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U.S. Environmental Protection Agency

EPA Docket Center, Office of Water, Office of Science and Technology

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RE: **The American Public Power Association's Comments on the Effluent Limitation Guidelines and Standards for the Steam Electric Power Generating Point Source Category- Deadline Extensions Proposal. 90 Fed. Reg. 47,693 (October 2, 2025), Docket No. EPA-HQ-OW-2009-0819**

The American Public Power Association (APPA) appreciates the opportunity to submit comments in response to the Environmental Protection Agency's (EPA or Agency) proposed rule to extend deadlines promulgated in the 2024 Supplemental Effluent Limitation Guidelines and Standards for the Steam Electric Power Generating Point Source Category (Proposed Rule).

APPA is the voice of not-for-profit, community-owned utilities that power 2,000 towns and cities nationwide. We represent public power before the federal government to protect the interests of the more than 55 million people that public power utilities serve, and the 100,000 people they employ. APPA provides the following specific comments and recommendations in response to EPA's Proposed Rule.

- APPA supports extending the deadline for existing steam electric power plants to submit a notice of plan participation (NOPP) in the 2034 cessation subcategory by six years, from December 31, 2025, to December 31, 2031. Additional time is needed to allow utilities to make critical planning decisions on whether they can comply with the 2024 Rule while also ensuring electric grid reliability.
- APPA supports EPA extending the zero liquid discharge (ZLD) compliance deadlines by five years as proposed, while EPA undertakes a new rulemaking to reconsider

whether ZLD technology is “available” and “economically feasible” to meet the ZLD limitations in the 2024 Rule.

- APPA supports the EPA's proposed extension of the pretreatment standards for existing sources (PSES) compliance deadline for bottom ash transport water (BATW), flue gas desulfurization wastewater (FGDW), and combustion residual leachate (CRL) from May 9, 2027, to a date three years following the final rule's publication in the Federal Register.
- APPA supports EPA’s proposal to require alternative applicability dates and permit late NOPP submissions based on site-specific factors.
- APPA supports the clarifications to the must-run provisions.
- APPA recommends EPA retain the 2028 cessation of coal combustion subcategory and the 2034 subcategory if the Agency does not repeal the 2024 Rule.
- APPA recommends the Agency repeal the "functionally equivalent to a direct discharge” requirement for unmanaged CRL and let permit writers set appropriate limits using their best professional judgment (BPJ).

Should you have questions about these comments, please contact Carolyn Slaughter at (CSlaughter@publicpower.org).

Sincerely,

Carolyn Slaughter

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I. Introduction

The American Public Power Association (APPA) appreciates the opportunity to submit comments in response to the Environmental Protection Agency's (EPA or Agency) proposed rule to extend deadlines promulgated in the 2024 Supplemental Effluent Limitation Guidelines and Standards for the Steam Electric Power Generating Point Source Category (Proposed Rule).[1]

The American Public Power Association is the voice of not-for-profit, community-owned utilities that power 2,000 towns and cities nationwide. We represent public power before the federal government to protect the interests of the more than 55 million people that public power utilities serve, and the 100,000 people they employ. Our association advocates and advises on electricity policy, technology, trends, training, and operations. Our members strengthen their communities by providing superior service, engaging citizens, and instilling pride in community-owned power. Approximately 1,300 of the nation's 2,000 or so public power utilities have 10 or fewer employees and serve towns, villages, or counties with fewer than 10,000 people, and all but 144 of the nation's public power utilities would be considered a "small governmental jurisdiction" under the Regulatory Flexibility Act.[2]

All public power utilities share a common characteristic: providing customers in the community with not-for-profit, cost-based electricity. Public power utilities may generate their own electricity or purchase power from other electric power generators, including other large public power utilities and joint action agencies formed to serve smaller communities collectively. Public power utilities are transparent because they are subject to sunshine laws, and their boards are accountable to the community. Public power utilities, by their nature, involve citizens in their decision-making.

APPA participates on behalf of its members collectively in EPA's rulemakings and other Clean Water Act (CWA or Act) proceedings that affect the interests of public power utilities. For these reasons, APPA has a clear interest in any potential regulatory and compliance changes to the 2024 Supplemental Steam ELG Rule.[3]

II. Executive Summary

The Clean Water Act requires EPA to base its effluent limitation guidelines (ELGs) on technology that is both "available" and "economically achievable."[4] However, the 2024 Rule fails both requirements—a fact EPA itself recognized in 2020. Zero liquid discharge

[1] 90 Fed. Reg. at 47,693 (October 2, 2025) (Proposed Deadlines Extension Rule).
[2] 5 U.S.C. §601-12.
[3] 89 Fed. Reg. at 40,198 (May 9, 2024) (2024 Rule).
[4] 33 U.S.C. § 1311(b)(2)(A).

technology (ZLD) cannot currently be deployed at the necessary scale, with adequate redundancy, or within the timeframes required to meet the 2024 Rule's deadlines.

The 2024 Rule forces electric utilities to either make significant investments in wastewater treatment technologies unlikely to reliably achieve zero-discharge limits or retire power plants essential to meeting current and future electricity demand. This rule imposes significant costs on ratepayers and threatens the reliability of the nation's electric grid. As community-owned utilities, those costs are directly borne by customers.

To address these urgent challenges, EPA should first extend the upcoming Notice of Planned Participation (NOPP) deadline for the 2034 cessation subcategory, providing utilities and customers relief from immediate financial and operational risks. The extension should be long enough to allow EPA to conduct a new rulemaking. Second, EPA should use this time to reexamine and correct the 2024 Rule's flawed assumptions—specifically, the mistaken conclusions that the required technology is both available and economically achievable for meeting the new limits.

APPA provides the following specific comments and recommendations in response to EPA's Proposed Deadlines Extension Rule.

- APPA supports extending the deadline for existing steam electric power plants to submit a NOPP in the 2034 cessation subcategory by six years, from December 31, 2025, to December 31, 2031. Additional time is needed to allow utilities to make critical planning decisions on whether they can comply with the 2024 Rule while also ensuring electric grid reliability.
- APPA supports EPA extending the ZLD compliance deadlines by five years as proposed, while EPA undertakes a new rulemaking to reconsider whether ZLD technology is "available" and "economically feasible" to meet the ZLD limitations in the 2024 Rule.
- APPA supports the EPA's proposed extension of the pretreatment standards for existing sources (PSES) compliance deadline for bottom ash transport water (BATW), flue gas desulfurization wastewater (FGDW), and combustion residual leachate (CRL) from May 9, 2027, to a date three years following the final rule's publication in the *Federal Register*.
- APPA supports EPA's proposal to require alternative applicability dates and permit late NOPP submissions based on site-specific factors.
- APPA supports the clarifications to the must-run provisions.
- APPA recommends EPA retain the 2028 cessation of coal combustion subcategory and the 2034 subcategory if the Agency does not repeal the 2024 Rule.
- APPA recommends the Agency repeal the "functionally equivalent to a direct discharge" requirement for unmanaged CRL and let permit writers set appropriate limits using their best professional judgment (BPJ).

II. Electric Reliability and Load Growth Challenges Necessitate Extending ELG Compliance Dates

Electricity demand has surged well beyond last year's projections, intensifying reliability and resource adequacy challenges. A recent PJM report, the regional transmission organization for 13 states and the District of Columbia, demonstrates this dramatic shift through comparative forecasts.[5] PJM's summer peak jumped from approximately 175,000 megawatts (MW) in 2035 under the 2024 forecast to roughly 210,000 MW—a 20% increase. Winter peak projections show comparable growth.[6]

The North American Electric Reliability Corporation (NERC)—which oversees power grid standards across the U.S., Canada, and parts of Mexico—released its May 2025 summer assessment, warning of significant reliability challenges. Peak electricity across NERC's 23 regions has increased by over 10 gigawatts since last summer, more than twice the growth rate seen between 2023 and 2024.[7] Multiple regions face elevated risks, particularly the Midcontinent Independent System Operator (MISO), Texas (ERCOT), and New England.[8]

In MISO specifically, the closure of 1,575 MW of coal and natural gas plants, combined with reduced capacity transfers from external sources, has decreased available dispatchable generation.[9] This leaves the region vulnerable to reserve shortfalls during high-demand periods or when renewable output is low.

NERC attributes these challenges to accelerating electricity demand growth, which is straining both generation resources and transmission infrastructure across many areas. Ongoing supply chain disruptions are also delaying equipment maintenance, replacement, and new construction projects.

Rising electricity demand has compelled certain electric utilities to reconsider and, in many cases, reverse prior decisions to retire coal-fired plants, thereby extending these facilities' operational lifespans—often by an additional 10 to 15 years. Similarly, other utilities are reassessing earlier retirement plans amid heightened concerns about electric reliability and resource adequacy. This significant shift in the energy landscape underscores the need for EPA to revisit its initial approach of leveraging the NOPP election as a mechanism to encourage the retirement of coal-fired generation capacity.

EPA must address the urgent challenges created by the 2024 Rule by extending the approaching NOPP deadline for the 2034 cessation subcategory and initiating new rulemaking to reconsider the ZLD requirements and cost assumptions.

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[5] 2025 PJM Long–Term Load Forecast Report (January 2024) at 9, 10, 13, and 26.
[6] *Id*.
[7] 2025 Summer Reliability Assessment (2025 SRA) (May 2025) at 5.
[8] *Id*.
[9] 2025 SRA at 5.

III. APPA Supports Extending the NOPP Submission Deadlines

APPA supports the Agency's Direct Final Rule (DFR) to extend the deadline for existing steam electric power plants to submit a NOPP in the 2034 cessation subcategory by six years, from December 31, 2025, to December 31, 2031.[10] These comments are intended to support the EPA's proposal—they should not be considered objections to the DFR.

If the DFR does receive adverse comments from others, EPA will have to withdraw it and rely instead on its companion proposal to extend the deadline. This creates a tight timeline. EPA will have very little time to review public comments, address them, finalize the rule, and complete interagency White House Office of Management and Budget review before December 31, 2025, the NOPP deadline. Further, the recent government shutdown may make this timeline even tighter. Therefore, APPA requests that EPA provide clear guidance to permit authorities and utilities on how to handle the situation if the deadline extension is not finalized in time.

Extending the deadline will prevent the power sector from making rushed decisions that could harm both public power utilities and their customers, especially while EPA reviews the 2024 Rule. As explained, recent energy demand forecasts, increased electricity demand, and supply chain issues with replacement power generation make an extension of the deadline necessary. Extending the deadline would prevent utilities from incurring costs on facilities that would have to close in 2034.

IV. EPA should repeal the 2024 ELG Rule's zero-discharge requirements in a separate rulemaking because the required technologies are not "available" or "economically achievable".

EPA is asking for comments on whether the zero liquid discharge technologies required for FGDW and CRL are actually available or economically achievable. The Act requires "the best available technology economically achievable (BAT)." The plain meaning of "available" is "present or ready for immediate use," "accessible," or "obtainable." The U.S. Supreme Court has said that "availability" has real meaning and must be evaluated based on "facts on the ground"—meaning what's actually available in practice, not just in theory.[11]

A. Zero-discharge technologies are not available now

Real-world evidence shows that the ZLD technologies EPA approved are nowhere near "present or ready for immediate use" at full scale. Membranes and thermal evaporator systems cannot reliably achieve zero-discharge limits in practice. Significant

[10] 90 Fed. Reg. at 47,617 (October 2, 2025) (Direct Final Rule).
[11] *Ross v. Blake*, 578 U.S. 632, 642-43 (2016) (interpreting "available" under 42 U.S.C. § 1997e(a)); *see also Safeco Ins. Co. of Am. v. Robey*, 399 F.2d 330, 338 (8th Cir. 1968) ("'available'" means "'actually available'" and not theoretically available).

problems remain with scaling up these systems for the large volumes, flow rates, and chemical compositions found at major power plants.

1. Membrane systems are not operational

In 2020, EPA recognized no membrane system had been installed at full scale at any U.S. plant to treat FGDW.[12] In the 2024 Rule, EPA acknowledges that this still has not changed.[13] EPA determined in its 2024 Rule that membrane technology is viable, based on deployments at international facilities and observations from pilot programs. However, the evidence shows the EPA's conclusion rests on the same insufficient data, with key information still missing.

In 2020, the EPA correctly noted substantial data deficiencies regarding international membrane installations. While the Agency knew of facilities in China, South Korea, and Finland using this technology, it lacked crucial details about system configuration and operation, achievable reduction levels, performance issues during continuous use, and whether these systems could be replicated at U.S. power plants.

These questions remain unanswered. The EPA based its assessment mainly on a brief two-page summary of 2021 phone conversations with DuPont. Such vendor-supplied information is typically insufficient, particularly when incomplete. Though the EPA claimed DuPont supplied "detailed information" about two Chinese installations, this information consists of merely one paragraph per facility, lacking performance metrics and operational maintenance data. Essential specifications are missing, including unit capacity, wastewater volume processed, and the type of coal used. These omissions represent critical gaps that—as the EPA acknowledged in 2020—are fundamental to evaluating whether the technology can operate at full scale in U.S. facilities. Despite not disputing these persistent gaps in the 2024 ELG Rule, the EPA dismissed them, unconvincingly asserting that the continued operation of these foreign plants constitutes "significant new information" supporting the use of zero liquid discharge technology.[14]

EPA's reliance on pilot studies is equally problematic. None of the small-scale pilots referenced in 2024 demonstrates reliable full-scale operational capability. Pilot studies function as controlled experiments—testing specific theories and generating data to refine hypotheses. While the 2024 ELG Rule mentions three new pilot studies, EPA never analyzed their data or explained how their configurations support the Agency's conclusions. For instance, one specifically cited study operated at only 264 to 793 gallons

[12] 85 Fed. Reg. at 64650, 64,663 (Oct 13, 2020).
[13] 89 Fed. Reg. at 40,216 ("In the 2020 rule, the EPA rejected membrane filtration as a stand-alone BAT technology basis due in part to the lack of a single full-scale domestic installation, which is still the case today.") (emphasis added).
[14] 89 Fed. Reg. at 40,217.

per day (gpd), far from the 500,000 gpd required at large power plants.[15] Additionally, this study indicated that plants would need expensive supplementary treatment beyond the membrane systems themselves. Some of the more sophisticated pilot programs (such as EPRI's) have only recently commenced.

EPA has disregarded critical data gaps and technical evidence that contradict its determination that membranes constitute BAT for FGDW.

2. Thermal evaporation systems aren't available nationwide

Thermal evaporation systems cannot satisfy ZLD limits alone nationwide. EPA said this in 2015, and nothing has changed.[16] Operating experience with thermal evaporation systems has revealed significant challenges due to the highly variable and corrosive nature of FGD wastewater.[17] Engineers must either select costly exotic metals or accept frequent component replacement and associated downtime.[18] Even premium materials eventually corrode.[19]

3. Spray dry evaporators have limitations

EPA's analysis of spray dryer evaporators (SDEs) was minimal. EPA has never treated SDEs as anything more than a supplement to other systems and acknowledges that they work only under certain plant configurations.[20] SDEs also share thermal evaporators' key problem: difficult solids handling.

In the 2015 and 2020 Rules, EPA did not evaluate SDEs as a standalone technology.[21] In the 2024 Rule, EPA noted SDEs can supplement other systems at some plants[22] and admitted they "may not be the best choice for all plants." [23] Yet EPA concluded that because three domestic plants have installed SDEs, they must be available at every plant and can independently achieve zero liquid discharge.[24]

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[15] Electric Research Institute Comments on the Proposed Effluent Limitation Guidelines Rule at 11-12, Tbl.1-2, EPA-HQ-OW-2009-0819-10047. (EPRI 2023 Comments).
[16] 80 Fed. Reg. at 67,852
[17] H.A. Nebrig et al., "Preliminary Assessment of a Thermal Zero Liquid Discharge Strategy for Coal-Fired Power Plants," presented at the International Water Conference, November 13–17, 2011 at 10, EPA-HQ-OW-2009-0819-8721_Att. 52.
[18] EPA, Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category: EPA's Response to Public Comments, Part 6 of 10 at 6-41 (Sept. 2015), EPA-HQ-OW-2009-0819-6469_Att. 5.
[19] UWAG 2023 Comments at 185 (Sept. 20, 2013), EPA-HQ-OW-2009-0819-4655_Att. 1.
[20] Feb. 2023 Treatment Technologies Memo at P-1 to P-2.
[21] 80 Fed. Reg. at 67,838 (Nov. 3, 2015); 85 Fed. Reg at 64,650 (Oct. 13, 2020).
[22] Technical Development Document for Final Supplemental Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category at 27-28, (2024 TDD).
[23] 2024 RTC at 1208-09.
[24] *Id*.

EPA failed to address logistical constraints preventing broad SDE deployment across the utility sector. The Agency's unexplained reasoning and disregard of evidence showing why SDEs cannot be widely deployed render its conclusion arbitrary and capricious.[25]

B. Zero Liquid Discharge Technology has Limited Feasibility Industry-Wide

EPA claims 40 coal-fired plants achieve zero discharge of FGDW, but this assertion is unsupported, inaccurate, and irrelevant.[26] EPA neither identifies these plants nor explains how it reached this number, preventing meaningful public comment.

The claim appears to reference 35 facilities from EPA's 2015 Technical Development Document, which describes plants using site-specific techniques under unique circumstances that cannot be replicated industry-wide:

- *Complete Recycle* (18 facilities): Only viable for plants burning low-chloride coal, which is uncommon. These plants don't produce saleable gypsum and did not use the membrane/evaporator technology underlying the 2024 Rule.
- *Evaporation Ponds* (9 facilities): Only feasible in hot, arid southwestern climates—impractical for most of the country's humid, wet, cold conditions.
- *Dry Fly Ash Conditioning* (6 facilities): Requires sufficient fly ash volumes for landfill disposal of brine, which many facilities lack. Only one facility used evaporator technology, with no details on sector-wide applicability.
- Underground Injection (few facilities): Not viable for most plants due to geological constraints. One attempt failed due to pressure issues and geological problems.

The 2024 TDD reveals only five facilities that implemented the technology EPA used to establish zero-discharge limits: two installed brine concentrators and three installed spray dryer evaporation systems. No domestic facility has installed a full-scale membrane system. Most experienced significant operational problems, demonstrating these systems cannot reliably achieve zero liquid discharge, even among the limited subset that attempted implementation.

EPA suggests that ZLD technologies demonstrate industry-wide availability, but only a handful of domestic plants have attempted installations, and those that have faced significant challenges or outright failure. Even if a few plants achieved zero discharge, this doesn't meet the statutory requirement that technology be "achievable for [the] category" given plant-specific differences and challenges.

Steam electric power plant wastestreams are high-volume and complex. While membrane and evaporator systems exist, they're not effectively available for FGDW treatment across the category. Reliable zero discharge requires extensive pretreatment,

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[25] See Ohio, 603 U.S. at 294-96.

[26] 40 Fed. Reg. at 40,216

redundant treatment systems for continuous operation during maintenance, sufficient space, and brine disposal capability. A functional system at a typical plant would require equipment and capacity far exceeding EPA's 2024 Rule projections—beyond what most engineers would consider realistic, even if cost were ignored.

Economic achievability is statutorily coequal with availability. The actual cost to build a theoretically functional ZLD system at a typical plant far exceeds EPA's estimates, even under its flawed cost model.

C. Zero-discharge technologies are not economically achievable

1. EPA's cost estimates are inaccurate

The EPA must carefully and thoroughly evaluate whether the required treatment technologies are truly economically achievable before establishing ZLD as the technology basis for BAT. If the actual costs of implementing these technologies are much higher than expected, it calls into question whether they are genuinely available for widespread adoption. However, EPA's cost analysis has been inadequate. Despite substantial real-world evidence showing flaws in EPA's compliance cost estimates, the Agency has continued to rely on its existing model without making meaningful corrections. Comments submitted by the Utility Water Act Group (UWAG) show EPA's estimated cost for biological treatment plus chemical precipitation, compared with actual utility-anticipated costs, revealing orders-of-magnitude differences.[27]

[27] UWAG Comments on ELG Deadline Extension Rule, See Table 1 at 34.

Table 1- Comparison of EPA Projections v. Post 2020 Rule Utility Costs

Plant Name	EPA Estimated Costs ($) for Biological Treatment + Chemical Precipitation[28]		Actual Utility Anticipated Costs ($) for Biological Treatment Alone		EPA Estimated Costs as Percentage of Actual Utility Anticipated Costs
	Capital	O&M	Capital	O&M	Capital
Fort Martin (Units 1-2)	10,997,849	576,766	45,597,126	553,000	24.1%
Trimble County (Units 1-2)	12,785,392	1,535,726	72,432,276	3,085,416	17.7%
Mill Creek (Units 1-4)	5,560,844	442,871	66,646,410	3,069,562	8.3%
Ghent (Units 1-4)	9,068,391	741,951	79,501,888	4,215,581	11.4%
Mitchell (Units 1-2)	13,463,922	--	48,800,000	--	27.6%
Bowen (Units 1-4)	28,689,986	--	110,000,000	--	26.1%
Cross (Units 1-4)	5,971,518	448,708	138,300,000	5,199,021	4.3%

Accurate cost assessment is central to EPA's responsibilities under the Clean Water Act. The CWA requires EPA to select only those technologies that are economically achievable and to specifically consider the costs involved in achieving the required reductions in pollutants of concern. A fair and realistic evaluation of regulatory costs is essential for sound decision-making, as affirmed by the U.S. Supreme Court in *Michigan v. EPA* (2015).[29]

[28] Memorandum from Eastern Research Group, Inc., to Steam Electric Rulemaking Record, Generating Unit-Level Costs and Loadings Estimates by Regulatory Option at 30-37, Tbl. 5 (Generating Unit-Level Costs for FGD Wastewater Treatment under Regulatory Option B) (Aug. 31, 2020), EPA-HQ-OW-2009-0819-8934 (DCN SE08638).

[29] *Michigan v. EPA*, 576 U.S. 743, 753, 759 (2015).

APPA member Santee Cooper estimates $248 million to install a membrane filtration system at Cross Generating Station for compliance with the 2024 ELG rule—comprising $84 million for the vendor-supplied filtration system plus $164 million for engineering, installation, startup, and oversight.[30] EPA's flawed cost model projects only $25.3 million for the same facility, representing just 10.2% of Santee Cooper's actual estimate.

An APPA member in the Midwest, an indirect discharger, has received budgetary estimates of $10 to $22 million for ZLD technologies, with a 2027 compliance date. Customers could expect to see a 15% increase in electricity costs over two years, which will create a significant economic burden for a community that is considered below the national poverty line.

2. *ZLD Technologies to treat CRL are neither available nor economically achievable*.

EPA's flawed cost-estimation methodology extends beyond FGDW systems to affect all waste streams, including CRLs. The ZLD technologies EPA mandates for CRL are identical to those required for FGDW, and EPA uses the same cost-estimation approach for both. Consequently, EPA's decision to impose ZLD limits on CRL from affected facilities was equally arbitrary and capricious.

The availability issues plaguing zero-discharge technologies for FGDW also apply to CRL systems. As previously discussed, many facilities face significant challenges managing crystallized solid waste from thermal treatment and lack adequate fly ash volumes for landfill disposal of brine or membrane system byproducts. These problems intensify at CRL-generating landfills not co-located with electric generating units (EGUs). Critical questions remain unanswered: How will standalone landfills secure sufficient ash for safe brine disposal? If a landfill installs thermal treatment, must it dispose of crystallized solids in the same landfill, creating a continuous cycle? EPA has not addressed these fundamental operational concerns.

Given these deficiencies, EPA should rescind the 2024 Rule's ZLD limits for both FGDW and CRL. Maintaining these requirements will force additional plant closures because the mandated technologies are neither available nor economically achievable.

[30] The vendor provided a separate $24 million installation estimate with noted exclusions. The gap between this and Santee Cooper's $164 million estimate cannot be resolved without detailed pilot testing and engineering design

V. APPA Supports the Proposed 5-year Extension of ZLD Compliance Deadlines While EPA Reviews Whether the Technology is Economically Achievable and Available

A. APPA supports the five-year extension as a temporary measure

APPA supports extending the "no later than" zero-discharge compliance deadlines by five years—from December 31, 2029, to December 31, 2034—for three waste streams (FGDW, BATW, and CRL). This extension is needed while EPA reconsiders whether ZLD technologies are available and economically achievable.

The extension of the “no later than” date is appropriate given the challenges discussed in Section IV above, as well as unexpected supply chair delays, changes in electricity demand and the need for public power utilities to amortize technology investments to comply with the 2020 ELG rule.

The EPA is seeking public comment on how supply chain uncertainties have delayed compliance with wastewater discharge limits. Equipment lead times vary by technology: 13 months for spray drying systems (carbon steel) to 28 months for membrane/specialty alloy systems. Electrical components face particularly long delays (24+ months) due to competing demand from power generation, transmission, and other industries.

These delays worsen as multiple facilities compete for a limited number of zero-discharge technology suppliers. Extended lead times increase project costs due to heightened demand. The supply chain challenges have already caused substantial delays and are expected to continue affecting compliance timelines. Thus, an extension to the ZLD deadlines is warranted.

EPA is seeking feedback on whether the proposed five-year extension should apply equally to all compliance deadlines or if different waste streams might require different timelines.[31] APPA recommends applying the extension to all three waste streams—FGDW, BATW, and CRL, since many facilities treat these streams together. Staggered deadlines across waste streams would add complexity and cost, while a uniform extension would give facilities the flexibility to choose the most practical and cost-effective treatment approach for their specific circumstances.

Extending the compliance deadline offers a critical benefit: allowing many affected EGUs to operate through 2034 rather than shutting down by 2029 due to unattainable ZLD requirements. This additional time enables utilities to maintain existing capacity while developing and deploying reliable, affordable replacement generation essential for grid stability. As EPA acknowledges, the extension "better effectuates the ability of facilities to transfer out of the permanent cessation of coal combustion by 2034 pathway and continue to generate electricity using coal resources as necessitated by local or regional resource adequacy and reliability needs and to mitigate an impending national energy emergency."[32]

[31] 90 Fed. Reg. at 47,705.
[32] 90 Fed. Reg. at 47,704.

This extension is vital given unprecedented electricity demand growth forcing utilities to reconsider announced retirement plans for coal plants. The five-year extension ensures these dispatchable resources remain available for grid reliability and resource adequacy.

Alternatively, the extension provides time to advance technologies capable of meeting ZLD requirements by the 2034 deadline. For some public power utilities, zero-discharge technologies remain under development, requiring pilot studies and engineering analyses to prove effectiveness at baseload facilities' wastewater volumes. The extension allows for technology development and refinement before the 2034 compliance date.

EPA possesses clear statutory authority under the Clean Water Act to extend compliance deadlines for grid reliability concerns. CWA sections 301(b)(2)(A) and 304(b)(2)(B) explicitly authorize EPA to consider "energy requirements" when establishing effluent limitations under section 304(b). This language encompasses broad energy impacts, including grid reliability and resource adequacy risks from imposing zero-discharge limits on coal-fired plants.

Under 40 C.F.R. § 122.62(a)(3)(i), facilities can request permit changes if relevant standards or regulations are amended. Although this provision appears to allow modification of permits with ZLD applicability dates set for December 31, 2029, EPA should make it explicit in the final rule that such permits issued under the 2024 Rule are eligible for revision.

VI. APPA Supports the Proposed Transfer Provisions

If EPA keeps the zero-discharge requirements, facilities should be allowed to switch between the generally applicable zero-discharge limits and the 2034 cessation subcategory option.[33] EPA proposes to let facilities switch between two options until December 31, 2034:

- Meeting the generally applicable ZLD limits under the 2024 Rule, OR
- Joining the 2034 cessation subcategory (committing to stop burning coal by 2034)

APPA generally agrees with the December 31, 2034, cut-off date for switching between options. This allows for maximum flexibility in responding to changing circumstances.

In addition to ensuring facilities can respond to evolving business conditions, APPA urges EPA to allow permitting authorities to approve transfers back to the 2028 cessation subcategory from the 2020 Rule's general applicable requirements if approved by the permitting authority. Providing this option would help facilities adapt to changing circumstances and maintain compliance in a practical, responsive manner.

[33] 90 Fed. Reg. at 47,703.

VII. APPA Supports the Tiered Requirements for Indirect Dischargers

APPA is pleased to see EPA recognize the need for comparable deadlines for indirect dischargers. APPA appreciates EPA's efforts to address this concern. APPA supports EPA's proposed extension of the pretreatment standards for existing sources (PSES) compliance deadline for BATW, FGDW, and CRL from May 9, 2027, to a date three years following the final rule's publication in the *Federal Register*. This extension is essential because the original three-year timeframe established in the 2024 Rule is insufficient for facilities to assess their compliance requirements, make critical operational decisions regarding their power plants, and develop and implement treatment solutions that may not be easily accessible.

Furthermore, extending the PSES deadline aligns appropriately with the proposed postponement of the 2034 NOPP submission deadline to December 31, 2031. It would be illogical to mandate facilities meet zero-discharge standards for BATW, FGDW, and CRL by May 9, 2027, when they would have until December 31, 2031, to finalize operational decisions that could significantly alter their compliance approach and treatment strategies. Consequently, extending the general PSES deadline is justified.

VIII. APPA Supports Site-Specific Alternative Applicability Dates and NOPP Submission Flexibility

EPA is proposing to incorporate site-specific timeline flexibility into the permit conditions, as established in 40 C.F.R § 423.18(d).[34] Extending the NOPP submission deadlines or applicability timing for any compliance date would apply to the 2020 and 2024 ELG rules. Permitting authorities would be required to establish alternative applicability dates. Permitting authorities would be allowed to accept late NOPP submissions under specific unforeseen circumstances, such as unexpected changes in regional capacity markets, supply chain issues, or other factors beyond the facility's control. Facilities must submit detailed requests and progress reports to qualify. EPA is proposing these changes to address concerns about withdrawing from the 2028 cessation subcategory and to assist facilities struggling to meet the 2020 ELG Rule requirements by December 31, 2025. APPA supports this proposed revision.

A. EPA should also give permit writers the authority to provide an alternative cessation date

The applicability date (when facilities must start complying) and the cessation date (when facilities must stop burning coal) serve similar purposes—they both determine when a facility must take action to meet ELG requirements. Allowing permit writers to set alternative cessation dates would help resolve several industry challenges. For instance, some facilities planning to stop coal combustion by the end of 2028 may need to operate a bit longer—perhaps an extra year or two—to meet electricity demand and ensure new generation is in place. However, this short extension often isn't enough time for those facilities to design and install the required technologies to comply with the 2020 Rule.

[34] 90 Fed. Reg. at 47,706.

Granting permit writers the flexibility to adjust cessation dates would help address these timing issues. Moreover, EPA is already proposing to give state permit writers authority to provide alternative applicability dates and late NOPP submission deadlines; therefore, given the similarity, it is reasonable also to give them authority to extend cessation deadlines.

EPA is also soliciting comments on whether there should be a minimum or maximum timeline for alternative applicability dates.[35] APPA recommends that EPA *NOT* set minimum or maximum time limits. Instead, permit writers should have full discretion to determine appropriate timelines based on individual facility circumstances.

EPA also seeks comments on whether other circumstances should qualify for alternative applicability dates. EPA's proposal lists specific circumstances where permit writers must grant alternative applicability dates.[36] APPA recommends adding two more circumstances to the final rule: 1) including situations where treatment technology installations impose substantial and unreasonable costs to customers, and 2) when changes in state law require a different compliance approach. For instance, Illinois enacted the Climate and Equitable Jobs Act (CEJA) in 2021, mandating that all privately-owned coal-fired and oil-fired power plants achieve zero emissions by January 1, 2030. Given this requirement, the 2028 cessation subcategory appeared to be a reasonable compliance strategy at the time. However, given the anticipated rise in energy demand nationwide, CEJA could potentially be repealed or modified to grant facilities extended operational timelines. Similarly, EPA should consider changes to existing state climate legislation or the introduction of new climate laws as qualifying circumstances.

IX. APPA Supports the Clarification to Reliability Permit Conditions

EPA proposes to clarify that the must-run provision includes reliability must-run agreements approved by the Federal Energy Regulatory Commission and to specify reporting requirements related to resource adequacy shortfalls and extended production. EPA clarifies that:

- 40 C.F.R. § 423.18(a)(2) covers reliability must-run agreements, including those accepted by FERC.
- 40 C.F.R § 423.18(a)(3) applies when an EGU certifies it will stop burning coal, and a balancing authority projects this would create a resource shortage.
- Events under 40 C.F.R §423.18(a)(3) trigger reporting requirements under §423.19(i).
- The term "increased production" in 40 C.F.R §423.19(i)(3) includes extended production.

APPA supports these proposed clarifications.

[35] 90 Fed. Reg. at 47,706.
[36] 90 Fed. Reg. at 47,712.

X. APPA Supports Retaining the Cessation of Coal Subcategories

A. 2028 cessation subcategory should be retained

When EPA created the 2028 cessation subcategory in the 2020 Rule, it relied on several CWA statutory factors, including costs, environmental impacts, equipment age, and other considerations.[37]

EPA found that requiring additional technologies (such as chemical precipitation) or high-recycle-rate BATW technologies is not BAT and would impose unacceptably high costs on older plants. These high costs could:

- Force premature plant retirements;
- Create electricity reliability problems; and
- Make it difficult for utilities to recover costs over the plants' remaining useful life

By allowing surface impoundments as the treatment standard for this subcategory in the 2020 Rule, EPA gave older plants a reasonable path forward without having to either pass excessive costs to customers or risk being unable to recover investment costs after retirement. This approach also allows utilities to phase out uneconomical plants in an orderly manner while preventing electricity reliability problems.

B. 2034 cessation subcategory

EPA relied on the same statutory factors when it created the 2034 subcategory: (1) age of equipment, (2) environmental impacts, and (3) cost. Should EPA choose to retain the zero liquid discharge requirements in the 2024 ELG Rule, the 2034 subcategory becomes essential for managing both grid reliability and cost recovery. It enables public power utilities to operate under the 2020 Rule for a defined period, providing time to address operational and financial challenges before full compliance with a new limit is required.

1. Age of equipment and facilities

Plants committing to stop burning coal by December 31, 2034, have recently installed or are currently installing technologies to meet the 2020 Rule. Given their short remaining useful life, it's reasonable to let them continue meeting 2020 standards rather than requiring them also to install ZLD technologies under the 2024 Rule.

2. Environmental impacts (including energy requirements)

Utilities require time to transition coal plants in an orderly and planned manner, allowing them to recover the costs of wastewater treatment technologies. Without the 2034 subcategory, facilities might extend the life of coal plants to amortize both old and new treatment technology costs. This would delay or prevent reductions in air pollution

[37] CWA section 304(b). EPA may set different limitations for different plants. See *Chem. Mfrs. Ass'n v. EPA*, 870 F.2d 177, 214 (5th Cir. 1989) (EPA may "create a separate subcategory for a group of plants … when they are so fundamentally different from other plants on which the limitations are based that they cannot practicably achieve the effluent limitations").

and solid waste that would come from retiring or converting these plants. The EPA found that these broader environmental benefits support the creation of this subcategory.

3. Cost

While not the primary reason, cost also supports this subcategory. Coal plants ceasing combustion by 2034 have fewer remaining years to amortize the costs of new technologies, making the per-megawatt-hour costs much higher than for plants continuing to burn coal. This is especially true for plants that wouldn't install ZLD technologies until the latest compliance date of December 31, 2029. In the case of public power, these costs are directly borne by the customers.

XI. EPA should repeal the "functionally equivalent to a direct discharge" requirements for unmanaged CRLs and let permit writers set appropriate limits using their professional judgment

The National Pollutant Discharge Elimination System (NPDES) program, by and large, is not designed to regulate pollutants released via groundwater to waters of the United States (WOTUS). The 2024 Rule's "functional equivalent" approach for unmanaged CRL is flawed and unworkable.

The 2024 Rule imposes limits on unmanaged CRL that discharges through groundwater to waters of the United States in a manner that is the "functional equivalent of a direct discharge" (FEDD).[38]

In *County of Maui v. Hawaii Wildlife Fund* (2020), the U.S Supreme Court ruled that whether something is a "functional equivalent" discharge must be determined case by case based on multiple factors. However, applying these factors is problematic because:

- Neither EPA nor permit writers currently know which power plants have such discharges;
- No one knows what will qualify as FEDD in any given situation;
- The unique engineering challenges for treating these discharges are unknown; and
- The costs of addressing these challenges are unknown

Despite all these unknowns, EPA imposed a one-size-fits-all limit on these groundwater discharges. To set ELGs, EPA must thoroughly evaluate whether treatment technologies are both available and economically achievable for each category of industrial discharge,

[38] The 2024 Rule sets a single limit for arsenic and mercury in "unmanaged" CRL that covers two different types of discharges: 1. Discharges where the permit writer determines it's the "functional equivalent of a direct discharge" to waters of the U.S. through groundwater 2. Discharges where CRL has leaked from a waste management unit into groundwater, mixed with that groundwater, and then been captured and pumped to the surface for direct discharge to waters of the U.S.

These comments focus on problems with the first type (FEDD) but do not address EPA's approach to the second type.

considering factors such as equipment age, engineering feasibility, costs, and environmental impacts.[39] Instead of conducting detailed, case-by-case assessments, EPA made broad assumptions about the presence and impact of CRL FEDDs, failing to account for critical factors like distance, travel time, and changes in pollutant composition. This approach overlooks the unique characteristics of each discharge, and the engineering challenges involved in capturing and treating these waste streams. As a result, EPA's cost and technology estimates are inadequate and do not reflect real-world conditions.

Given the diffuse and variable nature of unmanaged CRL FEDDs, few facilities are likely to be able to capture and treat all such discharges to meet the 2024 Rule limits. Imposing a uniform ELG limit, rather than allowing permit writers to use their best professional judgment (BPJ) for site-specific conditions, risks creating an effective prohibition rather than a workable permit standard.

APPA recommends EPA repeal the FEDD portion of the unmanaged CRL subcategory and instead empower permitting authorities to set appropriate limits based on site-specific evaluations and their professional judgment. This flexible approach would ensure that regulatory requirements are practical, achievable, and tailored to the unique circumstances of each facility.

XIII. Conclusion

APPA appreciates the opportunity to submit comments on the Agency's proposal to extend the compliance deadlines in the 2024 Rule to ensure the workability and effectiveness of the program. APPA supports extending the impending NOPP deadline, extending the BAT applicability timing for ZLD limitations, providing alternative applicability timing based on site-specific factors, updating the transfer provisions, and extending the PSES to allow for parity.

APPA encourages the Agency to conduct a new rulemaking to reexamine the 2024 Rule's determination regarding the availability and economic achievability of controlling FGDW, BATW, and CRL using ZLD technology.

Should you have questions about these comments, please contact Carolyn Slaughter at (CSlaughter@publicpower.org).

[39] 33 U.S.C. §§ 1311(b)(2)(A), 1314(b)(2).