

Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category-Initial Notification Date Extension

EPA-HQ-OW-2009-0819

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The [Environmental Protection Network](#) (EPN) harnesses the expertise of more than 700 former Environmental Protection Agency (EPA) career staff and confirmation-level appointees from Democratic and Republican administrations to provide the unique perspective of former regulators and scientists with decades of historical knowledge and subject matter expertise.

EPA has released a direct final rule and a proposed rule extending deadlines for compliance with the 2024 steam electric power generating effluent limitation guidelines (ELGs). Both rules require public comments to be submitted by November 3, 2025. The direct final rule extends the date by which a steam electric power plant must submit to EPA a Notice of Planned Participation (NOPP) committing to a permanent cessation of coal combustion by December 31, 2034 in order to be subject only to the less stringent permit limits of the 2020 steam electric effluent limitations. The direct final rule extends the NOPP submittal date from December 31, 2025 to December 31, 2031. The proposed rule includes this NOPP submittal deadline extension and also extends six other deadlines in the 2024 rule. The proposed rule extends the deadline for direct dischargers to comply with zero discharge limits for Flue Gas Desulfurization (FGD) wastewater, Bottom Ash (BA) transport water, and Combustion Residual Leachate (CRL) from December 31, 2029 to December 31, 2034 and extends the deadline for indirect dischargers of these same wastewaters from May 9, 2027 to three years or longer after the promulgation date of this final rule. EPA also states in the proposed rule that the agency is considering redoing the 2024 ELGs in a future rulemaking.

EPA states that these deadline extensions are needed because of a U.S. energy crisis and a lack of available technology to meet the zero discharge standards. EPN is submitting the following comments to the docket for the direct final rule and will separately submit comments to the docket for the proposed rule.

Introduction

EPA is wasting government resources to promulgate the fourth rule on steam electric power generating ELGs in 10 years, delaying yet again the requirement for steam electric power plants to treat their highly toxic wastewater which has been contaminating drinking water supplies and fisheries for decades. EPA is years behind the statutory requirement to review and update ELGs for many industry categories, allowing highly toxic wastewater discharges to go untreated for years, impairing public health and the environment. Instead of using EPA's limited staff and funding on higher priority industry dischargers, the agency instead is conducting a fourth rulemaking allowing steam electric power plants to avoid needed treatment for another 10 years. In 2023, the average operating coal-fired power plant was 45 years old and extremely costly to operate because of its age and inefficiency.

A new report, *Meeting Forecasted Growth in Electricity Demand*,¹ contradicts EPA's argument that the delay in treatment is needed because the nation's energy crisis requires these old plants to keep running. This report supports EPA's estimation in the 2024 rule that toxic discharge limitations would have a minor effect on

¹ https://www.analysisgroup.com/globalassets/insights/publishing/2025_meeting_forecasted_growth_in_electricity_demand.pdf

household electricity costs and the nation's total electric capacity. In fact, the report explains that households will get lower electricity costs if these plants are replaced by more efficient, cost-effective plants.

EPN disputes EPA's rationale that there is an energy crisis requiring these five-year extensions in order to keep old, inefficient steam electric power plants online. EPA justifies these extensions because of an alleged energy emergency with an unclear landscape associated with energy markets, including projected electricity demand, resource adequacy, equipment supply chains (especially natural gas turbines and grid transformers), and reliability associated with extreme weather conditions. EPA relies on a North American Electric Reliability Corporation (NERC) long-term resource adequacy and reliability assessment (LTRA) and proposed utility cost savings for delaying the date by which utilities must decide whether to permanently close coal-fired power plants.

NOPP Submission of Data Extension

In both the direct final rule and the proposed rule, EPA is requesting comment on extending the 2024 rule deadline for ceasing coal combustion from 2032 to 2034 and delaying submittal of a NOPP committing to the cessation of coal combustion from 2025 to 2031 in order to be subject only to the 2020 limits for FGD wastewater and BA transport water. Since the 2020 rule set no limits on CRL, CRL controls would be based on best professional judgment (BPJ) limits set by the permit writer while the plant was operating and chemical precipitation limits on mercury and arsenic once the plant ceases operation.

The 2024 rule retained the 2020 rule requirement that all coal-fired power plants not ceasing coal combustion by 2028 must meet the 2020 rule limits by December 31, 2025. The 2024 rule provided an exemption from the 2024 limits if a plant was planning to cease coal combustion by 2032. Recognizing that plants needed at least 2 years to upgrade their treatment to meet the more stringent 2024 limits, EPA required plants to submit a NOPP by December 31, 2025, two years in advance of the compliance date for indirect dischargers and 4 years in advance of the compliance date for direct dischargers to meet the 2024 limits. EPA now claims that these dates need to be extended because there is an energy crisis in the U.S. that was not recognized one year ago when the 2024 rule was finalized. EPA lists the following issues justifying this interim final rule extending the date to cease coal combustion and avoid more stringent limits: increased energy demand; decreased energy reserves; transmission difficulties; decreased energy reliability; and data centers using semiconductors and other components needed to meet the 2024 limits.

EPN does not agree that any of the factors cited by EPA in the interim final rule justify the deadline extensions for coal cessation or NOPP submittal. In the Introduction to our comments, we provide detailed comments on why these factors do not justify deadline extensions. Plants have known since 2015 that they need to treat their toxic FGD wastewater and dry dispose of their bottom ash and have had 10 years to make the decision to do this or cease coal combustion. The 2024 rule further clarified that December 31, 2025 was the date to meet the 2020 rule limits. It is outrageous that EPA now, just 2 months before these limits must be met and the public notified whether a plant will cease coal combustion, is delaying public notice of this decision until 2031. All of these coal-fired power plants are decades old, highly inefficient, and much more expensive to run than other types of plants. There is no credible excuse why they need another 6 years to decide if they will continue coal combustion.

EPA Fails to Demonstrate a Lack of Available Technology for Zero Discharge Limitations

For direct dischargers, EPA is extending the end date for compliance with zero discharge limits from 2029 to 2034. EPA's 2024 rule gave direct dischargers an entire 5 year permit term to come into compliance, but EPA is now proposing to extend that by another 5 year permit term.

For indirect dischargers who are required under the Clean Water Act (CWA) to meet ELGs within 3 years of a final rule, EPA is asking for comments on a new "tiered approach" to give them a longer period of time to comply. The first tier extends their deadline to meet zero discharge limits from May 9, 2027 to October 2, 2028. The second tier extends their deadline to meet zero discharge limits to December 31, 2034 if they certify they will switch to direct discharge by then.

EPA asserts that the deadline delays for direct and indirect dischargers are needed for three reasons, the first being the lack of available technology. EPA presents no data demonstrating a lack of available technology nor how this has changed since the 2020 rulemaking. Treatment technology vendors have been aware since the 2020 rule that coal-fired power plants would be interested in membrane technology since it is less expensive than biological treatment and much more effective in removing toxics. In fact, it is the only treatment that removes the drinking water pollutant bromide that drinking water utilities urged EPA to regulate during the 2015 and 2020 rulemakings. Membrane technology is so cost-effective that the 2020 rule promulgated that as a voluntary treatment option with a compliance deadline of 2028. In the 2024 rule, EPA convincingly documented that membrane treatment technology was technologically available, economically achievable, and posed acceptable non-water quality environmental impacts. To further help direct discharging plants achieve the zero discharge limits, EPA gave them a year beyond the voluntary option 2028 compliance period of the 2020 rule. When the 2024 rule was promulgated, 36 currently-operating coal-fired power plants were already achieving zero discharge of FGD wastewater and more than 75% of the plants were already meeting zero discharge of BA transport water. Other than vague statements about data centers causing semi-conductor shortages, EPA presents no data indicating that in just one year membrane technology is no longer available.

EPA's second reason for delaying these compliance deadlines is the need for a longer amortization period to lower the costs of meeting the 2020 rule limits. Operating steam electric power plants have known since the 2015 rule was promulgated that they would need to provide chemical precipitation and biological treatment of their FGD wastewater. The 2020 rule only modified that treatment train to allow a shorter detention time for biological treatment. As a result, coal-fired power plants have been able to install the required treatment train and amortize the costs of meeting the 2020 limits since the 2015 rule was promulgated.

EPA's third reason for delaying these compliance deadlines is to make it easier for coal-fired power plants to opt out of ceasing coal combustion by 2034. As we noted previously, the report, *Meeting Forecasted Growth in Electricity Demand*,² undermines EPA's argument that the nation's energy crisis requires these old plants to keep running. In 2023, the average age of operating coal-fired power plants was 45 years, making them extremely inefficient and costly to run. In fact, most of the coal-fired plants that retired between 2002 and 2021 were 50 years old. They retired either when the cost of operating the plant exceeded the expected revenue or when operating costs exceeded the plant's value to the power system, such as its value in providing reliability to the electric grid. If EPA succeeds in keeping these old plants operating by exempting them from enforcement of existing regulations and delaying needed treatment, electricity consumers will be

² https://www.analysisgroup.com/globalassets/insights/publishing/2025_meeting_forecasted_growth_in_electricity_demand.pdf

forced to bear the cost of sustaining coal-fired generating sources that are clearly uneconomic and higher cost than the generating units that would have replaced them; drinking water systems will continue to charge their customers more to remove coal-fired power plant toxics from their tap water; and fisheries will continue to be contaminated at levels posing serious health risks to consumers.

There is no justification for delaying the compliance dates for direct or indirect dischargers. There are very few indirect dischargers for one or more of the regulated wastewaters, and EPA presents no justification for developing a two-tiered system for compliance dates that exceed the statutory-required 3 years after promulgation. Indirect dischargers do not need an EPA regulation to give them the option of changing to direct discharge in order to get the longer compliance date.

EPA Fails to Document Challenges Resulting from Geopolitical Competition for AI and Other Technologies

In Section VI.D of the Federal Register notice for the proposed rule, Extended Best Available Technology (BAT) Applicability Timing for Zero-Discharge Limitations, the EPA states: “Geopolitical competition for AI and other technologies of the future has also influenced rising demand-driven delays for fulfillment of specific components, like semiconductor chips and other electrical components, which create challenges for facilities to timely meet the 2024 rule where these components are also used in the wastewater treatment system.” EPA has not provided a record documenting these challenges. EPA should delete this assertion or provide a record basis specific to the technologies that are the basis for the BAT effluent limitations. EPA’s statement is also controverted by the data requests in Section VII, in which the EPA estimates that facilities have conducted more than 30 successful pilot studies, received “many” engineering cost estimates or quotes for zero-discharge systems, and EPA’s awareness that facilities have “continued to contract for, fabricate and install zero-discharge systems.”

Further, EPA cites the growth of large data centers as a major contributor for the expected electricity demand yet did not analyze the difficulty for large data centers to interconnect with the grid. This is prompting the recent trend for co-locating energy resources, including behind-the-meter self-generation, flexible load capacity, and BYOB (bring your own battery) business strategies to build data centers without straining the existing electric system.³

EPA Should Not Allow Additional Alternatives to ELG Compliance Timing

EPA proposes allowing permitting authorities to extend the NOPP submission date and the compliance date of any 2020 or 2024 rule deadlines for site specific, unexpected circumstances. EPA asks for public comment on whether there should be minimum or maximum durations for these alternative, site-specific deadlines; what the circumstances should be to qualify for these alternative dates; and whether and how this provision should be integrated with the other provisions being proposed.

It is ridiculous for this steam electric ELG to authorize permitting authorities to extend compliance dates for the 2020 rule since compliance is due by December 31, 2025. The 2020 rule already extended the 2015 rule’s 2023 compliance date to 2025, so steam electric power plants have had 10 years to install biological treatment of FGD wastewater and dry disposal of BA, which was required by both the 2015 and 2020 rules. The 2020 rule even had adequate data to conclude that steam electric power plants had the capability to meet much more stringent toxic limits by installing a membrane treatment system instead of a biological

³ https://emp.lbl.gov/sites/default/files/2024-09/Hybrid_Plant_Tracking_2024_v3.pdf

treatment system. The 2020 rule promulgated this membrane treatment as a voluntary option with compliance due in 2028. The 2024 rule required this same membrane treatment option and gave plants until 2029 (an additional year) to comply. EPA presents no new data indicating plants cannot meet the 2024 limits until 2034. EPA does not explain why it is proposing to add alternative compliance dates for case specific situations when the CWA already authorizes EPA and state permitting authorities to adjust national ELG requirements for unique site specific circumstances (see CWA Section 301(n)).

A facility can request a variance from ELG requirements if it can demonstrate that its situation is different from the national standard. EPA or the state permitting agency must review the evidence and make a written finding on whether or not the factors at that facility are “fundamentally different.” Fundamentally different factors are the specific characteristics of a facility that are unique enough to warrant an adjustment to national ELGs. The CWA explains that these factors are distinct from those the EPA considered when developing the national standards and can include the age of equipment, processes, engineering aspects, and non-water quality impacts like energy requirements and costs. The core difference is that the national standard was based on a different set of assumptions, and these new factors make the ELG requirements impractical or economically unfeasible for a specific facility. If the variance is approved, EPA or the state permitting agency can establish new, adjusted effluent limitations that are either more or less stringent than the national standard, as dictated by the factors.

A 5-Year Delay in Compliance will Undermine the Significant Economic Benefits from the 2024 Rule

EPA requests comments on the cost savings of these 5 to 6 year deadline delays.

EPA's 2024 rule estimated that household electricity costs would only increase between \$1.61 and \$3.14 per year on average and that the total electric capacity from steam electric plants would decrease by only 3%. Those findings undermine EPA's current statement that 5 more years of delay in achieving the 2024 standards is necessary to provide adequate, affordable electricity nationwide. This proposed new rule does not mention that the 2024 rule would prevent over 660 million pounds of pollutants from being dumped into U.S. waterways each year and that over 30 million people drink water downstream of steam electric power plants. Despite the fact that EPA lacks the methods to monetize many of the benefits of the 2024 rule, the agency was able to monetize \$3.2 billion in annualized benefits, an amount 3 to 6 times greater than the costs to industry to comply with this ELG.

While the major driver for these benefits came from the indirect improvements to air quality from greenhouse gases (GHGs), nitrous oxides (NOx), and sulfur oxides (SOx), the benefits included reduced water treatment costs, reduced cancer from trihalomethanes (THMs) in drinking water, reduced child IQ loss from lead and mercury, reduced cardiovascular effects, improved recreational opportunities, and protection of threatened and endangered species. EPA estimated that every year after industry complied with the 2024 rule: a) 1,555,558 children from birth to 7 years of age would be protected from loss of IQ points when eating fish downstream from these plants due to the reduction in lead discharges and b) 201,850 infants would be protected from loss of IQ points in utero from their mother eating fish downstream of these plants due to the reduction in mercury discharges.