

Steam Electric Effluent Limitations Guidelines and Standards Rule

Background on Effluent Limitations Guidelines and Standards (ELGs)

- The Clean Water Act directs EPA to establish ELGs to control discharges of pollutants in industrial wastewater to surface waters and publically owned treatment plants (POTWs)
- ELGs are based on the performance of specified technologies; facilities are not required to use those technologies and may instead use alternative technologies/approaches to comply.
 - Statute designed to increasingly elevate the technology floor for all dischargers in an industrial sector to match the performance of the best plants in the industry.
 - Not based on the water quality of individual receiving waters.
- ELGs provide equity and certainty for industrial facilities as the requirements apply nationally

Background on the Steam Electric ELGs

- The Steam Electric ELGs are applicable to discharges from fossil- and nuclear-fueled steam electric generating units at establishments where the generation of electricity is the predominant source of revenue or principle reason for operation.
- (b) (5) [REDACTED]
[REDACTED] EPA signed revisions to the ELGs on September 30, 2015.
- The Rule addresses changes in the industry that have occurred since EPA last updated existing regulations 35 years ago and limits the amount of toxic metals (e.g., mercury, arsenic, selenium, lead), as well as nutrients, discharged into waterways.
 - Previous regulations were based primarily on the use of surface impoundments (settling ponds), intended to focus on removal of suspended solids, rather than dissolved metals which are toxic and harmful to humans and aquatic life.
 - The 2015 ELG Rule is based on technologies, which are already in use in the industry, are effective for treating or eliminating toxic pollutant and nutrient discharges to surface waters, (b) (5) [REDACTED]
 - New technologies for generating electric power and the widespread implementation of air pollution controls over the last 30 years have altered existing wastewater streams or created new wastewater streams at many power plants, particularly coal-fired plants.
 - Estimated annual compliance costs and benefits for the final rule are \$480 million (only 12% of industry incurs cost) and \$451 to \$566 million, respectively; these costs reflect the fact that many companies were already planning to retire their coal-fired units/plants because of the low cost of natural gas.
- This rule, done in conjunction with the Coal Combustion Residual Rule on maintenance/closure of surface impoundments, provides industry with a long planning period up to 2023 to comply with both rule.

What Does the Rule Accomplish?

- Steam electric power plants are the largest industrial source of toxic pollutants discharged to surface waters, responsible for approximately 30% of the nationwide total.
 - Annually reduces pollutant discharges by 1.4 billion pounds and water withdrawals by 57 billion gallons leading to improvements in public health and ecological impacts.

- Reduces severe health and environmental problems that they pollutants can cause in the form of cancer and non-cancer risks in humans, lowered IQ among children, and deformities and reproductive harm in fish and wildlife.
- Improves protections for downstream drinking water plants and their customers.
- Reduces discharges of nutrients which exacerbate over-enrichment and associated water quality problems.
- Reduces the risk of catastrophic failure of surface impoundments.
- Due to their close proximity to these discharges and relatively high consumption of fish, some minority and low-income communities have greater exposure to, and are therefore at greater risk from, pollutants in steam electric power plant discharges.

What does this rule require?

- The rule establishes new requirements for wastewater streams from the following processes and byproducts associated with steam electric power generation: flue gas desulfurization (FGD), fly ash, bottom ash, flue gas mercury control, and gasification of fuels such as coal and petroleum coke.
- The rule established requirements for FGD wastewater for arsenic, mercury, selenium, and nitrogen. The rule encourages plants to commit to meet more stringent limits for pollutants in FGD wastewater, based on evaporation/crystallization technology, by giving them until the end of 2023 to meet the more stringent limits.
 - When the rule was signed, nearly half of all power plants with wet FGD scrubbers already had equipment/processes in place that enable them to meet the new effluent limits.
 - The new BAT limits have spurred technology development and new technology vendors entering the market, resulting in new technology solutions capable of meeting the BAT and Voluntary Program effluent limits.
 - A number of power plants are “leapfrogging” past the performance level set by the new BAT effluent limitations and committing to the more stringent voluntary limits.
- The rule established zero discharge of pollutants in fly ash transport water
 - When the rule was signed, dry fly ash handling was widely demonstrated, with over 80 percent of generating units operating these systems; others had announced plans to convert the systems at additional generating units.
 - Now, the transformation to dry ash handling systems is nearly complete, with only a handful of plants still using wet fly ash handling systems.
- The rule established zero discharge of pollutants in bottom ash transport water
 - When the rule was signed, more than 50% of entities already employed zero discharge technologies or had announced plans to switch to such systems in the near future.
 - (b) (5)
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- The rule also establishes zero discharge pollutant limits for flue gas mercury control wastewater, and limits on arsenic, mercury, selenium and total dissolved solids in coal gasification wastewater.