

EPA Proposes New Standards to Regulate Water Discharges from Power Plants

Stephen Fotis, Kaitlin Gregg, and Erin Bartlett

OVERVIEW

On April 19, 2013, the Environmental Protection Agency (EPA) released a proposed regulation, pursuant to section 304(b) of the Clean Water Act (CWA), establishing Effluent Limitation Guidelines (ELGs) for all electric generating units that produce steam, including units powered by nuclear, coal, oil and natural gas (collectively referred to as EGUs). The EPA is under a court-mandated deadline to establish a final ELGs rule for EGUs, which the agency has not revised since 1982. While the proposed regulations are technology-based, their implementation will require EGUs to comply with specific pollution limits, based on the availability and cost of the applicable pollution control technology.

The new, proposed standards are intended to reduce the amount of toxic metals and other wastewater discharges from steam EGUs into surface waters by strengthening the technology-based standards in the ELGs. The proposed rule identifies different standards depending on whether the discharges are released from existing or new EGUs and directly to surface waters or indirectly through publically owned treatment works (POTWs).

BACKGROUND

The CWA prohibits the discharge of pollutants into navigable waters except as authorized by the statute. Dischargers to waters of the United States must obtain and comply with a permit under the CWA's section 402, National Pollutant Discharge Elimination System (NPDES) permitting program. A NPDES permit must contain technology-based limitations on the amount of pollutants that may be discharged from the permitted facility. EPA has promulgated over 50 ELGs, which establish technology-based effluent limitations for individual industries.

Once EPA promulgates an ELG for an industry, any facility belonging to that industry must incorporate the effluent limitation into its NPDES permit. EPA is required to review existing ELGs, and revise them as appropriate, "at least every five years." EPA is also permitted to issue ELGs for new source categories as the agency determines they are needed.

The EPA was sued in 2010 by the Defenders of Wildlife and the Sierra Club for failing to comply with the agency's duty to review and if necessary revise the ELGs for the steam EGU industry. *Defenders of Wildlife v. Jackson*, D.D.C. No. 1:10-cv-1915 (Mar. 18, 2012). The parties signed a consent decree, which established a mandatory timeline for EPA to review and develop the new ELGs by notice and comment rulemaking. This mandatory timeline requires EPA to issue final rule for setting new ELGs by May 22, 2014.



THE PROPOSED STANDARDS

Applicability. The proposed standards would revise or establish technology-based performance standards for new and existing EGUs that discharge directly into surface waters or indirectly discharge into surface waters through POTWs. EPA has identified eight main regulatory alternatives to regulate discharges from EGUs depending on whether the wastewater is discharged from an existing or new unit or whether it is a direct or indirect discharge. The proposed rule would apply to facilities with the following characteristics:

- The plants generate electricity from a process utilizing fossil or nuclear fuel in conjunction with a thermal cycle employing the steam/water system as the thermodynamic medium;
- The facility generates more than 50 megawatts of power; and
- The facility discharges waste from one or more of the following seven wastestreams: flue gas desulfurization (FGD), fly ash, bottom ash, flue gas mercury control (FGMC), combustion residual leachate from landfills and surface impoundments, nonchemical metal cleaning wastes, and gasification of fuels such as coal and petroleum coke.

Discharges Directly Into Surface Water from Existing Facilities. EPA has identified four preferred alternatives for regulating existing wastestreams that discharge directly to surface waters and has identified one alternative for regulating indirect discharges into POTWs from existing EGUs.

Under the leading option, on which EPA based the draft regulatory text, (referred to as Option 4a in the proposed rule), EPA would establish numeric performance standards for existing EGUs based on the following technologies:

- Chemical precipitation and biological treatment for FGD wastewater;
- Dry handling of the fly ash, bottom ash (at units above 400 megawatts (MW)), and waste from FGMC systems, thereby imposing a “zero discharge” effluent limit for all pollutants from these three waste streams;
- Impoundment of combustion residual leachate;
- Vapor-compression evaporation system for wastewater from gasification processes; and
- Chemical precipitation for nonchemical metal cleaning wastes.

The attached matrix presents the technology basis for all of the ELG regulatory options that EPA has proposed for the seven waste streams from existing EGUs. As a general matter, the first option proposes to establish the least stringent of the control requirements, with the stringency of the control requirements progressively increasing in the subsequent options.



Indirect Discharges to POTWs from Existing Sources. As a general matter the performance standards for discharges to POTWs are proposed to be equal to the proposed existing-source standards for direct discharges discussed above for each pollutant, with some specific exceptions. Those exceptions include that only copper will have a numeric standard among the discharges of nonchemical metal cleaning waste, there would be no pretreatment standards for discharges of bottom ash transport water (as proposed in some of EPA’s options for direct discharges), and that other than the pretreatment standards for nonchemical metal cleaning wastes, EPA is not proposing to establish pretreatment standards for existing sources for discharges from oil-fired units and for generating units under 50 MW.

Discharges from New Sources. The proposed rule would also set performance standards for direct and indirect discharges by all new EGUs. As a general matter, these standards would either set stringent numeric effluent limitations or impose a “zero discharge” mandate for all seven of the waste streams regulated under proposed ELG rule.

Pollutants Regulated. In order to determine BAT controls, EPA must first identify which pollutants need to be controlled. In the proposed rule, EPA contemplates establishing effluent limits for pollutants that may serve as surrogate or indicator pollutants for additional pollutants because the EPA believes “many of the pollutants originate from similar sources, have similar treatabilities,¹ and are removed by similar mechanisms.”

EPA identified six pollutants for potential regulation for FGD wastewater: oil and grease, total suspended solids (TSS), arsenic, mercury, nitrate/nitrite, and selenium. For leachate, EPA identified four potential pollutants for regulation: oil and grease, TSS, arsenic and mercury. For fly ash discharges, bottom ash, and FGMC wastewater, under some of the proposed alternatives, EPA is proposing to establish zero discharge limitations, which would in effect directly control all pollutants of concern. For other proposed options that would not require zero pollutant discharge, EPA identified two potential pollutants for regulation: oil and grease and TSS. For nonchemical metal cleaning wastes, EPA identified four pollutants for potential regulation (TSS, oil and grease, copper, and iron). Additionally, EPA identified four pollutants for regulation for gasification wastewater: arsenic, mercury, selenium, and total dissolved solids (TDS).

Coordinated Requirements for Surface Impoundments Containing Coal Combustion Residuals. In 2010, the EPA issued a proposed rule to regulate coal combustion residuals (CCR) from coal-fired power plants (Coal Ash Rule). EPA has yet to finalize the Coal Ash Rule. Under the proposed Coal Ash Rule, EPA created two options for regulating CCRs under the Resource Conservation Recovery Act (RCRA). While the ELG proposed rule does not contemplate making changes to the Coal Combustion Rule, it does seek comment on how to harmonize the two rules in order to effectively streamline the compliance process for regulated facilities subject to both rules.

¹ The term treatabilities is discussed in the proposed rule’s Preamble and refers to the concept that the technology used to treat one pollutant will effectively treat other pollutants found in the same wastestream, thereby eliminating the need to create additional standards for the effectively-treated pollutants.



The proposed rule identifies two primary means of integrating the two rules: (1) through coordinating the design of any final substantive CCR regulatory requirements; and (2) through coordination of the timing and implementation of final rule requirements to provide facilities with a reasonable timeline for implementation that allows for coordinated planning and protects electricity reliability for consumers.

Voluntary Incentive Program. The proposed rule also establishes a voluntary incentive program, whereby existing EGUs would be granted two additional years to comply with the new ELG requirements, if they also dewater, close and cap all CCR surface impoundments at the facility (except combustion residual leachate impoundments), including those surface impoundments located on non-adjointing property that receive CCRs from the facility. Additionally, any power plant that eliminates discharges of all process wastewater to surface waters, with the exception of cooling water discharges, would be granted five additional years to comply.

NEXT STEPS

EPA estimates the proposed rule would apply to approximately 1,200 plants; 500 of which are coal-fired generating units. EPA also expects that if finalized as proposed, the rule will reduce pollutant discharges by 470 million to 2.62 billions pounds annually and will reduce water use by 50 billion to 103 billion gallons per year. Once finalized, the proposed regulations would be phased in between years 2017 and 2022. This time frame would fall directly after many coal and oil-fired EGUs have paid for and installed comprehensive add-on emission controls—which will generate significant wastewater streams—to comply with EPA’s Mercury and Air Toxics (MATS) Rule. Additionally, EPA estimates the rule will cost between \$185 million to \$954 million, and would be economically achievable. Comments are due sixty (60) days after publication in the *Federal Register*.

FOR ADDITIONAL INFORMATION

Van Ness Feldman closely monitors and counsels clients on water, air, and other environmental regulatory developments. If you would like more information about the proposed ELGs for steam EGUs or assistance with participation in the public comment process, please contact [Stephen Fotis](#), [Britt Fleming](#), or any member of the firm’s [Environmental](#) Practice in Washington, D.C. at (202) 298-1800 or in Seattle, WA at (206) 623-9372.

In February 2012, Van Ness Feldman expanded its capabilities by combining practices with the Seattle law firm of GordonDerr LLP, a preeminent real estate, land use, water law, and civil litigation firm in the Pacific Northwest. Learn more at www.vnf.com.

© 2013 Van Ness Feldman, LLP. All Rights Reserved.

This document has been prepared by Van Ness Feldman for informational purposes only and is not a legal opinion, does not provide legal advice for any purpose, and neither creates nor constitutes evidence of an attorney-client relationship.

Proposed ELGs Technology Basis for Main Regulatory Options

Wastestream		Option 1	Option 3a	Option 2	Option 3b	Option 3	Option 4a	Option 4	Option 5
FGD Wastewater									
< 2000 MW scrubbed capacity	Chemical Precipitation*	BPJ**	Chemical Precipitation + Biological Treatment	BPJ	Chemical Precipitation + Biological Treatment	Chemical Precipitation + Biological Treatment	Chemical Precipitation + Biological Treatment	Chemical Precipitation + Biological Treatment	Chemical Precipitation + vapor compression evaporation
≥ 2000 MW scrubbed capacity				Chemical Precipitation + Biological Treatment					
Fly Ash Transport Water	Impoundment (Equal to BPT)	Dry handling	Impoundment (Equal to BPT)	Dry handling	Dry handling	Dry handling	Dry handling	Dry handling	Dry handling
Bottom Ash Transport Water									
≤ 400 MW	Impoundment (Equal to BPT)	Impoundment (Equal to BPT)	Impoundment (Equal to BPT)	Impoundment (Equal to BPT)	Impoundment (Equal to BPT)	Impoundment (Equal to BPT)	Impoundment (Equal to BPT)	Dry handling	Dry handling
> 400 MW							Dry handling/Closed loop		
Combustion Residual Leachate	Impoundment (Equal to BPT)	Impoundment (Equal to BPT)	Impoundment (Equal to BPT)	Impoundment (Equal to BPT)	Impoundment (Equal to BPT)	Impoundment (Equal to BPT)	Impoundment (Equal to BPT)	Chemical Precipitation	Chemical Precipitation
FGMC Wastewater	Impoundment (Equal to BPT)	Dry handling	Impoundment (Equal to BPT)	Dry handling	Dry handling	Dry handling	Dry handling	Dry handling	Dry handling
Gasification Wastewater	Evaporation	Evaporation	Evaporation	Evaporation	Evaporation	Evaporation	Evaporation	Evaporation	Evaporation
Nonchemical Metal Cleaning Wastes	Chemical Precipitation	Chemical Precipitation	Chemical Precipitation	Chemical Precipitation	Chemical Precipitation	Chemical Precipitation	Chemical Precipitation	Chemical Precipitation	Chemical Precipitation

*For FGD wastewater Options 1, 2, 3b (2000 MW and more), 3, 4a, and 4, there would also be “flow minimization for plants with high FGD discharge flow rates (i.e., greater than 1,000 gpm) and FGD system metallurgy and operating practices that can accommodate an increase in chlorides.”

** Best Professional Judgment- refers to the practice of setting effluent limitation standards when EPA has not promulgated an applicable ELG or NSPS.