



ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 423

[EPA–HQ–OW–2009–0819; FRL–8794.3-04-OW]

RIN 2040-AG54

Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category – Deadline Extensions

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: The U.S. Environmental Protection Agency (the EPA or Agency) is finalizing a Clean Water Act (CWA) rule to extend deadlines promulgated in the 2024 “Supplemental Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category” (2024 rule), update the 2024 rule’s transfer provisions to allow facilities to switch between compliance alternatives, and create authority for alternative applicability dates and paperwork submission dates, based on site-specific factors.

DATES: The final rule is effective on **[INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**. In accordance with 40 CFR 23.2, this regulation shall be considered issued for purposes of judicial review at 1 p.m. Eastern time on **[INSERT DATE 14 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**. Under section 509(b)(1) of the CWA, judicial review of this regulation can be had only by filing a petition for review in the U.S. Court of Appeals within 120 days after the regulation is considered issued for purposes of judicial review. Under section 509(b)(2), the requirements in this regulation may not be challenged later in civil or criminal proceedings brought by the EPA to enforce these requirements.

ADDRESSES: The EPA has established a docket for this action under Docket ID No. EPA–HQ–OW–2009–0819. All documents in the docket are listed on the <http://www.regulations.gov>

website. Although listed in the index, some information is not publicly available, *e.g.*, confidential business information (CBI) or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the Internet and will be publicly available only in hard copy form. Publicly available docket materials are available electronically through <https://www.regulations.gov>.

FOR FURTHER INFORMATION CONTACT: Richard Benware, Engineering and Science Division, Office of Water (Mail Code 4303T), Environmental Protection Agency, 1200 Pennsylvania Avenue, NW; Washington, DC 20460; telephone number: 202-566-1369; email address: benware.richard@epa.gov. Information about the Steam Electric Effluent Limitations Guidelines and Standards (ELGs) is available online at: <https://www.epa.gov/eg/steam-electric-power-generating-effluent-guidelines>.

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I. Executive Summary

The EPA is finalizing regulations that apply to wastewater discharges from steam electric power plants, particularly coal-fired power plants. In 2024, the EPA finalized a CWA regulation that revised the technology-based effluent limitations guidelines and standards (ELGs) for the steam electric power generating point source category applicable to flue gas desulfurization (FGD) wastewater, bottom ash (BA) transport water, and legacy wastewater at existing sources

and combustion residual leachate (CRL) at new and existing sources. 89 FR 40198 (May 9, 2024).

In the last year and a half, the EPA has observed extraordinary increases in energy demand across the U.S., decreases in energy reserves, difficulties in transmission across the electricity grid, increased energy prices, and decreased energy reliability (DCN SE11901, SE11902). In addition, the EPA has identified additional information that makes it clear that, due to supply chain logistical challenges as well as the unique characteristics of each facility’s operational needs, the deadlines to comply with the 2024 rule are infeasible and impractical on a nationwide basis. This final action revises the compliance deadlines for existing sources subject to the 2024 rule, as seen in the following table, at a time of both growing energy crisis as well as different circumstances than what existed during the 2024 rulemaking process. These compliance deadline extensions also give utilities and permitting authorities flexibilities needed to ensure affordable and reliable power (DCN SE11915). Table 1 provides an overview of each revised regulatory deadline.

Table 1 – Summary of Deadline Extensions

Rule	Wastestream/Submission	Previous Deadline	New Deadline	Extendable by 40 CFR 423.18?
2020 Rule	NOPP for the Voluntary Incentives Plan, Permanent Cessation of Coal Combustion by 2028 Subcategory, and Transfers	October 13, 2021 June 27, 2023 December 31, 2025	X	Yes
	BA Transport Water (Generally Applicable BAT)	December 31, 2025	X	Yes
	FGD Wastewater (Generally Applicable BAT)			
	FGD Wastewater (VIP limitations)	December 31, 2028	X	
2024 Rule	NOPP for the Permanent Cessation of Coal Combustion by 2034 Subcategory	December 31, 2025	December 31, 2031	X
	BA Transport Water (Generally Applicable PSES)	May 9, 2027	[INSERT DATE THREE YEARS AND ONE DAY FROM PUBLICATION IN THE FEDERAL REGISTER] -or- Site-Specific Date for BAT (see below)	X
	FGD Wastewater (Generally Applicable PSES)			
	CRL (Generally Applicable PSES)			
BA Transport Water	No later than	No later than	Yes	

	(Generally Applicable BAT)	December 31, 2029	December 31, 2034	
	FGD Wastewater (Generally Applicable BAT)			
	CRL (Generally Applicable BAT)			

The revised deadlines also extend the date for existing steam electric power plants that seek to achieve permanent cessation of coal combustion to submit a notice of planned participation (NOPP) to December 31, 2034, allowing utilities additional time to assess evolving power demand needed to inform operational planning and decision-making. In addition to specific extensions to regulatory deadlines, this final action also revises the existing transfer provisions at 40 CFR 423.13(o) to allow facilities to switch between compliance alternatives and creates authority in 40 CFR 423.18 for alternative applicability dates and paperwork submission dates, based on site-specific factors. This final rule further establishes tiered pretreatment standards for existing sources (PSES). In so doing, it creates a compliance pathway for indirect dischargers that plan to become direct dischargers and, furthermore, changes the pretreatment compliance deadlines to provide consistency with the compliance deadlines for direct dischargers meeting best available technology economically achievable (BAT) limitations. This final rule does not change the underlying technology bases for the effluent limitations based on BAT. Subsequent to this rulemaking, the EPA intends to further evaluate data submitted during the public comment period and determine if reconsidering the 2024 BAT requirements is appropriate.

II. Does this action apply to me?

Entities potentially regulated by this action include:

Table 2 – Entities Potentially Regulated by This Action

Category	Example of Regulated Entity	North American Industry Classification System (NAICS) Code
Industry	Electric Power Generation Facilities—Electric Power Generation	22111
	Electric Power Generation Facilities—Fossil Fuel Electric Power Generation	221112

This table is not intended to be exhaustive but rather provides a guide for readers regarding entities likely to be regulated by this action. This table includes the types of entities that the EPA is now aware could potentially be regulated by this action. Other types of entities not included in Table 2 could also be regulated. To determine whether an entity is regulated by this action, carefully examine the applicability criteria found in 40 CFR 423.10 (Applicability). For questions regarding the applicability of this action to a particular entity, consult the person listed in the **FOR FURTHER INFORMATION CONTACT** section.

III. What is the EPA’s authority for taking this action?

The authority for this rule is the Federal Water Pollution Control Act, 33 U.S.C. 1251 *et seq.*, including CWA sections 301, 304(b), 304(g), 307, and 501(a); 33 U.S.C. 1311, 1314(b), 1314(g), 1317, and 1361(a).

Unless otherwise provided by law, an agency may reconsider past decisions and revise, replace, or repeal a decision so long as the agency provides a reasoned explanation and considers significant reliance interests. *FCC v. Fox Telev. Stations, Inc.*, 556 U.S. 502, 515 (2009); *Motor Vehicle Mfrs. Ass’n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 42 (1983); *see also Nat’l Ass’n of Home Builders v. EPA*, 682 F.3d 1032, 1038 & 1043 (D.C. Cir. 2012) (a revised rulemaking based “on a reevaluation of which policy would be better in light of the facts” is “well within an agency’s discretion,” and “[a] change in administration brought about by the people casting their votes is a perfectly reasonable basis for an executive agency’s reappraisal” of its policy choices) (citations omitted).

IV. Background

A. Clean Water Act

Congress passed the Federal Water Pollution Control Act Amendments of 1972, also known as the Clean Water Act (CWA), to “restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” 33 U.S.C. 1251(a). The CWA establishes a comprehensive program for protecting the Nation’s waters. Among its core provisions, the CWA

prohibits the direct discharge of pollutants from a point source to waters of the United States (WOTUS), except as authorized under the CWA. Under CWA section 402, discharges may be authorized through a National Pollutant Discharge Elimination System (NPDES) permit. 33 U.S.C. 1342. The CWA also authorizes the EPA to establish nationally applicable, technology-based ELGs for discharges from different categories of point sources, such as industrial, commercial, and public sources. 33 U.S.C. 1311, 1314.

Furthermore, the CWA authorizes the EPA to promulgate nationally applicable pretreatment standards that restrict pollutant discharges from facilities that discharge wastewater to WOTUS indirectly through sewers flowing to publicly owned treatment works (POTWs), as outlined in CWA sections 307(b) and (c). 33 U.S.C. 1317(b)–(c). The EPA establishes national pretreatment standards for those pollutants in wastewater from indirect dischargers that may pass through, interfere with, or are otherwise incompatible with POTW operations. Pretreatment standards are designed to ensure that wastewaters from indirect industrial dischargers are subject to similar levels of treatment as those directly discharged and subject to ELGs. *See* CWA section 301(b), 33 U.S.C. 1311(b). In addition, the EPA has by regulation required POTWs to implement local treatment limits applicable to their industrial indirect dischargers to satisfy any local requirements. *See* 40 CFR 403.5.

Direct dischargers (*i.e.*, those discharging directly to WOTUS rather than through POTWs) must comply with effluent limitations in NPDES permits. Indirect dischargers that discharge through POTWs must comply with pretreatment standards. Technology-based effluent limitations (TBELs) in NPDES permits are derived from ELGs (CWA sections 301 and 304, 33 U.S.C. 1311 and 1314) and new source performance standards (CWA section 306, 33 U.S.C. 1316) promulgated by the EPA or based on best professional judgment (BPJ) where the Agency has not promulgated an applicable effluent guideline or new source performance standard. CWA section 402(a)(1)(B), 33 U.S.C. 1342(a)(1)(B); 40 CFR 125.3(c). Additional limitations based on

water quality standards are also included in the permit in certain circumstances. CWA section 301(b)(1)(C), 33 U.S.C. 1311(b)(1)(C); 40 CFR 122.44(d).

The EPA establishes ELGs by regulation for categories of point source dischargers that are based on the degree of control that can be achieved using various levels of pollution control technology. The EPA promulgates national ELGs for major industrial categories for three classes of pollutants: (1) conventional pollutants (*i.e.*, total suspended solids or TSS, oil and grease, biochemical oxygen demand or BOD₅, fecal coliform, and pH), as outlined in CWA section 304(a)(4) and 40 CFR 401.16; (2) toxic pollutants (*e.g.*, toxic metals such as arsenic, mercury, selenium, and chromium; toxic organic pollutants such as benzene, benzo-a-pyrene, phenol, and naphthalene), as outlined in CWA section 307(a), 40 CFR 401.15 and 40 CFR 423 appendix A; and (3) nonconventional pollutants, which are those pollutants that are not categorized as conventional or toxic (*e.g.*, ammonia-N, phosphorus, and total dissolved solids or TDS).

B. Relevant Effluent Guidelines

The EPA develops effluent guidelines that are technology-based regulations for a category of dischargers. The EPA bases these regulations on the performance of control and treatment technologies. *See, e.g., Sw. Elec. Power Co. v. EPA*, 920 F.3d 999, 1005 (5th Cir. 2019) (“[T]he Administrator must require industry, regardless of a discharge’s effect on water quality, to employ defined levels of technology to meet effluent limitations.”) (citations and internal quotations omitted).

There are several TBELs that may apply to a given discharger under the CWA: four types of standards applicable to direct dischargers, two types of standards applicable to indirect dischargers, and a default site-specific approach. The TBELs relevant to this rulemaking are described in detail below.

1. Best Practicable Control Technology Currently Available

Traditionally, the EPA defines best practicable control technology (BPT) effluent limitations based on the average of the best performances of facilities within the industry,

grouped to reflect various ages, sizes, processes, or other common characteristics. The EPA may promulgate BPT effluent limitations for conventional, toxic, and nonconventional pollutants. In specifying BPT, the EPA looks at a number of factors. The EPA first considers the cost of achieving effluent reductions in relation to the effluent reduction benefits. The EPA also considers the age of equipment and facilities, the processes employed, engineering aspects of the control technologies, any required process changes, non-water quality environmental impact (including energy requirements), and such other factors as the Administrator deems appropriate. *See* CWA section 304(b)(1)(B), 33 U.S.C. 1314(b)(1)(B). If, however, existing performance is uniformly inadequate, the EPA may establish limitations based on higher levels of control than what is currently in place in an industrial category, when based on an Agency determination that the technology is available in another category or subcategory and can be practicably applied.

2. Best Available Technology Economically Achievable

BAT represents the second level of stringency for controlling direct discharge of toxic and nonconventional pollutants, after BPT. Courts have referred to this as the CWA's "gold standard" for controlling discharges from existing sources. *See, e.g., Sw. Elec. Power Co.*, 920 F.3d at 1003. In general, BAT represents the best available, economically achievable performance of facilities in the industrial subcategory or category. Consistent with the statutory language, the EPA considers technological availability and economic achievability in determining what level of control represents BAT. CWA section 301(b)(2)(A), 33 U.S.C. 1311(b)(2)(A). Other statutory factors that the EPA considers in assessing BAT are the cost of achieving BAT effluent reductions, the age of equipment and facilities involved, the process employed, potential process changes, non-water quality environmental impact (including energy requirements), and such other factors as the Administrator deems appropriate. CWA section 304(b)(2)(B), 33 U.S.C. 1314(b)(2)(B). The EPA retains considerable discretion in assigning the weight to be accorded each factor. *Weyerhaeuser Co. v. Costle*, 590 F.2d 1011, 1045 (D.C. Cir. 1978). This is especially true for the EPA's consideration of non-water quality environmental

impact. *BP Expl. & Oil, Inc. v. EPA*, 66 F.3d 784, 801-02 (6th Cir. 1995). Historically, the EPA has usually determined economic achievability on the basis of the effect of the cost of compliance with BAT limitations on overall industry and subcategory financial conditions. BAT reflects the highest performance in the industry and may reflect a higher level of performance than is currently being achieved in the industry. *See, e.g., Sw. Elec. Power Co.*, 920 F.3d at 1006; *Am. Paper Inst. v. Train*, 543 F.2d 328, 353 (D.C. Cir. 1976); *Am. Frozen Food Inst. v. Train*, 539 F.2d 107, 132 (D.C. Cir. 1976). Under this approach, BAT may be based upon process changes or internal controls, even when these technologies are not common industry practice. *See Am. Frozen Food*, 539 F.2d at 132, 140; *Reynolds Metal Co. v. EPA*, 760 F.2d 549, 562 (4th Cir. 1985); *Cal. & Hawaiian Sugar Co. v. EPA*, 553 F.2d 280, 285-88 (2nd Cir. 1977). Courts have previously endorsed this approach. *Kennecott v. EPA*, 780 F.2d 445, 448 (4th Cir. 1985); *see also Sw. Elec. Power Co.*, 920 F.3d at 1031.

3. Pretreatment Standards for Existing Sources

Section 307(b), 33 U.S.C. 1317(b), of the CWA calls for the EPA to issue pretreatment standards for discharges of pollutants to POTWs (*i.e.*, indirect discharges). PSES are designed to prevent the discharge of pollutants that pass through, interfere with, or are otherwise incompatible with the operation of POTWs. Categorical pretreatment standards are technology-based and are analogous to BAT ELGs, and thus the EPA typically considers the same factors in promulgating PSES as it considers in promulgating BAT. *See, e.g., Reynolds Metal Co.*, 760 F.2d at 553; *Chem. Mfrs. Ass'n v. EPA*, 870 F.2d 177, 244 (5th Cir. 1989). The General Pretreatment Regulations, which set forth the framework for the implementation of categorical pretreatment standards, are found at 40 CFR part 403. These regulations establish pretreatment standards that apply to all nondomestic dischargers. *See* 52 FR 1586 (January 14, 1987).

4. Best Professional Judgment

CWA section 301 and the EPA's implementing regulation at 40 CFR 125.3(a) indicate that technology-based treatment requirements under section 301(b) represent the minimum level

of control that must be included in an NPDES permit. *See* 33 U.S.C. 1311. Where EPA-promulgated effluent guidelines are not applicable to a non-POTW discharge, or where such EPA-promulgated guidelines have been vacated by a court, the EPA has provided by regulation that such treatment requirements are established on a case-by-case basis using the permit writer's BPI. Under the EPA's regulations, case-by-case TBELs are developed by permit writers on the theory that CWA section 402(a)(1) authorizes the EPA Administrator to issue a permit that will meet either: all applicable requirements developed under the authority of other sections of the CWA (*e.g.*, technology-based treatment standards, water quality standards, ocean discharge criteria) or, before taking the necessary implementing actions related to those requirements, "such conditions as the Administrator determines are necessary to carry out the provisions of this Act." 33 U.S.C. 1342(a)(1). The regulation at 40 CFR 125.3(c)(2) cites this section of the CWA, stating that technology-based treatment requirements may be imposed in a permit "on a case-by-case basis under section 402(a)(1) of the Act, to the extent that EPA-promulgated effluent limitations are inapplicable." Furthermore, 40 CFR 125.3(c)(3) states that "[w]here promulgated effluent limitations guidelines only apply to certain aspects of the discharger's operation, or to certain pollutants, other aspects or activities are subject to regulation on a case-by-case basis in order to carry out the provisions of the Act." The factors considered by the permit writer are the same as those that the EPA considers when establishing effluent guidelines. *See* 40 CFR 125.3(d)(1) through (3).

C. 2015 Steam Electric Rule

1. Summary of the 2015 Rule

On November 3, 2015, the EPA promulgated a rule revising the regulations for the steam electric power generating point source category at 40 CFR 423. 80 FR 67838 (2015 rule). The 2015 rule set the first Federal limitations on the levels of toxic pollutants (*e.g.*, arsenic) and nutrients (*e.g.*, nitrogen) that may be discharged in the steam electric power generating industry's largest sources of wastewater, based on technology improvements in the industry over the

preceding three decades. Before the 2015 rule, regulations for the industry had last been updated in 1982 and, for the industry's wastestreams with the largest pollutant loadings, contained only limitations on TSS and oil and grease.

The 2015 rule addressed effluent limitations and standards for multiple wastestreams generated by new and existing steam electric facilities: BA transport water, CRL, FGD wastewater, flue gas mercury control wastewater, fly ash transport water, gasification wastewater, and legacy wastewater. The 2015 rule required most steam electric facilities to comply with the effluent limitations "as soon as possible" after November 1, 2018, but no later than December 31, 2023. Permitting authorities established particular applicability date(s) within that range for each plant (except for indirect discharges, which discharge to POTWs) at the time they issued the plant's NPDES permit. For plants that opted into the 2015 rule's voluntary incentives program (VIP), which gave plants the certainty of more time to meet more stringent FGD wastewater limitations, the compliance deadline was December 31, 2023.

2. Vacatur of Limitations Applicable to CRL and Legacy Wastewater

Electric utilities, environmental groups, and drinking water utilities filed seven petitions for review of the 2015 rule in various circuit courts. The petitions were consolidated in the U.S. Court of Appeals for the Fifth Circuit as *Southwestern Electric Power Co. v. EPA*, Case No. 15-60821. In early 2017, the EPA received two administrative petitions to reconsider the 2015 rule: one from the Utility Water Act Group (UWAG) and one from the Small Business Administration.

On August 11, 2017, the EPA announced a rulemaking to potentially revise the new, more stringent BAT effluent limitations and PSES in the 2015 rule that apply to FGD wastewater and BA transport water. The Fifth Circuit subsequently granted the EPA's request to sever and hold in abeyance petitioners' claims related to those limitations and standards, and those claims are still in abeyance. With respect to the remaining claims related to limitations applicable to legacy wastewater and CRL, the court issued a decision in 2019 vacating those limitations as

arbitrary and capricious under the Administrative Procedure Act and unlawful under the CWA, respectively. *Sw. Elec. Power Co.*, 920 F.3d at 1033. In particular, the court rejected the EPA's BAT limitations for each wastestream set equal to previously promulgated BPT limitations based on surface impoundments. In the case of legacy wastewater, the court held that the EPA's record did not support BAT limitations based on surface impoundments. *Id.* at 1015. In the case of CRL, the court held that the EPA's setting of BAT limitations equal to BPT limitations was an impermissible conflation of the two standards, which are supposed to be progressively more stringent, and that the EPA's rationale was not authorized by the statutory factors for determining BAT. *Id.* at 1026. After the court's decision, the EPA announced plans to address the vacated limitations in a later action.

D. 2020 Steam Electric Reconsideration Rule

1. Summary of the 2020 Rule

On October 13, 2020, the EPA promulgated the Steam Electric Reconsideration Rule, 85 FR 64650 (2020 rule). The 2020 rule revised requirements applicable to existing sources for FGD wastewater and BA transport water. Specifically, the 2020 rule made four changes to the 2015 rule. First, the rule changed the technology basis for control of FGD wastewater and BA transport water. For FGD wastewater, the technology basis was changed from chemical precipitation plus high hydraulic residence time biological reduction to chemical precipitation plus low hydraulic residence time biological reduction. This change in the technology basis resulted in less stringent selenium limitations and more stringent mercury and nitrogen limitations. For BA transport water, the technology basis was changed from dry-handling or closed-loop systems to high-recycle-rate systems, allowing for a site-specific purge not to exceed 10 percent of the BA transport system's volume. Second, the 2020 rule revised the technology basis for the VIP for FGD wastewater from vapor compression evaporation to chemical precipitation plus membrane filtration. Third, the 2020 rule created three new subcategories for high-flow facilities, low-utilization electric generating units (EGUs), and EGUs permanently

ceasing coal combustion by 2028. Facilities or units in these subcategories were subject to less stringent limitations: high-flow facilities were subject to FGD wastewater limitations based on chemical precipitation; low-utilization EGUs were subject to FGD wastewater limitations based on chemical precipitation and BA transport water limitations based on surface impoundments and a best management plan; and EGUs permanently ceasing coal combustion by 2028 were subject to FGD wastewater and BA transport water limitations based on surface impoundments. Finally, the 2020 rule required most steam electric facilities to comply with the revised effluent limitations “as soon as possible” after October 13, 2021, but no later than December 31, 2025. NPDES permitting authorities established the particular applicability date(s) of the new limitations within that range for each facility (except for indirect dischargers) at the time they issued the facility’s NPDES permit. Facilities opting into the VIP were given until December 31, 2028, to meet the revised FGD wastewater limitations.

2. 2020 Rule Litigation

Environmental groups filed two petitions for review of the 2020 rule, which were consolidated in the U.S. Court of Appeals for the Fourth Circuit on November 19, 2020, as *Appalachian Voices, et al. v. EPA*, No. 20-2187. An industry trade group and certain energy companies moved to intervene in the litigation, which the court authorized on December 3, 2020. On April 8, 2022, the court granted the EPA’s motion to place the case into abeyance as a result of a new rulemaking announced in July 2021. The case is still in abeyance.

E. 2024 Supplemental Steam Electric Rule

1. Summary of the 2024 Rule

On May 9, 2024, as part of a “suite of final rules” imposing new requirements on the power generation sector, the EPA promulgated the Steam Electric Supplemental Rule (89 FR 40198) (2024 rule). This revision of the regulations at 40 CFR part 423 established a zero-discharge limitation for three wastewaters generated at steam electric power plants: FGD wastewater, BA transport water, and managed CRL. The 2024 rule also established non-zero

numeric discharge limitations on mercury and arsenic on discharges of CRL that the permitting authority determines are the functional equivalent of a direct discharge to a WOTUS through groundwater or discharges of CRL that have leached from a waste management unit into the subsurface and mixed with groundwater before being captured and pumped to the surface for discharge directly to a WOTUS (*i.e.*, “unmanaged” CRL). These mercury and arsenic limitations also apply to a fourth wastestream called legacy wastewater, which is typically discharged from surface impoundments during the closure process, where those surface impoundments have not commenced closure under the EPA’s coal combustion residuals regulations under the Resource Conservation and Recovery Act as of the effective date of the 2024 rule. The 2024 rule eliminated the 2020 rule’s separate standards applicable to two subcategories of facilities or units (high-flow facilities and low-utilization EGUs), while retaining the 2020 rule’s subcategory for EGUs permanently ceasing combustion of coal by 2028. The 2024 rule also established a new subcategory for EGUs permanently ceasing combustion of coal by December 2034, as well as a requirement for dischargers to post reporting and recordkeeping documentation to a publicly available website. For indirect discharges, the 2024 rule established PSES that are the same as the BAT limitations. Pretreatment standards are directly enforceable and apply no later than May 9, 2027.

In this final action, the EPA is not changing the underlying BAT bases in the 2024 rule, nor is the Agency altering the rule’s annual pollutant loadings and environmental impacts; however, as the Agency has previously announced, it is considering further rulemaking to modify the 2024 rule’s underlying technology bases and associated limitations or standards. Due to the postponement of these loadings and impacts, the EPA has conducted an analysis showing the changes in costs and benefits due to discounting, but given the limited scope of this current rulemaking, it has not at this time updated its other primary analyses from 2024.

2. 2024 Rule Litigation

A number of parties challenged the 2024 rule in various petitions that were consolidated before the U.S. Court of Appeals for the Eighth Circuit as *Southwestern Electric Power Co. v. EPA*, No. 24-2123. On August 27, 2025, the court granted the EPA's request for an abeyance and ordered the Agency to file a motion to govern further proceedings within 30 days after publication in the Federal Register of a final deadline-extension rule.

3. Administrative Petitions for Reconsideration of the 2024 Rule

The EPA has received two petitions for reconsideration, one from the Edison Electric Institute (EEI) and one from UWAG.

EEI is a trade association that represents U.S. investor-owned electric companies. On November 13, 2024, EEI sent a petition to the EPA that included recommendations primarily related to CRL applicability (DCN SE11943). This petition was updated with a supplemental letter of EEI priorities on May 8, 2025, which reiterated recommendations for CRL, and which also included discussion of extending the deadlines in the 2020 and 2024 rules (DCN SE11948). With respect to the 2024 rule's permanent cessation of coal combustion by 2034 subcategory, EEI recommended extending the NOPP deadline from December 31, 2025, to December 31, 2029, to provide more time to address load growth challenges. EEI also recommended extending the zero-discharge compliance dates of the 2024 rule. Finally, EEI recommended that the EPA extend the generally applicable 2020 rule deadlines for BA transport water and FGD wastewater to at least December 2027 to allow units to transfer out of the 2028 cessation of coal combustion subcategory and, instead, install technologies to meet the 2020 rule's requirements, and thereby continue to operate and produce power past 2025.

UWAG is a voluntary nonprofit group composed of individual energy companies and two national trade associations of energy companies: the National Rural Electric Cooperative Association (NRECA) and the American Public Power Association (APPA). NRECA represents nearly 900 local electric cooperatives across the U.S., serving 42 million people and covering 56 percent of the Nation's land area. APPA is the national service organization that represents not-

for-profit local, state, or other government-owned electric utilities. On February 21, 2025, UWAG sent the EPA a petition for rulemaking to reconsider and repeal the 2024 rule, as well as administratively stay the 2024 rule while it is in litigation (DCN SE11944). The petition requested several reviews of the determinations underlying the 2024 rule, including the 2024 rule's determination that zero-discharge technology is available and economically achievable to treat FGD wastewater and CRL. The UWAG petition correspondingly advocated for postponement of all compliance dates in the 2024 rule.

In addition to these two petitions, on April 25, 2025, the EPA received a request from America's Power, a national trade association representing U.S. steam electric power plants and their supply chains. The letter noted an estimated 29 coal-fired EGUs have committed to retire by 2028 and, in light of emerging challenges to grid reliability, urged the EPA to release these units from their retirement commitments as quickly as possible (DCN SE11903, SE11903A1). America's Power also made recommendations for revisions to the 2020 and 2024 rules.

While the EPA was aware of the general subjects raised in these petitions when finalizing the 2024 rule, as discussed below, load growth and power demands are much higher than predicted just a year and a half ago, and reliability and resource adequacy concerns have only intensified. Forecasts not available at the time of the 2024 rule, and certainly not available for the 2020 rule, warrant additional consideration with respect to the various deadlines discussed in section VII of this preamble. These factors and new information have been evidenced and recognized through numerous reports from and actions by the Federal Energy Regulatory Commission (FERC), the North American Electric Reliability Corporation (NERC), grid operators, grid reliability experts, the power industry, utility groups, and regulatory agencies, as described in greater detail in section V of this preamble.

4. NOPP Submission Extension Requests

Stakeholders, including grid operators, grid reliability experts, trade associations, and utilities, have raised concerns that a significant number of facilities need more time to understand

how their operations fit within a changing landscape of local and regional demand that is untethered from rapidly approaching compliance timelines crafted under different demand assumptions used in the 2024 rule. This includes, among other decisions, whether to avail themselves of the compliance pathway for EGUs seeking to retire or convert to alternative fuel sources by December 31, 2034, by the current NOPP submission deadline of December 31, 2025.

Under these circumstances, the 2024 rule's December 2025 NOPP submission deadline conflicts with the Administration's priorities of ensuring reliable and secure domestic sources of energy to meet demand, as outlined in the Executive Orders section below.

F. Executive Order Summary

Upon taking office, President Trump issued key executive orders to unleash America's affordable and reliable energy and natural resources, including to support the ongoing adoption and development of cutting-edge technologies. These executive orders took steps to encourage the increase of coal generation to expand domestic energy and avoid shutting down steam electric power plants, which could place the electricity grid at risk, to the extent permitted by law. In accordance with these orders, the EPA has reviewed the relevant issues and information referenced previously relating to the burden of existing compliance deadlines and other issues as part of this rulemaking.

Executive Order 14156, Declaring a National Energy Emergency, invokes emergency authorities to accelerate domestic fossil fuel production and infrastructure expansion, citing energy reliability, affordability, and national security concerns. 90 FR 8433 (January 29, 2025).

Executive Order 14154, Unleashing American Energy, directs Federal agencies to review and remove, as appropriate and to the extent permitted by law, regulatory roadblocks to energy development within the U.S., including by streamlining permitting processes and reconsidering previous mandates related to climate and renewable energy. 90 FR 8353 (January 29, 2025). It also directs agencies to review and revise, as appropriate and to the extent permitted by law,

existing regulations to identify those that impose undue burdens on development or use of domestic energy resources. *Id.*

Executive Order 14261, Reinventing America's Beautiful Clean Coal Industry and Amending Executive Order 14241, affirms that clean coal resources will be critical to meeting the rise in electricity demand due to the resurgence of domestic manufacturing and the construction of artificial intelligence (AI) data processing centers, and encourages the utilization of coal to meet growing domestic energy demands while ensuring Federal policy does not discriminate against coal production or coal-fired electricity generation. 90 FR 15517 (April 8, 2025).

Executive Order 14179, Removing Barriers to American Leadership in Artificial Intelligence, seeks to ensure the rapid pace of U.S. adoption and development necessary to maintain American dominance and global leadership in AI. 90 FR 8741 (January 31, 2025).

V. Information Supporting the Final Action

A. National Energy Crisis

The CWA requires the EPA, in developing effluent limitations guidelines and pretreatment standards, to consider a number of different factors. 33 U.S.C. 1314(b)(2)(B). The EPA has considerable discretion in evaluating these relevant factors and determining the weight given to each in reaching its ultimate BAT determination. *Texas Oil & Gas Ass'n v. EPA*, 161 F.3d 923, 928 (5th Cir. 1998). Likewise, the EPA has significant discretion in weighing the statutory factors to re-evaluate the policy arguments supporting the 2024 rule. *Clean Water Action v. U.S. EPA*, 936 F.3d 308, 315 (5th Cir. 2019) (quoting *Nat'l Ass'n of Home Builders v. EPA*, 682 F.3d 1032, 1038, 401 U.S. App. D.C. 227 (D.C. Cir. 2012)) (stating that “a reevaluation of which policy would be better in light of the facts” is the “kind of reevaluation [that] is well within an agency’s discretion”). As described in section IV of this preamble, two factors the EPA considers when setting limitations based on BAT are non-water quality environmental impact, which expressly includes “energy requirements,” as well as “such other

factors as the Administrator deems appropriate.” 33 U.S.C. 1314(b)(2)(B). Most notable with this industry is the impact of environmental regulations, including the steam electric ELGs, on the U.S. electricity grid. Since the promulgation of the 2024 rule, Federal agencies, States, grid operators, and grid reliability experts have identified an impending energy crisis resulting from increased load and the premature retirement of critical steam electric and other baseload power plants. NERC has consistently warned of resource adequacy and reliability shortfalls that could occur if coal-fleet retirements occurred faster than the system could respond by constructing replacement baseload power (DCN SE11931). This is consistent with previous testimony that the EPA was aware of as of the 2024 rule.¹

Since the promulgation of the 2024 rule in May of 2024, the EPA has become aware of new information and data demonstrating the existence of an energy crisis. Much of the information relied upon by the EPA during the 2024 rulemaking process proved to underestimate energy supply and demand projections, while more recent information and data points to an impending, extraordinary spike in energy demand that cannot currently be satisfied. For example, on October 16, 2024, FERC held a Commissioner-led Reliability Technical Conference to discuss policy issues related to the reliability and security of the North American bulk power system (BPS). Commissioners and witnesses expressed serious concerns about the anticipated retirement of existing generating resources, the addition of significant volumes of variable energy resources, and rapid anticipated electric load growth (DCN SE11933).

More recently, on June 4 and 5, 2025, FERC held another Commissioner-led Technical Conference titled “Meeting the Challenge of Resource Adequacy in Regional Transmission Organization and Independent System Operator Regions.” The technical conference addressed how resource retirements, load growth, and the changing resource mix have contributed to

¹ On May 4, 2023, bipartisan commissioners of FERC testified before the Senate Energy and Natural Resources Committee about the very real crisis facing the nation’s grid. Commissioners warned of a “looming reliability crisis in our electricity markets,” “a very catastrophic situation in terms of reliability,” and “unprecedented challenges to the reliability of our nation’s electric system” (DCN SE11932).

resource adequacy challenges across the nation. NERC testified that “growth projections of electric demand have reached heights unseen in decades, disrupting resource adequacy plans across North America” (DCN SE11950).

Other Federal agencies have also confirmed, and taken action to address, the energy crisis. For example, the Department of Energy (DOE) recently issued an emergency order to delay the closure of Consumers Energy’s 1,560-megawatt (MW) J.H. Campbell steam electric power plant in West Olive, Michigan, citing urgent reliability concerns for the Midcontinent Independent System Operator (MISO) grid, as the Midwest braced for peak summer electricity demand (DCN SE11953). The three-unit steam electric 1,560 MW J.H. Campbell plant, built between 1962 and 1980, was slated to go “cold and dark” by June 2025 as part of Consumers Energy’s transition to renewables. In the October 27 revision of the 2025 Final EO report, the DOE concluded the retirement of firm power capacity such as coal-fired EGUs is exacerbating the resource adequacy problem, as this capacity is not being replaced on a one-to-one basis. One of the key takeaways in the report is, “The status quo of more generation retirements and less dependable replacement generation is neither consistent with winning the AI race and ensuring affordable energy for all Americans, nor with continued grid reliability (ensuring ‘resource adequacy’)” (DCN SE11976). The DOE also recently issued an emergency order under section 202(c) of the Federal Power Act directing PJM Interconnection (PJM),² in coordination with Constellation Energy, to operate specified generation units at the Eddystone, Pennsylvania, Generation Station past their planned retirement. The order follows recent statements from PJM warning that its system faces a “growing resource adequacy concern” due to load growth, the retirement of dispatchable resources, and other factors (DCN SE11922). There are over a dozen such emergency orders issued by the DOE in the past six months alone (DCN SE11999). In May 2025, FERC also approved a reliability must-run contract between PJM and Talen Energy to

² PJM Interconnection is the regional transmission organization that manages all or parts of Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia, and the District of Columbia.

keep the Brandon Shores two-unit, 1,280 MW coal-fired power plant in Anne Arundel County, Maryland, online past its anticipated retirement date to ensure reliability (DCN SE11961).

Public utilities at the state level are taking similar actions to rapidly change planning activities in response to the energy crisis. In its 2022 integrated resource plan³ (IRP) final order, Southern Company subsidiary Georgia Power had slated Plant Bowen for retirement by 2027. More recently, Georgia Power announced plans to extend the life of several existing coal- and natural gas-fired power plants into the late 2030s, including proposals to extend operations at the 3.2-gigawatt (GW) Plant Bowen—one of the world’s largest coal plants— from a previously published 2027 retirement date to the end of 2038 according to their January 2025 IRP (DCN SE12076). Between the filing of Georgia Power’s 2025 IRP and its Budget 2026 Load and Energy Forecast, the total pipeline of large-load projects through the 2030s has more than doubled, from 22.8 GW to 51.1 GW (EPA-HQ-OW-2009-0819-10679, pg. 4). Commenters provided additional data to support these assessments. Prior to 2024, Southern Company reported roughly flat growth in its electric service territories due to economic conditions and energy efficiency; more recently, the utility—the second largest by customer base in the U.S.—now projects average annual retail sales growth of eight percent through 2029, a significant increase from the growth forecast of approximately one percent a few years ago (DCN SE12029) (EPA-HQ-OW-2009-0819-10679, pg. 4).

According to NERC, regions across the North American BPS are positioned to meet peak demand under *normal* summer and winter conditions, although elevated risks of electricity supply shortfalls could persist under periods of extreme temperatures, surging demand, and resource variability as illustrated by the following example. In June 2025, a severe heat wave impacted the eastern U.S., significantly increasing energy demand beyond predictions. The

³ An Integrated Resource Plan is an electric utility’s plan to meet forecasted electricity demand over a specified future period. Most States require utilities to have IRPs with a 20-year horizon and commonly require a detailed plan for the first few years of the forecasted energy demand. An update is typically required every two or three years with less-detailed interim reports sometimes being required annually. As discussed in the 2024 rule, utilities plan and budget for plant closures as part of the normal IRP process.

National Weather Service issued extreme heat warnings of triple digit temperatures ranging from south of St. Louis to north of Boston. To put the strain on the grid in context, PJM stated that demand reached about 161,000 MWs on June 23, 2025, the highest level recorded since 2011. According to FERC, PJM had only about 10 GW remaining to spare at the period of peak load. FERC chairman Mark Christie noted that grid operators' ability to just narrowly sustain power supplies through the extreme heat and humidity without blackouts reflects significant and growing resource adequacy challenges, stating at a June 26, 2025, briefing, "We're simply not building generation fast enough, and we're not keeping generation that we need to keep" (DCN SE11949).

More broadly, this heat wave also resulted in a June 24, 2025, power outage that left more than 71,000 customers without electricity in Michigan, Pennsylvania, New York, and Massachusetts, according to Poweroutage.us. The heat wave impacted other regions as well. On June 24, 2025, the DOE issued an emergency order to Duke Energy Carolina under Section 202(c) of the Federal Power Act to address potential grid shortfall issues in the Southeast (DCN SE11962). We Energies in Wisconsin had planned closures of its Oak Creek Units 5 and 6 in 2024 and Units 7 and 8 in 2025, but it recently announced postponement of retiring Units 7 and 8, citing tightened energy supply requirements in the Midwest power market and the need to maintain reliable service during peak-demand periods, such as those experienced during the June 2025 heatwave (DCN SE11963). In San Antonio, ERCOT deployed 400 MW of mobile generation units to help reduce the risk of energy shortages during heat waves (DCN SE11964).

B. Regional Energy Reliability and Resource Adequacy Concerns

NERC's mission is to ensure the reliability, resiliency, and security of the North American BPS. The BPS is made up of six regional entities⁴ that provide NERC with data,

⁴ The six regional entities (REs) overseen by NERC that monitor and enforce reliability standards for the BPS are: Midwest Reliability Organization (MRO), Northeast Power Coordinating Council (NPCC), ReliabilityFirst (RF), SERC Reliability Corporation (SERC), Texas Reliability Entity (Texas RE), and Western Electricity Coordinating Council (WECC).

narratives, and assessments to independently evaluate long-term reliability, recognize trends, and identify emerging issues and potential risks for the upcoming 10-year period. NERC develops a long-term reliability assessment (LTRA) annually based on known system changes as of July of the current year. NERC is subject to oversight by FERC.

“Resource adequacy” refers to the ability of an electricity system to meet the power demand of customers at all times, even during peak usage and potential outages. In the December 2024 LTRA, NERC identified increasing resource adequacy challenges for the upcoming 10 years as demand growth surges and power generators announce retirement plans (DCN SE11905). NERC also identified a substantial number of the replacement generation resources as weather dependent and, thus, more variable and less reliable than the resources they would replace. This includes ensuring sufficient generation capacity and reserves to maintain a stable power supply. The MISO recently affirmed the importance of these resources in its 2024 Reliability Imperative report, in which it identified significant challenges associated with new, weather-dependent resources that “do not provide the same critical reliability attributes as the conventional dispatchable coal and natural gas resources that are being retired” (DCN SE11929).

Furthermore, NERC categorized six areas in the U.S. as “Elevated-Risk.”⁵ Areas categorized as Elevated-Risk meet established resource adequacy targets or requirements, but probabilistic or deterministic analysis of conditions that are plausible but more extreme than normal seasonal peaks are likely to cause shortfall in area reserves. More extreme conditions can include temperatures that result in above-normal demand levels, low resource output or availability, and/or disruption of normal electricity transfers. NERC further wrote that “the aggregate of peak electricity demand for NERC’s 23 assessment areas has risen by over 10 GW—more than double the year-to-year increase that occurred between the summers of 2023 and 2024” (DCN SE11938). The 2024 LTRA identified PJM as Elevated-Risk due to resource

⁵ The EPA agrees with comments that, at proposal, the Agency had cited to a previous version of NERC 2024 LTRA that had erroneously listed MISO as “High Risk” due to a data mismatch error, which has been corrected in the July 11, 2025, update to the 2024 LTRA.

additions not keeping up with expected generator retirements and projected demand growth.

Here, winter seasons replace summer as the higher risk periods due to generator performance and fuel supply issues.

Since proposal, NERC has also published its seasonal Winter Reliability Assessment (DCN SE12030). This report found that six NERC regions or sub-regions have an elevated risk during extreme weather for the 2025–2026 winter season. Specifically, the report discusses that, while the share of power that coal provides continues to decrease, the ability of coal to be stockpiled for extreme winter weather allows coal to satisfy an increasingly important role that is infeasible or prohibitively costly for natural gas, a fuel that NERC describes as a “just-in-time fuel.”

PJM’s 2023 study (DCN SE11847) and 2024 study (DCN SE11901) highlight several trends that increase reliability risks: the growth rate of electricity demand; retirements at risk of outpacing the construction of new resources due to a combination of factors including siting and supply-chain disruptions; and the fact that PJM’s interconnection queue is composed primarily of intermittent and limited-duration resources, which need multiple MWs to reliably replace one MW of thermal generation (*e.g.*, coal, natural gas, nuclear). The 2024 PJM report shows increased wholesale power costs of almost five percent and significant rises in capacity prices, such as 20 percent in New Jersey. The 2024 report also highlights PJM concern about load growth, particularly from data centers and electrification, as a significant driver of increased demand and capacity needs, as well as the slow pace of new generation coming online to replace retiring resources, findings further supported in recent public PJM communications (DCN SE12077).

The National Association of Regulatory Utility Commissioners (NARUC) also released *Grid Reliability and U.S. Coal Fleet Attributes: Considerations for State Regulators* (DCN SE12000). NARUC stresses the “...need for [...] regulations that consider grid reliability...” While noting that the electric grid will continue to undergo significant changes, with renewables

and storage making up the vast majority of new capacity in coming years, NARUC pointed out that coal and other conventional generation have advantages in providing dispatchable power when needed, stating these plants provide “consistent, reliable power, especially during periods of high demand or low renewable generation, such as during extreme weather events.” Thus, the report echoed NERC in finding that the rapid retirement of a large number of coal plants is a “concern.”

In deregulated electricity markets, capacity auctions are used to send signals monetarily that would lead to similar planning as the IRP process. PJM capacity auctions are typically held three years in advance of the capacity delivery year and are designed to ensure sufficient generating capacity to meet electricity demand and grid reliability at lowest cost. PJM uses capacity market auctions to accept offers to provide power at lowest cost first, but recent delays in auctions due to regulatory issues and litigation have led to higher prices. This can be seen with the results of PJM’s recent capacity auction for the 2026–2027 delivery year. On July 22, 2025, PJM announced that it had completed its auction and that the clearing price was the settlement cap of \$329.17/MW-day, a 22 percent increase over the previous year’s clearing price, which was already an increase over the \$28.92/MW-day that cleared the auction two years ago. This clearance price achieved adequate capacity, including reserve margins, but cleared by only 139 MW, approximately the amount generated by a single small- to mid-sized EGU. This reflects the tightening margins between supply and demand in the PJM service area, demonstrating that in the short term, the loss of even a single coal-fired EGU (which can often be several hundred MW capacity) could lead to resource adequacy issues (DCN SE11965 and DCN SE11966).

In addition, the 2024 PJM report states, “The demand in each scenario reflects growth from end-use electrification, electric vehicles and data centers. Recent history of this anticipated growth has proven unprecedented and dynamic. Average growth estimates for PJM’s summer peak, for example, have increased by 375 percent between the 2022 and 2024 load forecasts, from 0.4 percent per year to 1.6 percent per year. This trend adds to the complexity of ensuring

reliability through the energy transition” (DCN SE11901). This report identifies a drastic increase in energy demand, significantly higher than was anticipated in formulating the 2024 rule.

Finally, another important aspect of the LTRA is the interconnection queue. The LTRA reports the interconnection queue has a backlog for the huge variety of replacement sources and storage projects seeking to connect to the grid, such as the ERCOT example above. In summary, the 2024 LTRA identified “critical reliability challenges facing the industry: satisfying escalating energy growth, managing generator retirements, and accelerating resource and transmission development” (DCN SE11905).

C. Increasing Energy Demand from Data Centers, Manufacturing, and Other Causes

A data center is a building or group of buildings that holds computer systems and equipment to power every day digital services. These facilities provide space, power, cooling, and security for servers and network hardware. Data centers power almost everything online, from websites to banking and video streaming. Consumers and companies worldwide depend on services that run through data centers every hour. Many industries, such as healthcare, retail, manufacturing, and government, rely on data centers for secure storage and quick access to information. The demand for cloud computing, e-commerce, streaming, AI programming, and social media makes these sites more important each year. Data centers use a large amount of electricity, making reliable and affordable power one of the most important factors to U.S. economic development and national security (DCN SE12002). Data centers and the massive power they require are critical to national security because they store and process sensitive government, military, and intelligence information, support artificial intelligence (AI) development, and manage critical digital infrastructure (DCN SE12003).

According to the DOE, from 2014 to 2016 the annual energy consumption of data centers in the U.S. remained stable at approximately 60 terawatt-hours (TWh). By 2018, this figure had increased to around 76 TWh, accounting for 1.9 percent of the country’s total electricity

consumption. Recent forecasts expect total power demand for data centers to be between 74 and 132 GW in 2028, corresponding to 6.7 and 12 percent of total U.S. electricity consumption. The adoption and growth of AI has been cited as a leading driver of surging data center demand in the U.S., with the technology requiring immense computing power, and several utilities are already adopting additional power resources to meet this demand (DCN SE11906). For example, Entergy Louisiana will add three highly efficient steam electric power plants to its system to meet growing power demands due to data center expansion in the state, including Meta's \$10 billion data center in northeast Louisiana, which will be the largest in Meta's fleet (EPA-HQ-OW-2009-0819-10667, pg. 8). In February 2025, American Electric Power's Indiana & Michigan Power Company reached a joint settlement with the Indiana Office of Utility Customer Counselor, Amazon Web Services (AWS), Microsoft, Google, and the Data Center Coalition to establish a process for new, large-scale industrial customers like data centers to connect to the grid. Previously, AWS announced a \$11 billion investment in a data center campus in New Carlisle, Indiana, and another \$2 billion data center in Fort Wayne, Indiana, both among the largest economic development projects in the state (EPA-HQ-OW-2009-0819-10667, pg. 8). Alliant Energy has cited Google's \$576 million data center investment, and Quality Technology Services' \$750 million data center investment, both in Cedar Rapids, as contributing to the company's projected 30 percent increase in electric demand in its service area by 2030 (EPA-HQ-OW-2009-0819-10667, pg. 8–9). The National Renewable Energy Center's "Data Center Infrastructure for 2025" shows transmission network and new data center demand capacity coinciding geospatially with large cities, highlighting the challenges demand growth is already placing on the grid (DCN SE11922). The EPA notes that consultants, investors, and ratings firms such as S&P and Moody's identify the U.S. technology sector as one that can initiate, develop, and complete projects relatively quickly, with new data centers operational in as little as two to three years. Meanwhile, the energy sector requires longer lead times to schedule and build infrastructure as a result of extensive planning requirements and significant capital investment.

These concerns have been confirmed by several commenters who have expressed a need for more energy load and reliability due to projected data center buildout, manufacturing growth, and population growth. South Carolina requires additional capacity due to the State's seven percent population increase from 2020 to 2024 (DCN SE12036), and \$9.22 billion in economic investments announced in 2023, some of which includes the buildout of data centers (DCN SE12037 and EPA-HQ-OW-2009-0819-10679, pg. 3). Edison Electric Institute, which represents all investor-owned electric companies in the U.S., also cited data center growth as a core reason to continue expanding energy capacity, relying on a 2024 report by the Electric Power Research Institute finding that data centers may consume more than nine percent of U.S. electricity generation annually by 2030, compared to an estimated four percent today (DCN SE12038 and EPA-HQ-OW-2009-0819-10667, pg. 7). EEI further cites the rapid buildout of data centers as a reason why "EEI members that planned to retire facilities under the 2028 [Permanent Cessation of Coal Combustion] PCCC Subcategory are finding during analyses of fleet operability and efficiency that they may need to keep plants running for additional years to meet customer demand" (EPA-HQ-OW-2009-0819-10667, pg. 15). Natural gas and coal are forecast to meet over 40 percent of the electricity demand from data centers until at least 2030 (DCN SE11967).

Moreover, as described in the President's July 2025 strategy titled "Winning the Arms Race: America's AI Action Plan" (DCN SE11954), AI systems may pose novel national security risks in areas such as cyberattacks and the development of chemical, biological, radiological, nuclear, or explosive weapons. Ensuring America is at the forefront of AI development is vital for national defense and homeland security. The President issued Executive Order 14179, Removing Barriers to American Leadership in Artificial Intelligence, making it possible for America to retain global leadership in AI. 90 FR 8741 (January 31, 2025). Executive Order 14179 will ensure that AI adoption and development is progressing at the rapid pace necessary to

maintain American dominance, which would further expand the need for upgrades to the U.S. electrical grid to support data centers as identified in the AI Action Plan (DCN SE11954).

D. Supply-Chain Risks

In addition to the documented increase in energy demand, another issue facing the power sector, in addition to compliance with the 2024 rule's deadlines, is challenges in obtaining equipment to maintain and upgrade steam electric power plants. This includes the ready supply of key components of control technologies (*e.g.*, microchips) that are experiencing increased global demand from other industries and, consequently, becoming another rate-limiting factor for the installation of new wastewater treatment technologies necessary to comply with wastewater limits. For example, Southern Company's public comment detailed delays from two vendors that might add 16 weeks or more to its project schedule (EPA-HQ-OW-2009-0819-10705). To support this comment, Southern Company provided a memorandum from WesTech (EPA-HQ-OW-2009-0819-10705, Attachment B) detailing a number of long lead time components for wastewater technologies including the following:

- Pumps, compressors, and blowers have lead times of 28 to 40 weeks due to global vendor capacity constraints.
- Pressure vessels and heat exchangers have fabrication lead times that now extend beyond 30 weeks, influenced by material availability and shop backlogs.
- Electrical and control systems require extended delivery times of 40-plus weeks in some instances due to semiconductor supply shortages.
- Structural steel and specialty alloys are impacted by raw material and fabrication delays, resulting in delivery windows ranging from 26 to 32 weeks.
- Some specialized valves and actuators are quoted at 28 or more weeks.
- Critical instrumentation, including transmitters and analyzers, is averaging 30 weeks due to supply chain dependencies in electronics manufacturing.

The power industry is also experiencing a significant turbine backlog, primarily for natural gas turbines, leading to a further reliance on existing steam electric power plants. A combination of factors, including increasing electricity demand, particularly from data centers, ongoing natural gas plant development using combustion turbines, and airline industry manufacturing, has led to a substantial increase in orders for gas turbines. Three major original equipment manufacturers—GE Vernova, Siemens Energy, and Mitsubishi Power—have reported backlogs stretching into 2029 and beyond. The Electric Power Research Institute reports a five-year-plus wait for new turbine installations (DCN SE11930).

Critical grid components, like transformers, are also facing longer lead times, further impacting project timelines (DCN SE11968). According to the U.S. Department of Commerce, the average U.S. electricity grid transformer is 38 years old, fast approaching the 40-year life expectancy of a transformer. The National Renewable Energy Laboratory notes utilities needing to add or replace transformers are currently facing high prices and long wait times due to supply-chain shortages (DCN SE11969). The National Infrastructure Advisory Council reports Hitachi has a waitlist of two to four years for transformers, and supply issues and uncertainty continue to affect development with lead times for transformers averaging 120 weeks and large transformer lead times averaging 80 to 210 weeks, with at least one other U.S. company having a backlog of five years (DCN SE11968). The list of U.S. infrastructure that depends on transformers includes new housing developments, a growing electric vehicle charging station market, and renewable energy projects. For instance, in Texas, companies planned to build 108 new gas-fired power plants and 17 expansions in the next few years to power AI and other heavy industries. In just one example, however, the developer Engie withdrew from two projects in Texas in February 2025 citing “equipment procurement constraints” (DCN SE11951). With the high uncertainty surrounding resource adequacy over the next decade, the need to maintain baseload capacity from existing steam electric power plants will remain for the foreseeable future.

Demand for all major fuels and energy-related technologies jumped in 2024 worldwide, and coal remains a crucial fuel source in addressing potential demand spikes in several countries besides the U.S., notably in China, in India, and across much of Southeast Asia. A May 2025 International Energy Agency report stated that peak demand is slated to grow even faster than overall power demand, and potentially 80 percent faster in emerging markets and developing economies by 2035 (DCN SE11915). These findings highlight that supply-chain issues are increasing globally (DCN SE11977) and will likely continue to increase as the demand and the competition for components escalates across the world.

E. Other Pressures on Retirement

The EPA notes that there are additional legal pressures leading to generator retirements that are not within the considerations above and are outside the Agency's CWA authority, but that are relevant to the extent they inform conditions facing the steam electric generating industry. These include State or regional laws that may either provide incentives toward retiring steam electric power generation or specifically provide timelines for retirements. An example of the former is the Regional Greenhouse Gas Initiative, which 10 States have joined to cap and reduce carbon emissions. An example of the latter is that, in 2021, Illinois passed the Climate and Equitable Jobs Act, which, with certain exceptions, required the phase-out of coal-fired power plants by 2030 and natural gas-fired power plants by 2045 (DCN SE11970).

Some steam electric power plants have also entered into settlements with States, the Federal Government, and/or local community groups to retire a plant or EGUs. For example, in 2015, American Electric Power (AEP) announced a settlement with the Sierra Club and other parties to cease coal combustion at Cardinal Unit 1 by 2030 (DCN SE11971). More recently, in 2024, the EPA and two environmental groups entered into a settlement that results in the closure of the Merrimack Station (DCN SE11972). These are just some examples of the settlements that continue to influence steam electric power plants' operations.

F. Recent Changes in Facilities' Plans to Cease Burning Coal in Light of Rising Demand

Several commenters provided their own examples of how projected energy demand increases have impacted facility retirement dates and additional data to suggest that unprecedented demand is driving policy changes that support the extension of the 2024 rule’s deadlines. Talen, for example, has determined that a 2028 planned retirement of two of its facilities—Keystone Generating Station and Conemaugh Generating Station, both in Pennsylvania—is no longer feasible (EPA-HQ-OW-2009-0819-10695, pg. 7).

In early 2025, Santee Cooper, a public power utility in South Carolina, reassessed its 2024 IRP adopted in May 2024 and updated it. This update reflects “significant uncertainties on whether Santee Cooper will be able to retire its Winyah Generating Station by its targeted retirement date of 2033.” The confluence of a number of factors⁶ has made it “impossible” for Santee Cooper to “establish a firm retirement date for the four Winyah units, which would be reflected in a federally enforceable commitment through the NOPP election by the end of [2025]” (EPA-HQ-OW-2009-0819-10683, pg. 4).

Buckeye Power’s Cardinal Plant submitted a NOPP intending to retire its unit 3, which was consistent with demand forecasts when the NOPP was submitted in 2021; however, recent PJM capacity market results resulted in discussions between Buckeye Power and PJM to continue operating this unit under a reliability must-run (RMR) order through May 2029 or longer. Ultimately, Cardinal was able to continue operating this unit in light of projected increases without an RMR (DCN SE12008, pg. 125). Similar discussions were had between PJM and KeyCon’s Conemaugh Plant, which had filed a NOPP to retire by 2028, but in light of recent auctions and clearing prices soaring to their highest level in decades, KeyCon was able to procure treatment technologies to meet limitations and remain in compliance for coming years (DCN SE12008, pg. 125–26).

⁶ Specific factors cited as challenges to establishing retirement dates included: unanticipated increases in electricity demand due to the explosive growth of energy-intensive manufacturing and data centers, electrification of the transportation sector, and substantial challenges and timing uncertainties in the development of new replacement generation and other related energy infrastructure, including the permitting and buildout of new natural gas combustion turbines, natural gas pipelines, transmission lines, and large transformers.

Southwestern Electric Power (SWEPCO) originally submitted a NOPP for its Welsh Plant to cease coal combustion by 2028. However, as demand has evolved, to be compliant with its minimum Southwest Power Pool (SPP) capacity obligations, Welsh would need to convert to an alternative fuel source or add new generation before ceasing coal combustion in 2028. If SWEPCO did not meet its capacity obligations, SPP could issue deficiency charges (EPA-HQ-OW-2009-0819-10671, p. 16).

Southern Company submitted NOPPs for 2028 retirement for 12 units. While two units retired, two were denied by the public service commission for retirement, others have repowered or plan to repower, and the rest of the units transferred applicability to continue operating in response to load growth (EPA-HQ-OW-2009-0819-10705, p. 26). The Georgia Public Service Commission initially postponed a decision on the retirement of Plant Bowen in 2022, and in 2025 supports continued operation to the mid-2030s due to increasing load growth in Georgia (EPA-HQ-OW-2009-0819-10705, p. 23).

In addition, several power companies (*e.g.*, Mill Creek Generating Station, E.W. Brown Generating Station, CPS Energy's Spruce Unit 1, PacifiCorp's David Johnston Plant, KeyCon's Keystone Generating Station) expressed concern regarding EGU retirements in light of increasing power demand. Some suggested an extension would allow them to delay these retirements, in part, to meet surging energy demand. PPL Corporation and its two subsidiaries, Louisville Gas and Electric and Kentucky Utilities Company, provided comments indicating that the 2024 rule would likely "compel premature retirement of a significant number of our coal generating fleet" despite the company's projected "very high levels of increased demand in the near term." Furthermore, PPL projected that annual energy requirements will climb sharply from 32,808 GWh in 2025 to 48,129 GWh in 2032—an increase of almost 47 percent. Peak summer and winter demand increases of about 1,800 MW for the same period are also projected (EPA-HQ-OW-2009-0819-10674, pg. 5). The EEI noted in their comments that several members that

had planned to retire units before the 2028 cessation deadline may need to keep these units online for additional years to meet customer demand (EPA-HQ-OW-2009-0819-10667, p.15).

VI. Final Rule

The EPA is extending seven deadlines in the 2024 rule, updating the 2024 rule's transfer provisions to allow facilities to switch between compliance alternatives, and creating authority for limited additional timing flexibility for both the 2020 and 2024 rule deadlines, based on site-specific factors. First, the EPA is extending the date for existing steam electric power plants to submit a NOPP for the permanent cessation of coal combustion by 2034 subcategory. In addition to this deadline extension, the EPA is expanding the transfer flexibilities in 40 CFR 423.13(o) by including a new transfer provision for facilities wishing to switch between requirements for zero discharge and requirements applicable to the permanent cessation of coal combustion by 2034 subcategory. Second, the EPA is extending the latest compliance dates for zero-discharge limitations applicable to discharges of FGD wastewater, BA transport water, and CRL. The third set of deadline extensions apply to standards for the same wastewaters from indirect dischargers. Specifically, the EPA is promulgating a set of tiered standards for indirect dischargers that would provide flexibility to achieve zero discharge on the same timelines as direct dischargers. Fourth, the EPA is providing authority for additional site-specific extensions of paperwork submission dates and deadlines in the 2020 or 2024 rules when necessary to address unexpected circumstances.

The EPA's proposed rule solicited comment on each of the provisions described above, including comments on alternatives and comments providing information and data supporting the proposed deadline extensions and related provisions (90 FR 47703 to 47707). Following the thorough engagement process, which included public webinars, tribal consultations, and a careful consideration of all comments and information submitted, the EPA has determined that the final extensions and related modifications are supported by the full record before the Agency. As discussed further below in this section, the EPA finds that none of the alternatives presented by

commenters were supported by new information or otherwise warranted modification to the date extensions or other provisions outlined in the proposal. The EPA also finds that suggestions not to move forward with finalizing any of the deadline extensions or related modifications were not warranted in light of the record and statutory factors, as discussed more fully in later parts of this section. As such, and for the reasons described herein, the EPA is finalizing the proposed extensions and modifications. This rule will, in part, provide flexibility to a critical industry in advance of imminent deadlines, which could otherwise force utilities to make premature and irrevocable decisions to begin the process of decommissioning without full consideration of rapidly evolving regional resource adequacy needs.

As part of the proposal, the EPA also requested data to better understand whether and the extent to which it would be appropriate for the EPA to undertake more comprehensive reconsideration of the 2024 rule, in part, to ensure grid reliability beyond this rule's most immediate extensions and related modifications. The decisions described below reflect the EPA's commitment to maintaining a balanced approach that supports both environmental goals and operational feasibility for an industry on which Americans rely. See the EPA's response to comments document (DCN SE12008) for a more detailed discussion of the Agency's finding with regards to public input on the proposed regulation.

A. NOPP Submission Date Extension

Following publication of the 2024 rule, stakeholders, including trade associations and utilities, have raised concerns that certain facilities need more time to decide whether to avail themselves of the 2024 rule's compliance pathway for EGUs seeking to retire or convert to alternative fuel sources by December 31, 2034. Based on recent forecasts projecting a surge in energy demand, the EPA finds that the 2024 rule's December 2025 deadline may unreasonably force facilities to decide to retire when they could still be needed to meet local or regional resource adequacy and grid reliability needs. Such premature retirements could result in unforeseen impacts on the ability of the U.S. to ensure that energy remains abundant, affordable,

and reliable for Americans. This would be inconsistent with the Administration's prioritization of ensuring a reliable and secure domestic source of energy to meet those demands. The EPA is committed to ensuring these steam electric power plants have the option to remain in operation to increase the Nation's energy supply, meet surging demand (e.g., from data centers), support regional grid reliability, and grow domestic manufacturing, jobs, and wages, while simultaneously fulfilling its statutory duties and advancing the Clean Water Act's goal of eliminating discharges to the Nation's waters.

Since promulgation of the 2024 rule, the EPA has continued to discuss electric reliability issues with the DOE, NERC, and other stakeholders under the framework established in the *Joint Memorandum on Interagency Communication and Consultation on Electric Reliability* (EPA-DOE MOU) (DCN SE11904). At a recent EPA-DOE MOU meeting, NERC presented findings from its LTRA (DCN SE11905). In the 2024 LTRA, NERC found that electric reliability will face unanticipated challenges in the coming decade due to "surging demand growth" at the same time many generators are anticipating retiring, decisions that are being forced, in part, by the adoption of a regulatory regime that was informed by significantly lower demand forecasts. One key aspect identified in the 2024 LTRA is the surging demand growth needs of data centers. In its *2024 U.S. Data Center Energy Usage Report*, the DOE found that "U.S. data center energy use has continued to grow at an increasing rate..." (DCN SE11906). The EPA has also received additional reports indicating that surging demand will introduce resource adequacy issues to a greater extent than the Agency anticipated during the 2024 rule proceedings (see section V).

As previously explained, in the 2024 rule, the EPA established a subcategory for EGUs permanently ceasing coal combustion by December 31, 2034. For these EGUs, less stringent limitations and standards apply to discharges of pollutants. These less stringent limitations and standards are the same as the limitations and standards previously applicable under the 2020 rule. As there were no nationally applicable limitations and standards for CRL prior to 2024, the subcategory left in place the requirement for permitting authorities to develop case-by-case

TBELs using their BPJ, and it established mercury and arsenic limitations based on chemical precipitation after the retirement of the plant. In order to participate in this subcategory, facilities had to submit a NOPP to their permitting authority or control authority by December 31, 2025, and subsequently submit annual progress reports on the steps taken to achieve permanent cessation of coal combustion. The NOPP notifies the permitting authority or control authority of the plant's intent to opt into the 2024 rule's subcategory for sources that anticipate closure or repowering.

At the time of the 2024 rule, the EPA estimated there were "around 50" EGUs whose retirement dates had been announced between 2030 and 2034. While the flexibilities in the new permanent cessation of coal combustion subcategory were also applicable to retirements prior to 2030 (especially with regard to CRL), these post-2030 retirements would have been subject to the full suite of zero-discharge limitations but for the subcategory. Utilities and trade associations have extensively communicated to the EPA that facilities need additional time to decide about ceasing coal combustion in light of surging electricity demand, especially in areas where data centers and manufacturing facilities may be constructed in the near future. Several public comments further confirmed this understanding. For example, Santee Cooper discussed changes in its South Carolina service area that left the utility uncertain as to whether it could retire its Winyah facility by 2033 (EPA-HQ-OW-2009-0819-10683).

The EPA received many comments in support of, and in opposition to, the extension of the NOPP submission date extension. Comments in support of the extension pointed to many of the same considerations discussed by the EPA in the proposal. Comments opposing the NOPP extension pointed to many of the same concerns certain commenters had with the deadline extensions as a whole (*i.e.*, that the EPA did not sufficiently justify how concerns with energy reliability or affordability, as well as supply-chain issues, warrant any regulatory changes).

The EPA disagrees with comments arguing that the record does not support a NOPP submission date extension and agrees with those commenters supporting the proposed NOPP

submission date extension to December 31, 2031. Providing for NOPP submission as late as 2031 allows utilities to evaluate their most recent IRP or three-year capacity market auction result before committing to this pathway, and the new submission deadline does not reflect when all facilities will actually submit their NOPP to receive subcategorized limitations in their permit.

In addition, the EPA disagrees with comments characterizing the NOPP submission date as a substantive regulatory provision in and of itself, whether those comments supported or opposed the extension of that date. The primary function of the NOPP is to inform the permitting authority that the discharger will seek the less stringent subcategorized limitations applicable to EGUs planning to permanently cease coal combustion. In this way, it can help the permitting authority to better understand and prepare the resources needed for permitting these particular facilities. However, beyond conveying this intent to the permitting authority, the NOPP serves no other purpose for regulated utilities or permitting authorities. Regardless of the timing of the NOPP submission, and even if the EPA were to eliminate the requirement to file a NOPP altogether, the limitations of the subcategory and corresponding substantive deadlines would still apply as they did prior to this final deadline-extension rule.

With respect to the suggestion that issuing a DFR extending the NOPP date demonstrates that the EPA pre-judged the outcome of this rulemaking, the Agency disagrees. As the EPA stated above and in the proposal, allowing for NOPP submission as late as 2031 lets utilities evaluate their most recent IRP or three-year capacity market auction result before committing to this compliance pathway. While the EPA could have issued a DFR with an earlier submission date that did not exceed the zero-discharge compliance dates, this would have resulted in the Agency needing to take a second action, shortly after the first, to extend the NOPP submission date once again, even after the DFR went into effect.

The rationale for the subcategory for the permanent cessation of coal combustion by 2034 was set forth in the 2024 rule and, as described in that rule, is based on the statutory factors in CWA sections 301 and 304. The NOPP provides the mechanism for facilities to make use of that

subcategory, and thus the date for the NOPP submission is authorized under CWA section 501(a), which allows the Administrator to prescribe such regulations as are necessary to carry out his functions, including establishment of ELGs, pursuant to sections 301 and 304 of the CWA. As such, the EPA is extending the NOPP date in 40 CFR 423.19(h) from December 31, 2025, to December 31, 2031. The new December 31, 2031, NOPP submission date is three years prior to the permanent cessation of coal combustion date and, thus, would allow for the most accurate three-year capacity auctions in deregulated regions (*e.g.*, PJM) or the more typical two- to three-year IRP cycle to conclude prior to a plant opting into the subcategory with a NOPP. See the response to comments document (DCN SE12008) for further discussion of EPA findings related to the NOPP extension.

B. Withdrawal of NOPP Companion Direct Final Rule

Contemporaneously with the notice of proposed rulemaking, the EPA published a direct final rule extending the date (from December 31, 2025, to December 31, 2031) for existing steam electric power plants to submit a NOPP in the 2024 rule's subcategory for EGUs permanently ceasing coal combustion by December 31, 2034.

The EPA received adverse comments on the direct final rule and thus, as the Agency indicated it would in such event, subsequently withdrew that rule (90 FR 54588, November 28, 2025). The deadline extension for NOPP submission is instead addressed by this final action.

C. New Transfer Provision

The EPA is establishing a set of new transfer provisions in 40 CFR 423.13(o) to enhance flexibility to choose among compliance alternatives. As described in the 2020 rule, even where facilities have provided a NOPP and publicly announced retirement or repowering plans, actually ceasing coal combustion may “require local or state regulatory approval prior to reducing its utilization or planning to retire...” 85 FR at 64709. Such procedural steps continue to exist, and in light of energy demand concerns and commitments, they may not be ultimately fulfilled. Thus, a plant fully intending to retire steam electric power generation under a previous announcement

could be subject to unanticipated demand growth or other circumstances that lead a regulatory authority to reject the retirement decision. In such cases, it is reasonable and consistent with the statutory and regulatory framework to permit a plant to transfer back into a compliance pathway that applies the generally applicable zero-discharge limitations. Similarly, it is possible that a plant intending to remain in operation may not clear a capacity auction or may be required by a State regulatory body to retire. In such cases, it would contradict the intent of the subcategory to treat these facilities differently from those that were carrying out earlier planned retirements.

The EPA did not receive adverse comments on the proposed transfer provision distinct from comments relating to the proposed compliance deadline extensions. Several commenters provided suggested edits, largely based on specific needs of a utility or a utility group. However, the EPA did not find the suggested revisions were accompanied with a sufficient underlying rationale to warrant modifying the proposal for this final rule. As such, the EPA is finalizing these provisions as proposed—allowing transfers into and out of the subcategory for EGUs permanently ceasing combustion of coal by 2034 up until the December 31, 2034, deadline—to ensure that facilities facing unexpected changes in operations are not unfairly penalized as compared to the rest of the industrial sector. See the response to comments document (DCN SE12008) for a more detailed discussion on this topic.

D. Extended BAT Applicability Timing for Zero-Discharge Limitations

As originally promulgated, the 2024 rule's zero-discharge limitations must be met as soon as possible, but “no later than” December 31, 2029. As part of its rationale for establishing this latest date, the EPA stated that this date created “a level playing field” for facilities regardless of where they were in their five-year permit cycle. 89 FR at 40256. After considering the comments, and for the reasons discussed below, the EPA is extending the “no later than” dates for zero-discharge limitations in the 2024 rule (applicable to discharges of FGD wastewater, BA transport water, and CRL) to December 31, 2034 (*i.e.*, one additional permit cycle).

The EPA finds that postponing the “no later than” dates is warranted for several reasons, supported by the statutory factors, found in sections 301 and 304 of the CWA, of availability, achievability, cost, non-water quality environmental impact (including energy requirements), and such other factors as the Administrator deems appropriate. Three reasons, in particular, led to the EPA’s finding. First, the December 31, 2029, date for meeting the limitations no longer is “available” for all facilities under the current circumstances due to constraints in the ability to procure and install the control technologies or their component parts, including as a result of supply-chain disruptions, as well as competition for skilled labor. Second, delaying the “no later than” date is critical in allowing facilities that recently invested in technologies to meet the 2020 rule a longer period to amortize the costs of those technologies, which is expected to improve their ability to undertake additional investments towards compliance with the 2024 rule, in addition to having less impact on customer rates. Finally, postponing the “no later than” date until December 31, 2034, gives facilities the ability to transfer out of the permanent cessation of coal combustion by 2034 subcategory and still meet the applicable BAT limitations by their deadline, thereby allowing them to 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. This postponement also provides the EPA time to consider a subsequent rulemaking where it can further review new comments and data received on the costs, economic achievability, and energy impacts of the zero-discharge requirements that are subject to extended compliance deadlines in this final rule.

The EPA received a number of comments in support of, and in opposition to, the deadline extensions. One group of commenters argued that the proposed rule’s legal and factual bases for the extensions were improper and fully opposed them. These commenters further insisted that the record does not support the reasons the EPA provided as justification. Specifically, these commenters disputed that there were any documented supply-chain delays demonstrating the deadline of 2029 is not achievable. These commenters stated that the EPA only provided

anecdotal evidence of supply-chain issues impacting industry compliance or that evidence presented was not “new.” Commenters also argued that the compliance date of 2029 was still technologically available using the EPA’s own analysis and findings. Finally, these commenters disputed the EPA’s proposed findings that there was a national energy crisis leading to resource adequacy and reliability concerns or that demand from data centers and manufacturing growth was as much as claimed. Therefore, these commenters asserted that planning timeframes did not support the need for flexibility until as late as 2034.

A second group of commenters argued that the deadline extensions would not cure the underlying legal and factual deficiencies in the 2024 rule. These comments typically also included tacit support for the extensions as a temporary fix while the EPA reconsidered the underlying regulatory provisions.

A third group of commenters supported the deadline extensions and, in some cases, recommended changes. These comments supported both the legal and factual bases for the extensions or suggested additional rationales. These comments also supported extending all the zero-discharge limitations, citing the fact that many facilities choose to develop co-treatment of wastewaters. Many of these commenters agreed that there were supply-chain issues affecting the feasibility of a 2029 compliance deadline. One commenter cited a recent six-month delay in a necessary component and overall schedule for a membrane and thermal system designed to meet the VIP limitations for FGD wastewater. Several other comments represented that these systems were not available by 2029 either due to supply-chain issues or other reasons. One of these comments provided an engineering dependency chart demonstrating that a plant in South Carolina would need until December of 2031 to complete installation of a zero-discharge system. Some commenters further suggested that competition over skilled labor meant that, while the 2029 deadlines might be achievable by some facilities, they may not be feasible industrywide.

Several commenters also agreed with the EPA that cost recovery is often spread over longer timeframes than the four years between the 2020 rule deadlines (no later than 2025) and

2024 rule deadlines (no later than 2029). In particular, some commenters pointed to examples of a 20-year bonding program that was approved by one state public utility commission. These commenters also agreed with the EPA that allowing until 2034 would provide the greatest latitude to facilities to transfer between the compliance alternatives of the 2024 rule and avoid rushed decision-making and premature retirements that could impact resource adequacy and reliability. Some commenters suggested that the EPA is warranted in extending compliance deadlines so that facilities would have sufficient time to see the results of any subsequent rulemaking before committing further resources to compliance. Some of these comments pointed to the 2017 postponement rule (82 FR 43494, September 18, 2017) as a precedent for the EPA to take this action. In light of the comments received and EPA's careful review of the record, the EPA is finalizing the zero-discharge compliance deadline extensions as proposed. The following paragraphs further explain the reasons for the EPA's decision.

1. Industry-wide installation of the 2024 zero-discharge limitations cannot reasonably be achieved nationwide by 2029 due to longer-than-expected timelines and delays in procuring necessary components and completing installation.

The first basis supporting the EPA's decision to postpone the latest compliance deadlines for the zero-discharge limitations is the longer-than-expected timelines and delays in procuring necessary components and completing installation of the relevant wastewater control technologies. With respect to the first basis for the postponement, supported by the statutory factors of technological availability and "other factors" (here, supply-chain risks), the EPA concludes that the record clearly demonstrates that at least *some* extension is warranted, as discussed further in this section. And the EPA also concludes that the record supports an extension until 2034 for the latest deadline, for the reasons also discussed below.

In feedback on the proposed rule, electric utilities and trade associations provided information calling into question the ability of plants to meet the 2024 rule zero-discharge requirements on the timeframes set forth in that rule. In particular, some commenters offered

new information with timeframes for specific steps in the implementation of zero-discharge technologies that could result in exceedance of the “no later than” December 31, 2029, compliance dates (*e.g.*, see Southern Company Comments – EPA-HQ-OW-2009-0819-10705), and Santee Cooper submitted a detailed engineering dependency chart demonstrating that it cannot comply with the 2024 rule’s requirements for FGD wastewater prior to December 2031 (EPA-HQ-OW-2009-0819-10769). After considering this new information, it is apparent that at least some facilities will need longer timeframes than until 2029 to comply.⁷

This assumption is bolstered by the fact that the vendor that sold the zero-discharge system employed at one plant (the NRG Parish plant) submitted comments on the proposed rule that support the EPA’s finding that delayed implementation is warranted, in part, to avoid overwhelming qualified contractors.⁸ This vendor is not the only commenter to have raised such concerns. Other commenters noted that competition for skilled labor and supplies means that, while individual facilities may still be able to comply by 2029, industrywide conversion may take longer, a consideration that similarly factored into the EPA’s choice of applicability timing in the 2020 rule (85 FR 64683).

In addition to the information that longer timeframes may be needed for at least some plants, supply-chain disruptions risk further delays in these timelines, which were already problematic for compliance. While the EPA agrees in part with comments that supply-chain issues are not wholly “new” concerns, the Agency has identified disruption in supply chains as an issue ever since the 2020 rule (85 FR 64683). The fact that supply-chain issues continue to linger, and that these issues continue to result in delays in the ultimate timeframes to commission wastewater treatment systems, are important aspects of the problem that the EPA should consider. *Motor Vehicle Mfrs. Ass’n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983).

⁷ While environmental groups correctly note that, in some circumstances, facilities may be able to request a variance, this does not eliminate the EPA’s duty to establish reasonable timeframes for a national regulation, pursuant to the statutory factors prescribed by the CWA.

⁸ While the vendor supported an extension, the vendor also suggested a staggered variant of the deadline extension wherein some facilities comply sooner and information from those facilities is shared with “higher risk” facilities to create a larger base of “operational know-how.” The EPA did not finalize this alternative approach.

The EPA also agrees with comments stating that the Agency has authority to consider supply-chain risks as an “other factor” that the Administrator deems appropriate, under CWA section 304(b), when determining BAT applicability, and it has done so here.

Furthermore, the nature of supply-chain risks is not static, but continues to evolve. In 2020, the EPA was primarily concerned about supply-chain disruptions from the COVID-19 pandemic and how it impacted the timing of the technologies required to comply with the 2020 rule’s generally applicable limitations (*e.g.*, biological treatment). At that time, the EPA did not consider supply-chain risks a concern for meeting BAT limitations in the VIP, as the rule gave utilities over eight years to install the relevant technologies to meet such limitations.

Stakeholders have recently identified delays in obtaining critical components for these same technologies (which can be used to achieve the 2024 rule’s zero-discharge limitations), and these newly identified delays have the potential to delay existing coal-fired EGUs from complying with the 2024 rule’s limitations on the timelines envisioned in that rule, as the following example shows.

Georgia Power Company’s Plant Scherer has experienced delays in receiving equipment for its membrane and brine crystallization system that may delay the project timeline by up to 16 weeks. While this 16-week project delay is not expected to singlehandedly cause the facility to miss the 2028 deadline for achieving the 2020 rule’s BAT limitations in the VIP, that deadline was over eight years from publication of the 2020 rule and over seven years from the facility submitting a NOPP requesting VIP limitations in its permit. In contrast, the latest zero-discharge deadlines in the 2024 rule were approximately five and a half years from publication and a mere four years from the December 31, 2025 deadline to submit a NOPP, should a facility have opted into the subcategory for the permanent cessation of coal combustion by 2034.⁹ When considering FGD wastewater and CRL,¹⁰ these deadlines also apply to a much larger group of facilities than

⁹ The EPA only notes the NOPP filing deadline to the extent that facilities may not have been certain of their compliance pathway prior to this date.

¹⁰ BAT for BA transport water is not based on the same technologies as FGD wastewater and CRL.

the handful of facilities that opted into the 2020 rule VIP as of the October 2021 deadline. Thus, while facilities in the 2020 rule's VIP may be able to accommodate a 16-week delay due to the longer timeframe of that compliance pathway, the shorter timeframe and larger number of facilities needing to comply with the 2024 rule's zero-discharge limitations substantially raises the likelihood that at least some facilities will face delays impacting compliance.

Plant Scherer is also not the sole example provided by commenters. Others stated that similar supply-chain issues have impacted installation schedules for at least two other plants in the VIP while waiting for critical component parts, such as specialty alloys and rotating equipment (EPA-HQ-OW-2009-0819-10667-A1 Comment Excerpt 11; EPA-HQ-OW-2009-0819-10694-A1, Comment Excerpt 16). Another comment adds that the wait time for membrane delivery can be over two years (*e.g.*, 28-month lead time), which would follow the sometimes equally lengthy process of designing the new wastewater treatment system for a given plant (EPA-HQ-OW-2009-0819-10679, pg. 39).¹¹ These specific examples demonstrate that supply-chain delay concerns are more than just hypothetical, as some commenters have suggested.

The challenge in weighing supply-chain risks is further supported by comments from technology vendors themselves. While one treatment technology vendor submitted a comment reaffirming its ability to deliver treatment technologies within the original 2029 compliance deadlines, this vendor relied in part on its previous experience and staffing converting BA systems to 2024 rule-compliant systems across the coal fleet. However, the technologies for FGD wastewater and CRL are not the same as those for BA conversions, and even if that experience is directly translatable, BA conversions occurred over a 10-year period from the publication of the 2015 rule to 2025, whereas the timeframe under the 2024 rule is only five and a half years.

Two other zero-discharge technology vendors submitted comments on the proposal expressly supporting the need for additional time. One vendor agreed with the EPA's proposed

¹¹ This comment also states that lead times for SDEs are 13 months.

extension, while the other vendor recommended a staged compliance timeline rather than the “no later than” dates specified in the rule to avoid what they referred to as a “compliance cliff” (EPA-HQ-OW-2009-0819-10666-A1, Comment Excerpt Number 3). While the EPA agrees that it could be counterproductive to just push off compliance by five years for all facilities, this is not how section 423.11(t) operates. That provision requires permitting authorities to establish a date that is “as soon as possible” subject to the consideration of four factors but “no later than” the dates that the EPA is postponing in this action. Thus, if properly applied, this will result in some gradual adoption of zero-discharge technologies rather than a rush for all facilities to convert in 2034. Furthermore, a number of facilities are proceeding with these technologies under the VIP or are in the process of transferring out of the permanent cessation subcategory into the VIP, and thus they will still be installing these same technologies by 2028.

Some commenters argued that the compliance date extensions are not warranted because the 2024 rule record demonstrated that membrane, thermal, and SDE technologies could be installed in timeframes shorter than 2029 and because at least one plant (the NRG Parish plant) subsequently did just that in under two years. While the EPA acknowledges that parts of the 2024 rule record appear to support the 2024 rule’s original timeframes, the Agency disagrees that the compliance deadline extensions are not warranted. The information pointed out by these commenters must be considered along with other record evidence, particularly newer information, showing longer timeframes are needed, as described above.

After carefully considering the information before it, the EPA has determined that the weight of the evidence shows that the 2024 rule BAT technologies are no longer available nationwide on the timeframes provided for in that rule and, therefore, expecting compliance by 2029 is no longer reasonable. Courts have recognized that the EPA must select a “reasonable” time by which BAT limitations are available. *See Am. Frozen Food Inst.*, 539 F.2d at 132 (endorsing the view that, although the best available standard does not mean that the technology must be in actual routine use somewhere, it does mean that the technology “must be available at

a cost and at a time which the Administrator determines to be reasonable”) (citation omitted); *see also CPC Int’l, Inc. v. Train*, 515 F.2d 1032, 1048 (8th Cir. 1975) (same). Thus, the EPA’s next task was to determine the precise length of the extension. The EPA has decided that an extension until 2034 is reasonable because it addresses the on-the-ground realities and concerns discussed above, and extending the latest compliance deadlines one additional permit cycle will create parity wherever a plant is in its particular permit cycle. Selecting compliance dates that account for the fact that the CWA envisions issuance of NPDES permits on a 5-year schedule, 33 U.S.C. 1342(b)(1)(B), is consistent with how the EPA structured its compliance period in the 2015, 2020, and 2024 rules. The EPA further notes that it did not extend these deadlines past 2034 as some comments suggested.¹² Instead, any unforeseen circumstances that may be out of a facility’s control and would hinder a facility’s ability to comply by 2034 could, where appropriate, be sufficiently addressed by the site-specific timeline flexibilities established at 40 CFR 423.18(d), as discussed below.

2. An extension of the latest compliance deadlines for the 2024 rule’s zero-discharge limitations until 2034 is warranted based on the adverse impacts on customer rates resulting from the cumulative costs of complying with multiple rules in short succession.

The second basis supporting the EPA’s decision to postpone the latest compliance deadlines for the zero-discharge limitations is the adverse impacts on customer rates, which have seen soaring increases, including the cumulative costs to utilities of complying with both the 2020 and 2024 rules in short succession. This second basis is supported by the statutory factors of “cost” and “other factors as the Administrator deems appropriate,” which in this case is electricity price impacts to residential households. The EPA disagrees with the commenter that suggests that finalizing the deadline extensions would increase residential electric customer bills in either the short run or the long run. Electricity bills are climbing rapidly and, while not all

¹² As was done in the 2015, 2020, and 2024 rules, the EPA will also evaluate availability timing as part of any subsequent reconsideration.

service areas have experienced the same 20 percent electricity price increase seen in New Jersey (DCN SE11952 and SE11973), many states have seen prices rise over recent years (DCN SE12031). Electricity prices had already been a problem for many Americans. In 2021, many moratoria on utility shut-offs ended with tens of billions of dollars in bills coming due “as high as \$1,500 to \$2,000” for some customers (DCN SE12032), and yet a recent article documented that U.S. Census Bureau data show an increase from 20 percent to 24 percent of households unable to pay their energy bills between 2021 and 2024 (DCN SE12031).

These challenges would continue to mount for utilities forced to comply with the 2024 rule under that rule’s deadlines. One municipal commenter explained that, if their utility had to rush to install zero-discharge systems for BA transport water and CRL under the timeframes of the 2024 rule, their customers would face a price increase of up to 15 percent (EPA-HQ-OW-2009-0819-10691). Instead, this commenter supported the proposed deadline extensions being finalized because, in part, it would allow the municipality to “orient their budget cycles to the compliance schedule” (EPA-HQ-OW-2009-0819-10691). The EPA agrees with this commenter that longer implementation timeframes can moderate impacts to electricity consumers. Specifically, two municipalities that recently procured zero-discharge technologies to treat CRL were able to avoid price increases to existing tipping fees, in part because they were provided ample time to plan and save for these expenditures (DCN SE12033, DCN SE12034).

This consideration is more pronounced for facilities with FGD wastewater. The EPA agrees with comments stating that typical amortization periods for wastewater treatment technologies are 20 years. One comment providing a specific state approval of a 20-year cost-recovery program bears this timeframe out as normal and appropriate (EPA-HQ-OW-2009-0819-10665). The 2020 and 2024 rules discussed how facilities incur greater capital costs when amortized over fewer and fewer years. Specifically, the record demonstrated that annualized capital costs approximately double when amortization shrinks from the typical 20-year period to eight years. 84 FR 64640. In some cases, under the 2024 rule, facilities completing installation of

a biological treatment system by the end of 2025 would be required to turn around and install zero-discharge systems by 2029.

In the 2024 rule, the EPA’s analysis showed that these cumulative costs were economically achievable within the previously projected electricity market supply and demand; however, these supply and demand assumptions have proven inaccurate, as discussed previously.¹³ In addition to the requirement under section 304(b) of the CWA to consider “cost,” the effects of cumulative impacts are an important consideration that agencies regularly consider,¹⁴ and back-to-back amortization of costs incurred by some of the larger plants to meet the 2020 and 2024 rules could mean steep rises in costs to utilities. These costs are often passed on, leading to similarly steep rises in residential electricity prices, at a time where there are significant concerns related to the grid demand and reliability.¹⁵ While the CWA does contemplate technological advancement, in addition to the requirement to consider the “cost” of achieving effluent reduction, as mentioned, the Act also requires consideration of “such other factors as the Administrator deems appropriate.” 33 U.S.C. 1314(b)(2)(B). The EPA has historically examined potential impacts on residential electricity prices in previous iterations of the Steam Electric ELG as an “additional factor that might be appropriate when considering what level of control represents BAT” (80 FR 67856, 85 FR 64685). Providing facilities more time to amortize the costs of the previous 2020 rule helps reduce short-term price pressures on American families, as well as domestic manufacturers, and adds additional support for this action’s extension of the latest deadlines for the 2024 rule’s zero-discharge limitations.

3. An extension of the 2024 rule’s latest compliance deadline for zero-discharge limitations is warranted to ensure plants can continue operating to support grid reliability and in light of legitimate uncertainties about the economic and energy impacts of the 2024 rule.

¹³ The EPA expects to update any relevant portions of its cost and achievability analyses, as appropriate, in any subsequent action considering revisions to the underlying technology bases for the 2024 rule.

¹⁴ See, e.g., Executive Order 13563—*Improving Regulation and Regulatory Review*.

¹⁵ Again, while the EPA’s 2024 rule record analyzed these electric price increases, the EPA expects to update any relevant portions of this analysis in a future rulemaking to reflect more current conditions, as appropriate.

The third basis supporting the EPA’s decision to postpone the latest compliance deadlines for the zero-discharge limitations is the need to ensure plants can continue operating to support grid reliability and in light of legitimate uncertainties about the economic and energy impacts of the 2024 rule. With respect to the third basis for the postponement, based on the statutory factors of economic achievability, as well as non-water quality environmental impact (including energy requirements) or “other factors” (resource adequacy and grid reliability), the EPA agrees with comments stating that there is a national energy crisis impacting resource adequacy and grid reliability. The EPA has continued to identify information supporting this conclusion, including NARUC (2025), NERC 2025–2026 Winter Reliability Assessment, and information provided in various public comments. The EPA also agrees that increasing demand from data centers, manufacturing, and other causes could exacerbate these issues in the short run. The EPA received several comments detailing population growth, manufacturing growth, and data center projects that are leading to demand increases in several service areas. As a result of this information, the EPA disagrees with comments that appear to cherry pick information to the contrary and present that information as a justification for retaining the 2024 rule’s 2029 compliance deadlines.

While these commenters list a litany of supposed errors in the EPA’s rationale, their complaints sometimes contradict each other. For example, some commenters state that the EPA does not have the expertise to make judgments about reliability and resource adequacy or that the Agency should defer to states, which are given the primary oversight of reliability-related issues, whereas other commenters accuse the Agency of not conducting sufficient analysis on those issues. Some commenters even go so far as to suggest that the EPA second-guess the DOE’s lawfully issued Federal Power Act section 202(c) orders.

The EPA disagrees with the premise of these comments, as they illustrate a misunderstanding that the Agency is trying to regulate the electric grid or make primary findings regarding the operations thereof. To the contrary, the EPA is merely pointing to what competent

state, national, and North American electric reliability authorities have already concluded as the Agency decides how best to implement its statutory directive to establish technology-based regulations governing point source discharges under the CWA. Even taking these commenters' information as true, the EPA finds that, at most, it demonstrates that there is uncertainty as to future demand growth, resource adequacy needs, and reliability concerns. To the extent that these commenters point to information that calls out these uncertainties, the EPA agrees that the future on these difficult issues is uncertain, but that is no reason to continue with the status quo. In fact, uncertainty is commonly accounted for by reliability authorities through probabilistic assessments. For example, NERC states that it conducts its analysis of electricity shortfall risks by considering "probability-based risk assessments" (DCN SE12030).

The EPA notes that there is also uncertainty in the extent to which the 2024 rule is driving closures in the near term. Closures matter in determining the economic achievability of the rule, as well as impacts on grid reliability, which the EPA may consider as an "energy requirement" or, alternatively, an appropriate "other factor" in its BAT decision-making. The EPA disagrees with comments stating that the 2024 rule analyses demonstrate that the costs of the rule are still economically achievable and that the impacts on coal-fired plants are small. In response to the EPA's request for data to support any subsequent rulemaking, commenters have raised concerns that the Agency's data may be stale, the Agency may have underestimated costs, and these underestimated costs may have led to underestimated market impacts.¹⁶ Furthermore, some commenters have provided cost estimates of systems that are significantly more expensive than the EPA's estimates in 2024. Compounding these purported analytical inaccuracies, underlying inputs for electric market modeling (*e.g.*, demand projections) have also changed significantly in just one year. These factors all result in the impacts of the 2024 rule being

¹⁶ Even if the impacts were accurately estimated, costs and impacts that the EPA found to be achievable in 2024 may no longer be, in light of the Agency's findings regarding resource adequacy and reliability.

uncertain, despite the relatively short time that has elapsed since the 2024 rule analyses were performed.

However, it is also not reasonable for some commenters to request that the EPA update all the Agency's data and analyses prior to finalizing this deadline-extension rule, and such an update is not legally required. The EPA has always been clear that it would conduct any reconsideration in multiple phases (DCN SE12039), and in the proposed deadline-extension rule the Agency explicitly stated that it would use information received from its data request to "define the scope of this subsequent rulemaking to potentially revise the underlying technology bases for certain limitations and standards in the 2024 rule" (90 FR 47708). This is consistent with the approach taken in the 2017 postponement rule. That rule was finalized relatively quickly, and without revising the EPA's major analyses, which were only updated during the subsequent 2020 reconsideration rule (85 FR 64650), a substantial effort that took three years. The U.S. Court of Appeals for the Fifth Circuit upheld the EPA's 2017 postponement rule as a lawful follow-on rulemaking to the 2015 rule. *Clean Water Action v. EPA*, 936 F.3d 308, 315–16 (5th Cir. 2019). Assuming a three-year re-analysis here, the EPA would not be able to meaningfully evaluate the very data it asked for and finalize a rule until 2028. It would make no sense for the EPA to finalize a deadline-extension rule one year before the 2024 rule's latest compliances deadlines for zero-discharge limitations, as most of the costs for the rule would have been incurred and most of the construction completed. Instead, the EPA is proceeding exactly as it said it would by completing this relatively narrow and tailored first rule and then, after determining the scope of a subsequent reconsideration rulemaking, commencing the difficult work of updating all its analyses and conclusions, as appropriate. This approach is entirely consistent with case law finding that an agency "need not solve every problem before it in the same proceeding." *Mobil Oil Expl. & Producing Se. v. United Distrib. Cos.*, 498 U.S. 211 (1991) (citing *Vt. Yankee Nuclear Power Corp. v. NRDC, Inc.*, 435 U.S. 519, 543-544 (1978))

(agencies are free to engage in multiple rulemaking “absent constitutional constraints or extremely compelling circumstances”).

The EPA also notes that coal-fired power plants serve a unique niche in the electric grid. As discussed in NARUC (2025) and NERC 2025–2026 Winter Reliability Assessment, these plants, unlike natural gas plants, have fuel stockpiles and can reliably provide dispatchable power during extreme weather (DCN SE12000 and DCN SE12030). These findings are consistent with the operations of the Keystone and Conemaugh plants, which total 3,400 MW of nameplate capacity and were dispatched during Winter Storm Elliot, allowing PJM to avoid a load shedding event (DCN SE12042). This illustrates the importance of maintaining a diverse fleet of generating units that includes a variety of fuel sources, a fact that the EPA cited in subcategorizing oil-fired units in the 2015 rule (80 FR 67856).

Based on the foregoing considerations, the EPA has concluded that an approach that meets the statutory directives and environmental goals of the CWA while respecting the needs for resource adequacy and reliability is warranted in the short term. In particular, by extending the latest compliance deadlines for the zero-discharge requirements in the 2024 rule to December 31, 2034, the EPA can help ensure that plants that might be planning for retirement or repowering by 2034 can more readily stay online past that date to meet the Nation’s energy requirements and still be on track to meet the otherwise applicable effluent limitations. Furthermore, while the commenters paint a picture in which costs and impacts of the 2024 rule are small, interconnection queue backlogs are resolved, and new generation and storage projects are able to quickly address resource adequacy concerns, this scenario falls on one end of a spectrum of probabilistic outcomes. Other probabilistic outcomes include those with significantly higher costs and impacts, high demand growth, delays with commissioning new generation, and impactful extreme weather events. Instead of definitively resolving these uncertainties, it is appropriate for the EPA to fulfill its statutory duties while exercising its

discretion to ensure maintenance of a diverse fleet and protection against any number of worst-case scenarios, especially while it considers further actions it may take to revise the 2024 rule.

4. The final rule does not revise the 2024 rule's earliest compliance dates, which have already passed.

The EPA disagrees with public comments suggesting that these extensions would result in widespread delays in compliance. The EPA is not postponing the earliest compliance date for the 2024 rule, which has since passed and, as a result, facilities without some of the limitations described above have already begun submitting NOPPs (DCN SE12001) and installing technology to comply with zero-discharge limitations (EPA-HQ-OW-2009-0819-10666). These extensions are not intended to simply provide this industrial sector with a blanket deferral of compliance, but instead to appropriately acknowledge the rapidly changing demand on this industry and provide permitting authorities greater flexibility to react in real time to the evolving challenges on the power sector. Of note is the fact that a permitting authority is required to evaluate the same criteria in section 423.11(t) as was required in the 2024 rule when considering the "as soon as possible" date. The factors at section 423.11(t) include consideration of "Time to expeditiously plan (including to raise capital), design, procure, and install equipment to comply with the requirements of the final rule" and "Other factors as appropriate." For these reasons, the EPA disagrees with comments suggesting that it is necessary to postpone the earliest compliance dates. Therefore, the EPA is not postponing the "as soon as possible" date. See *Implementation of the Steam Electric ELGs Deadline Extension Final Rule* (DCN SE12026) for detail on how these changes impact the ongoing permitting of facilities. For a more thorough discussion of the EPA's response to the public comments on the extensions of the zero-discharge limitations, see the response to comments document (DCN SE12008).

E. Tiered PSES

While the majority of steam electric power plants directly discharge the three wastestreams for which the EPA established zero-discharge limitations in the 2024 rule, there are

still one or more indirect dischargers of each of these wastewaters. The EPA finds that the considerations discussed above in this preamble that warrant longer applicability timing for zero-discharge requirements on direct dischargers are equally applicable to indirect dischargers. Thus, the EPA is finalizing a new tiered standard for indirect dischargers that conforms with the Act and allows an indirectly discharging plant to choose to be subject to the same limitations, and on the same timeframes, as apply to existing direct dischargers.

Section 307(b)(1) of the CWA requires that pretreatment standards “shall specify a time for compliance not to exceed three years from the date of promulgation.” 33 U.S.C. 1317(b)(1). This three-year period is similar to the three years stated in sections 301(b)(2)(C), (D), and (F), which apply to BAT limitations. 33 U.S.C. 1311(b)(2)(C), (D), and (F). Section 301(b)(2)(C) states that “there shall be achieved . . . compliance with [BAT] effluent limitations . . . as expeditiously as practicable but in no case later than three years after the date such limitations are promulgated . . . and in no case later than March 31, 1989.”¹⁷ 33 U.S.C. 1311(b)(2)(C). The EPA reads those provisions as requiring that the Agency’s original BAT limitations be met no later than three years after the date that ELGs are promulgated, with a back-end deadline of March 31, 1989. Furthermore, the Act is silent as to any required timeframe for compliance with revised effluent limitations after March 31, 1989. *See Clean Water Action v. EPA*, 936 F.3d 308, 316–17 (5th Cir. 2019) (“EPA’s reading of the text accords the language its natural meaning: the initial BAT effluent limitations were to be complied with as expeditiously as practicable, but in no case later than three years after promulgation, with a final compliance date of March 31, 1989—whichever came first. This reading is supported by section 1311(d), which requires the EPA periodically to review BAT limitations, including after 1989, but contains no such compliance deadline.”) (citation omitted).

Given that BAT limitations and PSES are intended to be analogous, as previously described, it would make sense that the three-year requirement in CWA section 307 also applies

¹⁷ CWA section 301(b)(2)(D) and section 301(F) contain similar language. 33 U.S.C. 1311(b)(2)(D) and (F).

only to the EPA's initial pretreatment standards for an industry. This is supported by CWA section 307(b)(2), which includes language stating that the Administrator shall "from time to time" revise its pretreatment standards and *does not* include language directing compliance with revised standards under that paragraph by any particular date. In other words, it would be illogical to read into the statute a deadline for compliance with revised standards if it remains within the EPA's discretion as to when to initiate revisions to such standards. Nonetheless, even assuming that the three-year requirement applies to revisions of those standards, the EPA's pretreatment standards meet that requirement because they represent a phased-in standard that increases in stringency after three years from promulgation, in order to reflect when more stringent technologies are available, achievable, and have acceptable non-water quality environmental impact, as required by the Act.

In the first tier of the standard, indirect dischargers are required, by **[INSERT DATE THREE YEARS FROM PUBLICATION IN THE FEDERAL REGISTER]**, to meet pre-2024 rule standards for FGD wastewater, BA transport water, and CRL. These standards (which are based, respectively, on biological treatment plus chemical precipitation, high-recycle-rate systems, and the permitting authority's BPJ) are available and achievable, as supported by the record in the EPA's prior rules. In the second tier of the standard, facilities opting to file a permit application with their permitting authority to directly discharge these wastewaters are allowed to continue indirectly discharging until the compliance date determined by the permitting authority, but no later than December 31, 2034, provided they certify that they will complete the conversion to direct discharge. In the second tier of the standard for facilities that do not opt to become direct dischargers, the tiered standard changes to zero discharge by **[INSERT DATE THREE YEARS AND ONE DAY FROM PUBLICATION IN THE FEDERAL REGISTER]**. In either case, this pretreatment standard is one standard that tightens over time, and so it conforms to the requirement of the Act that pretreatment standards specify a time for

compliance not to exceed three years from the date of promulgation.¹⁸ The EPA expects that this approach provides equity across a range of permitted facilities regardless of their discharge circumstance—*i.e.*, direct or indirect.

The EPA received a number of comments in support of, and in opposition to, the tiered standard for indirect dischargers. Comments against the tiered standard included general opposition to the delay in compliance with the 2024 standard, claims that the EPA lacks a record supporting the delay, and questions regarding the Agency's legal authority to delay the 2024 pretreatment standards. The EPA disagrees with commenters that argue there is no record support for the extension, as detailed in the paragraphs above supporting the compliance date extension for the zero-discharge BAT limitations. The Agency also disagrees that the PSES compliance deadlines cannot lawfully be extended beyond three years from promulgation of the 2024 rule, for the reasons discussing EPA's statutory authority under Section 307 of the CWA, explained above.

The EPA agrees with commenters that support the tiered standard for PSES because the approach provides consistency in the compliance deadlines between requirements for indirect and direct dischargers. The tiered standard gives facilities that have infrastructure that conveys wastewater to a publicly owned treatment works adequate time to design, procure, and install new, zero-discharge technology to comply with the 2024 limitations. This approach will provide equitable regulatory treatment across permitted facilities regardless of their discharge circumstance (*i.e.*, direct or indirect). The tiered PSES standard is appropriate because, as a general matter, the same factors that warrant longer applicability timing for zero-discharge limitations for direct dischargers (*e.g.*, equipment delays due to supply-chain disruptions, changing energy demand forecasts) apply equally to indirect dischargers. There is no difference as a general matter between a direct discharger and indirect discharger as far as being able to

¹⁸ As explained more fully in its response to comments document (DCN SE12008), the EPA also does not agree with commenters that BAT limitations such as the ones promulgated in the 2024 rule and addressed in this action are subject to a requirement that they apply no later than three years after the date of promulgation.

procure and install the relevant zero-discharge technologies, nor is there a difference in terms of the importance of these plants to meeting regional energy demands. See the discussion above and EPA's response to comments document (DCN SE12008) regarding the rationale for the extension of the latest compliance dates for the 2024 rule BAT limitations. The tiered requirement is also consistent with the extended deadline to submit a NOPP for cessation of coal combustion by 2034. The tiered PSES gives facilities the flexibility to consider retirement decisions, especially in light of increased energy demand and resource adequacy concerns, before the deadlines for requirements based on installation of zero-discharge technology, rather than potentially forcing premature retirement.

Finally, the EPA received comments opposing the zero-discharge PSES, suggesting that indirect dischargers should continue to be able to discharge to POTWs. The EPA also received comments from utilities and industry trade associations that the zero-discharge technologies used to establish PSES and BAT limitations in the 2024 rule are not available or economically achievable and are a primary cause of coal-fired power plant retirements. As previously explained, the EPA is considering future action to revise the zero-discharge BAT limitations and PSES for the relevant wastestreams.

F. Alternative Applicability Timing and NOPP Submission Timing Flexibility

The EPA is finalizing a site-specific timing flexibility to be incorporated in the permit conditions set forth in 40 CFR 423.18(d), based on the statutory factors of "availability," as well as "non-water quality environmental impact (including energy requirements)" or, alternatively, "other factors" the Administrator deems appropriate (*i.e.*, sudden changes in resource adequacy needs for a particular service area or supply-chain issues). *See* 33 U.S.C. 1311(b)(2)(A), 1314(b)(2)(B). As discussed further below, this flexibility is primarily intended to address challenges previously described in this final rule that may result in a plant, or even a single EGU at a plant, pivoting too quickly or too late into an alternative compliance pathway to ensure compliance with the applicable requirements. Unlike the compliance deadline extensions for the

2024 rule's zero-discharge limitations discussed above, this site-specific timing flexibility could potentially apply to the 2020 rule limitations.

While the EPA is aware that several utilities have already pushed back plans to retire coal units by 2028 in order to support regional resource adequacy, trade associations and regional transmission organizations have discussed further scenarios with the Agency that could lead to impractical timeframes for the installation of technologies needed to meet applicable limitations. In one scenario, such as that experienced at Buckeye Power's Cardinal Plant (DCN SE12043), a utility may have announced that one or more EGUs at a plant would retire by 2028 (making it eligible for the 2020 rule's subcategory for the permanent cessation of coal combustion by 2028), while the remainder would continue generation. If the IRP process or capacity auctions indicate that future needs may not be met, these EGUs may need to back out of previous retirement decisions. However, the plant may have combined wastewaters, such as combined FGD wastewaters from a joint FGD unit that treats flue gas from the entire plant. In the case that the plant was properly developing a treatment system that could treat wastewater from the EGUs it had intended to continue operating, the continued operation of one or more additional EGU(s) could lead to more wastewater than the system can treat. In such circumstances, the plant would be forced to choose between noncompliance or retiring an EGU needed for local resource adequacy. The EPA agrees that a plant in such a situation should be given the time to build out treatment systems and comply with the 2020 rule given the rapidly evolving resource needs for this critical industry.

In another scenario, such as that experienced at KeyCon's Conemaugh plant (DCN SE12042), a plant that had submitted a NOPP for permanent cessation of coal combustion by 2028 may learn through the IRP process or capacity auctions that its continued operation is necessary to support local resource adequacy. Such facilities can still use the transfer flexibilities in 40 CFR 423.13(o) to transfer to the VIP limitations for FGD wastewater and the generally applicable limitations for BA transport water by December 31, 2025. However, if a plant had not

taken significant steps to design, bid, and procure these technologies prior to the transfer deadline, it would not be practicable for the plant to do so by the deadlines in the 2020 rule, particularly where the generally applicable BA transport water limitations have the same deadline as the transfer itself. In such circumstances, a plant could be forced into deciding whether to risk noncompliance or retire despite being needed for local resource adequacy. Furthermore, requirements to first notify or gain approval from a state public utility commission might make formally submitting a transfer notice by December 31, 2025, impracticable.¹⁹ As with the previous example, the EPA agrees that, in such circumstances, the plant should be given time to both get approvals needed to submit a transfer notice and build out treatment systems to comply with the 2020 rule.

Finally, stakeholders have expressed concerns with supply chains, as discussed in sections V and VI. As also discussed, the rapid growth of data centers, in some cases, takes materials and components that might otherwise have been used in an ELG compliance technology. Thus, it is possible that facilities may have to wait on parts that are available on the market, but that are not available on the timelines originally believed or agreed to in a contract. In such cases, it is reasonable and consistent with the statutory and regulatory scheme that a plant should have sufficient time to obtain and install its compliance technologies and should not be penalized for factors outside of its control. While the EPA cited supply-chain concerns as part of the reason for the compliance deadline extensions for the 2024 rule's zero-discharge limitations from 2029 to 2034 discussed above, here, supply-chain concerns serve as an independent basis for the additional site-specific flexibilities because these flexibilities would also apply to 2020 rule deadlines and are limited to unexpected circumstances that might arise in a site-specific context affecting a project schedule, which is not as likely to be an issue for deadlines farther out into the future, such as the 2034 deadlines. Moreover, while the more general compliance

¹⁹ Some utilities may also be required to conduct environmental reviews of such decisions under state or Federal law, further delaying the date by which a notice to transfer could be filed.

deadline extensions until 2034 are intended to address systemic issues experienced at the industry-level, this site-specific flexibility is intended to address unforeseen issues at particular facilities. See the response to comments document (DCN SE12008) for further discussion on EPA's decision to finalize these site-specific flexibilities.

The EPA is requiring that a plant submit an initial request letter and regular progress reports to their permitting authority. The initial request letter must include the circumstance under which it is requesting alternative applicability timing. The letter must also include detailed engineering dependency charts that would allow the permitting authority to establish an alternative applicability date and, where appropriate, an associated schedule of milestones in the permit, as well as determine the frequency of regular progress reports. For instance, if a plant needed only an extra six months to install relevant technologies, then monthly progress reports might be warranted; however, if the same plant needed an extra six years to install relevant technologies, then annual or biannual progress reports might be sufficient.²⁰ Furthermore, the plant's engineering dependency charts should identify contingencies, especially for uncertain or critical path steps, so that any associated schedule can be sufficiently flexible to avoid the potential for permit modifications upon a predictable delay. Finally, the letter must be accompanied by any missing NOPPs or progress reports. While the EPA intends that this flexibility be used only when necessary, the Agency is finalizing it in a way that provides sufficient flexibility in terms of time and need. Facilities and permitting authorities should continue to plan for compliance through normal pathways to the extent possible.

The EPA received comments both in support of, and in opposition to, these provisions. Commenters opposed to the flexibilities argued that they are arbitrary and unlawfully fail to include sufficient safeguards. These commenters more specifically took issue with the EPA presenting no new data to indicate that facilities require additional time for compliance.

²⁰ Note that nothing in this requirement prevents a permitting authority from requesting additional information or information at additional times, consistent with applicable law.

Commenters argued that the EPA has not explained why the 2024 rule and its deadlines do not already account for reliability, capacity needs, or supply-chain issues. Commenters also suggested that the CWA already allows the EPA and state authorities to adjust national requirements for unique site-specific circumstances through statutory variances, such as fundamentally different factors (FDF) variances. Some commenters suggested that the EPA should, while others suggested the Agency should not, explicitly describe the circumstances which warrant or qualify for flexibility.

Commenters in favor of the flexibilities also asked that these flexibilities be automatically applied via a fixed extension. Some commenters also requested some specific changes to the language in 40 CFR 423.18(d). Commenters asked that language be revised or added to call out facilities or EGUs that move within a permanent cessation of coal combustion subcategory. One commenter provided an example of an EGU changing from retiring to continuing operation but changing fuel sources. Commenters also requested that the EPA clarify whether 40 CFR 423.18(d) provisions apply to requirements for zero discharge only or also apply to advanced biological treatment systems. Another commenter requested that the EPA establish national guidance and an interim implementation framework. Finally, the EPA received feedback on specific language changes for the provisions.

In general, the EPA disagrees that the establishment of the new site-specific applicability date provision in section 423.18(d) is arbitrary, unnecessary, or otherwise insufficiently supported. However, the EPA acknowledges that, as part of the proposal, it did rely on relatively generic scenarios rather than provide specific examples to demonstrate the need for these provisions. The EPA has also added a new memoranda to the record, *Implementation of the Steam Electric ELGs Deadline Extension Final Rule*, providing further examples on how these provisions could be implemented in facilities' individual permits (DCN SE12026).

The EPA also disagrees with comments that the Agency should explicitly list additional circumstances in the new section 423.18(d) and agrees with those instead recommending the

same or similar approach to the proposal. These provisions are meant for extraordinary measures beyond what was foreseen in the ELG analysis or even in a facility's initial planning. The EPA expects that facilities should and will plan to meet the compliance dates as specified in the ELG; however, should market conditions change too late for a facility to feasibly come into compliance, then 40 CFR 423.18(d) may be invoked. The EPA views these flexibilities as extraordinary measures. Thus, the EPA recommends that utilities and their permitting authorities turn to these flexibilities only as a last resort and only for the reasons and issues described in 423.18(d)(3).

Given the emergency nature that the provisions are intended to address, despite some comments requesting more prescriptive language in the regulation, the EPA is declining to explicitly list conditions or qualifiers which must be met prior to being granted these flexibilities. Likewise, the EPA also disagrees with the commenter suggesting that the flexibility be finalized as an automatic extension. Such an extension would be overbroad for some facilities while potentially being too short for others. The EPA finds that the decisions surrounding when and how to administer these flexibilities should be left to the permitting authority, who will be best positioned to consider all the relevant factors at that time and establish alternative applicability dates that are appropriate in light of each facility's specific circumstances.

The EPA also disagrees with some commenters stating that the flexibilities do not include safeguards. The EPA has crafted a set of circumstances that require very detailed showings. For example, section 423.18(d)(3)(iii) is only available when supply-chain issues result in a delay of "a necessary component (not merely a preferred component where there are reasonable substitutes) at a key stage of fabrication or installation..." Furthermore, while the EPA does not explicitly include backstops as requested by these commenters, the 2020 rule implementation is complete on December 31, 2028. Thus, as of January 1, 2029, a facility would have to be in compliance, have permanently ceased coal combustion, or have begun some formal transfer with today's new extensions. A facility failing to complete one of these actions would already be in

noncompliance. Third, these site-specific flexibilities are not automatic like the transfers of section 423.13(o). Instead, a facility would be required to undergo a permit renewal or permit modification to incorporate any alternative applicability timing.

Finally, the EPA has included a number of reporting and recordkeeping requirements, including requirements for some of the very information commenters suggest is needed, and a requirement to post this documentation to the facility's public-facing ELG Compliance Data and Information website. For further discussion of implementation, see the implementation memo (DCN SE12026).

After considering the feedback received from the public on this topic and the full record before it, the EPA is finalizing a requirement for permitting authorities to extend the NOPP submission dates or applicability timing for any compliance date in the 2020 or 2024 rules (including the VIP limitations for FGD wastewater) due to these or any other unexpected and uncontrollable circumstances. These flexibilities, as determined appropriate by a permitting authority, would be included as a new permit condition via 40 CFR 423.18(d). This would allow an alternative applicability date and, where appropriate, associated schedule of milestones, to be included in a permit, notwithstanding the existing applicability timing in the regulatory text. See the EPA's response to comments document (DCN SE12008) for further discussion of the public comments received on this provision, as well as additional detail supporting the Agency's findings.

G. Clarifications to Sections 423.18(a) or 423.19(i)

In the 2020 rule, the EPA discussed how changed circumstances in a plant's operations could affect compliance with the ELG. This discussion distinguished voluntary versus involuntary changes in operations. As examples of involuntary changes, the EPA noted that electric utilities are regulated by a variety of agencies that can legally require continued generation at a plant (e.g., section 202(c) of the Federal Power Act). For these types of reliability-related issues, the EPA established permit conditions that would ensure non-

interference with resource adequacy and reliability when such orders were issued.²¹ After this provision was established, stakeholders raised questions as to the applicability of the section to energy emergency alerts (EEAs). In response to these stakeholder concerns, when finalizing the 2024 rule, the EPA reinforced its commitment to not interfering with the provision of reliable power by amending 40 CFR 423.18(a) to expressly include EEAs as a valid trigger for the protections therein.

Since the 2024 rule, stakeholders have questioned whether 40 CFR 423.18(a) can be read to include other types of actions not explicitly listed. Specifically, four scenarios were raised for which stakeholders wish further clarification from the EPA. These include the following:

- Whether 40 CFR 423.18(a)(2) is interpreted to include FERC’s acceptance of a reliability must-run agreement as being a reliability must-run agreement issued by a public utility commission as contemplated within this subsection;
- Whether 40 CFR 423.18(a)(3) is interpreted to include the following as a qualifying event: where an EGU(s) has certified it would cease combustion of coal, and an appropriate balancing authority projects, pursuant to its authority, that doing so would cause a resource adequacy shortfall for an upcoming delivery year;
- Whether 40 CFR 423.19(i)(1)(ii) is interpreted to include the 30-day submission applicability to any findings made pursuant to 40 CFR 423.18(a)(3); and
- Whether 40 CFR 423.19(i)(3) is interpreted such that the termination of need statement submission is also triggered 30 days from when the source is no longer subject to extended production (which is increased production) resulting from the qualifying event.

With respect to the first issue, the EPA intended for any reliability must-run agreement or similar order to be covered. The EPA believes that, between 40 CFR 423.18(a)(2) and

²¹ In contrast, the EPA noted that a plant voluntarily changing operations needed to “carefully plan its implementation.” 85 FR 64650, 64709 (October 13, 2020).

423.18(a)(3), there is sufficient flexibility that either provision or both could apply to such orders depending on the entity making or receiving the filing.

With respect to the second issue, the EPA received a similar question from the Tennessee Valley Authority (TVA) at the time of the 2023 proposal. There, the EPA pointed out that TVA was certified by NERC as the reliability coordinator for itself and several other utilities. Therefore, the record supported that TVA had the authority to issue operating instructions and emergency operating instructions with which any utilities (including itself) must comply, making TVA a competent electricity regulator. Since 40 CFR 423.18 refers broadly to “a competent electricity regulator (*e.g.*, an independent system operator),” the EPA concluded that this broad definition allowed for load balancing authorities to be included and thus made no textual changes.

With respect to the third issue, the EPA notes that 40 CFR 423.19(i)(2)(ii) refers back to (i)(2)(i), which in turn refers back to any qualifying event in 40 CFR 423.18(a). Since the reference does not limit qualifying events to any subparagraph in 40 CFR 423.18(a), the EPA agrees that any event under (a)(3) would trigger the reporting and recordkeeping requirement.

With respect to the final issue, the EPA again agrees that extended production is increased production.

The EPA received comments supporting these clarifications. One commenter requested further clarification as to whether a reliability must-run directive may emanate from NERC-certified reliability coordinator that oversees the balancing area. Finally, one commenter asked the EPA to codify these clarifications.

With respect to directives from a NERC-certified reliability coordinator, the EPA agrees that such an order could qualify under section 423.18(a)(3) as “any other reliability-related order [...] by a competent electricity regulator...”

Finally, the EPA disagrees with the single comment suggesting codification of these clarifications. Unlike the codification of “energy emergency alert” in the 2024 rule, where that

type of action was not clearly in line with the other enumerated actions in section 423.18(a)(3), here a reliability must-run order fits squarely within the types of orders and agreements covered by existing regulatory text.

H. Reliance Interests

As set forth in section III, explaining the EPA's authority for taking this action, unless otherwise provided by law, agencies may reconsider past decisions and revise them, so long as they provide a reasoned explanation and consider significant reliance interests. *FCC v. Fox Telev. Stations, Inc.*, 556 U.S. at 515; *Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. at 42; *see also Nat'l Ass'n of Home Builders v. EPA*, 682 F.3d at 1038 & 1043. In addition to the reasoned explanation for the decisions in this rule described in this section above, the Agency has also considered whether there are significant reliance interests affected by the rule. Despite requesting feedback on possible reliance interests impacted by this rule, the Agency received very few comments on the subject, and the comments that it did receive are either not material to this final action or lacking in sufficient specificity. Some commenters raised concerns about reliance interests related to the underlying technology bases for previous rules (*e.g.*, biological treatment) or on various subcategories (*e.g.*, the permanent cessation of coal combustion subcategories in the 2020 or 2024 rules). These concerns are not germane to this final rule, which deals only with deadline extensions and related provisions and does not address the underlying technology bases or subcategories of prior rules. One commenter argued that certain "engineering, procurement, and construction firms, consultants and/or vendors" have reliance interests that are adversely affected by this rule. It stated that "these entities and their supply-chain partners will lose or have delayed market opportunities. These entities may have made investments that will be stranded or they will see a considerable delay in recouping sunk costs." The Agency notes that this commenter is not itself an engineering, procurement, or construction firm, nor is it a consultant or vendor of any treatment or related technology. In fact, no such entity submitted comments with similar concerns, including any that are small

businesses, which the commenter urged the EPA to especially consider. Even in light of this final rule, there may be other reasons why a utility would move forward with installation of zero-discharge technologies on the timeline envisioned by the 2024 rule. Moreover, this comment fails to recognize that, in light of the supply-chain issues identified in this action, some vendors may be helped by the delay in compliance deadlines. Finally, the commenter offers no specific evidence regarding delayed market opportunities, stranded investments, or sunk costs. Without more, the EPA cannot quantify any potential impacts. Finally, one commenter claimed that there may be reliance interests on the part of States, Tribes, local communities, and environmental groups adversely affected by this rule because “[t]hose stakeholders set up permits, health protections, and restoration projects based on the original schedule.” This commenter, however, did not provide any specific information to support these reliance interest claims. Again, without more, these claims appear speculative, and the EPA cannot quantify any potential impact. Moreover, as noted in its response to comments document, the Agency disagrees with some commenters that previously estimated pollutant reductions will no longer occur simply as a result of this deadline extensions rule; based on this rule’s analysis, the EPA expects the full range of benefits (*i.e.*, water, air, non-water quality, human health) will still occur, but on a different timeline than stated in the 2024 rule. In light of comments received, the EPA has determined that it is appropriate to finalize the rule, including to the extent the rule revises decisions made previously, for the reasons discussed above in section VI.

I. Economic Achievability

In the 2024 rule, the EPA estimated that the cost to industry of zero discharge of FGD wastewater would be \$179 million per year, the cost to industry of zero discharge of BA transport water would be \$19 million per year, and the cost to industry of zero discharge and chemical precipitation of CRL would be \$218 million per year in annualized costs at a 3.76 percent discount rate. Combined, this led to a total compliance cost estimate of \$416 million per year at a 3.76 percent discount rate. At that time, the EPA determined that these costs were

economically achievable to the industry. The deadline extensions and flexibilities finalized in today's action are designed to lessen the burden to comply with the existing Steam Electric ELGs, in part due to the dramatic increase in energy demand described above, and the EPA anticipates that these flexibilities will allow utilities to better make compliance decisions that impose minimum economic impact across the industry and to their customers.

As discussed in today's preamble, there have been significant changes in market conditions and state and federal legislation affecting the power sector since the EPA conducted the 2024 Rule analysis; therefore, there is a high degree of uncertainty regarding the costs and benefits presented based on the 2024 analysis, given recent changes affecting the electricity sector.

The final rule extends by five years the "no later than" deadline for complying with zero-discharge limitations for BA transport water, FGD wastewater, and managed CRL. As the rule specifies that the limitations are to be met "as soon as possible . . . but no later than," it is possible that plants will comply sooner and according to a schedule that is similar to that for the baseline. To model the effects of the final rule, the EPA conservatively assumed that each affected plant would implement technologies five years later than assumed in the analysis of the 2024 rule, *i.e.*, implementation starting in 2030 under this final rule and being completed by 2034, so as to not underestimate potential impacts. At a three percent discount rate, the EPA estimates that this rule would save utilities approximately \$61 million annualized; and at a seven percent discount rate, the EPA estimates that this rule would save utilities approximately \$112 million annualized. As such, the EPA finds that, with these cost savings, this final action is economically achievable.

The EPA also received several adverse comments stating that the underlying cost and economic impact analysis for the 2024 rule used old data, particularly in light of the incredible increase in energy demand across the U.S. in the last year and current projections. Subsequent to this rulemaking effort, the EPA intends to undertake a further reconsideration of certain aspects

of the existing regulations. Should the EPA decide in a future action to reopen the BAT basis for the underlying 2024 rule more broadly, it will make a decision at that time (based on the current conditions of the industry) as to the need for updating both the underlying data and/or the Agency's modeled costs and economic impacts.

J. Severability

The purpose of this section is to clarify the EPA's intent with respect to the severability of provisions of this final rule. In the event of a stay or invalidation of part of this rule, the Agency's intent is to preserve the remaining portions of the rule to the fullest extent possible. The EPA notes the following existing regulatory text at 40 CFR 423.10(b) that is not altered by this final rule: "The provisions of this part are separate and severable from one another. If any provision is stayed or determined to be invalid, the remaining provisions shall continue in effect." Moreover, to dispel any doubt regarding the EPA's intent and to inform how any final regulation would operate if severed, the Agency is adopting each portion of this rule independent of the other portions. As explained below, the EPA carefully crafted this rule so that each provision or element of the rule can operate independently. Moreover, the EPA has organized the rule so that if any provision or element of this final rule is determined by judicial review or operation of law to be invalid, that partial invalidation would not render the remainder of the rule invalid.

This final rule extends the NOPP submission deadline for the subcategory for permanent cessation of coal combustion by 2034. It is the EPA's position that this extension is justified and supported by the record independently of the compliance date extensions. Although the invalidation of compliance date extensions would result in a NOPP submission date in 2031 that is two years after the latest compliance dates for the generally applicable limitations, the EPA finds that this would still be appropriate as the practicalities of permitting would result in facilities submitting NOPPs prior to the latest compliance dates to avoid receiving permits with zero-discharge limitations.

This final rule extends certain compliance dates associated with zero-discharge limitations and standards for discharges of pollutants found in three steam electric wastestreams. The final rule provides extended dates for limitations and standards associated with each wastestream in separate sections that do not rely on one another. Although the decision to extend deadlines applicable to each wastestream rests on overlapping facts, the decision to extend the compliance dates for limitations for each wastestream was made independently of the decisions to extend the other compliance dates.

In addition, the rule creates a site-specific flexibility for additional time to comply with the limitations in the 2020 and 2024 rules under four separate sets of circumstances. The EPA finds that there is support and authority for this site-specific flexibility independent of the support and authority for the general compliance deadline extension for zero-discharge limitations. Thus, the EPA would have promulgated this flexibility even if it did not simultaneously promulgate the more general compliance deadline extension until 2034. Furthermore, the EPA finds that there is support and authority for each circumstance provided for in this site-specific flexibility, which is independent of the support and authority for the other circumstances. For example, if a court were to find that the site-specific flexibility for one circumstance (*e.g.*, supply-chain risks) was not justified, the EPA would maintain that the site-specific flexibility should still be retained for the remaining three circumstances.

This final rule also provides flexibility for steam electric facilities to opt into different compliance pathways that exist in the rule, for example, due to changed circumstances. This flexibility to transfer to a different compliance pathway is unrelated to other provisions in the final rule, and the EPA's decision to allow for such transfers is unrelated to other aspects of the rule.

Finally, this final rule creates authority for alternative applicability dates for limitations promulgated in the 2020 or 2024 rules, based on site-specific factors. This authority is independent from other changes being finalized, and the EPA's decision to provide for such

authority is unrelated to other aspects of this final rule. For example, in the event of a stay or invalidation of any extended compliance dates for the zero-discharge limitations or standards, the EPA finds there is continued authority for alternative applicability dates, as discussed in this paragraph, and such authority could continue to be implemented.

These examples are illustrative, rather than exhaustive, and the EPA intends for each portion of this final rule to be independent and severable. Furthermore, if application of any portion of this final rule to a particular circumstance is determined to be invalid, the EPA intends that this rule remain applicable to all other circumstances.

VII. Statutory and Executive Order Reviews

Additional information about these statutes and Executive Orders can be found at <https://www.epa.gov/laws-regulations/laws-and-executive-orders>.

A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review

This action is an economically significant regulatory action as defined under section 3(f)(1) of Executive Order 12866. Accordingly, it was submitted to the Office of Management and Budget (OMB) for review. Any changes made in response to E.O. 12866 interagency review have been documented in the docket. From a 2024 rule baseline, the EPA estimated that this action would result in annualized cost savings of \$61 million at a three percent discount rate, and \$112 million at a seven percent discount rate.

The Agency also prepared monetized benefits, attempting to incorporate some of the current uncertainty in the industry changes, and as such are presenting a range of monetized benefits. EPA estimates this action would result in forgone benefits ranging between \$3.3 million at the low end and \$95 million to \$232 million at the high end at a three percent discount rate; and between \$3.3 million at the low end and \$112 million to \$271 million at the high end at a seven percent discount rate. See memorandum entitled “*Overview of Costs and Benefits of Steam*

Electric ELG 2025 Deadline Extensions Final Rule” for more details on the Agency’s economic analysis supporting this action (DCN SE12028).

B. Executive Order 14192: Unleashing Prosperity Through Deregulation

This action is considered an Executive Order 14192 deregulatory action. This final rule provides burden reduction by allowing additional time for the regulated community associated with their decision-making.

C. Paperwork Reduction Act (PRA)

The information collection activities in this rule have been submitted for approval to the Office of Management and Budget (OMB) under the PRA. The Information Collection Request (ICR) document that the EPA prepared has been assigned EPA ICR number 7814.02 (OMB Control Number 2040-0313) and is included in the docket for this rule. The ICR is briefly summarized here. The information collection requirements are not enforceable until OMB approves them.

The EPA is promulgating several new reporting and recordkeeping requirements or changes as part of the final rule. First, to implement this rule’s expanded transfer flexibilities, under CWA sections 304(i) and 308, this rule includes expanded reporting and recordkeeping requirements in 40 CFR 423.19(l). Second, to implement this final rule’s new tiered PSES for facilities that wish to receive applicability dates as direct dischargers from a permitting authority, the rule includes a new reporting and recordkeeping requirement in 40 CFR 423.19(p). Third, to implement the final rule’s new flexibility for alternative applicability dates, the rule includes two new reporting and recordkeeping requirements in 40 CFR 423.19(q). Specifically, the rule includes requirements for an initial request letter and regular progress reports. Finally, to implement the final rule, permitting authorities need time to read and analyze additional submissions. The EPA also notes that with these additional reporting and recordkeeping requirements, the rule also expands the filings required to be posted to each plant’s public-facing website.

Respondents/affected entities: steam electric facilities

Respondent's obligation to respond: Mandatory (40 CFR 423.19)

Estimated number of respondents: 90

Frequency of response: Annually

Total estimated burden: 3,225 hours (per year). Burden is defined at 5 CFR 1320.3(b).

Total estimated cost: \$335,343 (per year), includes \$0 annualized capital or operation and maintenance costs.

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for the EPA's regulations in 40 CFR are listed in 40 CFR 9. When OMB approves this ICR, the EPA will announce that approval in the Federal Register and publish a technical amendment to 40 CFR 9 to display the OMB control number for the approved information collection activities contained in this final rule.

D. Regulatory Flexibility Act (RFA)

I certify that this action will not have a significant economic impact on a substantial number of small entities under the RFA. In making this determination, the EPA concludes that the impact of concern for this rule is any significant adverse economic impact on small entities and that the Agency is certifying that this rule will not have a significant economic impact on a substantial number of small entities because the rule relieves regulatory burden on the small entities subject to the rule. This action consists of a compliance date extension for the steam electric power generating industry, including small entities, which will allow for greater flexibility for compliance. The EPA has therefore concluded that this action will relieve regulatory burden for all directly regulated small entities. In addition, the EPA previously certified that the 2024 rule, which had a higher cost burden than is anticipated for this action, will not have a significant economic impact on a substantial number of small entities under the RFA (89 FR 40198).

As small entities were estimated to incur an estimated 21 percent of the annualized compliance costs for meeting BA, FGD, and managed CRL limitations in the 2024 rule analysis, the EPA expects that they may see a corresponding share of the estimated cost savings from the compliance date extension (*i.e.*, total savings of \$12.7 million at a 3 percent discount rate).

E. Unfunded Mandates Reform Act (UMRA)

This action does not contain an unfunded mandate as described in UMRA, 2 U.S.C. 1531–1538, and does not significantly or uniquely affect small governments. The action imposes no enforceable duty on any State, local, or Tribal governments or the private sector.

F. Executive Order 13132: Federalism

This action does not have federalism implications. It will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

G. Executive Order 13175: Consultation and Coordination with Indian Tribal Governments

This action does not have tribal implications as specified in Executive Order 13175. It does not have substantial direct effects on Tribal governments, on the relationship between the Federal Government and the Indian Tribes, or the distribution of power and responsibilities between the Federal Government and Indian Tribes as specified in Executive Order 13175. The EPA's analyses show that no plant subject to the final ELGs is owned by Tribal governments. Thus, Executive Order 13175 does not apply to this action.

H. Executive Order 13045: Protection of Children from Environmental Health Risks and Safety Risks

The EPA interprets Executive Order 13045 as applying only to those regulatory actions that concern environmental health or safety risks that the Agency has reason to believe may disproportionately affect children, per the definition of “covered regulatory action” in section 2-202 of the Executive Order.

Therefore, this action is not subject to Executive Order 13045 because it does not concern

an environmental health risk or safety risk. Since this action does not concern human health, the EPA's Policy on Children's Health also does not apply.

I. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use

This action is not a "significant energy action" because it is not likely to have a significant adverse effect on the supply, distribution, or use of energy. The compliance date extensions would allow EGUs to continue operations with additional time for decision-making and will beneficially, rather than adversely, impact supply, distribution, or use.

J. National Technology Transfer and Advancement Act (NTTAA)

This rulemaking does not involve technical standards.

K. Congressional Review Act (CRA)

This action is subject to the CRA, and the EPA will submit a rule report to each House of the Congress and to the Comptroller General of the United States. This action meets the criteria set forth in 5 U.S.C. 804(2).

List of Subjects in 40 CFR 423

Environmental protection, Electric power generation, Power facilities, Waste treatment and disposal, Water pollution control.

Lee Zeldin,
Administrator.

For the reasons stated in the preamble, the Environmental Protection Agency amends 40 CFR part 423 as follows:

PART 423— STEAM ELECTRIC POWER GENERATING POINT SOURCE

CATEGORY

1. The authority citation for part 423 continues to read as follows:

Authority: 33 U.S.C. 1251 *et seq.*; 1311; 1314(b), (c), (e), (g), and (i)(A) and (B); 1316; 1317; 1318 and 1361.

2. Amend § 423.13 by:

- a. Revising paragraphs (g)(4)(i)(A), (k)(4)(i), and (l)(1)(i)(A); and
- b. Adding paragraph (o)(1)(iii).

The revisions and addition read as follows:

§ 423.13 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).

* * * * *

(g) * * *

(4) * * *

(i) * * *

(A) Dischargers must meet the effluent limitations for FGD wastewater in this paragraph (g)(4)(i) by a date determined by the permitting authority that is as soon as possible beginning

July 8, 2024, but no later than December 31, 2034. These effluent limitations apply to the discharge of FGD wastewater generated on and after the date determined by the permitting authority for meeting the effluent limitations, as specified in this paragraph (g)(4)(i).

* * * * *

(k) * * *

(4) * * *

(i) Except for those discharges to which paragraphs (k)(4)(ii) through (iv) of this section applies, or when the bottom ash transport water is used in the FGD scrubber, there shall be no discharge of pollutants in bottom ash transport water. Dischargers must meet the discharge limitation in this paragraph (k)(4)(i) by a date determined by the permitting authority that is as soon as possible beginning July 8, 2024, but no later than December 31, 2034. The limitation in this paragraph (k)(4)(i) applies to the discharge of bottom ash transport water generated on and after the date determined by the permitting authority for meeting the discharge limitation, as specified in this paragraph (k)(4)(i).

* * * * *

(l) * * *

(1) * * *

(i) * * *

(A) Dischargers must meet the effluent limitations for combustion residual leachate in this paragraph (l)(1)(i) by a date determined by the permitting authority that is as soon as possible beginning July 8, 2024, but no later than December 31, 2034. The effluent limitations in this paragraph (l)(1)(i) apply to the discharge of combustion residual leachate generated on and after the date determined by the permitting authority for meeting the effluent limitations, as specified in this paragraph (l)(1)(i).

* * * * *

(o) * * *

(1) * * *

(iii) On or before December 31, 2034, a facility may convert:

(A) From the generally applicable zero discharge limitations under paragraphs (g)(4)(i), (k)(4)(i), or (l)(1)(i) of this section to limitations for electric generating units permanently ceasing coal combustion under paragraphs (g)(4)(iii), (k)(4)(iii), or (l)(2)(i) of this section; or

(B) From limitations for electric generating units permanently ceasing coal combustion under paragraphs (g)(4)(iii), (k)(4)(iii), or (l)(2)(i) of this section to the generally applicable zero discharge limitations under paragraphs (g)(4)(i), (k)(4)(i), or (l)(1)(i) of this section.

3. Amend § 423.16 by revising paragraphs (e)(3), (g)(3), and (j)(1) to read as follows:

§ 423.16 Pretreatment standards for existing sources (PSES).

* * * * *

(e) * * *

(3) *2024 PSES*. Except as provided for in paragraph (e)(4) of this section, for any electric generating unit with a total nameplate generating capacity of more than 50 megawatts and that is not an oil-fired unit:

(i) Dischargers must meet the standards in paragraph (e)(1) of this section by January 1, 2028. The standards in paragraph (e)(1) of this section apply to the discharge of FGD wastewater generated on and after January 1, 2028.

(ii) By the dates in paragraph (e)(3)(ii)(A) or (B) of this section there shall be no discharge of pollutants in FGD wastewater:

(A) January 2, 2028; or

(B) Where a certification statement has been submitted pursuant to § 423.19(p),
December 31, 2034.

* * * * *

(g) * * *

(3) *2024 PSES*. Except as provided for in paragraph (g)(4) of this section, for any electric

generating unit with a total nameplate generating capacity of more than 50 megawatts and that is not an oil-fired unit:

(i) Dischargers must meet the standards in paragraph (g)(1) of this section by January 1, 2028. The standards in paragraph (g)(1) of this section apply to the discharge of bottom ash transport water generated on and after January 1, 2028.

(ii) By the dates in paragraph (g)(3)(ii)(A) or (B) of this section, there shall be no discharge of pollutants in bottom ash transport water:

(A) January 2, 2028; or

(B) Where a certification statement has been submitted pursuant to § 423.19(p), December 31, 2034.

* * * * *

(j) * * *

(1) *2024 PSES*. Until and including the dates specified in paragraphs (j)(1)(i) and(ii), or paragraph (j)(2) of this section, the EPA is declining to establish PSES for combustion residual leachate and is reserving such standards to be established by the control authority on a case-by-case.

(i) Except for those discharges to which paragraph (j)(1)(ii) of this section applies, by the dates in paragraph (j)(1)(i)(A) or (B) of this section, there shall be no discharge of pollutants in combustion residual leachate:

(A) January 2, 2028; or

(B) Where a certification statement has been submitted pursuant to § 423.19(p), December 31, 2034.

(ii) After the retirement of all units at a facility, the quantity of pollutants in CRL shall not exceed the quantity determined by multiplying the flow of CRL permeate times the concentrations listed in the table 7 to § 423.13(g)(3)(i) or the flow of CRL distillate times the concentrations listed in the table in § 423.15(b)(13).

4. Amend § 423.18 by adding paragraph (d) to read as follows:

§ 423.18 Permit conditions.

* * * * *

(d)(1) Notwithstanding the dates associated with any limitations in § 423.13(g), (k), or (l), a permitting authority shall establish, in a facility's permit, an alternative applicability date and, where appropriate, an associated schedule of milestones, for achieving the required limitations when the facility meets one of the circumstances in paragraph (d)(3) of this section, provided that the facility submits an initial request letter pursuant to § 423.19(q) and the permitting authority finds that request factually supported in the letter and attachments provided.

(2) Notwithstanding the dates associated with any notice of planned participation required to be submitted under § 423.19(g), (j), or (l), a permitting authority may accept a late notice of planned participation provided that the facility meets one of the circumstances in paragraph (d)(3) of this section, submits an initial request letter pursuant to § 423.19(q), and the permitting authority finds that request factually supported in the letter and attachments provided. Transfers pursuant to § 423.13(o)(1)(ii) but receiving alternative § 423.19(l) submission dates in this paragraph (d)(2) shall be deemed timely. In no case may a late notice of planned participation be accepted pursuant to this paragraph (d)(2) after December 31, 2028.

(3) Circumstances which a permitting authority shall find warrant an alternative applicability date or later notice of planned participation submission date based on factual support under paragraph (d)(1) or (2) of this section include:

(i) Where a facility needs an alternative applicability date upon making a permissible transfer between limitations prior to the deadlines in § 423.13(o) due to:

(A) An unexpected change in regional capacity market prices; or

(B) An unexpected change in local demand which materially exceeds projections made in the most recent iterations of integrated resource plans or other planning documents;

(ii) Where a facility has one or more electric generating units using a wastewater

treatment system treating combined wastewater (e.g., wastewater from a single flue gas desulfurization system servicing different units) and needs an alternative applicability date after making a decision to back out of a commitment to permanently cease coal combustion at one or more different electric generating units at the same plant due to:

(A) An unexpected change in regional capacity market prices; or

(B) An unexpected change in local demand which materially exceeds projections made in the most recent iterations of integrated resource plans or other planning documents;

(iii) Where a facility needs an alternative applicability date because it faces an unexpected supply chain issue that delays a necessary component (not merely a preferred component where there are reasonable substitutes) at a key stage of fabrication or installation such that the timeline for reaching steady-state treatment is delayed; or

(iv) Where a facility faces any other circumstance that requires additional time and is wholly outside both the facility's control and the facility's ability to plan for.

(4) A facility availing itself of this paragraph (d) may consider the alternative applicability dates or alternative notice of planned participation submission dates when evaluating compliance for purposes of § 423.13(o)(2).

5. Amend § 423.19 by:

a. Revising paragraphs (c)(1), (h)(1), (l) paragraph heading, and (l)(1); and

b. Adding paragraphs (p) and (q).

The revisions and additions read as follows:

§ 423.19 Reporting and recordkeeping requirements.

* * * * *

(c) * * *

(1) Except as provided in paragraph (c)(2) of this section, each facility subject to one or more of the reporting requirements in paragraphs (d) through (q) of this section must maintain a publicly accessible internet site (ELG website) containing the information specified in

paragraphs (d) through (q) of this section, if applicable. This website shall be titled “ELG Rule Compliance Data and Information.” The facility must ensure that all information required to be posted is immediately available to anyone visiting the site, without requiring any prerequisite, such as registration or a requirement to submit a document request. All required information must be clearly identifiable and must be able to be immediately downloaded by anyone accessing the site in a format that enables additional analysis (e.g., comma-separated values text file format). When the facility initially creates, or later changes, the web address (i.e., Uniform Resource Locator (URL)) at any point, they must notify the EPA via the “contact us” form on EPA's Effluent Guidelines website and the permitting authority or control authority within 14 days of creating the website or making the change. The facility's ELG website must also have a “contact us” form or a specific email address posted on the website for the public to use to submit questions and issues relating to the availability of information on the website.

* * * * *

(h) * * *

(1) *Notice of Planned Participation.* For sources seeking to qualify as an electric generating unit that will achieve permanent cessation of coal combustion by December 31, 2034, under this part, a Notice of Planned Participation shall be made to the permitting authority, or to the control authority in the case of an indirect discharger, no later than December 31, 2031.

* * * * *

(1) *Requirements for facilities seeking protections under this part—(1) Notice of Planned Participation.* For sources which intend to make changes that would qualify them for a different set of requirements under § 423.13(o), a Notice of Planned Participation shall be made to the permitting authority, or to the control authority in the case of an indirect discharger, no later than the dates stated in § 423.13(o)(1).

* * * * *

(p) *Requirements for facilities subject to zero discharge pretreatment standards for*

existing sources by 2034. For sources seeking to be subject to the second tier of the tiered standards in § 423.16(e)(3)(ii)(B), (g)(3)(ii)(B), or (j)(2)(i)(B), a certification statement shall be submitted to the control authority by January 1, 2028 stating that the facility has submitted a permit application, permit renewal application, or permit modification request to its permitting authority seeking an as soon as possible date for achieving the corresponding generally applicable zero discharge limitations in § 423.13(g)(4)(i), (k)(4)(i), or (l)(1)(i), subject to the considerations in § 423.11(t). Furthermore, the certification statement will include an affirmative statement that the facility will also cease its indirect discharge by the as soon as possible date determined in this permitting action.

(q) Requirements for facilities seeking an alternative applicability date under this part—

(1) Initial request letter. A facility may submit a letter to its permitting authority requesting that it receive an alternative applicability date pursuant to § 423.18(d).

(2) Contents and timing. The initial request letter must detail the significant unexpected circumstance in § 423.18(d)(2) and a compelling narrative that explains why these unexpected circumstances warrant an alternative applicability date by the permitting authority in light of the facility's plans and execution of those plans. The letter must also contain a proposed schedule of compliance to be incorporated into the permit, supported by detailed engineering dependency chart that clearly shows the milestones leading to compliance as soon as possible given the unexpected circumstances described in the letter, including contingencies for critical path steps. In the case of a missed notice of planned participation, annual progress report, or other reporting or recordkeeping requirement that should have been submitted prior to **[INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**, the letter must also attach such reporting requirements. Such submissions shall be deemed timely by the permitting authority. The facility shall submit an initial request letter within 60 days of the significant unexpected circumstance detailed in the letter or by **[INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**, whichever is later.

(3) *Progress reports.* A facility that submits an initial request letter pursuant to paragraph (q)(1) of this section must submit regular progress reports with its permitting authority at a frequency determined in paragraph (q)(4) of this section.

(4) *Contents and timing.* Progress reports must include a description of tasks and sub-tasks completed towards each of the milestones listed in the initial request letter, any changes to the expected dates of milestones, and any contingencies from the initial request letter which have been effectuated. The permitting authority shall establish the timing of regular progress reports based on the following considerations:

- (i) The estimated duration of the alternative applicability timing;
- (ii) The timeframes of various milestones, tasks, and sub-tasks;
- (iii) The number and magnitude of contingencies; and
- (iv) Any other appropriate and relevant factor.

(5) *Request letter.* A facility may submit a single initial request letter under this paragraph (q)(5) to provide factual support for circumstances specified in § 423.18(d)(3) that would support of one or more requests for alternative dates in § 423.18(d)(1) or (2).