of their CCRs totally uneconomical. In many cases, the quality (e.g., high carbon content in fly ash) of CCRs is such that they cannot be utilized commercially. There is no mention of any type of beneficiation technology (e.g., carbon burnout or mercury removal) in order to use material that is currently unsuitable, and more importantly, the cost of upgrading the material for use is not considered in the provided cost analysis.

EPA needs to address the concern regarding an increased number of landfills due to a potential reduction in beneficial uses in its RA. Such an assessment should include the expected reduction, as acknowledged by EPA, in the non-encapsulated uses.

This section lists the requirements that would be covered by the proposed regulation. It appears that one important area that has not been addressed is the effect of classifying CCRs as hazardous waste on plant operations. Certain amounts of CCRs may be released during the normal operation of a power plant. This includes releases from the emission control equipment or storage vessels, releases during maintenance operations, etc. In many cases, releases from such operations may cause CCR-laden dust to be present on the equipment/structure surfaces throughout the plant. There may also be special requirements associated with maintenance personnel entering ash or flue gas handling equipment. In addition, certain unexpected issues, such as ash leftover after delivery to a landfill in transportation vehicles, may become problem areas. The EPA's risk assessment document (EPA530-D-09-001) has not addressed whether there are risks involved with the above plant activities that would justify a classification of CCRs as hazardous wastes. The cost estimates provided by EPA do not assign any costs associated with addressing the above issues by the plants.

6. Preamble, Page 153, Beneficial Uses

The EPA proposes to maintain the Bevill determination for CCRs used beneficially. Based on this, CCRs being used beneficially will be exempted from the proposed regulation requirements from the point of the generation of these CCRs to the point they are beneficially used. This implies that if CCRs from a power plant were being transported to a landfill, the plant would be subjected to hazardous waste requirements. However, if the same CCRs are transported to a facility utilizing CCRs for commercial purposes, then these requirements are waived. EPA has not addressed the issues of CCRs being stored and handled at the place of beneficial uses, which may not be any different than the storage and handling at the point of origin. It appears that the main area of concern with CCRs is their storage in landfills or impoundments and that this concern can be addressed with the requirements of liners, etc., without a classification under hazardous waste.

7. Preamble, Page 215, Estimated Cost of Baseline CCR Disposal and RIA

The cost estimates provided in RIA do not include costs for storage design and operating standards. For certain plants, these standards may result in significant cost impacts. Cost for the disposal of CCRs presently being used for non-encapsulated uses should also be added to these estimates. This would be a conservative measure, despite EPA's assumption that overall beneficial use of CCRs may go up with this regulation. Without complete costs, it is impossible to determine the impact of the three proposal options for this regulation. Also, for the option under Subtitle C, do the requirements include disposing of the collected leachate or just monitoring? It would be helpful, if it were clarified.

8. Preamble, Pages 220 and 221, Cost Estimation Uncertainties and Effective Dates

One possible scenario that is not covered is the potential for site closures due to the increased cost of disposal. In some instances, large volumes are disposed of in sand and

gravel pits and other methods that were termed "sham beneficial uses". These plants would have to convert to proper disposal techniques, and there is the possibility that some sites may become unprofitable due to higher disposal costs. This potential reduction in generation capacity is one area that should be explored as a possible scenario.

Shortfalls in landfill capacity may be experienced when certain disposal facilities affected by this regulation are closed, causing a need for new units to replace existing capacity as well as additional capacity to manage wastes no longer being used for certain current disposal practices (e.g., sand and gravel pits.) It is possible that the time period allowed to implement these changes is too short.

9. Preamble, Page 269, APPENDIX to the Preamble: Documented Damages from CCR Management Practices

The proposed regulation covers four types of CCRs: fly ash, bottom ash, boiler slag, and flue gas desulfurization wastes. All of these wastes have different characteristics and constituents. In the proven damage cases (described in EPA-HQ-RCRA-2006-0796-0015), most disposal facilities not only include a mixture of two or more of the CCR types, but, frequently, they have other types of wastes present, such as water treatment waste, petroleum coke, etc. It is not clear whether presence of wastes other than CCRs contributed to the proven damage status. It is also not clear whether one or more of the CCRs did not contribute to the damage. The EPA should address this in its discussion in the preamble.

10. Risk Assessment Document, EPA Contract EP-W2-09-004

The RA makes assumptions that could over-state the risks of disposal units. The Monte-Carlo modeling tends to over-estimate risks by using a generic statistical model without consideration of mitigation measures available on a site specific basis. In particular, the RA allows for a time scale of 10,000 years for exposure. In all proven damage cases that have data available (22 of 24 damage cases presented in the 2007 NODA, excluding oil ash sites), remediation activities have been initiated to mitigate further damages. In addition, the RA is not based on a "site specific" analysis, but rather a "site based" analysis. Each individual site will have specific criteria, including hydrological factors, precipitation, soil permeability, topography, and other considerations. These factors could vastly influence the possibility of impacts to ground or surface water. No measure of population is taken into account, which makes interpretation of the risks difficult to ascertain.

The data for the RA suggests that, of the three waste types modeled (CCRs, CCRs co disposed with coal refuse, and fluidized bed combustion (FBC) waste), multiple waste streams were sampled and collectively termed CCRs, including bottom ash, boiler slag, fly ash, and flue gas desulphurization (FGD) sludge. These 4 waste streams are considerably different, and it may not make sense to consider them all in a single category. Boiler Slag, for instance, is a glassy substance and largely inert, however it is assumed to have the same risks as FGD sludge by this analysis. In a coal-fired boiler, metals present in flue gases are captured by particulate control devices and are thus collected along with fly ash. In the preamble, EPA has noted in several places that introduction of future emission control devices may increase the amount of metals in CCRs. One example of this could be the injection of activated carbon in boiler flue gases to capture mercury, since activated carbon may also capture other metals (along with mercury). However, in this case, these metals would ultimately end up in fly ash as well. Any differences this may cause in the toxicity potential between bottom and fly ash should be included in EPA's analysis.

Department of Interior

The Bureau of Reclamation has reviewed the EPA's Proposed Regulation for Coal Combustion Residues. We provide the following comments:

General Comments:

Reclamation has concerns about the impact this Proposed Regulation for Coal Combustion Residues may have on Reclamation projects.

Specific comments:

Agency Process:

Options 1 and 3 of the proposed plan would result in the full or partial classification of coal combustion residues (CCR) as a Subtitle C hazardous waste under the Resource Conservation and Recovery Act (RCRA).

Reclamation comment:

Reclamation has been using fly ash in their concrete mixes since 1949 and supports fly ash as a beneficial additive to conventional concrete, high performance concrete, roller compacted concrete, controlled low strength backfill and soil cement. Currently we require 20- to 70-percent of the cementitious material in concrete to be fly ash. Reclamation currently follows the 1983 EPA guidelines² for the procurement of cement and concrete containing fly ash and is designing and building structures with a strategy towards sustainability per Executive Order 13514³.

Although it is stated that the 1980 RCRA Bevill exclusion for CCR beneficial use will be retained, it is our opinion that any classification of CCR's as hazardous material would adversely impact Reclamation. We believe that the EPA is underestimating the severity of

² National Archives and Records Administration, Office of the Federal Register, "Code of Federal Regulations, Title 40, Protection of Environment", Part 247, 48FR.

³ Federal Register, "Executive Order 13514, Federal Leadership in Environmental, Energy, and Economic Performance", Vol. 74, No. 194, October 8, 2009.

the impact of listing CCR's as hazardous waste for the 14 industries which beneficially use CCR's. We also believe their assumption stated in the executive summary that "these industries are not expected to be impacted by the proposed rule" should be more fully evaluated.

In our opinion, the EPA's stated goals to "increase the beneficial use of CCR's from 31% in 2001 to 50% in 2011" and to "increase the use of coal fly ash in concrete from 14 million U.S. tons in 2002 to 18.6 million U.S. tons by 2011"⁴ will not be met if CCR's are fully or partly regulated as RCRA subtitle C. By regulating CCR disposal as RCRA Subtitle C, in full or by implementing a hybrid regulation, we believe that the availability to purchase fly ash for use in concrete will be eliminated.

We believe that the proposed regulations do not resolve the containment issues. If the wastes are classified as RCRA subtitle C, more CCR's will be diverted to storage as waste and not used in beneficial ways.

Conclusions

- Fly ash is not hazardous when using good practices in concrete construction.
 - EPA has published a number of documents^{5,6,7} that recommended that coal combustion wastes (fly ash) not be regulated as a hazardous waste under RCRA subtitle C, and that such classification is unwarranted.
 - In June 2008, EPA reported to Congress^{Error! Bookmark not defined.} the energy savings and environmental benefits associated with substitution of recovered mineral materials (including coal fly ash) involving cement and concrete.
- We concur with industry leaders⁸ who feel strongly that if fly ash is designated a hazardous waste, fully or in a hybrid classification, it will no longer be used in concrete.
 - Fly ash producers will no longer allow its use due to liability concerns.
 - If it is classified as a hazardous waste, its use will be removed from local, state and national building codes for the same reason.
 - Even if it is specified, contractors will not want to use it for the same reason.
 - Ready mixed suppliers purchasing, storing, and using fly ash in their concrete would perceive an increase in liability and would be reluctant to supply concrete containing fly ash.
 - There may be a perception that the hazardous component of fly ash can be passed from the concrete into the water that comes in contact with our concrete facilities that contain fly ash. Reclamation supplies irrigation water for 10,000,000 acres of land, it supplies 10 trillion gallons of water for municipal,

⁴ United States Environmental Protection Agency in conjunction with the U.S. Department of Transportation and the U.S. Department of Energy, "Study on Increasing the Usage of Recovered Mineral Components in Federally Funded Projects Involving Procurement of Cement and Concrete to Address the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users, Report to Congress", EPA530-R-08-007, June 3, 2008.

⁵ U.S. Environmental Protection Agency. August 9, 1993. Notice of Regulatory Determination on Four Large-Volume Wastes from the Combustion of Coal by Electric Utility Power Plants, Federal Register Notice. 58 FR 42466.

 ⁶ US EPA, Reg. Determination on Wastes from the Combustion of Fossil Fuels, Final Rule 65 Fed. Reg. 32214, May 22, 2000.
 ⁷ U.S. Environmental Protection Agency (U.S. EPA), January 2006. "Characterization of Mercury-Enriched Coal Combustion Residues from Electric Utilities Using Enhanced Sorbents for Mercury Control." EPA/600/R-06/008. F. Sanchez, R. Keeney, D. Kosson, R. Delapp, and S. Thorneloe.

⁸ http://www.uswag.org/ccbletters.htm

residential, and industrial use and it supplies 31 million people with water for municipal, residential, and industrial use.

- The cost of concrete would increase if fly ash is considered as a hazardous material.
 - If still marketed, the cost of fly ash will increase if fly ash is labeled a hazardous material. The cost of transporting, handling, storing, and using fly ash to produce concrete will increase to account for increased liability.
 - Fly ash costs approximately 20- to 50-percent less than the cost of cement depending on availability. If the availability of fly ash is reduced to the point that only cement will be used in producing concrete then all projects will lose the cost savings associated with using fly ash.
 - Without the use of fly ash, the demand for cement will increase significantly, which will increase the price for cement.
 - If the availability of fly ash is reduced to the point that the demand for fly ash is greater than the supply, the market will see an increase in the cost of fly ash.
- Use of fly ash in concrete is reducing CO₂ emissions by about 15 million tons annually⁹.
 - Use of fly ash also preserves natural resources since less mining is needed to obtain materials to manufacture cement, and less land is used to dispose of fly ash.
 - \circ Without the use of fly ash, the demand for cement will increase significantly, and more CO₂ will be generated due to the increased production of cement.
- Replacing fly ash with other materials will be at a greater cost to obtain equivalent performance and durability.
 - Fly ash has been proven to effectively mitigate the effects of Alkali-Silica-Reaction (ASR) in concrete, which has the potential to affect many Reclamation concrete structures. The other methods of mitigation are to use lithium nitrate admixtures or higher quality aggregates.
 - There are very limited sources of lithium, the cost is high, and procuring large amounts would be difficult as the battery industry heavily relies on lithium for production.
 - The availability of good-quality, accessible non-reactive aggregate has decreased over the years. This means new mining areas and greater hauling distances, which in turn increases emissions and cost.
 - Fly ash is an essential component to prevent sulfate attack in concrete. Fly ash extends the service life of concrete exposed to sulfate attack from less than 50 years to more than 100 years. Groundwater sulfates are common throughout the western United States and cause significant deterioration in unprotected concrete.
 - Without access to fly ash, Reclamation would need to use different methods to obtain equivalent performance in concrete structures. Chemical admixtures are available for use in concrete, but to obtain the same benefits provided by fly ash, multiple chemicals would need to be combined at a much greater cost.
 - Natural pozzolans (natural fly ashes) would not be a viable replacement for fly ash as their quality is highly variable and most of them require extensive processing and additional energy consumption to make them suitable for concrete.

⁹ <u>http://www.coalashfacts.org/CCP%20Fact%20Sheet%201%20-%20Safe%20and%20Valuable%20Resources_FINAL.pdf</u> Page 27 of 46

- Fly ash improves concrete workability.
 - Fly ash particles are finer than cement and are spherical in shape, which increases the workability of concrete reducing labor cost.
- The use of fly ash in mass concrete saves substantial cooling costs and improves quality by minimizing thermal cracking.
 - Using fly ash in concrete reduces thermal cracking due to heat generation from hydrating cement. Reducing the amount of cement required in the mixture lowers or eliminates costs associated with artificial cooling. Artificial cooling costs required to reduce the thermal stresses in mass concrete are significant.
- If fly ash is considered hazardous waste, it could impact any work performed on existing concrete structures.
 - Sampling and testing of existing concrete containing fly ash would create solid waste that could be regulated by the EPA and could require special hazardous waste disposal.
 - Cost for contractor's liability for workers handling and testing the material could significantly increase.
- Reclamation is currently following the 1983 EPA guidelines for procurement of cement and concrete containing fly ash².
 - Guidelines issued under executive order 40 CFR Part 247, essentially required all federal agencies to (1) identify established specifications for coal fly ash in cement and concrete; (2) revise specifications to allow the use of concrete containing coal fly ash; and (3) revise performance standards related to cement and concrete to ensure that coal fly ash is not arbitrarily restricted. In addition, federal procurement regulations also required federal agencies to provide documentation as to why fly ash can not be used in concrete.

Department of Transportation

 It would be helpful if EPA incorporated some explanatory language in the preamble that CCRs (destined for disposal) listed as hazardous wastes under Subtitle C of RCRA will also be subject to the DOT hazardous materials regulations (HMR) because a material subject to EPA hazardous waste manifest requirements is defined as a hazardous material under the HMR. In the interest of making generators and transporters of this waste aware that the DOT regulations will apply when CCRs are transported in commerce, the Pipeline and Hazardous Materials Safety Administration suggests that EPA incorporate the following:

"Generators and transporters of CCRs destined for disposal should be aware that an EPA hazardous waste subject to EPA hazardous waste manifest requirements under 40 CFR Part 262 meets the definition for a hazardous material under the Department of Transportation's Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) and must be offered and transported in accordance with all applicable HMR requirements, including materials classification, packaging, and hazard communication. See the definition for "hazardous waste" in 49 CFR 171.8."

• DOT is concerned about the negative impacts that may result from designating fly ash as a hazardous material. Fly ash is a valuable byproduct used in highway facility

construction. It is a vital component of concrete and is important for a number of other infrastructure uses. To designate fly ash, along with other CCRs, as hazardous wastes would likely jeopardize its availability and discourage, if not eliminate, its use.

- The Rule would designate all CCRs as hazardous and then exempts beneficial uses. However, DOT is concerned that this approach is confusing, and may still have unintended consequences due to the association with Subtitle C. For example, many States have policies that forbid the use of any hazardous materials. Thus, if fly ash is designated as a hazardous material, it would fall under these general State prohibitions and would legally prevent the use of fly ash in public works structures and highways. Furthermore, an exemption in a Federal regulation probably would not negate State laws. If a material is in any manner considered hazardous, States will not risk future liability. DOT supports EPA's efforts to protect the beneficial uses of CCRs, but we are still concerned that this Rule would significantly diminish the beneficial uses of CCRs.
- FHWA suggests that the proposed rule would continue to be effective and protect the beneficial uses of CCRs if the rule focused upon disposal regulations. If the rule focused upon disposal regulations, then there would be no adverse effect on fly ash usage, and both an environmental protection interest and the public works benefit would be preserved.
- It should be noted that the incident at a TVA facility which drew attention to this topic involved bottom ash, a product that is handled and stored using a wet process. Fly ash used in concrete is handled using a dry process and has no relationship to the Kingston, Tennessee situation. To designate the material as a hazardous material would likely result in more material requiring disposal, increasing the risk of future unfortunate events that could arise from the disposal effort instead of the current, beneficial utilization.
- Fly ash can be used to improve concrete in many ways. The following is a brief list of those concrete properties improved through the utilization of fly ash:
 - Setting time is normally delayed. This aids in placement during summer construction.
 - Long term strength is increased. Early strength may be reduced but ultimate strength is increased, with strength gain being maintained for many years.
 - Heat of hydration of the concrete is normally reduced. This reduces shrinkage and thereby the cracking potential of the pavement or structure.
 - Fly ash, particularly Class F fly ash, will mitigate the potential for alkali silica reaction (ASR) in most concrete mixtures. ASR is a major source of early concrete deterioration in many areas of the US. It is such a significant problem that Congress has allocated \$8 million to conduct research to seek solutions. At this time, fly ash is the most widely used product to combat this problem and to date very few other solutions have been found to address the issue in a practical manner.
 - Fly ash reduces the permeability of concrete. Lower permeability resists the intrusion of deleterious chemicals and prolongs the life of the structure or pavement.
- If fly ash is designated a hazardous material, FHWA is concerned that its usage in concrete will greatly diminish. State and local agencies that are responsible for highway systems, as well as commercial users of concrete, would not utilize such a material from either a public safety standpoint or because of State statutes. A diminished use of fly ash in concrete will have the following implications:

- More cement would be used. Today, commonly 20% to 35% of the cementitious material in many, if not most, concrete mixtures is fly ash. Fly ash unavailability would mean the same percent of cement would be added back into the mixtures and thus increase the carbon footprint by that same amount.
- Cement is more costly than fly ash. In some areas, it is as much as twice the cost. Agency budgets have already been decimated by the increase in fuel and asphalt costs of recent years, and this would be another challenge to maintaining our highway system.
- Agencies would no longer have practical, economical means to address ASR. In some states this affects millions of dollars directed toward bridges and pavements. As renewed emphasis is being placed on our nation's infrastructure, removing a valuable tool such as fly ash would be devastating to the long term effectiveness of that effort.
- Concrete durability would be reduced. This would shorten the life of pavements and structures, further straining our aging transportation system.
- The potential for cracking in concrete would increase. In both pavements and structures, cracking reduces the service life and increases maintenance costs.

Specific Questions/Comments:

On page 2 of the preamble, the following statement is made: "In addition, CCRs destined for disposal would be subject to the cradle-to grave management standards under the rules implementing subtitle C of RCRA."

Comment: Fly ash is produced at a power plant and thus must be stored until it is transported off-site. How and when would the exemption be applied? Does the exemption begin at the power plant, with an exempt storage area and anon-exempt storage area? For example, if two trucks contain the same fly ash, and one is bound for disposal and one is bound for a cement plant for beneficial use, would one be considered transporting hazardous material and the other not?

On page 69 of the preamble, the following statement is made: "As described previously, EPA has identified 27 proven damage cases - 17 cases of damage to groundwater, and ten cases of damage to surface water, including ecological damages in seven of the ten cases."

Comment: All cases cited involve either ground water or surface water. Throughout the proposed rule, the justification for the hazardous waste designation is water pollution relating to improper disposal. There is no documented evidence that fly ash used for beneficial uses has created any adverse effect since the May 2000 Regulation or Determination that concluded Subtitle C was not warranted.

Infrastructure utilizes dry fly ash. FHWA suggests that EPA address certain types of CCRs that are stored in wet or dry form. This would free those materials most used for beneficial use from Subtitle C and also avoid adverse effects on beneficial uses of CCRs.

On page 255 of the preamble, the following statement is made:

"Of the 495, 383 plants (77%) operate CCR disposal units on-site (i.e., onsite landfills or onsite surface impoundments), 84 plants solely transport CCRs to offsite disposal units operated by other companies (e.g., commercial waste management companies), and 28 other plants generate CCRs that are solely beneficially used rather than disposed."

Comment: FHWA is concerned that the 28 plants that solely provide CCRs for beneficial use would be unnecessarily burdened with new containment standards, reporting requirements and transport restrictions for a product that is not hazardous.

References cited in DOT's comments

U.S. Environmental Protection Agency. April 2005. Using Coal Ash in Highway Construction: A Guide to Benefits and Impacts, EPA-530-K-05-002.

Federal Highway Administration. August 1995. Fly Ash Facts for Highway Engineers, FHWA-SA-94-081.

Rens, L. September 2009. Concrete Roads: A Smart and Sustainable Choice. Brussels, Belgium: European Concrete Paving Association. <u>www.eupave.eu</u>.

Helmuth, Richard. 1987. Fly Ash in Cement and Concrete. Skokie, IL: Portland Cement Association

Tennessee Valley Authority (TVA):

I. Introduction

TVA appreciates the opportunity to participate in the Office of Management and Budget's interagency review of EPA's proposed Coal Combustion Residuals rules. **We support EPA's initiative in developing national standards which will provide a uniform regulatory platform for all utilities**. As an operating utility and as a Federal agency that will ultimately be required to comply with rules once finalized, we believe we can offer a unique perspective on the operational impact of these rules. As we have previously announced it is our intention to "go dry" in the handling and disposal of CCRs at all of our facilities over the next ten (10) years.

However we do have concerns with the preferred approach, RCRA Subtitle C and the classification of CCRs as a listed hazardous waste, which EPA is proposing in this rule. Among other things, today's comments will be directed at the impacts a Subtitle C approach could have on our, and other utilities', daily operations, and our concern on any negative impact a hazardous waste classification could have on our ability to maximize legitimate use of CCR products. Our comments are generally directed at what we consider significant impacts the proposed rules dictate. More specific technical and operational comments will be submitted directly to EPA in the course of the public comment period once the rules are published in the *Federal Register*.

II. EPA Approaches for Regulating CCRs-Analysis of Proposed Options

The preamble discusses three possible approaches to regulating CCRs. The first is Subtitle C, the second Subtitle D and lastly, a combination of Subtitle C & D requirements.

A. Subtitle C Option

1. Description

This is the EPAs preferred option. As stated on page 226 of the preamble,

Facilities treating, storing, or disposing of the newly listed CCRs are subject to the RCRA 3010 notification requirements, the permit requirements in 40 CFR part 270, and regulations in 40 CFR part 264 or 267 for permitted facilities or part 265 for interim status facilities, including the general facility requirements in subpart B, the preparedness and prevention requirements in subpart C, the contingency plan and emergency procedure requirement in subpart D, the manifest, recordkeeping and reporting in subpart E, the closure and post-closure requirements in subpart G, the corrective action requirements, including facility-wide corrective action in subpart F, and the financial assurance requirements in subpart H.

- 2. Issues, considerations and Concerns
 - a. Listed Waste Management Issues

Listing CCRs as K179 hazardous waste under 40 CFR 261 brings up a host of issues

It is common practice in the utility industry to employ wet systems to collect and transport CCRs to disposal or reclaim units. As a listed waste both the CCRs and the water typically used to transport them would remain a hazardous waste regardless of subsequent treatment. As stated on page 136 of the preamble:

EPA expects that as a result of these measures, facilities will switch to dry handling of CCRs, which will obviate the need for the construction of new surface impoundments after the effective date of the rule, and will effectively phase out existing surface impoundments within the five years before these requirements become effective.

The ramifications of this requirement are immense. Wet scrubbing technology for flue gas desulfurization (FGD) provides a key technology for compliance with existing and future clean air act requirements. These systems can produce nearly pure gypsum in a wastewater stream. These systems can use impoundments where the gypsum can be subsequently reclaimed and beneficially used in the production of wallboard (discussed further below). Even with de-watering systems, the wastewater, under the proposed rule, would retain the hazardous listing, complicating its treatment and discharge as discussed below. TVA operates eight wet scrubbers and plans additional deployment of this technology. EPA programs to attain the National Ambient Air Quality Standards for fine particles, for visibility improvements in parks, and to reduce emissions of hazardous air pollutants account for the deployment of wet scrubbing technology across the nations. Program goals might be impacted if this technology is overly burdened or needlessly eliminated. Dry scrubbing systems exist, but they have limitations for use with higher sulfur coals. If these rules force

dry scrubbing technology, this will also result in fuel switching. Analysis of the fuel switching is not explored to any great depth in the regulatory impact analysis.

Wastewaters are also generated in transporting other CCRs to impoundments. One means of producing dry CCRs is by dewatering. The resulting water can then be sent to a surface water impoundment and discharged per the facilities NPDES permit. The Subtitle C approach would eliminate this treatment option because the filtrate for the dewatering operation would remain a hazardous waste. On page 146 of the preamble EPA clearly states the impact of their preferred Subtitle C approach: "The *practical effect of today's proposed rule would be to prevent facilities from continuing to manage wet forms of CCRs, and would result in facilities operating surface impoundments to stop receiving CCRs no later than five years after the effective date of the final regulation....*" The net effect is to require all power plants to install dry systems and eliminate water transport of CCRs. <u>This will not only have a large financial impact it, but will also lead to the possibility of additional fugitive air emissions in dry conveying of these materials.</u>

b. Unit Design Considerations

On page 142 of the preamble EPA states:

Based on its risk analyses and the damage cases, EPA has concluded that a single composite liner system for CCR landfills and surface impoundments will protect human health and the environment from releases of contaminants to groundwater.

We agree with this conclusion. Once the solid CCRs are dewatered and removed from the slurry carrying them from the collection process TVA does not believe there is any practical, technical or safety reason that a properly constructed wastewater impoundment should not be allowed to accept the filtrate, landfill leachate and other nonhazardous waste water streams such as precipitation runoff from the coal storage piles at the facility, waste coal or coal mill rejects that are not of sufficient quality to burn as fuel, and wastes from cleaning boilers used to generate steam. Waste water impoundments are used by many industries as a safe and effective means of complying with NPDES permit requirements.

EPA's assumption (pg 155) that disposal patterns <u>will</u> remain the same may be erroneous. <u>Most utilities that have impoundments, including TVA, will more than likely be forced to look</u> for new offsite disposal units. Often there is limited onsite land available for simultaneously constructing new onsite dry landfills while closing existing impoundments.

c. Point of Generation Concerns

What does EPA consider the Point of Generation to be? The answers can affect both compliance and the ability to beneficially use CCRs. On page 85 of the preamble it is stated: "Today's proposed action would leave in place EPA's May 2000 Regulatory Determination that beneficially used CCRs do not warrant federal regulation under subtitle C or D of RCRA". Since CCRs destined for beneficial use are not regulated, it is not obvious at what point CCRs become regulated (K179). If it is at the point where the decision is made to dispose or beneficially use the material, then any fugitive or de minimus losses prior to that point that are cleaned up and then beneficially used should be excluded from being classified K179. In

addition, auxiliary collection, storage, and processing operations may be subject to onerous permitting and administrative requirements with no associated reductions in the risks of operating these systems. For CCRs placed in a landfill and later recovered it is not clear whether the beneficial use exemption is applicable. TVA routinely reclaims gypsum from disposal units at its facilities and depending on the point of generation this environmentally friendly practice could be needlessly eliminated.

d. Facility-wide Corrective Action Issues

Regulating CCR as hazardous waste would subject power plants to facility-wide corrective action. As stated in 40 CFR 264.101(a): "The owner or operator of a facility seeking a permit for the treatment, storage or disposal of hazardous waste must institute corrective action as necessary to protect human health and the environment for all releases of hazardous waste or constituents from any solid waste management unit (SWMU) at the facility, regardless of the time at which waste was placed in such unit." According to EPA, a SWMU is "any discernable unit at which solid wastes have been placed at any time, irrespective of whether the unit was intended for the management of solid or hazardous waste. Such units include any area at a facility at which solid wastes have been routinely and systematically released." [55 FR 30808]

Over the years, EPA has determined in reviews required by the Bevill Amendment that CCRs have been used in a number of ways that are beneficial. This proposed rule takes exception to some of those past uses. While TVA supports EPA in its efforts to better define beneficial use, to now subject decades of legitimate industry management practices to facility-wide corrective action requirements is inappropriate. Corrective action can be more appropriately triggered through groundwater monitoring as required by this rule.

e. Permitting Issues and Resource Limitations

TVA has previously announced its intention of "going dry" in the handling and disposal of CCRs. In order to accomplish this goal the agency plans to close 18 surface impoundments, install 4 gypsum dewatering facilities, convert 6 fly and 11 bottom ash/boiler slag systems to dry, close 10 landfills and construct 10 new landfills. We are in the process of preparing closure plans and locating and permitting new landfills at this time. As explained below, we are concerned that the subtitle C option could delay the implementation of these projects.

f. Unit Classification and Timing Concerns

On page 303 of the proposed rule an existing landfill is defined as:

Existing CCR Landfill means a landfill which was in operation or for which construction commenced prior to promulgation of the federal management standards which are applicable to such landfill. A CCR landfill has commenced construction if: The owner or operator has obtained the Federal, State and local approvals or permits necessary to begin physical construction: and either

(i) A continuous on-site, physical construction program has begun; or

(ii) The owner or operator has entered into contractual obligations—which cannot be cancelled or modified without substantial loss—for physical construction of the CCR landfill to be completed within a reasonable time.

On page 304 of the preamble a new landfill is defined as:

New CCR landfill means a landfill, including lateral expansions, or installation from which there is or may be placement of CCRs without the presence of free liquids, which began operation, or for which the construction commenced after the date on which the federal management standards which are applicable to such landfill become effective in the state where the landfill is located.

Our interpretation of these definitions is that an existing landfill would be one in existence on the date the federal rule is promulgated. We have been told that EPA plans on publishing this proposed rule in December 2009 with a 90 day comment period. For discussion, that would mean the comment period would end in March 2010 and the rule could be promulgated sometime later that year. All landfills in existence at that time would meet the definition of an "Existing CCR Landfill". Authorized states would have one to two years to adopt the federal rule after which permits could be issued for "New CCR Landfills". In the one to two year interim between the time the federal rule was promulgated and the time new standards become effective in the state, it appears no permits could be issued. Also, once the state program is in place, these new permits would be issued as Subtitle C permits instead of Subtitle D which can easily take years to obtain. We are concerned that the sheer volume as well as the more complex Subtitle C permit application process could overwhelm the state and federal permitting staffs. TVA has an aggressive schedule to close its impoundments and construct new landfills, and this rule could delay those projects as well as cause operational problems at plants needing additional disposal or storage capacity. The only alternative would be to use existing offsite Subtitle C disposal facilities at a significant cost increase in tipping fees and transportation costs. Also, the CCR destined for waste disposal would use a significant volume of finite existing subtitle C landfill space that was designed and constructed to more stringent standards (double liner and leak detection system) and for wastes that pose a much greater risk to the environment than are being proposed in this rule for CCRs. This increased demand for space will result in a lower supply and a corresponding increase in disposal costs for CCRs and hazardous wastes generally on a national scale.

- 3. Summary- Subtitle C approach will:
- Subject facilities to the complex administrative requirements of Subtitle C permitting and operating requirements with little environmental benefit
- Effectively eliminate wet emissions control, a viable and common pollution control technology
- Adversely affect the ability to market CCRs for beneficial reuse
- Delay the permitting of new lined, disposal facilities
- Place large financial and permit processing burdens on the states
- Subject utility operations to facility-wide investigations and corrective actions for past legitimate used of CCRs

- The listing of CCRs as K179 will present almost insurmountable compliance issues. Fugitive and *de minimus* losses from power generation and process equipment are not uncommon. While TVA strives to minimize such losses they are inevitable. The listing of CCR would make these losses subject to enforcement as improper management and handling of a hazardous waste. Compliance would be nearly impossible.
- Depending on where the point of generation occurs, RCRA training requirements could affect a substantial number of employees. If the POG is at point of loading, then only 10-20 personnel per site would be impacted, but if the POG is at the boiler, then the entire plant would be impacted (~100-500 per site). The associated time and training costs are substantial.
- Potentially subjecting site transportation destined for disposal to manifesting and RCRA transporter requirements is expensive, unwarranted and extremely burdensome for inert materials such as ash and gypsum
- Increase transportation costs and potential for incidents due to the greater hauling distances to subtitle C permitted facilities

B. Subtitle D Option

1. Description

This approach is explained in detail on pages 156-170 of the preamble. This approach contains most of the requirements of the Subtitle C approach including, location restrictions and requirements for unit design, ground water monitoring, run-on and run-off controls, and closure and post-closure care, as well as criteria restricting the wet handling of CCRs in certain surface impoundments. This approach allows the same level of environmental protection without the administrative burdens, exorbitant cost increases, and depletion of valuable subtitle C landfill capacity and state permitting resources associated with the subtitle C approach.

The design requirements for landfills are identical to the proposed subtitle C approach. Existing surface impoundments without composite liners would be phased out and new impoundments would likely be required to have composite liners and leachate collection.

2. Considerations

In its discussion of a subtitle D program some of EPA's more pertinent comments include:

- Many states already have some if not most of these requirements (with the exception of the phase-out of wet handling), under their current subtitle D programs, and they generally implement the requirements through permits. (page 157)
- EPA and certain commenters, however, have identified significant gaps in state programs and current practices. The subtitle D approach would fill gaps and ensure national minimum standards. (page 157)
- Under a subtitle D regulation, regulated CCR wastes shipped off-site for disposal would have to be sent to facilities that met the standards above, or they would have to be sent

and disposed of in units permitted by the states under subtitle D of RCRA that met the 40 CFR Part 258 standards. (page 166)

- At the same time, EPA recognizes that many of the states have regulatory programs in place for the disposal of CCRs, and that industry practices have been improving. (page167)
- The subtitle D approach would complement existing state programs and practices by filling in gaps, and ensuring that all disposal of regulated CCRs meets national minimum standards that are designed to address key risks identified in damage cases and the risk assessment – including the risk of surface impoundment failure, which has been identified as a concern appropriate for control under waste regulations. (pages 167-168)
- In addition, the subtitle D approach would eliminate two concerns that industry and state commenters have expressed to date: (1) that a subtitle C approach would inappropriately stigmatize uses of CCRs that provide significant environmental or economic benefits, or that (according to those commenters) hold significant potential promise, and (2) that the volume of CCR wastes generated – particularly requirements of a subtitle C regulation led to more off-site disposal – would overwhelm existing subtitle C capacity. (page 168)
- Related to the capacity issue, these same commenters have also argued that, under subtitle C, future cleanup of poorly sited or leaking disposal sites (including historical or legacy sites) would be considerably more expensive, especially where off-site disposal was chosen as the option. (page 168)
- EPA also notes that many of the requirements discussed above would go into effect more quickly. Under subtitle D of RCRA, EPA would set a specific nationwide compliance date typically 6 months after promulgation–and industry would be subject to the requirements on that date. (page 168)
- States have expressed concern that subtitle C requirements will be considerably more expensive to implement than a subtitle D regulation. (page 169)
 - 3. Summary

TVA considers most of these observations as positives and supports a subtitle D program which would alleviate many of our concerns stated above with EPA's preferred subtitle C rule.

In the preamble, EPA expresses its concern that if rules were promulgated under subtitle D of RCRA it would a lack an enforcement and permitting program as the statute establishes subtitle D as a state run only program. Since this appears to be the only major obstacle in regulating CCRs as a nonhazardous solid waste we respectfully suggest EPA pursue a legislative solution to this issue rather than impose a subtitle C hazardous program with so many negatives attached to it, on all of the utility industry.

C. Subtitle C & D Option

While we feel a full subtitle D approach best addresses the handling and disposal of CCRs, this approach is far better than a full subtitle C approach. Dry handled CCRs regulated under subtitle D, and the Bevill exemption being maintained for CCRs beneficially used are positives. Regulating wet-handled CCRs as a subtitle C waste would still be a concern if it subjected the entire facility to hazardous waste permitting requirements and effectively eliminated dewatering systems.

- III. Beneficial Use Considerations and Concerns
 - A. Considerations

As stated by EPA in the preamble on page 71:

A subtitle D rule, as well as provisions that encourage facilities to switch from wet- to dryhandling, would not be expected to adversely affect beneficial uses of CCRs and, in fact, would likely increase the beneficial use as CCRs managed dry are more amenable to beneficial uses. In comparison, the states and the electric utility industry, as well as industries that beneficially use these materials, have argued that a subtitle C rule would adversely affect beneficial uses, possibly to the point that minimal amounts of CCPs would be beneficially used. If true, this could substantially increase the amount of CCRs that are disposed of. In addition, the states have argued that there may be indirect effects on the beneficial use of CCPs, including the possible adverse effects on state beneficial use programs; however, the nature and magnitude of these impacts is uncertain at the present time. On the other hand, environmental stakeholders have taken an opposite position – that is, the level of beneficial use might be related to the stringency of regulation, such that a subtitle C rule would actually increase the beneficial use of CCPs.

As stated above we feel the first sentence reinforces that the best approach to regulating CCRs is subtitle D. In 2007, almost 50 million tons of CCRs were beneficially used (page 71) and each year the use of fly ash in concrete reduces greenhouse gas emissions by 12.5 to 25 million tons of CO2 equivalent (page 90). The possibility of Subtitle C actually increasing the beneficial use of CCRs is purely speculative at best and the designation as a hazardous waste could literally cause millions of tons of CCRs to be disposed of instead of beneficially used.

- B. Concerns
 - 1. Stigma of "Hazardous Waste" Classification & Toxics

On page 72 EPA states:

EPA believes that it can effectively mitigate concerns over any potential chilling effect on beneficial reuses resulting from association with classifying CCRs as hazardous wastes.

This opinion needs to be substantiated because based on TVA's experience, it is not accurate. The assumption that a stigma will be attached to CCP due to the regulation of CCR under Options 1 and 3 is correct. TVA learned during contacts with local residents after

the Kingston incident that people were concerned that CCP materials could be used in the construction of schools and other buildings where children could come into contact with "hazardous" or "toxic" materials.

Pages 87-88

EPA is not convinced nor believes that the commenters predictions will occur - that is, that a hazardous waste listing of CCRs will in practice eliminate all or virtually all beneficial uses of the material – as a result of a stigma effect or through the action of state laws that prohibit hazardous wastes from their beneficial use programs. At the time of the May 2000 Regulatory Determination, EPA strongly expressed this concern. On reconsidering this issue, EPA is now of the view that the stigma concern will not result in the total collapse of the recycling of these materials. Rather, we believe that regulating the disposal of CCRs as hazardous waste, but allowing CCRs that are properly characterized and beneficially used to retain the Bevill exemption, would encourage facilities to increase the amounts of material beneficially reused, because it would decrease the costs associated with waste disposal, and would consequently likely increase overall the beneficial use of these materials. Thus, while EPA appreciates the concerns of the commenters on this issue, which include states, companies making (or hoping to make) products out of CCRs, and CCR users, we are unconvinced that stigma alone will drive people away from the use of valuable products. After all, industry currently produces products out of materials that, when discarded, would be hazardous waste, and consumers buy products which contain ingredients that would require management as a hazardous waste when disposed (e.g., solvents).

We do not feel a decision with such potential for adverse environmental and financial affects should be based on an opinion. Utilities have been marketing CCRs for decades in growing numbers. Quite frankly, the use of solvents as an example is not appropriate. We believe most people recognize the inherent properties of a solvent are the same before and after use and are probably stored in a garage or out building. This is much different than someone knowing that the wallboard in their home would have been sent to hazardous waste landfill if not beneficially used.

a. Supply & Demand

Although some plants may attempt to minimize the costs of RCRA-type CCR disposal by investments in beneficial use programs or technologies, the economic analysis does not take into account that the resulting net costs to the utilities consists of a combination of the following:

- Current revenue streams generated by the sale of CCP will evaporate. CCP marketers know utilities' disposal costs and will demand subsidies to maintain or increase beneficial reuse. These subsidies could cost utilities up to the amount of their higher disposal costs, and the resulting market environment will most likely require additional subsidies beyond the utilities' actual management costs in order to overcome market resistance to the use of materials that the market and the public perceive as hazardous;
- 2. The increased costs of transporting CCP due to the change in the material's designation from nonhazardous to hazardous upon the occurrence of an accident or spill; and

- Because of technical considerations, the market will bear only a finite quantity of CCP as a replacement for naturally occurring materials regardless of the financial incentives to the utilities and the end users, and, with the probable market setbacks resulting from the RCRA stigma, the continued growth of CCP beneficial reuse will not continue at historical rates.
 - b. Other Cost Issues

The assumption that particular plants will continue to beneficially reuse CCP at the current rates does not take into account:

- 1. The actual cost of disposing of CCR under new regulations may vary widely between plants;
- 2. Regional utilities will perform economic analyses to identify the highest cost plants for the promotion of beneficial reuse; and
- 3. This economic analysis may cause the increase of beneficial reuse at one location at the expense of another existing program.

An example within the TVA system is a Plant that currently produces dry fly ash that is marketable as a cement replacement due to its high quality. If TVA converts all of its Plants to dry collection and installs a fly ash beneficiation system at a plant that previously did not market fly ash, the economics will dictate that the beneficiated fly ash should be sold to the detriment of the existing market for TVA's other ash. In addition, the market territories will shift toward the Plant with the beneficiated ash, thereby increasing transportation costs for beneficial reuse of other ash.

Public and market perception that CCRs, and thus CCPs, are hazardous will drive end users to return to the raw materials that are now being replaced by low cost CCPs, thereby increasing demand for the original materials and further driving up their cost. Small businesses such as cinder block manufacturers, concrete contractors, and abrasives blasters will be affected disproportionately when 20% to 100% of their raw materials become more costly.

IV. On-going State of Federally Required Cleanups

On page 107 of the preamble it is stated:

The Agency is proposing to allow state or federally-required cleanups commenced prior to the effective date of the final rule to be completed in accordance with the requirements determined to be appropriate for the specific cleanup.

We strongly support this as it will allow current on-going cleanups to achieve their goals in a timely manner.

V. CCR Risk Assessment

During the EPA OMB briefing teleconference on October 28, 2009, EPA indicated that when modeling groundwater to drinking water impacts that they substituted drinking water well proximity date near municipal solid waste landfills (MSWLF) for wells potentially near utility landfills and impoundments. We question the validity of the substitution as power plants are typically located near large water bodies such as rivers. Generally groundwater in the uppermost aquifer would be expected to move toward surface water and any site specific contamination would rapidly become attenuated. MSWLFs on the other hand can be located anywhere and any groundwater impacts can have a much greater impact on any drinking water wells in their proximity.

VI. Regulatory Impact Analysis

On page 71 of the RIA, Exhibit 41 presents costs for cleanup of the Kingston, TN dike failure.

Both cleanup as a nonhazardous waste and cleanup as a hazardous waste are presented and are attributed to TVA data. The assumptions for the cleanup as a hazardous waste quote a tipping fee cost at a Subtitle C landfill as \$80/ton. The original cost was based on sending a nonhazardous waste to a hazardous waste landfill. Sending the same material to the same Subtitle C landfill classified as a listed hazardous waste, as EPA is proposing for CCRs, could easily cost two to three times as much.

United States Department of Agriculture (USDA)

Agricultural Research Service

- Listing of all CCRs as hazardous waste significantly inhibit recognized, current, and continuing beneficial uses. What farmer would want to apply "hazardous waste" to his fields? What will corporate liability lawyers tell companies about creating wallboard for use in homes out of "hazardous waste?" The distinction between "intended for disposal" and "beneficial use" will be lost on a public hearing the words "hazardous waste." (page 1, Summary)
- While it is good that the EPA recognizes that there are valid beneficial uses of CCPs, the blanket designation of CCRs as hazardous waste will have a chilling effect on those who might wish to utilize in CCPs in beneficial applications. (page 2, Summary)

Rural Utility Service

 Regulating CCBs as hazardous waste could be the most extreme and costly option for EPA

- Regulating CCBs as hazardous will have a large undesirable economic impact on small electric utilities
- USDA RUS makes loans to these small electric utilities, mainly cooperatives
 - 1. The majority of these electric utilities receive or generate coal-fired generation
 - 2. The cooperative business model maintains that all increases for electric generation are passed onto the consumers (members)
 - 3. The cost of regulating the CCBs as hazardous waste will be passed on to individual consumers where the cost of electricity is already expensive
- Mine-sites are heavily regulated environments subject to comprehensive and environmental protection regulations administered by DOI's Office of Surface Mining and the State counterparts. The EPA regulations governing power plant disposal could be a duplication of effort.



United States Department of the Interior



OFFICE OF SURFACE MINING RECLAMATION AND ENFORCEMENT Washington, D.C. 20240

November 19, 2009

Memorandum

To: Cortney Higgins, Office of Management and Budget

From: Joseph G. Pizarchik, Director

Subject: Comments on the Environmental Protection Agency's (EPA's) Coal Combustion Residuals (CCRs) documents (Proposed Rule, Risk Assessment, and Regulatory Impact Analysis) and other legal matters.

First, I offer my apologies for the delay in providing these comments. This is an important matter, and I wanted to provide the appropriate comments.

In October of 2009, the Office of Management and Budget (OMB) received a draft proposed rule and supporting documentation from the EPA that would list most coal combustion residuals (CCRs) as hazardous wastes under Subtitle C of the Resource Conservation and Recovery Act of 1976 (RCRA). OMB provided OSM with a copy of EPA's draft proposed rule that would list all CCRs as hazardous when disposed in a utility landfill or impoundment. As a part of its proposal, EPA further proposes to address mine-filling with CCRs at SMCRA coal mines in a separate regulatory action consistent with the approach recommended by the NAS. Pursuant to Executive Order 12866, this draft proposed rule has been circulated to other interested agencies for comment before publication. OSM is pleased to offer the comments below.

The Office of Surface Mining Reclamation and Enforcement (OSM) has been involved in issues related to the regulation of CCRs for over a decade. Generally, CCR disposal operations are regulated under State solid waste management programs under Subtitle D of RCRA. If the disposal site is a mine with a SMCRA permit, the requirements of the applicable SMCRA regulatory program also apply. Some states do not allow disposal of CCRs on mine sites but do provide for placement at mines if the CCR can be beneficially used in reclamation of abandoned and active sites.

On March 14, 2007, in response to the National Academy of Sciences (NAS) report and discussions between OSM and EPA, OSM published an advance notice of proposed rulemaking (ANPR) to solicit comments on the development of proposed CCR regulations under SMCRA. We received approximately 1,900 comments. In general, industry and the states supported regulation under SMCRA, while the environmental community preferred EPA rulemaking based on RCRA because of EPA's expertise and the environmental community's belief that RCRA is a more suitable framework. Most commenters from the environmental community also requested

This document is pre-decisional. It is not to be shared outside of the Federal Government,

preparation of an environmental impact statement and formation of a multi-interest committee under the Federal Advisory Committee Act.

In 2008, OSM prepared draft proposed regulations governing the placement of CCRs on active mining sites and at certain abandoned mine land (AML) reclamation projects. The proposed rule was submitted to the Office of Management and Budget in the latter part of 2008, but was later withdrawn to allow for review by the incoming Administration. OSM has revised the environmental assessment (EA) in response to comments from the Office of the Solicitor, and has the proposed rule ready for review and approval by OSM and DOI management.

It is important to note that not all CCRs are created equal. There are various types of CCRs and the chemical and physical properties of specific types of CCRs vary. The chemical and physical properties are affected by the source of the coal, the type of combustion process, the types of other fuels burned with the coal, and the pollution controls on the power plant. CCRs should be characterized based on their chemical and physical properties. Those CCRs that exhibit hazardous waste characteristics should be managed in a manner that is protective of the environment and the public.

Just as all CCRs are not the same, not all mine sites are suitable for the placement of CCRs. It is OSM's view that CCRs that are suitable for placement or beneficial use on a mine based on appropriate testing be able to be placed in the appropriate mine with no pollution from the CCRs as the ultimate standard. Similarly, CCRs that do not exhibit hazardous waste characteristics that are not to be placed in a mine should be managed in a manner that does not cause pollution or threaten the public. Science should be the basis for how CCRs are managed.

Concerning mine filling, EPA states that "EPA is not addressing its regulatory determination on mine filling, and instead will work with the OSM to develop effective federal regulations to ensure that the placement of coal combustion residuals in minefill operations is adequately controlled." As we note above, SMCRA has no provision for permitting the disposal or placement of listed hazardous wastes. Some states (e.g. Illinois and Indiana), however, have specific rules that prohibit the disposal or placement of listed hazardous wastes at coal mines or in beneficial uses. Pennsylvania law prohibits the disposal of waste (including hazardous waste) in mines.

Given the lack of specific authority in SMCRA for disposal or placement of listed hazardous wastes in coal mines, if EPA lists all CCRs as hazardous wastes, the current placement of CCRs at some SMCRA permitted coal mines will have to cease. The proposal for a separate regulatory action concerning development of specific CCR regulations for SMCRA minefills will be moot for some states. Based on our experience, the SMCRA title IV abandoned mine reclamation program costs would significantly increase if they could no longer use CCRs in AML reclamation.

The risk assessment references a significant number of "mine" sites as data-collection sites, but fails to clarify if they are coal mines under the jurisdiction of SMCRA. We are concerned that this lack of information could add confusion to the promulgation of a regulatory program under

This document is pre-decisional. It is not to be shared outside of the Federal Government.

SMCRA and hamper the beneficial use of CCRs at coal mining sites as envisioned in EPA's proposal.

There are a number of statements in the regulatory impact analysis (RIA) that we believe could create difficulties for the promulgation of regulations under SMCRA for coal mine placement of CCRs. Among these is: "Industries which beneficially use CCR: At least 14 industries in the manufacturing, construction, agriculture, mining, and waste management sectors "beneficially use" CCR for industrial applications as substitutes for other materials. Because all regulatory options maintain the 1980 RCRA Bevill exclusion for CCR beneficial uses, these industries are not expected to be impacted by the proposed rule. Potential indirect effects could reduce future annual beneficial use by 4% to 42%." It appears that the indirect effects stated in the last sentence could have a substantial impact on beneficial use, including coal mine placement, which in essence contradicts the statement that industries that fall under the Bevill exclusion are not expected to be impacted by the proposed rule.

Furthermore, the RIA also states five scenarios where the impacts range from market stigma, CCRs being covered under federal or state regulation, and restrictions on beneficial uses. While not an issue for OSM, it is important to note that the reduction in the use of CCRs due to market stigma, regulatory coverage or restrictions would cause a significant direct impact on many industries that use CCRs for roads, construction material, treatment, etc. In our view, the RIA does not adequately address these costs.

The RIA fails to explain how it would be possible to disassociate the beneficial use, including mine placement, from the hazardous waste stigma that would be attached to the CCRs under this proposal. The proposal and RIA just exclude CCR beneficial uses without any explanation and, more importantly, without any scientific basis. There are several references that should have been cited to provide an adequate scientific basis for differentiating beneficial use from disposal. In particular, OSM has worked closely with EPA, other agencies and academia to provide scientific data that would assist in providing background information to help assuage the hazardous waste stigma.

The RIA only minimally considers the "hazardous waste stigma" based on what would happen in the future. The RIA does not consider the impact of the "hazardous waste stigma" on past or existing sites and situations where CCRs have been used or placed (e.g., mines, roads, and other forms of construction material). The RIA appears to dismiss the impact of this stigma on continued beneficial use without any real basis to do so.

The issues raised above will likely result in increased use of CCRs at some coal mining sites to avoid hazardous waste disposal requirements, making the need for SMCRA regulations even greater. During the review by OSM, the question arose as to whether EPA's proposed rule, as submitted to OMB, would prohibit OSM from allowing the use of CCRs at coal minesites?

EPA's proposed action would not directly affect OSM's legal authorities; however, if EPA lists CCRs as a hazardous waste under Subtitle C of RCRA, it will become more difficult to for OSM to allow the placement of CCRs on minesites because doing so could be construed as an arbitrary and capricious action subject to legal action.

This document is pre-decisional. It is not to be shared outside of the Federal Government.

EPA's proposed rule, even though it exempts CCR placement in minesites from regulation under Subtitle C at this time, casts doubt on whether OSM could allow CCR placement in coal minesite. Primarily, what level of proof would OSM need to demonstrate to withstand a challenge that such regulations are arbitrary and capricious if OSM allows an otherwise hazardous waste to be placed on a minesite? Thus, the listing of CCRs as a Subtitle C hazardous waste makes it unlikely that OSM regulations permitting CCR placement in minesites would withstand judicial scrutiny.

While it is not an OSM issue, people need to be aware that EPA's proposed rule may render it practically impossible for a surface coal mine operator that wishes to use CCRs in reclamation to secure the required reclamation bond. Section 509 of SMCRA requires that surface coal mining operations have a bond in an amount "sufficient to assure the completion of the reclamation plan if the work had to be performed by the [RA] in the event of for feiture." 30 U.S.C. § 1259(a).

OSM believes that the desired environmental protections can be achieved through the characterization of CCRs using an appropriate leachate procedure to identify those materials that should be managed as hazardous waste.

OSM also believes that it is important that EPA clearly address how the designation under its proposal would impact existing sites where these materials have been placed. There will be public concerns and potential legal issues associated with these sites that contain a material now classified by EPA as hazardous waste. What are EPA's plans for those sites? Will EPA handle them as other hazardous waste sites?

We would be happy to share other more detailed comments based on our experience related to CCRs gained in working with EPA and others over the past years. If you have specific questions on these comments or related issues, please contact John R. Craynon, P.E., Chief, Division of Regulatory Support, at (202) 208-2866 or <u>icraynon@osmre.gov</u>.

This document is pre-decisional. It is not to be shared outside of the Federal Government.