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**Attn: Docket ID NO. EPA-HQ-OW-2009-0819**

Attention: Richard Benware  
U.S. Environmental Protection Agency  
Docket ID No. EPA-HQ-OW-2009-0819  
Office of Science and Technology Docket  
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Washington, D.C. 20460

### **Comments on Proposed Revisions to Effluent Limitations Guidelines**

America's Power submits the following comments on the Environmental Protection Agency's (EPA or Agency) proposed rule to revise certain provisions of the effluent limitations guidelines (ELGs) for the steam electric power generating source category.<sup>1</sup> In particular, EPA is proposing to revise the effluent discharge limitations that were initially set for flue gas desulfurization (FGD) wastewater and bottom ash (BA) transport water from existing coal-fired power plants under the 2015 ELG rule.<sup>2</sup>

By way of background, America's Power is the only national trade organization whose sole mission is to advocate at the federal and state levels on behalf of coal-fired electricity and the nation's coal fleet. Our membership is comprised of electricity generators, coal producers, railroads, barge operators, and equipment manufacturers. A list of our members is attached.

As discussed below, America's Power generally supports EPA's proposed changes to the effluent discharge limitations for FGD wastewater and BA transport water. The current effluent discharge limitations for these two wastewater streams are overly stringent and, for some wastewater constituents, may not even be technically achievable based on available control technologies. The Agency's proposed changes will lower compliance costs while ensuring protection of the environment. The comments below identify specific technical suggestions for improving the effectiveness and workability of EPA's proposal.

**Importance of the Coal Fleet** There are compelling reasons to preserve coal-fired generation. The coal fleet provides fuel security, supports grid reliability and resilience, produces affordable electricity, contributes to fuel diversity, provides electricity when other fuels are not available or are too expensive, and promotes national security.

The importance of the coal fleet has been recognized by the Department of Energy (DOE), Federal Energy Regulatory Commission (FERC), North American

Electric Reliability Corporation (NERC), and grid operators, to name just a few. These entities have recognized the essential attributes the coal fleet provides to the electric grid and have expressed concerns about the impact of the changing electricity mix on grid reliability and resilience.<sup>3</sup>

Unfortunately, U.S. power plant owners have announced the retirement or conversion to other fuels of a staggering number of coal-fired electric generating units (EGUs) since 2010.<sup>4</sup> Almost 700 coal-fired EGUs in 43 states—totaling 133,200 megawatts (MW) of generating capacity—have retired or announced plans to retire. These retirements now exceed 42 percent of the coal fleet that was operating in 2010.

It is likely that this disturbing trend in premature retirements would be exacerbated if EPA were simply to implement the current overly stringent effluent discharge limitations for FGD wastewater and BA transport water. These limitations not only impose excessive compliance costs that are unnecessary to assure protection of human health and the environment, but also may not be technically achievable for some wastewater constituents based on available control technologies. Section 301(b) of the Clean Water Act expressly requires EPA to evaluate the economic impact of proposed ELGs on the affected industry as a whole. As EPA has acknowledged, the 2015 rule would lead to premature coal retirements. Therefore, it is imperative that EPA finalize the proposed changes and take additional steps, described below, to ensure the ELG control requirements do not cause more coal retirements.

**Revisions to Effluent Discharge Limitations for FGD Wastewater** In the 2015 ELG rule, EPA set overly stringent limitations for metals and other constituents that cannot be reliably achieved by the “best available” control technology selected by EPA itself in the rulemaking. That control technology consisted of a chemical precipitation system to remove suspended and dissolved solids, combined with a biological treatment system to remove nitrogen compounds, selenium and other metals. The type of bioreactor system used to set the current limitations employs a long residence time of 10 to 16 hours for completing the microbial processes for removing contaminants and, for that reason, is significantly more costly than the alternate biological treatment system included in the proposed ELG rule. The newly selected “low-residence” biological treatment system with a much shorter residence time of 1 to 4 hours will achieve “comparable” reductions to the current system because it will “require significantly less process or facility footprint modifications than the current long-residence system.”<sup>5</sup>

America’s Power generally supports this new approach for setting the FGD wastewater limitations. The new low-residence biological treatment system will reduce annual compliance costs, plus eliminate many of the technical challenges to reliably achieving the ELGs for metals and other constituents under varying operating scenarios (including load cycling in response to fluctuating demand), extreme climate conditions, and switching coal types.<sup>6</sup>

However, America’s Power has concerns regarding the proposed effluent discharge limitations for mercury and selenium. In the case of mercury, the proposed rule would drastically reduce the limitation from 788 to 85 nanograms

per liter based on the use of ultrafiltration with low-residence time biological treatment systems. We believe EPA's assumption that this control system can cost-effectively remove 90 percent of the mercury in the FGD wastewater is highly questionable and, as a result, has led the Agency to propose an unreasonably stringent mercury limit. Similarly, we believe that the proposed new selenium limitation of 76 micrograms per liter has not been increased enough to account for the high selenium levels that are likely to result from burning subbituminous coals, frequent load cycling, and other operational factors that typically result in highly variable FGD wastewater.

Another major concern is EPA's overreliance on pilot studies for setting the proposed FGD discharge limitations. Pilot studies typically test the performance of emerging control technologies under defined steady-state conditions that may differ significantly from normal plant operations. This is clearly the case regarding the pilot studies that evaluate the performance of biological treatment systems used to remove nitrogen compounds, selenium and other metals from the FGD wastewater. In particular, the cycling of coal-fired generating units will interfere with the performance of the biological treatment systems and thereby impair the ability of such units to achieve the proposed effluent limitations.

For these reasons, we urge EPA to reconsider the proposed mercury and selenium limitations in order to account for variable operating conditions and other technical issues that may inhibit the performance of the biological treatment systems.

**Revisions to Effluent Discharge Limitations for BA Transport Water** Another major deficiency with the 2015 ELG rule is the imposition of an effluent discharge limitation that prohibits the discharge of any BA transport water into surface water. The imposition of a zero-discharge limitation means every coal-fired power plant must convert to dry ash handling or install a closed-loop wet ash handling system for transferring the BA from the boiler to CCR disposal facilities. In the case of the latter control option, the closed-loop system must be able to recycle 100 percent of the BA transport water in order to comply with the zero-discharge limitation imposed under the 2015 ELG rule.

Although technically possible, the recycling of all BA transport water is challenging to achieve for closed-loop systems. Furthermore, it overlooks the fact that small amounts of effluent are discharged in most of the closed-loop wet ash systems upon which a zero discharge limitation for BA transport water was set in the 2015 ELG rules.<sup>7</sup> In light of this fact, wet ash handling systems for BA transport are, in reality, "partially closed" rather "closed looped," and they must operate as partially closed systems "due to small discharges associated with stormwater, and water chemistry imbalances including acidity and corrosiveness, scaling, and fines build-up."<sup>8</sup> Furthermore, the total elimination of all discharges for many coal-fired facilities would require extensive process changes, increased costs and, in many cases, be difficult to achieve.<sup>9</sup> As a result, the cost of achieving this last increment of reduction in BA transport water would be disproportionately high with negligible benefits to human health and the environment.

America's Power supports this proposed change to correct this significant oversight in setting the discharge limitations for BA transport water under the 2015 ELG rule. The proposed change would set the discharge limitations based "high-recycle-rate systems" that would allow generating facilities using a wet BA transport system to discharge up to ten percent of the system volume per day on a 30-day rolling average.<sup>10</sup> Not requiring total elimination of all discharges is better aligned with the technical capabilities of the partially closed wet ash handling systems and will therefore set a reasonably achievable performance standard that will lower compliance costs while ensuring protection of human health and the environment.

However, we have concerns with one aspect of the proposed discharge limitation for BA transport wastewater. A purge rate of up to ten percent for the wet ash handling transport system would be permissible under the proposed rule for these recycle systems only if "reasonable active measures are insufficient to maintain system water chemistry or water balance within acceptable limitations, or to facilitate maintenance and repairs of the BA system."<sup>11</sup> This limiting language in EPA's proposal overlooks the practical fact that there is a wide range of operational scenarios in which it would be necessary to purge discharges in small quantities from wet ash handling systems. To correct this problem, EPA should revise the proposed discharge limitations to allow any type of discharges for short durations that are incidental to operating partially closed wet ash systems so long as the total volumetric amount of the discharges does not exceed ten percent of the system volume over a 30-day rolling average period.

**Source Subcategory for Low-Utilization Units** America's Power supports EPA's proposal to establish a new source subcategory for affected coal-fired electric generating facilities with low utilization levels. For the reasons discussed below, the establishment of this subcategory will lower the disproportionately high compliance costs, and resulting competitive disadvantage, that would otherwise be incurred by low-utilization generating facilities.

For this new subcategory of electric generating facilities, the Agency would set discharge limitations based on different reference control technologies that are incrementally less stringent than the technologies used by EPA for setting the proposed new limitations for FGD wastewater and BA transport water. Those reference control technologies are chemical precipitation for reducing mercury and arsenic from FGD wastewater and gravity settling with surface impoundments, in combination with best management practice plans for reducing total suspended solids from BA transport water.

Effluent discharge limitations based on these technologies will therefore lower the overall compliance costs for this subcategory of low-utilization generating units that are becoming increasingly uncompetitive due to higher costs. Furthermore, the establishment of a subcategory for low-utilization units makes sense given that most existing coal-fired units were operated at one time as baseload generating facilities but are now dispatched as load-following units or just operate for short durations to meet peak demands in the summer or winter.

To qualify as a low-utilization generating unit, the proposed rule requires that the two-year annual net generation of each unit not exceed 876,000 megawatt-hours per year (equivalent to a 400 MW coal-fired boiler operating at a 25 percent capacity factor). America's Power supports the use of a two-year average for determining the eligibility of a low-utilization unit. Most importantly, this approach will help to minimize the potential repercussions of any sudden unplanned increases in a unit's annual net generation levels due to unforeseen circumstances, such as extreme weather or forced outages of other generating units within an electricity utility system.

To provide further operational flexibility, America's Power urges EPA to allow coal plant owners and operators to comply with the annual net generation limitation by averaging the annual generation production levels of multiple generating units under common operation or ownership and located at the same site. Under this approach, the owners and operators of multiple units located at the same plant site would have the option of complying with either the proposed annual net generation limitation on a unit-by-unit basis, or a combined annual net generation limitation applicable to multiple units through an averaging compliance option.<sup>12</sup> The added flexibility provided through averaging among multiple affected units at the same site would promote reliability of the electricity grid by allowing one unit to operate higher than its annual unit-specific generation limitation if one of the other units at the same site is unable to operate due to an extended forced outage or other operational constraints. Furthermore, these operational and reliability advantages will be achieved while still ensuring the same protection of the environment because the cumulative effluent discharges from the entire coal-fired generating facility under the combined generation limitation would be equivalent to the amount of discharges under a unit-by-unit approach.

**Source Subcategory for High FGD Flow Rates** For similar reasons, America's Power supports the establishment of a source subcategory for existing coal-fired generating units with extremely high FGD purge flow rates.

In the proposed rule, this new source subcategory would apply to those coal-fired generating facilities with FGD purge flow rates greater than four million gallons per day (after accounting for each facility's ability to recycle the wastewater). We believe that the establishment of this subcategory is needed to avoid placing disproportionately high costs on these high-flow facilities because the FGD wastewater treatment costs increase significantly when these much higher volumes of wastewater are processed through a biological treatment system for removing the nitrogen compounds, selenium and other metal constituents. As EPA itself recognizes in the proposed ELG rule, the treatment costs for a high-flow facility are exorbitantly high, specifically, "five to six times higher" than the capital and operating costs incurred by facilities that have more typical FGD wastewater flow rates and generate similar amounts of electricity.<sup>13</sup>

Imposing these excessively high costs on this subcategory of coal-fired units could force their premature retirement by putting them at a competitive disadvantage compared to other electric generating sources that are not subject to these very

high compliance costs for treating smaller volumes of FGD wastewater. To avoid these adverse disparate cost impacts, we agree with EPA's proposal to set for this subcategory of high-flow facilities a more cost-effective effluent discharge limitation for FGD wastewater based on chemical precipitation alone (i.e., without biological treatment that is generally required for other affected facilities).

**Regulation of Bromides in FGD Wastewater Discharges** America's Power supports EPA's proposal to retain its current approach to regulating bromides in FGD wastewater under the 2015 rule. That regulatory approach focused on setting water quality-based discharge limitations on a site-specific basis for only those coal-fired generating facilities that may be releasing bromides in FGD wastewater at elevated levels and potentially impacting downstream drinking water treatment facilities.

This approach makes good policy and economic sense given that only a small subset of affected generating units with FGD scrubbers may have bromide levels that would warrant installation of expensive control technologies, such as thermal evaporation, membrane filtration, or reverse osmosis treatment. Under this approach, the imposition of costly technology-based bromide control requirements would be limited to only those affected facilities for which bromide regulation is necessary to address potential water quality concerns. By contrast, it would avoid imposing such expensive controls on those affected generating facilities that are not impacting downstream drinking water treatment facilities and, as a result, bromide regulation is not necessary to ensure protection of human health and the environment.

America's Power appreciates the opportunity to submit these comments on the proposed ELG rule. Should you have any questions, please contact me at [mbloodworth@americaspower.org](mailto:mbloodworth@americaspower.org).

Sincerely,



Michelle Bloodworth  
President and CEO

Attachment: Members of America's Power

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<sup>1</sup> See *Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category*, 84 Fed. Reg. 64,620 (November 22, 2019).

<sup>2</sup> See 80 Fed. Reg. 67,838 (November 3, 2015).

<sup>3</sup> See e.g., Perry, Rick, "Secretary of Energy's Direction ...," Received by Neil Chatterjee, Cheryl LaFleur, and Robert Powelson, September 28, 2017; Federal Energy Regulatory Commission, Department of Energy, "Grid Resiliency Pricing Rule," Notice of Proposed Rulemaking, 82 Fed. Reg. 46940 (October 10, 2017); NERC, "Comments of the North American Electric Reliability

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Corporation in Response to Notice of Proposed Rulemaking,” October 23, 2017; NERC, *2017 Long Term Reliability Assessment*.

<sup>4</sup> In 2010, according to EIA, the U.S. coal fleet was comprised of 1,396 electric generating units located at 580 power plants for a total electric generating capacity of approximately 317,000 MW.

<sup>5</sup> 84 Fed. Reg. at 64,627, 64,631.

<sup>6</sup> 84 Fed. Reg. at 64,627, 64,631.

<sup>7</sup> 84 Fed. Reg. at 64,634-35.

<sup>8</sup> In particular, the proposed ELG rule identified many of the measures that electric utility owners and operators would have to implement in order to eliminate all discharges from existing wet ash recycle systems. These measures include “adding additional treatment chemicals (caustic) to manage acidity or other chemicals to control alkalinity, making use of reverse osmosis filters to treat a slip stream of the recycled water to remove dissolved solids, adding polymer to enhance settling and remove fine particles (‘fines’), and building storage tanks to hold water during infrequent maintenance or precipitation events.” 84 Fed. Reg. at 64,634-35.

<sup>9</sup> *Ibid.*

<sup>10</sup> 84 Fed. Reg. at 64,635.

<sup>11</sup> 84 Fed. Reg. at 64,636. In particular, the proposed rule would allow the discharge of any BA transport wastewater up to the ten percent volumetric level for only one of following reasons: to maintain system water balance when precipitation-related inflows within any 24-hour period resulting from a 25-year, 24-hour storm event or multiple consecutive events cannot be managed by installed spares, redundancies, maintenance tanks, and other secondary bottom ash system equipment; to manage proper water balance when regular inflows from wastestreams other than BA transport water exceed the ability of the bottom ash system to accept recycled water and segregating these other wastestreams is not feasible; to conduct maintenance not otherwise exempted from the definition of transport water when water volumes cannot be managed by installed spares, redundancies, maintenance tanks, and other secondary bottom ash system equipment; or to promote proper system water chemistry where current operations at the facility are unable to manage pH, corrosive compounds, and fine particulates to below levels that impact system operations. *See* 84 Fed. Reg. at 64,674.

<sup>12</sup> In particular, the owners or operators of multiple units located at the same plant site would have the option of complying with the proposed annual generation limitation of 876,000 MWh on a unit-by-unit basis, or a combined generation limitation of 2,628,000 MWh for a three-unit facility (3 units x 876,000 MWh per unit) that would apply to all three units through the multi-unit compliance option.

<sup>13</sup> 84 Fed. Reg. at 64,638.

## **2020 Membership**

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