

# Final Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Industry

## Summary

EPA finalized a rule to revise the technology-based effluent limitations guidelines and standards that would strengthen the existing controls on discharges from steam electric power plants. The final rule sets the first federal limits on the amount of toxic metals and other harmful pollutants that steam electric power plants are allowed to discharge in several of their largest sources of wastewater, based on technology improvements in the steam electric power industry over the last three decades.

- On an annual basis, the rule is projected to reduce the amount of toxic metals, nutrients, and other pollutants that steam electric power plants are allowed to discharge by 1.4 billion pounds and reduce water withdrawal by 57 billion gallons.
- Estimated annual compliance costs for the final rule are \$480 million.
- Estimated benefits associated with the rule are \$451 to \$566 million.

## Background

Steam electric power plants discharge large volumes of wastewater, containing vast quantities of pollutants, into waters of the United States. The pollutants include both toxic and bioaccumulative pollutants such as arsenic, lead, mercury, selenium, chromium, and cadmium. Today, these discharges account for about 30 percent of all toxic pollutants

discharged into surface waters by all industrial categories regulated under the Clean Water Act. The electric power industry has made great strides to reduce air pollutant emissions under Clean Air Act programs. Yet many of these pollutants are transferred to the wastewater as plants employ technologies to reduce air pollution.

The pollutants discharged by this industry can cause severe health and environmental problems in the form of cancer and non-cancer risks in humans, lowered IQ among children, and deformities and reproductive harm in fish and wildlife. Many of these pollutants, once in the environment, remain there for years. 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.

There are, however, affordable technologies that are widely available, and already in place at some plants, which are capable of reducing or eliminating steam electric power plant discharges. In the several decades since the steam electric ELGs were last revised, such technologies have increasingly been used at plants. This final rule is the first to ensure that plants in the steam electric industry employ technologies designed to reduce discharges of toxic metals and other harmful pollutants discharged in the plants' largest sources of wastewater.

## Who is affected by this regulation?

Certain coal-fired steam electric power plants will be affected by this rule. EPA estimates that about 12 percent of steam electric power plants will have to make new investments to meet the new requirements of this rule.

## What does this rule require?

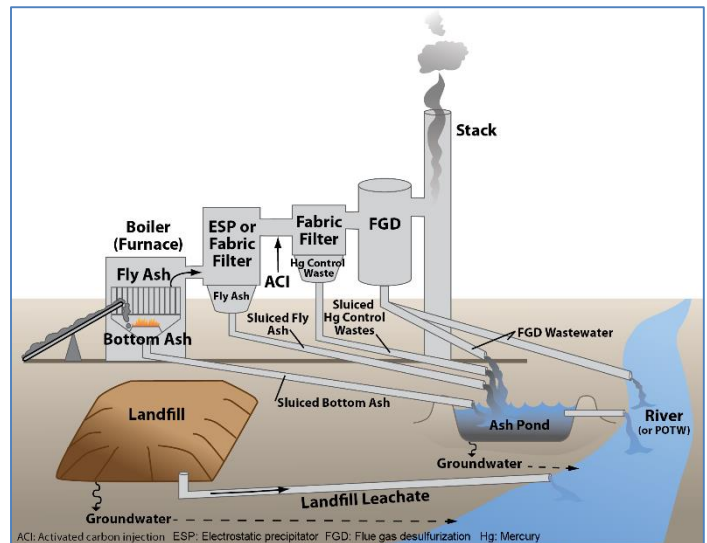
Generally, the final rule would establish new or additional requirements for wastewater streams from the following processes and byproducts associated with steam electric power generation: flue gas desulfurization, fly ash, bottom ash, flue gas mercury control, and gasification of fuels such as coal and petroleum coke.

The final rule phases in the new, more stringent requirements in the form of effluent limits for arsenic, mercury, selenium, and nitrogen for wastewater discharged from wet scrubber systems (flue gas desulfurization wastestream) and zero discharge of pollutants in ash transport water that must be incorporated into the plants' NPDES permits.

The rule encourages plants to commit to meeting even more stringent limits for pollutants in the flue gas desulfurization wastewater, plus a limit on total dissolved solids, based on evaporation technology, by giving them until the end of 2023 to meet the more stringent limits.

The rule also establishes zero discharge pollutant limits for flue gas mercury control wastewater, and stringent limits on arsenic, mercury, selenium and total dissolved solids in coal gasification wastewater, based on evaporation technology.

The rule also includes even more stringent controls for any new coal or petroleum coke plants that may be built in the future.



## How much time does a steam electric power plant have before implementation?

Each plant must comply between 2018 and 2023 depending on when it needs a new Clean Water Act permit.

## What are the benefits of this regulation?

There are numerous documented instances of environmental impacts associated with steam electric power plant discharges including widespread aquatic life impacts and toxic metal bioaccumulation in wildlife. In addition, there are increased cancer and non-cancer risks to humans from the pollutants. This regulation will greatly reduce these impacts. Of the benefits that could be monetized, EPA projects \$451 to \$566 million per year in benefits associated with this rule.

## What are the costs of implementing this rule?

Compliance costs of the final rule are economically achievable, with an annual estimated cost of \$480 million per year.

Analysis shows that the rule will have minimal impacts on electricity prices and the amount of electricity generating capacity.

## **Where can I find more information?**

For technical information about this rule, please contact Ronald Jordan by email at [Jordan.ronald@epa.gov](mailto:Jordan.ronald@epa.gov) or by telephone at 202-566-1003. For economic information about this rule, please contact James Covington by email at [Covington.james@epa.gov](mailto:Covington.james@epa.gov) or by phone at 202-566-1034. You can also learn more about this rule by visiting EPA's website at:  
<http://www2.epa.gov/eg/steam-electric-power-generating-effluent-guidelines-2015-final-rule>