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# Overview and Status of the Steam Electric Power Generating Effluent Limitation Guidelines (ELGs) and Standards

## Overview: What Is It?

The Clean Water Act (CWA) directs the Environmental Protection Agency (EPA) to regulate discharge of pollutants into U.S. waters. Such discharges are prohibited without a permit. Thus, industrial dischargers and others must obtain permits from states or EPA that set limits on pollutants in their effluent. To guide the limits set in permits for industrial dischargers, EPA issues Effluent Limitation Guidelines (ELGs), or technology-based standards, for categories of industrial dischargers. Since 1972, EPA has promulgated ELGs for 59 industrial categories, including the steam electric power industry.

In November 2015, EPA published revised ELGs and standards for the steam electric power industry to replace rules issued in 1982. EPA determined that new ELGs were necessary to reflect changes in the industry. For example, technology improvements over the past few decades reduced hazardous air emissions but increased discharges of certain pollutants, primarily heavy metals, to surface waters. EPA promulgated the 2015 rule to address those water quality impacts by establishing new ELGs for six wastestreams from steam electric power plants. (For more details on the rule see CRS Report R43169, *Regulation of Power Plant Wastewater Discharges: Summary of the EPA Final Rule*.) In September 2017, EPA finalized a rule postponing compliance deadlines for two wastestreams to allow the agency time to potentially revise the limits set in the 2015 rule (see "Current Status").

## Background of the Rule

ELGs are national regulations for industrial wastewater discharges that set technology-based numeric limits for specific pollutants. For point sources that introduce pollutants directly into U.S. waters—"direct dischargers"—states or EPA incorporate the limits set in ELGs into the National Pollutant Discharge Elimination System (NPDES) permits that they issue. For sources that discharge to publicly owned treatment works (POTWs)—"indirect dischargers"—EPA promulgates pretreatment standards that apply to those sources and are enforced by POTWs and federal and state authorities.

The CWA established several types of effluent limitations. Those applicable to the 2015 rule are as follows:

- *Best Practicable Control Technology Currently Available (BPT)* is based on the average of the best existing performance of plants within the industry or subcategory. In selecting BPT, EPA considers factors including the cost of applying the control technology in relation to the effluent reduction benefits, equipment and facility age, and processes employed.
- *Best Available Technology Economically Achievable (BAT)* generally represents the best existing performance in the industrial category or subcategory. Factors considered include the cost of achieving effluent reductions and processes employed.
- *New Source Performance Standards (NSPS)* reflect the reductions achievable based on the best available demonstrated control technology. EPA is directed to take into consideration the cost of achieving the effluent reduction and any non-water-quality environmental impacts and energy requirements.
- *Pretreatment Standards for Existing Sources (PSES)* are designed to control the discharge of pollutants that pass through, interfere with, or are otherwise incompatible with the operation of a POTW. PSES standards are analogous to BAT for direct dischargers.
- *Pretreatment Standards for New Sources (PSNS)* are designed for the same purpose as PSES. EPA considers the same factors in promulgating PSNS as it does in promulgating NSPS.

CWA Section 301(d) directs EPA to review existing ELGs at least every five years and, if appropriate, revise them. During the 2005 review of existing ELGs, EPA identified the rules governing the steam electric power point source category for possible revision based in part on data showing that the industry ranked high in discharges of toxic and nonconventional pollutants. EPA initiated a study, completed in 2009, that found that the 1982 regulations did not adequately address the pollutants being discharged and had not kept pace with changes that occurred in the industry over the last several decades—specifically the increase of flue gas desulfurization systems, or scrubbers, at coal-fired power plants to control air pollution. While scrubbers reduce emissions of harmful pollutants into the air, some create a significant liquid wastestream. In addition, discharges from coal combustion residual (CCR) surface impoundments at some steam electric power plants have a potential to degrade water quality. EPA also identified several wastestreams that are relatively new to the industry (e.g., carbon capture wastewater) and others for which there is little characterization data (e.g., gasification wastewater).

In 2009, environmental groups sued EPA to compel them to commit to a schedule for issuing revised ELGs for this industry. Pursuant to a consent decree that it entered into with these litigants, EPA promulgated the final rule, which was published November 3, 2015. The 2015 rule contains BAT and PSES standards for existing sources and NSPS

and PSNS requirements for new sources, which apply to six wastestreams (See **Table 1**.)

**Table 1. Pollutant Discharge Limitations and Technology Basis for 2015 Steam Electric Generating Point Source Category Effluent Limitations Guidelines and Standards**

| Wastestreams | Pollutant Discharge Limitations and Technology Basis for Existing Sources (BAT and PSES) | Pollutant Discharge Limitations and Technology Basis for New Sources (NSPS and PSNS) |
|---|---|---|
| Flue Gas Desulfurization (FGD) Wastewater | Numeric limitations on arsenic, mercury, selenium, and nitrate/nitrite as N | Numeric limitations on arsenic, mercury, selenium, and Total Dissolved Solids (TDS) |
| | Chemical precipitation + biological treatment | Evaporation control technology |
| Fly Ash Transport Water | Zero discharge of pollutants | Zero discharge of pollutants |
| | Dry handling control technology | Dry handling control technology |
| Bottom Ash Transport Water | Zero discharge of pollutants | Zero discharge of pollutants |
| | Dry handling or closed loop control technology | Dry handling or closed loop control technology |
| Flue Gas Mercury Control Wastewater | Zero discharge of pollutants | Zero discharge of pollutants |
| | Dry handling control technology | Dry handling control technology |
| Gasification Wastewater | Numeric limitations on arsenic, mercury, selenium, and TDS | Numeric limitations on arsenic, mercury, selenium, and TDS |
| | Evaporation control technology | Evaporation control technology |
| Combustion Residual Leachate | Impoundment control technology (equal to BPT standard) | Numeric limitations on arsenic and mercury |
| | | Chemical precipitation control technology |

**Source:** EPA, "Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category; Final Rule," 80 *Federal Register* 67838-67903, November 3, 2015.

## Current Status

Following promulgation of the final ELG rule in 2015, various stakeholders filed judicial petitions for review, which were consolidated in the U.S. Court of Appeals for the Fifth Circuit (*Southwestern Elec. Power Co. v. EPA*, 5th Cir., 15-60821, filed November 20, 2015). Industry groups and utilities argued, among other things, that EPA withheld essential data, methodologies, and analyses from the public record as confidential business information. Other groups argued that EPA acted arbitrarily by not requiring more stringent controls on discharges of bromide to surface waters. In March and April 2017, EPA received petitions for administrative reconsideration of the final rule. According to EPA, the petitions raised "wide-ranging and sweeping objections to the rule" and included new data that the agency wanted to review. In April 2017, the Administrator announced his decision to reconsider the rule. The Fifth Circuit granted EPA's request to sever and hold portions of the case in abeyance that are related to judicial review of the BAT and PSES for bottom ash transport water, FGD wastewater, and gasification wastewater while EPA reconsiders the rule.

On September 18, 2017, EPA published a final rule postponing the earliest compliance dates from November 2018 to November 2020 for BAT effluent limitations and PSES for two forms of waste—flue gas desulfurization wastewater and bottom ash transport water (82 *Federal Register* 43494). In explaining its rationale, EPA stated that it intends to conduct a new rulemaking regarding the appropriate technology bases and associated limits for the BAT and PSES requirements applicable to the two wastestreams "in light of new information not contained in the record for the 2015 rule and the inherent discretion the agency has to reconsider past policy decisions consistent with the CWA and other applicable law." The agency also stated that it does not intend to conduct a rulemaking that would potentially revise the rule as it pertains to ELGs and standards for the other wastestreams covered by the rule. As such, EPA is not changing the compliance dates for the BAT limitations and PSES established by the 2015 rule for those wastestreams.

Also of potential relevance to power plant owner/operators are federal standards, finalized in 2015, that are applicable to landfills and surface impoundment ponds that contain coal combustion residuals (also known as "coal ash"). EPA promulgated the regulations in accordance with its authorities in the Resource Conservation and Recovery Act. Among other requirements, the standards specify conditions under which certain surface impoundment ponds may be required to close. For more information, see CRS Insight IN10585, *State Programs for "Coal Ash" Disposal in the WIIN Act* .

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