UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Proposed Denial of the CCR Part B Alternate Liner Demonstration Application, Great River Energy Coal Creek Station, Upstream Raise 91, Underwood, North Dakota	)	Docket ID No: EPA-HQ-OLEM-2021-0280 *Submitted via regulations.gov*

COMMENTS OF EARTHJUSTICE, SIERRA CLUB, and CURE

April 10, 2023

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I. INTRODUCTION

Commenters Earthjustice, Sierra Club, and CURE (collectively, "Commenters") support the Environmental Protection Agency's ("EPA's") proposed decision to deny the alternate liner demonstration ("ALD") application submitted for Upstream Raise 91("UR91") at the Coal Creek Station currently owned and operated by Rainbow Energy Center[1] in Underwood, North Dakota.[2] Commenters' support for EPA's Proposed Denial is contingent upon EPA taking enforcement action, such as the issuance of an Administrative Order, prior to or contemporaneous with its final decision in this matter, to ensure that Coal Creek remedies the numerous, significant violations of the Coal Combustion Residuals ("CCR") Rule ("CCR Rule")[3] at Upstream Raise 91 – and at all other CCR units at the plant – pursuant to the agency's duties under the CCR Rule and the Resource Conservation and Recovery Act's ("RCRA") protectiveness standard.[4]

The 2015 CCR Rule created a "self-implementing" program whereby utilities certified their own compliance, with no enforcement other than through RCRA citizen suits.[5] In the 2015 CCR Rule, EPA did not require or provide for regulatory review or approval of utilities' self-compliance documentation. In 2016, Congress enacted statutory amendments authorizing EPA to enforce the CCR regulations, directing EPA to establish a permit program to ensure CCR Rule compliance, and authorizing EPA to approve state permit programs to operate in lieu of the

[1] Coal Creek's Part B Application was filed in Nov. 2020 by its then-current owner/operator, Great River Energy. Rainbow Energy Center, LLC bought Coal Creek Station from Great River Energy effective May 1, 2022. Letter from Great River Energy, Rainbow Energy Center, and Nexus Line to EPA (May 1, 2022), https://ccr.rainbowenergycenter.com/wp-content/uploads/2022/05/220501-Coal-Creek-Station-Transfer-of-Ownership-Notification.pdf.

[2] EPA, Memorandum re Posting EPA-HQ-OLEM-2021-0280 to Regulations.gov for Public Access (Jan. 30, 2023) and Proposed Determination: Proposed Denial of CCR Part B Alternate Liner Demonstration Application, Great River Energy Coal Creek Station, Upstream Raise 91, Underwood, North Dakota, Docket ID No. EPA-HQ-OLEM-2021-0280-0001 (Jan. 25, 2023) (collectively, "Proposed Denial"). NOTE: All page citations for all documents cited herein refer to the pdf page, unless otherwise noted. Accordingly, all page citations for the Proposed Denial refer to the pdf page of the document containing both the Memorandum and the Proposed Determination.

[3] Subpart D: Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments, 40 C.F.R. Part 257, Subpart D.

[4] 42 U.S.C. § 6944(a).

[5] Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities, 80 Fed. Reg. 21,302 (Apr. 17, 2015) ("2015 CCR Rule").

federal permit.[6] EPA has just recently begun some limited enforcement efforts under the CCR Rule,[7] and has proposed but not yet adopted a federal CCR permit program.[8]

In its 2020 Part A Amendments to the CCR Rule, EPA required all (expanded from most) unlined ponds to cease receiving waste and begin the closure process by a new, later deadline of April 11, 2021.[9] EPA also amended the Rule to regulate compacted soil or clay-lined ponds as unlined, as required by the 2018 D.C. Circuit Court of Appeals decision vacating several provisions in the 2015 CCR Rule.[10] The Part A Amendments also enabled utilities to apply for extensions of the April 2021 deadline upon demonstrating, among other things, that all CCR units at the facility are in compliance with the CCR Rule.[11] In its 2020 Part B Amendments, EPA established a two-part process for plants to establish that their pond(s) should be regulated as lined, rather than unlined, based on the nature and construction of the materials claimed to constitute a liner, contingent also upon demonstrating CCR Rule compliance.[12]

Utilities' Part A and Part B applications have, for the first time, required EPA to evaluate CCR Rule compliance at many plants across the country. As in this case, EPA's review of Part A and Part B applications has revealed widespread violations of critical CCR Rule requirements, including those involving groundwater monitoring (and, in the Part A context, pond closure and corrective action, among other requirements).[13] Every proposed and final Part A and Part B

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[6] Water Infrastructure Improvements for the Nation Act ("WIIN Act"), Pub. L. No. 114-322 (Dec.º16,º2016), Section 2301, enacting 42 U.S.C. § 6945(d).

[7] *See*, e.*g.*, Notice of Potential Violations and Opportunity to Confer, Alabama Power Company, Plant Barry – Bucks, Alabama, from Kimberly L Bingham, Chief, Chemical Safety and Land Enforcement Branch, EPA Region 4, to Susan B. Comensky, Vice President, Environmental Affairs, Alabama Power Company (Jan. 31, 2023) (attached); Press Release, EPA, EPA reaches settlement with Public Service Company of Colorado over allegations of noncompliance with Coal Combustion Residual Regulations (May 23, 2022), https://www.epa.gov/newsreleases/epa-reaches-settlement-public-service-company-colorado-over-allegations-noncompliance (attached); Press Release, EPA, EPA Takes Key Steps to Protect Groundwater from Coal Ash Contamination (Jan. 11, 2022), https://www.epa.gov/newsreleases/epa-takes-key-steps-protect-groundwater-coal-ash-contamination (attached).

[8] EPA, Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals From Electric Utilities; Federal CCR Permit Program, Proposed Rule, 85 Fed. Reg. 9,940 (Feb. 20, 2020).

[9] EPA, Hazardous and Solid Waste Management System: Disposal of Coal Combustion Residuals From Electric Utilities; A Holistic Approach to Closure Part A: Deadline To Initiate Closure, 85 Fed. Reg. 53,516, 53,517 (Aug. 28, 2020) ("Part A Amendments").

[10] Part A Amendments, 85 Fed. Reg. at 53,516–17, 53,519, 53,521, 53,561; *Util. Solid Waste Activities Grp. v. EPA*, 901 F.3d 414, 430–32 (D.C. Cir. 2018) ("*USWAG*").

[11] Part A Amendments at 53,562 and 53,564 (promulgating 40 C.F.R. §§ 257.103(f)(1)(iii) and (f)(2)(iii)).

[12] EPA, Hazardous and Solid Waste Management System; Disposal of CCR; A Holistic Approach to Closure Part B: Alternate Demonstration for Unlined Surface Impoundments, 85 Fed. Reg. 72,506 (Nov. 12, 2020) ("Part B Amendments").

[13] *See* EPA, Coal Combustion Residuals (CCR) Part A Implementation and proposed decisions linked therein, https://www.epa.gov/coalash/coal-combustion-residuals-ccr-part-implementation#ti (current as of Apr. 3, 2023); Press Release, EPA Takes Key Steps to Protect Groundwater from Coal Ash Contamination," (attached *supra* n.7).

decision issued by EPA on applications deemed complete has identified significant CCR Rule violations; those decisions address seven Part A plants[14] and six Part B plants.[15]

Coal Creek submitted a Part B Alternate Liner Demonstration Application for the plant's Upstream Raise 91 pond to EPA pursuant to 40 C.F.R. § 257.71(d)(1)(i).[16] EPA has proposed to deny the Application because it fails several Part B regulatory requirements: it fails to demonstrate that the Pond complies with the CCR Rule, specifically with respect to numerous groundwater monitoring requirements and appropriately remaining in detection monitoring, and it fails to demonstrate compliance with the location restriction for unstable areas. In addition, it fails to demonstrate that the purported liner materials are suitable for use as a CCR pond liner and that the construction of the purported liner is of good quality and in line with proven and accepted engineering practices.[17]

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[14] EPA, Final Decision, Denial of Alternative Closure Deadline for General James M. Gavin Plant, Docket ID No. EPA-HQ-OLEM-2021-0590-0100 (Nov. 18 2022), https://www regulations.gov/document/EPA-HQ-OLEM-2021-0590-0100 (attached); EPA, Proposed Determination: Proposed Conditional Approval of Alternative Closure Deadline for A.B. Brown Generating Station, Docket ID No. EPA-HQ-OLEM-2022-0335-0001 (Oct. 5, 2022), https://www.regulations.gov/document/EPA-HQ-OLEM-2022-0335-0001; EPA, Proposed Decision: Proposed Conditional Approval of Alternative Closure Deadline for the Calaveras Power Station, Docket ID No. EPA-HQ-OLEM-2022-0333-0001 (July 12, 2022), https://www.regulations.gov/document/EPA-HQ-OLEM-2022-0333-0001; EPA, Proposed Determination: Proposed Conditional Approval of Alternative Closure Deadline for the Mountaineer Power Plant, Docket ID No. EPA-HQ-OLEM-2021-0842-0001 (July 12, 2022), https://www.regulations.gov/document/EPA-HQ-OLEM-2021-0842-0001; EPA, Proposed Decision: Proposed Denial of Alternative Closure Deadline for Clifty Creek Power Station, Docket ID No. EPA-HQ-OLEM-2021-0587-0023 (Jan. 11, 2022), https://www.regulations.gov/document/EPA-HQ-OLEM-2021-0587-0023; EPA, Proposed Decision: Proposed Denial of Alternative Closure Deadline for Ottumwa Generating Station, Docket ID No. EPA-HQ-OLEM-2021-0593-0002 (Jan. 11, 2022), https://www.regulations.gov/document/EPA-HQ-OLEM-2021-0593-0002; EPA, Proposed Decision: Conditional Approval of an Alternative Closure Deadline for H.L. Spurlock Power Station, Maysville, Kentucky, Docket ID No. EPA-HQ-OLEM-2021-0595-0002 (Jan. 11, 2022), https://www.regulations.gov/document/EPA-HQ-OLEM-2021-0595-0002.

[15] EPA, Proposed Determination: Proposed Denial of the CCR Part B Alternate Liner Demonstration Application, DTE Electric Belle River Power Plant Bottom Ash Ponds and Diversion Basin, China Township, Michigan, Docket ID No. EPA-HQ-OLEM-2021-0282-0001 (Jan. 25, 2023), https://www regulations.gov/document/EPA-HQ-OLEM-2021-0282-0001; EPA, Proposed Determination: Proposed Denial of the CCR Part B Alternate Liner Demonstration Application, Great River Energy Coal Creek Station, Upstream Raise 91, Underwood, North Dakota, Docket ID No. EPA-HQ-OLEM-2021-0280-0001 (Jan. 25, 2023), https://www.regulations.gov/document/EPA-HQ-OLEM-2021-0280-0001; EPA, Proposed Determination: Proposed Denial of the CCR Part B Alternate Liner Demonstration Application, Conemaugh Generating Station, Ash Filter Ponds A. B. C. and D, New Florence, Pennsylvania, Docket ID No. EPA-HQ-OLEM-2021-0281-0001 (Jan. 25, 2023), https://www regulations.gov/document/EPA-HQ-OLEM-2021-0281-0001; EPA, Proposed Determination: Proposed Denial of the CCR Part B Alternate Liner Demonstration Application, SRP Coronado Generating Station, Evaporation Pond, St. Johns, Apache County, Arizona, Docket ID No. EPA-HQ-OLEM-2021-0285-0001 (Jan. 25, 2023), https://www regulations.gov/document/EPA-HQ-OLEM-2021-0285-0001; EPA, Proposed Determination: Proposed Denial of the CCR Part B Alternate Liner Demonstration Application for the Martin Lake Steam Electric Station, Tatum, Texas, Docket ID No. EPA-HQ-OLEM-2021-0284-0001 (Jan. 25, 2023), https://www.regulations.gov/document/EPA-HQ-OLEM-2021-0284-0001; EPA, Proposed Determination: Proposed Denial of the CCR Part B Alternate Liner Demonstration Application, DTE Electric, Monroe, Fly Ash Basin, Monroe, Michigan, Docket ID No. EPA-HQ-OLEM-2021-0283-0001 (Jan. 25, 2023), https://www.regulations.gov/document/EPA-HQ-OLEM-2021-0283-0001.

[16] Golder for Great River Energy, Application to Submit an Alternate Liner Demonstration for the Upstream Raise 91 CCR Surface Impoundment, Great River Energy – Coal Creek Station, Docket ID No. EPA-HQ-OLEM-2021-0280-0008 (Nov. 25, 2020) ("Application").

[17] *See* 40 C.F.R. §§ 257.71(d)(1)(i)(A), B), and (C).

As discussed below and in the attached Expert Reports of Mark Hutson,[18] EPA has appropriately deemed Coal Creek's Application inadequate on numerous, independently-sufficient, grounds. EPA should finalize its proposed decision and thereby reactivate Coal Creek's pressing duty to stop using and begin closing the unlined Upstream Raise 91 pond.

In addition, the serious consequences and troubling implications of Coal Creek's CCR Rule noncompliance should compel EPA, consistent with its obligations under the RCRA protectiveness standard and the Part B Amendments, to take additional action, such as issuing an administrative enforcement order, prior to or contemporaneous with the issuance of its final decision, to ensure the Coal Creek plant remedies its CCR Rule violations at UR91 and at all other CCR units on-site.

Time is critical because Coal Creek has not demonstrated compliance with numerous essential requirements of the CCR Rule regarding groundwater monitoring and contamination due to numerous deficiencies in its Application: failure to install and operate a groundwater monitoring system able to detect CCR releases from the Pond, including the failure to document that the two upgradient wells are unaffected by releases from the unit, the inadequate placement, number, and construction of downgradient wells, and the failure to document the basis for installing only the presumptively-insufficient minimum number of downgradient wells; inappropriate reliance on intrawell data comparisons; use of inappropriate statistical methods to analyze monitoring data; inappropriate use of a control chart for evaluating groundwater monitoring data, use of inexplicably-high detection limits for lithium and use of inappropriate procedure for radium non-detect values; waiting too long to conduct resampling to verify exceedances; reliance on inadequate alternate source demonstrations to remain, inappropriately, in detection monitoring rather than undertake assessment monitoring to address contamination associated with UR91. Coal Creek also failed to substantiate its claimed compliance with the CCR Rule's location restriction for unstable areas. In addition to these CCR Rule violations, Coal Creek failed to provide threshold information regarding the composition and construction of its purported liner to justify further review of the argument that UR91 should be regulated as if lined, rather than unlined, and avoid the mandate that all unlined CCR ponds must close.

EPA's proposed actions under the Part A and B Amendments, including the proposed Coal Creek Part B Application denial, are long overdue steps to begin implementing the CCR Rule pursuant to RCRA's protectiveness standard. Under that statutory mandate, EPA must adopt and implement regulations that ensure "no reasonable probability of adverse effects on health or the environment."[19] Unfortunately, the delay in issuing even proposed Part A and B decisions has enabled utilities to continue operating their leaking, unlined ponds well past the default cease receipt/begin closure deadline of April 11, 2021. EPA must promptly finalize its proposed Part B (and A) decisions and take all necessary and timely enforcement actions to hold Rainbow Energy and other owners and operators of CCR sites responsible for CCR compliance,

[18] Mark A. Hutson, P.G., Geo-Hydro, Inc., Observations on Groundwater Monitoring Compliance Issues Identified in EPA's Proposed Denial of Alternate Liner Demonstration Application, Coal Creek Station - Upstream Raise 91 (Apr. 10, 2023) ("Hutson Expert Report re Coal Creek") (attached); Mark A. Hutson, P.G., Geo-Hydro, Inc., Observations on Proposed Denials of Alternate Liner Determination Applications, at 4 (Apr. 3, 2023) ("Hutson Expert Report re Liners") (attached).

[19] 42 U.S.C. § 6944(a).

including but not limited to sufficient groundwater monitoring, timely and effective cleanup actions, and safe closure of ash ponds.

II. BACKGROUND

At approximately 1,150 megawatts, the Coal Creek plant is North Dakota's largest power plant and has been operating since 1979.[20] After the prior owner/operator, Great River Energy, tried without success to give the plant away (*i.e.*, to sell it for one dollar), it decided in 2020 to close it.[21] However, Rainbow Energy purchased the plant in May 2022, and it remains in operation.[22]

The plant has four CCR units: UR91 (formerly known as Ash Pond 91),[23] which is the subject of its Part B Application; Upstream Raise 92; the Drains Pond System; and the Southeast 16 Landfill.[24] Upstream Raise 91, Upstream Raise 92, and the Southeast 16 Landfill are immediately adjacent to one another, west to east respectively, and the Drains Pond System is directly northwest of Upstream Raise 91.[25] Upstream Raise 92 ceased receiving waste by April 10, 2021 and commenced to close the pond with ash in place.[26] The east cell of the Drains Pond System was closed and re-purposed as a non-CCR surface impoundment in 2019-2020.[27] The Drain Pond System's west and center cells remain in operation, as do UR91 and the Southeast 16 Landfill.[28]

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[20] *Rainbow Energy Center to purchase Coal Creek Station*, Great River Energy (June 30, 2021), https://greatriverenergy.com/transmission/rainbow-energy-center-to-purchase-coal-creek-station/; *North Dakota's largest power plant: Coal Creek Station*, Lignite Energy Council (Aug. 17, 2017), https://lignite.com/news/north-dakotas-largest-power-plant-coal-creek-station/.

[21] Joshua Partlow, *How coal holds on in America*, Washington Post (Jan. 17, 2022), https://www.washingtonpost.com/climate-environment/2022/01/17/coal-creek-station-power-plant/; Mike Hughlett, Star Tribune, Great River to sell coal plant, but still buy power from it (June 30, 2021), https://www.startribune.com/great-river-to-sell-coal-plant-but-still-buy-power-from-it/600073675/ (attached); Adam Willis, *Bismarck-based energy company to buy North Dakota's largest coal-fired power plant*, INFORUM (June 30, 2021), https://www.inforum.com/business/bismarck-based-energy-company-to-buy-north-dakotas-largest-coal-fired-power-plant (attached).

[22] Letter from Great River Energy, Rainbow Energy Center, and Nexus Line to EPA (May 1, 2022), https://ccr.rainbowenergycenter.com/wp-content/uploads/2022/05/220501-Coal-Creek-Station-Transfer-of-Ownership-Notification.pdf.

[23] Application at 35, 37.

[24] *Id.* at 4.

[25] *Id.* at 5, 152.

[26] Golder, Notice of Intent to Close, Upstream Raise 92 CCR Surface Impoundment – Coal Creek Station (June 4, 2021), https://ccr.rainbowenergycenter.com/wp-content/uploads/2021/10/2021-upstream-raise-92-notice-of-intent-to-close.pdf (attached).

[27] Golder, Notification of Closure, Drains Pond System East Cell – Coal Creek Station, at 3 (Mar. 4, 2020) (attached).

[28] *Id.*; Application at 4.

UR91 is 75 acres[29] and was designed for a maximum of 8,300,000 cubic yards at closure.[30] It receives fly ash, bottom ash, economizer ash, and flue gas desulfurization ("FGD") material.[31]

UR91 was built in the early 1990s in the footprint of what was known as the South Ash Pond, which "operated intermittently from 1979 through 1990" and was closed "[d]ue to the identification of groundwater impacts."[32] The history of the UR91 site reflects a series of unsuccessful attempts to address repeated concerns about groundwater contamination and suggests repeated misjudgments regarding the capabilities of the "liners" beneath the unit.

> Upstream Raise 91 was constructed on the historic footprint of the South Ash Pond, which was built in the late 1970s on a foundation of re-compacted site soils (glacial tills) and put into service in 1979. In 1981, the South Ash Pond was taken out of service to reconstruct the clay liner and was put back into service from 1982 until 1987, at which point CCR materials were removed and the geometry of the South Ash Pond footprint was modified. . . .
>
> Chloride concentrations in MW-49 increased significantly shortly after monitoring began in the late 1980s due to likely impacts from the South Ash Pond. In 1993, Upstream Raise was deepened and a new composite liner consisting of a 2-foot-thick compacted clay liner underlying a 40-mil high-density polyethylene (HDPE) geomembrane was completed. Beginning in 1996, chloride concentrations started a downward trend. . . .[33]

There is no indication that the plant undertook any groundwater remediation beyond closing the pond and removing the CCRs and some unspecified portion of the underlying subsoil.[34]

Notwithstanding the installation of a liner, Coal Creek continued to report high levels of chloride at UR91. Once CCR Rule-required groundwater monitoring commenced, Coal Creek reported statistically significant increases ("SSIs") for chloride at downgradient well MW-49 at

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[29] Application at 109.
[30] Golder, Closure Post-Closure Plan, Revision 1, Upstream Raise 91 Surface Impoundment (June 27, 2022), https://ccr.rainbowenergycenter.com/wp-content/uploads/2022/08/2022-Ash-Pond-91-Closure-Postclosure-Plan_Rev1.pdf (attached).
[31] Application at 12.
[32] Application at 14.
[33] *Id.* at 1072–73. *See also id.* at 627: "Previous evaluations of the water quality data have shown that the CCS ash ponds and evaporation ponds have adversely affected local water quality." (Coal Creek Station, 1993 Water Quality Monitoring Report, Submitted to North Dakota State Department of Health and Consolidated Laboratories by Environmental and Regulatory Services Division, Cooperative Power Association, citing Nov. 1991 water quality report.)
[34] Application at 14.

UR91 beginning in 2019[35] and in each subsequent year.[36] Rather than advance to assessment monitoring under the CCR Rule, Coal Creek has repeatedly relied on Alternate Source Demonstrations ("ASDs") with theories as to why the documented contamination at a site with a history of contamination is not related to UR91.[37] More recently, Coal Creek identified an SSI for total dissolved solids ("TDS") at another downgradient well (MW-91-1) at UR91, and prepared an ASD arguing that that pond is not the source of the contamination.[38]

The pattern repeats at each of the other CCR units. Coal Creek has consistently reported SSIs for boron, fluoride, and pH at Upstream Raise 92, with accompanying ASDs disclaiming a connection between the pond and the contamination detected by its groundwater monitoring.[39] Coal Creek also detected SSIs for fluoride, pH, and chloride at the Drains Pond System, and again dismissed them with ASDs.[40] In addition, Coal Creek reported SSIs for total dissolved solids ("TDS") in an upgradient well at Upstream Raise 92, and for TDS and chloride at upgradient wells at the Landfill, but determined that those units could not have caused the exceedances because they occurred in upgradient wells, and declined to prepare ASDs.[41]

As a coal-burning power plant, Coal Creek is a significant contributor to the climate crisis. In 2021, it emitted 9,379,768 metric tons of carbon dioxide,[42] which is equivalent to the emissions of 2,087,282 gasoline-powered passenger vehicles driven for one year.[43]

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[35] *Id.* at 31.

[36] Golder, Annual Groundwater Report – 2020, Great River Energy – Coal Creek Station, at 2 (Jan. 2021) ("2020 Groundwater Monitoring Report"), https://ccr.rainbowenergycenter.com/wp-content/uploads/2021/10/2020-annual-groundwater-report-coal-creek_rev1.pdf (attached); Golder, Annual Coal Combustion Residuals Groundwater Report – 2021, Great River Energy – Coal Creek Station, at 15 (Jan. 2022) ("2021 Groundwater Monitoring Report"), https://ccr.rainbowenergycenter.com/wp-content/uploads/2022/04/2021-Annual-Groundwater-Report-Coal-Creek.pdf (attached); WSP USA Inc. [a/k/a WSP Golder], 2022 Annual Coal Combustion Residuals Groundwater Report, Rainbow Energy Center, Coal Creek Station, at 2 (Jan. 31, 2023) ("2022 Groundwater Monitoring Report"), https://ccr.rainbowenergycenter.com/wp-content/uploads/2023/02/2022-Annual-Groundwater-Report-Coal-Creek.pdf (attached).

[37] Application at 1063–88, 1089–114 (ASDs from 2020); 2021 Groundwater Monitoring Report at 2, 15, 17-18, 99–124, 198–223; 2022 Groundwater Monitoring Report at 2, 13, 99–124.

[38] 2022 Groundwater Monitoring Report at 3, 16, 261–82. Coal Creek added MW-91-1 to the UR91 monitoring network as of 2019, when it switched from monitoring UR91 and UR92 together to separate monitoring networks for each unit. 2020 Groundwater Monitoring Report at 77.

[39] 2020 Groundwater Monitoring Report at 2–3, 16–18, 142–200; 2021 Groundwater Monitoring Report at 2–3, 15–18, 73–98, 172–97; 2022 Groundwater Monitoring Report at 2–3, 13, 16–17, 125–51, 205–60.

[40] 2020 Groundwater Monitoring Report at 2, 16, 18, 98–117; 2021 Groundwater Monitoring Report at 2–3, 15, 17–18, 125–70, 224–76; 2022 Groundwater Monitoring Report at 2, 13, 152–203.

[41] 2020 Groundwater Monitoring Report at 2, 16, 18; 2021 Groundwater Monitoring Report at 2–3, 15–17; 2022 Groundwater Monitoring Report at 2, 13, 18.

[42] EPA, Facility Level Information on Greenhouse Gases Tool, 2021 Greenhouse Gas Emissions from Large Facilities, search conducted at https://ghgdata.epa.gov/ghgp/main.do.

[43] EPA, Greenhouse Gas Equivalencies Calculator (updated March 2022), https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator.

Climate change, driven substantially by carbon dioxide emissions, imposes disproportionately heavy burdens on already overburdened communities.

> Many disadvantaged communities currently bear the brunt of climate-induced health risks from extreme heat, poor air quality, flooding, extreme weather events, and vector borne diseases.[44]

A recent EPA study quantified some of these disproportionate impacts. For example: Black and African American individuals are forty percent more likely to live in areas with the highest projected increased mortality due to climate change and thirty-four percent more likely to live in areas with the highest projected climate change-induced increases in childhood asthma; Hispanic and Latino individuals are forty-three percent more likely to live in areas with highest projected labor hour losses due to climate change; American Indian and Alaska Native individuals are forty-eight percent more likely to live in areas with the highest percentage of land inundated by sea level rise; and Asian individuals are twenty-three percent more likely to live in coastal areas with traffic delays due to climate-induced high tide flooding.[45] Increases in extreme heat events in cities in conjunction with the increase in toxic air pollution to which low-income and minority populations are disproportionately exposed are expected to become drivers of increased morbidity and mortality.[46]

The international community has, yet again, heightened the urgency of addressing climate change and the critical need for immediate, substantial, emissions cuts.

> Continued greenhouse gas emissions will lead to increasing global warming. . . . Every increment of global warming will intensify multiple and concurrent hazards.
> . . .
> For any given future warming level, many climate-related risks are higher than assessed in AR5 [previous IPCC report, 2014] and projected long-term impacts are up to multiple times higher than currently observed.
> . . .
> Some future changes are unavoidable and/or irreversible but can be limited by deep, rapid and sustained global greenhouse gas emissions reduction.[47]

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[44] U.S. Dep't of Health and Human Servs., Climate Change and Health Equity (last reviewed May 6, 2022), https://www.hhs.gov/ocche/climate-change-health-equity/index.html (attached). *See also* Global Change Research Program, Climate Change Impacts in the United States, at 22, 231, 238, and 240 (2014), https://www.globalchange.gov/browse/reports/climate-change-impacts-united-states-third-national-climate-assessment-0; Sharon L. Harlan & Darren M. Ruddell, Climate Change and Health in Cities: Impacts of Heat and Air Pollution and Potential Co-Benefits from Mitigation and Adaptation, Current Opinion in Environmental Sustainability, 3:126-134 at 128 (2011) ("Harlan & Ruddell, Health in Cities").

[45] EPA, Climate Change and Social Vulnerability in the United States: A Focus on Six Impacts, EPA 430-R-21-003, at 6 (Sept. 2021), https://www.epa.gov/cira/social-vulnerability-report (attached).

[46] Harlan & Ruddell, Health in Cities, 3:126–134 at 131.

[47] Intergovernmental Panel on Climate Change, Synthesis Report of the IPCC Sixth Assessment Report (AR6), Summary for Policymakers, at 12, 15, 19 (Mar. 2023), https://report.ipcc.ch/ar6syr/pdf/IPCC_AR6_SYR_SPM.pdf (attached).

III. COAL CREEK'S PART B APPLICATION FAILS TO SATISFY THE REGULATIONS' DEMANDING BURDEN OF PROOF.

A. The D.C. Circuit Held in *USWAG* that RCRA Requires Dangerous Unlined Coal Ash Ponds to Begin Closing as Soon as Possible, and that the CCR Rule Must Require Liners that Are at Least as Protective as Composite Liners for All Operating Units.

Across the nation, hundreds of leaking, unlined, toxic coal ash ponds are polluting groundwater as well as bays, lakes, rivers and streams, releasing toxic and radioactive substances into the water. For a century, utilities have used the cheapest, easiest – and most dangerous – method of disposal for the toxic waste generated by coal plants: dumping it into unlined basins or "ponds" next to the plants. Over decades, hundreds of coal ash ponds have grown to span scores of acres, containing millions of tons of liquid toxic waste impounded behind the ash or soil walls of aging coal ash dams. Many sit close to communities and water bodies, and industry's own monitoring data have revealed that the vast majority of these ponds are leaking coal ash toxins at levels that render the groundwater unsafe for human consumption.[48]

Utilities have known for decades that unlined coal ash ponds pose significant dangers to human health and the environment and must be closed.[49] Those concerns became legally binding requirements in EPA's 2015 CCR Rule, signed in December 2014[50] and formally published in April 2015.[51] In August 2018, the D.C. Circuit Court of Appeals in *Utility Solid Waste Activities Group v. EPA ("USWAG")* indicated in strong language, based on information in EPA's rulemaking record, that even the 2015 CCR Rule's requirement for closing unlined ponds fell short of RCRA's protectiveness standard, because it allowed unlined impoundments to continue operating until contamination was formally confirmed, instead of closing or retrofitting with composite liners.[52] The court further held that impoundments with only a natural clay liner, rather than a modern composite liner, were similarly "dangerous" and must be treated as unlined under the CCR Rule and thus also required to close or retrofit.[53]

Central to the *USWAG* court's review was EPA's 2015 finding that modern composite liners must be required for new impoundments because "[b]oth the CCR damage case history and the risk assessment clearly show the need for and the effectiveness of appropriate liners in

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[48] In fact, 91% of regulated coal ash ponds contaminated groundwater to levels that exceed federal health standards. *See* Environmental Integrity Project and Earthjustice, Poisonous Coverup: The Widespread Failure of the Power Industry to Clean Up Coal Ash Dumps (rev. Nov. 3, 2022), https://earthjustice.org/documents/report/poisonous-coverup (attached); *see also* Environmental Integrity Project & Earthjustice, Coal's Poisonous Legacy: Groundwater Contaminated by Coal Ash Across the U.S., Docket ID No. EPA-HQ-OLEM-2019-0173-0205 (rev. July 11, 2019) (attached).

[49] *See* Comments of Earthjustice et al., Section V, Docket ID No. EPA-HQ-OLEM-2019-0172-0165 (Jan. 31, 2020) (attached).

[50] EPA, Fact Sheet: Final Rule on Coal Combustion Residuals Generated by Electric Utilities (Dec. 2014), https://www.epa.gov/sites/production/files/2014-12/documents/factsheet_ccrfinal_2.pdf (attached).

[51] 2015 CCR Rule, 80 Fed. Reg. at 21,302.

[52] *USWAG*, 901 F.3d at 429. *See also* 42 U.S.C. § 6944(a).

[53] *USWAG*, 901 F.3d at 430–32.

reducing the potential for groundwater contamination at CCR landfills and CCR surface impoundments."[54] In its 2014 Risk Assessment for the CCR Rule, EPA concluded that modern composite liners are the "only liner type modeled that effectively reduced risks from all pathways and constituents far below human health and ecological criteria in every sensitivity analysis conducted."[55] Only a modern composite liner reduces the risk from coal ash in impoundments to a level that EPA found acceptable.[56] By contrast, unlined impoundments (including clay-lined impoundments) pose risks to human health that exceed the levels EPA deemed acceptable.[57]

The *USWAG* court relied on these EPA findings, holding that EPA had acted arbitrarily and capriciously, and contrary to the RCRA protectiveness standard, in allowing existing unlined (including clay-lined) impoundments to continue to operate.[58] Specifically, the court found that:

- EPA had conclusively determined that, for new impoundments, composite liners are needed to "effectively secure[] against leakage";
- leaking unlined (including clay-lined) impoundments cannot be fixed, making closure or retrofit necessary;
- even delays of a few months in addressing leakage from unlined impoundments created unacceptable additional risk;
- the risks of harm continue during the long process of closing a surface impoundment under the 2015 CCR Rule;
- groundwater monitoring does not fully protect against all of the risks that unlined impoundments pose to health and the environment; and therefore that
- EPA's decision to create less stringent standards for existing impoundments than it had for new impoundments was arbitrary and capricious, and contrary to the RCRA protectiveness standard.[59]

[54] 2015 CCR Rule, 80 Fed. Reg. at 21,371; *see also* Alexander Livnat, PhD, Comments on a Proposed Rule: Hazardous and Solid Waste Management System: Disposal of CCR; A Holistic Approach to Closure Part B: Alternate Demonstration for Unlined Surface Impoundments; Implementation of Closure, Docket ID. No. EPA-HQ-OLEM-2019-0173-0194 (Apr. 16, 2020) (discussing the damage case assessments) (attached).
[55] EPA, Human and Ecological Risk Assessment of Coal Combustion Residuals, at ES-7, Docket ID No. EPA-HQ-OLEM-2019-0173-0008 (Dec. 2014) ("2014 Risk Assessment"); *see also* EPA, Response to Comments, Vol. 5, Docket ID No. EPA-HQ-RCRA-2009-0640-12128, at 12 (2014) ("[T]he CCR damage cases and EPA's quantitative groundwater risk assessment clearly show the need for effective liners – namely composite liners – to very significantly reduce the probability of adverse effects.") (attached).
[56] 2014 Risk Assessment at 5-5 tbl. 5-3.
[57] *Id.*
[58] *USWAG*, 901 F.3d at 427–32.
[59] *Id.*

Responding to *USWAG*, EPA's Part B Amendments established a process for plant owners to attempt to make an "alternate liner demonstration" to qualify their unlined impoundments as lined impoundments under the CCR Rule, which would allow them to continue operating indefinitely, instead of closing.[60] To make a successful ALD, a plant owner must (among other things) "demonstrate that based on the construction of the unit and surrounding site conditions, that there is no reasonable probability that continued operation of the surface impoundment will result in adverse effects to human health or the environment."[61] The language in this provision mirrors the RCRA protectiveness standard that was at issue in *USWAG*.[62]

B. Part B Requires Applicants to Establish that Their Unlined Pond(s) Will Operate Safely During the Lengthy Demonstration Process, and that They Are Likely to Satisfy the Rigorous Technical Requirements for So-Called Alternate Liners.

In light of the dangers posed by CCR ponds lacking composite liners, as recognized by EPA and highlighted by the D.C. Circuit,[63] utilities seeking an ALD must overcome a demanding burden of proof in order to satisfy the Part B Amendments and RCRA's protectiveness standard. Because EPA's risk assessment failed to document any liner requirements – other than modern composite liners – that meet the protectiveness standard, EPA made clear that utilities would have to provide site-specific documentation of the properties and construction of the materials underlying their ponds in order to overcome the evidence that ponds lacking composite liners pose unacceptable risks."[64]

In response to industry assertions that the performance of some unlined ponds "is equivalent or even superior to the liners required by the 2015 CCR Rule,"[65] EPA stated that it was "theoretically possible" for some unlined ponds to meet that standard[66] and anticipated that at best "only a small fraction of non-composite lined surface impoundments" might be able to meet the Part B requirements.[67]

The Part B Amendments established a two-step process for utilities seeking ALD:

> In the first step, a facility would be required to submit an initial application to demonstrate that they meet certain minimum requirements before embarking on a comprehensive alternate liner demonstration. These minimum requirements are designed to ensure that it is likely a facility will ultimately be able to make the more extensive demonstration to support continued operation, and that the CCR surface impoundment can operate safely over the near term

[60] Part B Amendments, 85 Fed. Reg. at 72,506.
[61] 40 C.F.R. § 257.71(d).
[62] *See* 42 U.S.C. § 6944(a) (EPA solid waste regulations must ensure that "there is no reasonable probability of adverse effects on health or the environment from disposal of solid waste").
[63] *USWAG*, 901 F.3d at 430–32.
[64] Part B Amendments, 85 Fed. Reg. at 72,510.
[65] *Id*. at 72,508.
[66] *Id*. at 72,509.
[67] *Id*. at 72,508.

> while the facility collects the data and conducts the analyses necessary to support the demonstration.[68]

EPA acknowledged that utilities' reports claiming that some ponds lacking composite liners could nonetheless satisfy RCRA's protectiveness standard "are inadequate and similarly do not support the continued operation of the units," that "the information provided in the . . . reports is not sufficient to demonstrate whether on-site groundwater monitoring wells are adequate in number of construction to accurately reflect upgradient and downgradient conditions at the site," and that "some facilities have inappropriately handled monitoring data to erroneously show that the CCR surface impoundment has not contaminated groundwater."[69] EPA agreed that "neither the 2014 Risk Assessment nor the industry reports support conclusions about any individual CCR surface impoundment, and emphasized the need for site-specific information on the performance of the engineered liner and/or the naturally occurring soil."[70] Moreover, EPA warned potential applicants that the documentation required under the Part B Amendments would have to significantly surpass that included in the industry reports, as they "did not include the type or specificity of data necessary to support conclusions about these individual surface impoundments."[71]

> [P]art of the purpose of the initial application step is to determine whether the types of deficiencies raised by commenters [regarding industry's liner claims] are present at a particular site, and if so, to ensure that these facilities do not progress to the longer ALD process.
>
> . . .
>
> EPA purposefully divided the ALD process into two steps to weed out the facilities that fail to meet the RCRA § 4004(a) standard.
>
> . . .
>
> CCR surface impoundments that are able to progress to the demonstration step will have shown that the design of the groundwater monitoring network is sufficient to identify releases from the unit and that there is currently no evidence that releases have occurred or are likely to occur while they are completing the demonstration.[72]

In short, the Part B Amendments require applicants to demonstrate that the asserted "alternate liner" will likely satisfy RCRA's protectiveness standard and that there is no indication – evidenced by a properly designed and implemented groundwater monitoring program – that the pond is already leaking. The former requires proof, with all supporting data and analyses, that the materials are suitable for use as a liner and that the construction is of good quality and meets proven and accepted engineering practices.[73] The latter requires proof that the

[68] *Id*. at 72,510.
[69] *Id*.
[70] *Id*.
[71] *Id*. at 72,511.
[72] *Id*. at 72,511–12.
[73] 40 C.F.R. § 257.71(d)(1)(i)(C).

pond in question has a groundwater monitoring network compliant with the CCR Rule, a groundwater monitoring sampling and analysis program compliant with the CCR Rule, appropriately remains in detection monitoring, and satisfies all location requirements.[74]

A common thread across all six of EPA's proposed Part B application denials – including for Coal Creek – is the utilities' failure to provide documentation of their compliance with key CCR groundwater monitoring requirements, and of the characteristics and construction of their purported liners.

C. Coal Creek Failed to Document Compliance with Key Groundwater Monitoring Requirements for Upstream Raise 91.

1. *Coal Creek Failed to Demonstrate Compliance with the Groundwater Monitoring Network Requirements.*

The Part B Amendments require applications to include "[d]ocumentation that the groundwater monitoring network meets all the requirements of § 257.91."[75] The requirement that facilities install and operate groundwater monitoring systems sufficient to detect contamination emanating from their CCR disposal units is at the heart of the CCR Rule. As EPA explained when promulgating the Rule:

> EPA is finalizing groundwater monitoring and corrective action requirements to ensure that groundwater contamination at new and existing CCR units will be detected and cleaned up as necessary to protect human health and the environment. These requirements reflect Congressional intent that protection of groundwater be a prime objective of any new solid waste regulations. . . . [T]here is significant potential for CCR landfills and CCR surface impoundments to leach hazardous constituents into groundwater, impair drinking water supplies and cause adverse impacts on human health and the environment. . . . Thus, in order for a CCR landfill or CCR surface impoundment to show no reasonable probability of adverse effects on health or the environment, a system of routine groundwater monitoring to detect any contamination from a CCR unit, and corrective action requirements to address identified contamination, are essential.[76]

The CCR Rule requires that groundwater monitoring networks be designed to represent accurately both the quality of background groundwater in the uppermost aquifer that has not been affected by CCR leakage, and the quality of groundwater in the uppermost aquifer passing the unit's waste boundary.[77] The monitoring network must include a minimum of one upgradient and three downgradient wells, plus a sufficient number of additional wells to ensure that both

[74] *Id*. § 257.71(d)(1)(i)(B)(1)–(3).
[75] *Id*. § 257.71(d)(1)(i)(B)(1).
[76] 2015 CCR Rulemaking, 80 Fed. Reg. at 21,396.
[77] 40 C.F.R. § 257.91(a).

background and downgradient water quality are accurately represented.[78] "[T]he rule establishes a presumption that the minimum of one upgradient and three downgradient wells is not sufficient, and requires the owner or operator to rebut that presumption in order to install only this minimum."[79] Although utilities may employ wells for background purposes that are not hydraulically upgradient where hydrogeologic conditions do not support a determination of upgradient status, the background wells must in all cases represent groundwater quality that is not affected by CCR leakage.[80] The design of the groundwater monitoring network must be based on site-specific hydrogeological information such as "groundwater flow direction including seasonal and temporal fluctuations in groundwater flow."[81]

While the Part B Amendments specify the minimum groundwater monitoring network documentation to be submitted – including "any other data and analyses . . . relied upon when determining the design and location of the groundwater monitoring network,"[82] EPA also advised utilities that they must provide *all* documentation necessary to demonstrate that their groundwater monitoring system complies with 40 C.F.R. § 257.91.

> The intent of this provision is to allow for a comprehensive review of the existing well network to determine whether it is sufficient to identify releases from the unit that have occurred or might occur in the future. . . . Facilities have already designed and implemented their site groundwater monitoring programs, and EPA expects the facility would normally have generated the information specified in § 257.71(d)(1)(i)(B)(*1*) of this final rule, either as part of developing or implementing the groundwater monitoring program. However, *facilities are encouraged to provide additional detailed interpretation of the data and analyses for consideration during the review.*
>
> . . .
>
> [D]ocumenting that the existing well network meets the standard in this rule will require a level of detail and discussion beyond what is required in a routine groundwater monitoring report.[83]

EPA appropriately found, and the Hutson Expert Report confirms, that the Coal Creek Coal Application failed this test. The Application failed to demonstrate that the groundwater monitoring network at UR91 is adequate to ensure the detection of groundwater contamination associated with the Pond as required by 40 C.F.R. § 257.91.

[78] *Id.* § 257.91(c).
[79] 2015 CCR Rulemaking, 80 Fed. Reg. at 21,399.
[80] *Id.* § 257.91(a)(1).
[81] *Id.* § 257.91(b)(1).
[82] 40 C.F.R. § 257.71(d)(1)(i)(B)(1)(iv).
[83] Part B Amendments, 85 Fed. Reg. at 72,515 (emphasis supplied).

a. Coal Creek Failed to Establish that the Two Upgradient Wells Are Unaffected by Releases from the Unit.

i. *The Application misrepresents the number of upgradient wells at Upstream Raise 91.*

The Application contains inconsistent and misleading statements about the number of upgradient wells associated with CCR Rule-required groundwater monitoring at UR91. The text of the Application repeatedly states that there are four upgradient wells (MW-DP3, MW-91-2, MW-75, and MW-16-6) at UR91.[84] However, the Groundwater Monitoring System Certification, which is included in the Application,[85] states that there are two upgradient wells at UR91 (MW-91-2 and MW-75).[86] All of the annual groundwater monitoring reports completed since the Application was submitted identify the same two wells as the – only – upgradient wells at UR91.[87]

Not only are the Application's textual assertions regarding four upgradient wells patently wrong, but Coal Creek's attempt to claim MW-DP3 and MW-16-6 as upgradient wells for UR91 appears to be designed to mask evidence of groundwater contamination.[88] Both of those wells have chloride levels closer to those in UR91's downgradient wells than in the only two upgradient wells specified in the Groundwater Monitoring System Certification and annual groundwater monitoring reports.[89] In addition, one of the faux UR91 upgradient wells (MW-16-6), which the Groundwater Monitoring System Certification and annual groundwater monitoring reports identify as an upgradient well for a different pond – Upstream Raise 92,[90] has ongoing SSIs for TDS exceedances.[91] And the other faux UR91 upgradient well (MW-DP3), which the System Certification and annual reports identify as an upgradient well for the Drains Pond System,[92] registered potential exceedances for fluoride which Coal Creek claimed to be "false positive" results based on belated re-sampling.[93]

In the context of its discussion of Coal Creek's inappropriate use of intrawell data comparisons (addressed below), EPA's Proposed Decision states that the Agency considered data only from the "wells certified as upgradient for UR91 (MW-75 and MW-91-1)." As EPA explained: "[T]he Groundwater Monitoring System Certification provided in the application does

[84] Application at 21, 22, 24, 28, 33, 34.
[85] *Id.* at 141–205 (Golder, Coal Combustion Residuals Groundwater Monitoring System Certification, Revision 1, Great River Energy – Coal Creek Station (Mar. 8, 2019).
[86] *Id.* at 145, 146, 150
[87] 2020 Groundwater Monitoring Report at 9, 22; 2021 Groundwater Monitoring Report at 9, 22; 2022 Groundwater Monitoring Report at 8, 22.
[88] Hutson Expert Report re Coal Creek at 8-9.
[89] *Id.*
[90] *See, e.g.*, Application at 146, 150.
[91] 2020 Groundwater Monitoring Report at 2, 16; 2021 Groundwater Monitoring Report at 2, 15–16; 2022 Groundwater Monitoring Report at 2, 13.
[92] *See, e.g.*, Application at 146, 150.
[93] 2021 Groundwater Monitoring Report at 4, 14; 2022 Groundwater Monitoring Report at 3, 13.

not reflect either the transfer of these two wells to the monitoring system for Upstream Raise 91 or the designation of Upstream Raise 91 and adjacent impoundments as a multiunit system."[94]

ii. *Coal Creek failed to demonstrate that the upgradient wells are appropriately located in compliance with the CCR Rule.*

The CCR Rule requires that groundwater monitoring networks include background or upgradient wells that "[a]ccurately represent the quality of background groundwater that has not been affected by leakage from a CCR unit."[95] Coal Creek failed to demonstrate that UR91's upgradient wells have not been affected by leakage from a CCR unit.[96] The Groundwater Monitoring System Certification contains no effort to justify why the two wells labeled upgradient (MW-75 and MW-91-2) satisfy the Rule's requirement that they represent background groundwater quality unaffected by CCR unit leakage.[97] As EPA further notes, a 1993 report included in the Application "identifies the potential for groundwater mounding to have occurred around Upstream Raise 91 as a result of previous releases from previous iterations of this and nearby impoundments. The Application provides no indication of the areal extent of historical groundwater impacts around the impoundment."[98]

It is not surprising that Coal Creek ignored the requirement to demonstrate that its claimed-upgradient wells are unaffected by prior leakage. Indeed, the Application acknowledges that the site on which UR91 currently operates has an extensive history of CCR leakage at and around UR91.

> The former South Ash Pond (which included the entire area of Ash Pond #91, Ash Pond #92 and Plant Drain Pond #91) was placed into service in 1979 when the plant began operation. Visual evidence of leakage was observed on the north side of the South Ash Pond within a short time. The pond was taken out of service in 1980 and initially repaired in 1981. The East Ash Pond (current section 16 Disposal Area) was put into service to replace the South Ash Pond during repairs. Ash Pond #91 was in service in 1989 and 1990, was dewatered during 1991, repaired during 1992, and placed back in service in 1993. Ash Pond #92 was repaired and placed back in service in 1990.
>
> In the mid-1980s it was determined that subsurface leakage was occurring from both the South Ash Pond and the East Ash Pond. The East Ash Pond was used while Ash Pond #92 (east half of the former South Ash Pond) was being constructed. The East Ash Pond (now the Section 16 Disposal Area, east of Ash Pond #92) is only used for

[94] Proposed Denial at 41.
[95] 40 C.F.R. § 257.91(a)(1). Under some circumstances not relevant to this discussion, a facility may rely on wells that are not upgradient provided they accurately represent groundwater quality that is unaffected by leakage from a CCR unit. *Id.*
[96] Proposed Denial at 16–17; Hutson Expert Report re Coal Creek at 3.
[97] *Id.*
[98] Proposed Denial at 16-17. *See also* Hutson Expert Report re Coal Creek at 3.

> dry ash storage, because of excessive leakage during use as a wet impoundment . . . [99]

The Application estimates that the East Ash Pond leaked approximately 2.2 million gallons per day;[100] no estimate was found for the volume of leakage from the South Ash Pond. Although the Application contains no specific information regarding the extent of this prior contamination, let alone any attempt at groundwater remediation, it acknowledges widespread contamination across the plant site due to the ash ponds:

> [T]here are several sources of water quality impacts (ponds). Contamination from the sources has been found to be widespread throughout the ground water flow system at the site.[101]

Given that the South Ash Pond was taken out of service due to "groundwater impacts"[102] and the adjacent East Ash Pond was closed due to "excessive leakage,"[103] and both were repurposed without groundwater remediation into currently-operating CCR units – Upstream Raise 91, Upstream Raise 92, and the Section 16 Landfill – Coal Creek would face a high bar had it even attempted to prove that the wells labeled upgradient are unaffected by leakage from a CCR unit, as required by the CCR Rule.

b. Coal Creek Failed to Justify the Distance of Its Downgradient Wells from the Waste Boundary.

Coal Creek failed to demonstrate that the placement of its downgradient wells is sufficient to represent accurately the quality of groundwater passing the waste boundary and to monitor all potential contaminant pathways, in violation of 40 C.F.R. §§ 257.91(a)(2) and (c).[104] The groundwater monitoring network at UR91 includes three downgradient wells, which are located up to 200 feet from the pond's boundary.[105]

The CCR Rule requires that "[t]he downgradient monitoring system must be installed *at the waste boundary* that ensures detection of groundwater contamination in the uppermost aquifer."[106] Siting wells at some distance from the waste boundary allows for dilution and dispersion of contamination released from the Pond, impeding the timely and accurate detection of releases and effective corrective action to address releases.[107]

Coal Creek offers unavailing explanations for the location of its downgradient wells, claiming that they represent "general solid waste industry practice" and were "installed as part of previous state monitoring requirements and are located at appropriate distances as close as

[99] Application at 667.
[100] *Id.* at 911.
[101] Application at 848 (from Dames & Moore, Revised Water Quality Monitoring Plan, Coal Creek Station, For Cooperative Power Ass'n (Dec. 1991) (Appendix B-6 to Application) (emphasis supplied).
[102] *Id.* at 14.
[103] *Id.* at 667.
[104] Proposed Denial at 17–18; Hutson Expert Report re Coal Creek at 3-4.
[105] Proposed Denial at 18; Hutson Expert Report re Coal Creek at 3.
[106] 40 C.F.R. § 257.91(a)(2) (emphasis supplied).
[107] Proposed Denial at 18; Hutson Expert Report at 3.

practical to the waste boundary."[108] Coal Creek fails even to attempt to demonstrate that industry practice or prior state regulatory practice satisfy the CCR Rule's requirements for downgradient wells, or that it was not possible to site the wells at or closer to the waste boundary.[109]

c. Coal Creek Failed to Support the Number, Spacing, and Construction of Groundwater Monitoring Wells with Site-Specific Information.

Coal Creek failed to document that the groundwater monitoring network contains a sufficient number of wells, installed at appropriate locations and depths, to represent accurately the quality of groundwater passing the pond's boundary, and that the number, spacing, and construction of groundwater monitoring wells is adequately supported by site-specific information, contrary to the requirements of 40 C.F.R. §§ 257.91(a)(2), (b), and (c).[110]

The downgradient wells are spaced as far as 800 feet apart.[111] Coal Creek's Application fails to explain, with supporting, site-specific documentation, how such a wide distance between wells is sufficient to detect groundwater contamination emanating from the pond. As EPA states: "[I]t may be difficult to confirm that subsurface soils have been adequately characterized based on samples spaced as much as 800 feet apart and absent further explanation. Inadequate characterization of site heterogeneity may result in a failure to identify and monitor all potential contaminant pathways."[112]

d. Coal Creek's Groundwater Monitoring Certification Failed to Overcome the Presumption that the Minimum Number of Wells Is Insufficient.

Coal Creek's groundwater monitoring certification failed to justify its decision to employ the minimum number of three downgradient wells, thereby failing to overcome the rebuttable presumption that the minimum number of wells is insufficient to constitute an adequate groundwater monitoring network.[113] The CCR Rule states: "If the groundwater monitoring system includes the minimum number of monitoring wells specified in paragraph (c)(1) of this section, the certification must document the basis supporting this determination."[114]

Coal Creek's Groundwater Monitoring System Certification is silent as to why the minimum number of three downgradient wells would be sufficient to achieve the performance standards of the CCR Rule. EPA appropriately found that Coal Creek's groundwater monitoring network certification fails to comply with 40 C.F.R. § 257.91(f).[115]

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[108] Application at 147.
[109] Proposed Denial at 18; Hutson Expert Report re Coal Creek at 3.
[110] Proposed Denial at 18–21; Hutson Expert Report re Coal Creek at 3-4.
[111] Proposed Denial at 19 (based on map in Application at 53); Hutson Expert Report re Coal Creek at 3.
[112] Proposed Denial at 20. *See also* Hutson Expert Report re Coal Creek at 3-4.
[113] Proposed Denial at 21–22.
[114] 40 C.F.R. § 257.91(f).
[115] Proposed Denial at 21–22. *See also* Hutson Expert Report at 3-4.

2. *Coal Creek Failed to Demonstrate Proper Groundwater Monitoring Program Implementation, Including Legitimately Remaining in Detection Monitoring.*

In addition to demonstrating that the groundwater monitoring network was designed in compliance with 40 C.F.R. § 257.91, Part B applicants must establish that they are implementing a groundwater monitoring program in full compliance with 40 C.F.R. §§ 257.93-.94, and that the unit legitimately remains in detection monitoring.[116] The Part B Amendments further require applicants to "provide all data and analyses relied upon to comply with each of the requirements of this part."[117]

EPA emphasized the utilities' documentation responsibilities regarding this set of requirements:

> The intent of this provision is to allow for a comprehensive review of the facility's determination that a unit has not adversely affected groundwater. . . . The documentation must demonstrate that the characterization of groundwater quality is sufficient; the management of collected monitoring data has been properly considered and addressed non-detect data, trends, and other relevant factors that may affect data quality; and that the statistical tests applied are appropriate. . . . [T]he facility must document how it has complied with each requirement in §§ 257.93 through 257.94. . . . [T]he facility must provide all data and analyses relied upon to comply with each requirement."[118]

As discussed below and in the attached Hutson Expert Report, EPA's Proposed Denial appropriately identifies numerous, significant areas in which Coal Creek is out of compliance with these requirements regarding UR91.[119]

a. Coal Creek Improperly Used Intrawell Data Comparisons.

The CCR Rule requires comparisons of groundwater monitoring data from background wells with that from downgradient wells to determine whether and to what extent contamination is leaking from the CCR unit.[120] While background wells are typically upgradient, the Rule allows the use of non-upgradient wells provided that data from those wells "will provide an indication of background groundwater quality that is as representative or more representative than that provided by the upgradient wells."[121] And, as discussed above, background wells must represent groundwater quality not affected by a CCR unit.[122]

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[116] 40 C.F.R. § 257.71(d)(1)(i)(B)(*2*).
[117] *Id.*
[118] Part B Amendments, 85 Fed. Reg. at 72,516.
[119] Proposed Denial at 22–42; Hutson Expert Report re Coal Creek at 4-9.
[120] 40 C.F.R. §§ 257.91(a), 257.93.
[121] *Id.* § 257.91(a)(1)(ii).
[122] *Id.* § 257.91(a)(1).

An intrawell data approach inherently involves using monitoring data from each well in question for both background and downgradient statistical purposes. Intrawell data comparisons can only be effective if the baseline monitoring data accurately characterize water quality that is not affected by the unit. As EPA noted in promulgating the Part A Amendments, "[i]ntrawell background measurements . . . should include only those observations thought to be uncontaminated."[123] This is consistent with EPA Guidance: "Intrawell background measurements should be selected from the available historical samples at each compliance well and should include only those observations thought to be uncontaminated."[124]

Coal Creek's reliance on intrawell data – *i.e.*, data from the same well – for purposes of comparing "background" with downgradient concentrations of all constituents at UR91 does not comply with the CCR Rule. As discussed in EPA's Proposed Decision and the Hutson Expert Report, Coal Creek has not demonstrated that each of the downgradient wells – which Coal Creek uses as both "background" and downgradient wells for intrawell data comparisons – represents groundwater quality that is equally accurate or more accurate than that provided by unimpacted upgradient wells.[125]

Nor has Coal Creek shown that the downgradient wells, which are used as both background and downgradient wells for intrawell data comparisons, are not affected by leakage from UR91 including its prior iterations.[126] To the contrary, as discussed above, Coal Creek's Application discusses extensive seepage and widespread groundwater contamination due to prior iterations of UR91.[127] Changing the ponds' names and inserting an inadequate liner do not change the fact that there is extensive prior contamination due to leakage from a CCR unit and Coal Creek has failed to establish that the upgradient or downgradient wells represent groundwater quality unaffected by CCR unit leakage such that intrawell data comparisons might be appropriate.

Coal Creek invokes EPA's groundwater monitoring Unified Guidance to assert that intrawell comparisons are preferable to interwell where legacy units caused pre-existing contamination.[128] Its reliance is misplaced. First and foremost, the Guidance is relevant only to the extent that it is consistent with the governing regulations. Because the CCR Rule expressly requires that background/upgradient wells "represent the quality of background groundwater that has not been affected by leakage from a CCR unit,"[129] the provisions of the Guidance on which Coal Creek relies are inconsistent with the governing regulations. That Coal Creek attempts to justify its use of intrawell data comparisons by reference to the Guidance but not to the governing CCR Rule requirements is telling.

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[123] Part A Amendments, 85 Fed. Reg. at 53,543.
[124] EPA, Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance, EPA 530/R-09-007, Docket ID No. EPA-HQ-OLEM-2022-0335-0023, at 76 (Mar. 2009) ("Unified Guidance"). *See also id.* at 118.
[125] Proposed Denial at 25-26; Hutson Expert Report re Coal Creek at 4.
[126] *Id.*
[127] *See* Application at 14, 667, 848, 911, 1072–73.
[128] *Id.* at 25–27.
[129] 40 C.F.R. § 257.91(a)(1).

Second, the Unified Guidance makes clear that an intrawell approach is appropriate only when the well(s) involved are known to be uncontaminated.[130] As EPA explains:

> Using intrawell background to set a baseline of comparison may ignore recent contamination subject to compliance testing and/or remedial action. Even more contamination in the future would then be required to trigger a statistically significant increase [SSI] using the intrawell test. The Unified Guidance recommends the use of intrawell testing only when it is clear that spatial variability is not the result of recent contamination attributable to the regulated unit.[131]

Thus, Coal Creek's use of intrawell data comparisons fails the CCR requirements that background groundwater quality must be based on wells not affected by leakage from a CCR unit, background groundwater quality must be established for wells that are hydraulically upgradient or provide background groundwater quality for each Appendix III or IV constituent, and non-upgradient wells may be used for background purposes only if shown to characterize background quality that is at least as accurate as, or more accurate than, samples from an upgradient well.[132]

b. Coal Creek Inappropriately Employed a Control Chart in Its Statistical Methods for Evaluating Sampling Data.

The CCR Rule allows facilities to select among a variety of statistical methods for evaluating groundwater monitoring data, provided that the selected methods satisfy the Rule's specified performance standards.[133] The Rule further states that using a control chart approach is only appropriate if it is "at least as effective as any other approach in this section for evaluating groundwater data."[134]

Coal Creek improperly employed a control chart approach in its intrawell data comparisons without satisfying the performance standard applying to control charts.[135] As discussed above, Coal Creek used downgradient wells known to be contaminated as both background and downgradient wells for purposes of its intrawell data comparisons. Coal Creek used a control chart for these statistical comparisons, without demonstrating that such use met the Rule's "at least as effective" performance standard quoted above. To the contrary, EPA has long made clear that control charts are inappropriate in this circumstance:

> Control charts may be used for intra-well comparisons but are only appropriate for uncontaminated wells. If a well is intercepting a

[130] Unified Guidance at 76, 118.
[131] *Id.* at 118.
[132] 40 C.F.R. §§ 257.91(a)(1) and 257.93(d).
[133] *Id.* §§ 257.93(f) and (g).
[134] *Id.* § 257.93(g)(3).
[135] Proposed Denial at 29–31; Hutson Expert Report re Coal Creek at 5.

> release, then it is already in an "out-of-control" state, which violates the principal assumption underlying control chart procedures.[136]

Coal Creek failed to address the fact that it was using a control chart with contaminated wells, and failed to satisfy the Rule's performance standard.

c. Coal Creek Used an Inappropriate Error Rate in Its Statistical Methods for Evaluating Sampling Data.

The CCR Rule requires utilities to analyze their groundwater monitoring data using one of five authorized statistical methods to determine whether there are SSIs in concentrations for each constituent between background/upgradient wells and downgradient wells.[137] The Rule further requires utilities to certify that the selected method meets the Rule's performance standards for statistical evaluations, and to support that certification with a narrative description.[138]

As described in EPA's Proposed Decision and the Hutson Expert Report, Coal Creek failed to demonstrate that its use of a Type I error rate of 0.05 for all constituents satisfies the performance standard requiring the statistical method to be appropriate for the distribution of data.[139] While EPA's Unified Guidance recommends a Type I error rate of 0.1 for smaller datasets ($n < 10$), and an error rate of 0.05 for larger datasets ($10 \leq n > 20$),Coal Creek used the error rate of 0.05 for its small dataset of eight or nine intrawell samples per well.[140] Coal Creek failed to explain why its selected error rate was appropriate for its small sample size, particularly given the increased likelihood of yielding false negative results.[141]

d. Coal Creek Employed Inappropriate Methods for Analyzing Lithium and Radium Concentrations.

The CCR Rule's statistical methods performance standards address situations involving analytic results below the limit of detection. The Rule requires the use of statistical procedures "at least as effective as any other approach in this section for statistical method to account for evaluating groundwater data" and further specifies that "[a]ny practical quantitation limit that is used in the statistical method shall be the lowest concentration level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions that are available to the facility."[142] Coal Creek failed to demonstrate that its anomalous handling of lithium and radium data met this performance standard.[143] With respect to lithium, Coal Creek employed detection limits (100 and 500 μ/L) that are "substantially higher than the corresponding groundwater protection standard (GWPS) of 40 μ/L" – making it impossible to determine whether there has been an SSL [statistically significant level] of GWPS for lithium if

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[136] EPA, Solid Waste Disposal Facility Criteria, Technical Manual, Docket ID No. EPA 530-R-93-017, Docket ID No. EPA-HQ-OLEM-2021-0280-0003, at 284 (1993, revised Apr. 13, 1998).
[137] 40 C.F.R. §§ 257.93(f), (g), and (h).
[138] *Id.* §§ 257.93(f)(6) and (g).
[139] Proposed Denial at 27–29; Hutson Expert Report re Coal Creek at 4-5.
[140] Proposed Denial at 28.
[141] *Id.* at 28–29; Hutson Expert Report re Coal Creek at 4-5.
[142] 40 C.F.R. § 257.93(g)(5).
[143] Proposed Denial at 31–35; Hutson Expert Report re Coal Creek at 5-6.

the facility were to enter assessment monitoring."[144] EPA notes that "commercial laboratories publicly advertise far lower detection limits for lithium with standard analytical methods."[145] Yet Coal Creek offers neither an explanation for its use of such high detection limits nor an attempt to prove that it was not possible to use lower – indeed, much lower – detection limits.

EPA also appropriately found that Coal Creek's "procedure for managing radium nondetect values does not comply with the requirements of the regulation."[146] Whereas Coal Creek deducted negative values for radium from other measured values, EPA notes that that "is not a scientifically valid approach" as it "will invariably underestimate the total activity of the groundwater sample and potentially delay identification of contamination."[147]

e. Coal Creek's Re-Sampling Procedures for Addressing Elevated Results and Making SSI Determinations Violate the CCR Rule.

Coal Creek's procedures for conducting re-sampling to verify elevated concentrations as SSIs violate several provisions of the CCR Rule.[148] The Rule [149]

In contrast, Coal Creek waits until the next semi-annual sampling event – approximately 180 days – to conduct re-sampling for apparent SSIs (which it labels "potential exceedances").[150] In fact, while the information in the Application reveals an approximately 180-day delay from second quarter to fourth quarter (or fourth quarter to the next year's second quarter) sampling to verify apparent SSIs, Coal Creek's annual groundwater monitoring reports indicate that it sometimes takes even longer before confirming such exceedances. For example, the groundwater monitoring report for 2022 states that potential SSIs for boron and calcium in a downgradient well at UR91 (MW-51) that were identified in Q2 2022 were subject to confirmatory re-sampling in Q4 2022, and statistical analyses were to occur in Q1 2023.[151]

Curiously, Coal Creek states that some potential exceedances identified during regular semi-annual monitoring were found to be false positives "through confirmatory re-sampling during the [next semi-annual] sampling event," but other potential exceedances identified during regular semi-annual monitoring were subject to confirmatory re-sampling during the next semi-annual sampling event, with statistical analyses to determine SSIs not occurring until the next calendar quarter.[152] Coal Creek offers no explanation as to why it could not determine whether all potential exceedances were verified SSIs or false positives (to use its terms) by the next semi-annual sampling event (which would still be too long under the CCR Rule).

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[144] Proposed Denial at 33–34. *See also* Hutson Expert Report at 5-6.
[145] Proposed Denial at 34.
[146] Proposed Denial at 34. *See also* Hutson Expert Report re Coal Creek at 5-6.
[147] *Id.* at 35. *See also* Hutson Expert Report re Coal Creek at 5-6.
[148] Proposed Denial at 35–36; Hutson Expert Report re Coal Creek at 6.
[149] 40 C.F.R. §§ 257.94(b), 257.93(h)(2).
[150] Application at 997–98.
[151] 2022 Groundwater Monitoring Report at 4.
[152] 2020 Groundwater Monitoring Report at 3; 2021 Groundwater Monitoring Report at 3–4; 2022 Groundwater Monitoring Report at 3–4.

Coal Creek seems to think that it can wait some 180 days before re-sampling to confirm apparent SSIs, and then take another 90 days from the re-sampling event in order to comply with the 90-day SSI determination deadline.[153] That represents nothing less than rewriting the Rule to add 180 days to the 90-day SSI determination deadline. And this is not an occasional event; Coal Creek routinely waits until the next regularly-scheduled semi-annual sampling event to re-sample for all apparent SSIs.[154]

Waiting until the next regularly-scheduled semi-annual sampling event to confirm apparent SSIs is inconsistent with the CCR Rule for several reasons – in addition to contravening the 90-day SSI determination deadline. Using re-sampling would undermine the statistical tests requirement. "[U]se of a routine sampling event in place of an independent resampling event would result in collection of a total number of samples inconsistent with the semiannual statistical test and, thus, fewer than required by 40 C.F.R. §§ 257.93(e) and 257.94(c)."[155] In addition, it can "mask evidence of . . . an actual SSI. Different concentrations in samples collected nearly half a year later may reflect seasonal fluctuations or other variation and, thus, cannot be assumed to demonstrate that the previous SSI was not representative of groundwater quality at the time the previous sample was created . . . [and] would inevitably delay identification of a potential release."[156]

f. Coal Creek Improperly Relied on an Unsubstantiated, Speculative Alternative Source Demonstration.

The CCR Rule requires utilities to bear the burden of proof when seeking to establish that a source other than their CCR unit caused the groundwater contamination detected by their monitoring.[157] As EPA recently explained:

> A successful ASD must be sufficient to rebut the presumption that the CCR unit is the source of the SSI in a downgradient well of a properly designed groundwater monitoring network by demonstrating that a source other than the CCR unit is responsible for the SSI. An ASD requires conclusions that are supported by site-specific facts and analytical data in order to rebut the site-specific monitoring data and analysis that resulted in an SSI. Speculative or theoretical bases for the conclusions are insufficient.[158]

As noted above, Coal Creek prepared an ASD contending that the SSI for chloride in a downgradient well at UR91 was not due to UR91 but instead attributable to changes in sampling and laboratory contractors and/or to groundwater changes due to its removal of the nearby Duck Pond.[159] Coal Creek has continued to find SSIs for chloride at UR91 and continued to rely on its

[153] *Id.*
[154] 2020 Groundwater Monitoring Report at 3–4; 2021 Groundwater Monitoring Report at; 2022 Groundwater Monitoring Report at 3–4.
[155] Proposed Denial at 36.
[156] *Id.* at 36. *See also* Hutson Expert Report re Coal Creek at 6.
[157] 40 C.F.R. § 257.94(e)(2).
[158] Gavin Denial Decision at 48–49 (attached *supra* n.14).
[159] Application at 32 and 1063–114 (Appendices C-6 and C-7).

initial ASD to avoid moving to assessment monitoring.[160] EPA's Proposed Denial, reinforced by the Hutson Expert Report, found the ASD deficient under the CCR Rule.[161]

The ASD does not identify any specific changes in sampling that might result in consistently-high yet erroneous chloride results.[162] And while it notes some differences in methods for analyzing the samples, at best they would explain only a small fraction of the increased chloride results and it would be unlikely for changes in analytical methods to affect results in only one of the several wells sampled.[163] The ASD is also devoid of evidence to establish that removing the Duck Pond actually resulted in changes in groundwater flow.[164] To the contrary, "the ASD acknowledges that a comparison of major ion chemistry in groundwater samples across the site provides no indication that the adjacent Duck Pond System could be the alternate source of the identified SSI."[165]

To support further its proposed finding that UR91 has inappropriately remained in detection monitoring rather than advanced to assessment monitoring, EPA analyzed Coal Creek's groundwater monitoring data with corrections for some of the above-discussed flaws. For example, rather than using intrawell data comparisons, EPA re-evaluated the pond's groundwater monitoring data using available interwell background data (notwithstanding evidence that the two wells designated as upgradient may not be appropriate for background purposes due to CCR contamination).[166] EPA also made appropriate changes to the statistical methods to correct the errors discussed above.[167] EPA's calculations "identified SSIs at Upstream Raise 91 in MW-49 and MW-51 (Boron, Chloride, Sulfate, Total Dissolved Solids) and MW-91-91 (Boron, Chloride)," indicating that "SSIs are likely to be more numerous and widespread than identified in the application."[168] Thus, EPA's calculations, correcting for noncompliant approaches in Coal Creek's analyses, revealed SSIs in each of the three downgradient wells at UR91, and for several other contaminants in addition to chloride.

In addition, the Hutson Expert Report highlights that the Application's erroneous statements that monitoring wells MW-DP-3 and MW-16-6 are upgradient wells at UR91 are designed to distract from the clear differences between upgradient and downgradient chloride concentrations indicating SSIs. "Inclusion [in the Application] of wells not in the certified monitoring system appears to be an attempt to mask impacts to groundwater quality caused by decades of CCR disposal at this location."[169]

As well spelled out in EPA's Proposed Decision and confirmed in the Hutson Expert Report, the ASD fails to demonstrate that the chloride SSIs at UR91 are caused solely by an alternative source rather than the pond. Accordingly, Coal Creek unlawfully failed to move

[160] 2020 Groundwater Monitoring at 2; 2021 Groundwater Monitoring at 2, 15; 2022 Groundwater Monitoring at 2.
[161] Proposed Denial at 37–39; Hutson Expert Report re Coal Creek at 6-9.
[162] Proposed Denial at 38. *See also* Hutson Expert Report re Coal Creek at 7.
[163] *Id.*
[164] Proposed Denial at 38–39; Hutson Expert Report re Coal Creek at 8.
[165] Proposed Denial at 38.
[166] *Id.* at 40–41.
[167] *Id*. at 41.
[168] *Id.* at 42. *See also id*. at 64–66, Attachment 1.
[169] Hutson Expert Report re Coal Creek at 9.

UR91 from detection to assessment monitoring,[170] and is thereby ineligible to apply for an ALD under Part B.[171]

3. *Coal Creek Failed to Demonstrate Compliance with the CCR Rule's Unstable Areas Location Restriction.*

Although Coal Creek certified compliance with the location restriction for unstable areas,[172] EPA appropriately determined that the certification lacked sufficient support.[173] Coal Creek provided information regarding only the foundation materials for the 1993 liner replacement, but no information regarding the underlying soils. "Therefore, EPA could not confirm that the unit is not subjected to differential settling."[174] The lack of supporting information is of particular concern because "human-made features such as mining activities, fills, excavations, or structures that could cause unstable conditions were identified at or near the site."[175]

D. Coal Creek Failed to Document that the Materials Comprising Its Purported Liner, and the Construction Thereof, Satisfy Part B Application Requirements.

The Part B Amendments require applications to document "the design specifications for any engineered liner components, as well as data and analyses . . . relied on when determining that the materials are suitable for use and that the construction of the liner is of good quality and in-line with proven and accepted engineering practices."[176] EPA explained that before facilities undertake full-blown alternate liner demonstrations, the application must establish that the characteristics and construction of the purported liner make it likely to satisfy the ALD requirements.

> [T]he ability of any liner to achieve performance objectives is predicated on the quality of both the source materials and the construction of the surface impoundment. Therefore, EPA concludes that information on both must be incorporated in the application to provide evidence that the unit has the soil characteristics or engineering quality that would make it possible for the unit to meet the ultimate performance standard [and] is expected to remain protective in the near term while the comprehensive demonstration is completed. . . . EPA previously concluded that it is difficult to determine whether a particular soil is suitable for use as a liner based solely on individual index properties and without relevant confirmatory testing. For engineered soils, this will involve establishing the relationship between water content, density, and

[170] 40 C.F.R. § 257.94(e).
[171] 40 C.F.R. § 257.71(d)(1)(i)(B)(2).
[172] Application at 84–85.
[173] Proposed Denial at 45–46.
[174] *Id.* at 45.
[175] *Id.* at 46.
[176] 40 C.F.R. § 257.71(d)(1)(i)(C).

> hydraulic conductivity in a laboratory setting before construction begins to ensure the liner will be installed under optimum conditions. For naturally-occurring soils, this will involve testing that the pre-existing soil structure achieves a sufficiently and consistently low hydraulic conductivity. For geomembrane liners, this involves confirming that the material can withstand the stresses it will be exposed to and that the seams of the liner can be reliably welded to meet performance requirements.
>
> . . .
>
> [L]aboratory testing cannot account for operational problems during construction that result in substandard conditions. . . . [W]ithout contemporaneous documentation that the surface impoundment liner was well constructed, it will be too difficult to confirm that any data subsequently collected for the demonstration reliably represents actual liner conditions. In particular, for soil liners that do not meet the thickness requirement of the rule, field testing is likely the only reliable way to ensure that construction has achieved a sufficiently low and consistent hydraulic conductivity.[177]

Coal Creek's Part B Application relies on a 40-mil HPDE liner underlain by two feet of compacted clay soil with a hydraulic conductivity of less than 1×10^{-7} cm/sec for UR91's purported liner.[178] However, the minimum thickness for an acceptable CCR liner is 60 mil and Coal Creek "provides no explanation how the specifications set for the 40-mil HPDE are in line with current proven and accepted engineering practices that require 60-mil HDPE."[179]

Similarly, Coal Creek failed to document that the construction procedures were adequate to ensure that the liner would be of good quality and in line with proven and accepted engineering practices. For example, the Application contains insufficient information regarding any efforts to protect the liner during installation and prevent the formation of waves, or wrinkles, which could adversely affect the liner's integrity over time.[180]

IV. EPA MUST ACCOMPANY PART B DENIAL DECISIONS WITH ENFORCEMENT AND COMPLIANCE ASSURANCE ACTIONS.

A. Unlined Ponds Violating the CCR Rule Fail RCRA's Protectiveness Standard.

All of the ponds subject to EPA's proposed Part B decisions are unlined under the CCR Rule, and therefore must close[181] – absent an ALD under Part B, which is unlikely given the proposed denials of their applications. The fact that these ponds are unlined is more than

[177] Part B Amendments, 85 Fed. Reg. at 72,517.
[178] Application at 5, 35–43.
[179] Proposed Denial at 52; Hutson Expert Report re Liners at 3.
[180] Proposed Denial at 52–53; Hutson Expert Report re Liners at 5.
[181] 40 C.F.R. § 257.71(a).

sufficient to compel their immediate closure. The D.C. Circuit underscored the urgency of prompt closure of all unlined ponds.

> The EPA found that unlined impoundments are dangerous.
> . . .
> [U]nlined impoundments are at significant risk of harmful leakage. Impoundment leakages pose substantial risks to humans and the environment.[182]

But these ponds are not only unlined. They are violating numerous crucial requirements of the CCR Rule. EPA relied on the requirement that facilities must demonstrate ponds' compliance with the CCR Rule as justification for promulgating the Part B Amendments, which has allowed unlined ponds to remain open beyond the otherwise-applicable cease receipt deadline of April 11, 2021.[183] As EPA acknowledged, permitting unlined ponds violating the CCR Rule to remain in operation contravenes RCRA's protectiveness standard.[184]

While EPA's Part B denial decisions will – when finalized – require these unlined ponds to stop operating and begin the closure process, those decisions alone will not redress the widespread CCR Rule violations the Agency has documented at each site. Enforcement is necessary to accomplish that. Failure to undertake enforcement to gain prompt compliance would fall short of EPA's duties under the RCRA protectiveness standard.

B. Coal Creek's UR91 Pond Is Violating Critical CCR Rule Requirements.

As noted above, compliant groundwater monitoring at CCR units is essential to the effectiveness of the CCR Rule. EPA has documented that CCR units – especially those that are unlined – pose significant threats of groundwater contamination.[185] Yet none of the groundwater monitoring networks at any of the Part B ponds is properly designed to detect contamination, and none is being adequately implemented in a manner to detect contamination.

To the contrary, the nature and extent of the groundwater monitoring violations highlighted in every proposed Part B denial decision indicate that the utilities would prefer not to detect the contamination their ponds are causing. When contamination goes undetected or utilities unconvincingly attempt to disregard evidence of contamination that is detected, utilities fail to conduct more extensive monitoring to identify the nature and extent of the contamination. Moreover, they fail to undertake corrective action to clean-up their contamination.

As discussed above, EPA highlighted the following groundwater monitoring violations at the Coal Creek plant's UR91 pond:

- Wells labeled upgradient not shown to be unaffected by CCR leakage;
- Downgradient wells located far from the pond boundary, without documented justification;

[182] *USWAG*, 901 F.3d at 427, 428.
[183] 40 C.F.R. § 257.101(a); Part B Amendments, 85 Fed. Reg. at 72,514.
[184] Part B Amendments, 85 Fed. Reg. at 72,507.
[185] *See, e.g., USWAG*, 901 F.3d at 421–22.

- Failure to support the number, location, and depth of wells with site-specific technical information, with downgradient wells spaced as far as 800 feet apart and concerns about well construction and screening;
- Failure to overcome the presumption that the minimum number of downgradient wells is insufficient;
- Improper use of intrawell data comparisons;
- Failure to justify statistical methods employed, including inappropriate use of control chart, use of inappropriate error rate, use of inappropriate methods for determining lithium and radium exceedances;
- Delayed re-sampling to confirm groundwater exceedances and determine SSIs does not comply with CCR Rule;
- Failure to support the alternate source determination for chloride SSIs with factual information rather than theoretical assumptions, failure to establish that the monitored contamination was attributable to changes in sampling and laboratory contractors and/or groundwater changes due to removal of the nearby Duck Pond rather than leakage from UR91, and inappropriately remaining in detection monitoring rather than advancing to assessment monitoring; and
- Failure to establish compliance with the location restriction for unstable areas.

The nature and breadth of these violations make clear that Coal Creek is not appropriately monitoring UR91 to detect groundwater contamination. And when its inadequate monitoring nonetheless picked up some – although undoubtedly not all – of the contamination leaking from the pond, Coal Creek employed more wishful thinking than factual evidence to argue that the contamination is not emanating from the pond whose monitoring revealed the exceedances.

While denying Coal Creek's Part B Application will require it to stop operating UR91 and begin the closure process,[186] it will not necessarily require Coal Creek to remedy its ongoing groundwater monitoring violations. Without reliable groundwater monitoring, additional contamination related to the pond – and the plant's other CCR units, as suggested by the numerous SSIs and the site's history of widespread contamination – may go undetected and unaddressed, Coal Creek may not move from detection to assessment monitoring, and may not pursue corrective action where needed. EPA enforcement and compliance assurance is essential to address these serious violations that undermine the CCR regulatory program.

In addition, EPA has made considerable investment of its all-too-scarce technical resources in reviewing the Part B ponds' groundwater monitoring programs and identifying widespread, substantial violations. Enforcement and compliance assurance are critical to ensuring that this investment results in benefits to human health and the environment pursuant to EPA's RCRA duties.

[186] Having determined the application to be complete and thereby tolled the otherwise-applicable April 11, 2021 cease receipt deadline, EPA must finalize its proposed denial decision to specify a cease receipt/commence closure deadline in order to ensure legally-enforceable obligations for the timely closure of the Evaporation Pond.

C. Coal Creek's CCR Rule Violations Should Preclude It from Submitting a Part A Application for UR91.

Although the Part B Amendments state that applicants rejected from the Part B process could pursue Part A applications for delayed cease receipt deadlines if they lack alternative disposal capacity,[187] it is questionable whether EPA intended that option to be available to Coal Creek's UR91. While a Part A application might be appropriate for rejected Part B applicants who demonstrate compliance with the CCR Rule but fail to make the requisite showing for their purported liners, it is inappropriate for facilities – such as Coal Creek –that are violating the CCR Rule.

Part A requires utilities seeking to delay the closure of their ponds to prove, among other things, that all of the CCR units at the facility are in full compliance with the CCR Rule.[188] In reviewing the Coal Creek plant's Part B Application, EPA has already found numerous and significant CCR Rule violations. Thus, if some or all of these violations remain as of EPA's final decision, Coal Creek would not meet the requirements for a delayed cease receipt deadline under Part A.

EPA acknowledges that the CCR Rule noncompliance highlighted in its proposed denials would render Part B applicants ineligible to obtain Part A extensions.[189] Nevertheless, it would allow Coal Creek to submit a Part A application "if it was able to cure the deficiencies identified in EPA's final decision prior to submitting" its Part A application.[190]

It is questionable whether that option is lawful. Neither the Part B nor the Part A Amendments provide for such an opportunity to cure, let alone any process for documenting and ensuring that claimed cures have in fact occurred. To the contrary, EPA stated when promulgating both the Part A and Part B Amendments that there was no opportunity to cure violations as part of these processes.[191] EPA made clear that plants' obligations to demonstrate CCR Rule compliance were a prerequisite to delaying (Part A) or avoiding (Part B) the April 2021 cease receipt/commence closure deadline otherwise applicable to all unlined ponds, and essential under RCRA's protectiveness standard.

> Compliance with the rule provides critical support for the determination that these units will not present the types of risks identified in the damage cases considered in the 2015 CCR Rule.
> . . .
> [C]ompliance with part 257, subpart D generally provides some guarantee that the risks at the facility are properly managed and adequately mitigated. Consequently, this determination provides critical support for a decision to allow continued operation of the alternately lined surface impoundment. This means that EPA must be able to affirmatively conclude that the facility meets this criterion

[187] 40 C.F.R. § 257.71(d)(1)(iii)(E).
[188] 40 C.F.R. §§ 257.103(f)(1)(iii), (f)(2)(iii).
[189] Proposed Denial at 56.
[190] *Id*. at 55–56.
[191] Part A Amendments, 85 Fed. Reg. at 53,543; Part B Amendments, 85 Fed. Reg. at 72,514.

> prior to authorizing any continued operation of the surface impoundment. It also means that *EPA cannot grant facilities additional time to cure any noncompliance*.[192]

To allow a Part B applicant, such as Coal Creek, that fails to demonstrate CCR Rule compliance an opportunity belatedly to cure its violations and file a Part A application would grant it the "additional time to cure any noncompliance" that EPA expressly disavowed in promulgating both the Part A and Part B Amendments. To provide Coal Creek and other Part B applicants a second bite at the compliance apple for purposes of obtaining favorable treatment is not only contrary to the regulations but would also contravene RCRA's protectiveness standard. Of course, Part B applicants should and must cure their violations. The issue here is whether such belated actions render them eligible to delay the closure of their unlined ponds.

While Coal Creek must cure the noncompliance detailed in EPA's Proposed Denials – as well as other noncompliance that EPA may identify regarding UR91 and the plant's other CCR units, EPA should use its enforcement and compliance assurance authorities, discussed below, to ensure that such compliance occurs. It should not add more burden and delay to the Part A regulatory process for facilities where noncompliance has already been documented in the parallel Part B process. Indeed, EPA has yet to issue proposed decisions for 41 plants with complete and pending Part A applications.[193] And EPA has documented CCR violations at every plant for which it has issued a proposed or final Part A decision.

The delay entailed in enabling a denied Part B applicant such as Coal Creek to file a Part A application would be inconsistent with the *USWAG* court's call for unlined ash ponds to close promptly, compelled by RCRA's protectiveness standard. Coal Creek has known since August 2018 that, notwithstanding the claim that UR91 was clay-lined, it would be regulated as unlined and that all unlined ponds must close.[194] It has known since August 2020 that the default cease receipt/commence closure deadline for all unlined ponds – including those previously claiming to be clay-lined – was April 11, 2021.[195] Even when EPA published the Part B Amendments offering the remote possibility that some small number of ponds might meet the Part B criteria and avoid the immediate-closure requirement, EPA warned Coal Creek and other utilities that it would be difficult to obtain Part B approval and their applications might well be rejected.[196] EPA expressly advised facilities to develop alternate capacity: "facilities will need to be pursuing alternative capacity well before EPA would render a decision on their ALD."[197]

The North Dakota Public Service Commission erroneously attributes Coal Creek's apparent unpreparedness to close UR91 in a timely manner to EPA's delay in responding to the

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[192] Part B Amendments, 85 Fed. Reg. at 72,514 (emphasis supplied). *See also* Part A Amendments, 85 Fed. Reg. at 53,543 ("*EPA cannot grant facilities additional time to cure any noncompliance*.") (emphasis supplied).
[193] *See* EPA, Coal Combustion Residuals (CCR) Part A Implementation and proposed decisions linked therein, https://www.epa.gov/coalash/coal-combustion-residuals-ccr-part-implementation#ti (current as of Apr. 3, 2023). The count of forty-one plants with complete Part A applications that are neither withdrawn nor the subject of a proposed EPA decision includes eighteen applications under 40 C.F.R. § 257.103(f)(1) and twenty-two under (f)(2).
[194] *USWAG*, 901 F.3d at 426–432.
[195] Part A Amendments.
[196] Part B Amendments, 85 Fed. Reg. at 72,508.
[197] *Id.* at 72,532.

Part B Application.[198] As noted above, Coal Creek has been on notice for nearly five years that UR91 would be regulated as an unlined pond and that all unlined ponds would have to close. Coal Creek has known for three years that it would have to stop using and begin closing UR91 by April 11, 2021, and that the odds of obtaining an exemption under Part B were slim at best. Any responsible business, particularly one that serves the public, should have been preparing for alternate means of handling its CCR and non-CCR wastewaters due to the likely requirement to close UR91.

If Coal Creek decided not to pursue alternate capacity and to instead rely on its likely-to-fail Part B Application, then it has no reasonable claim to a Part A cease receipt extension and a Part A application would be nothing more than a delay tactic. In light of *USWAG*'s urgency about the need to close unlined ponds as soon as possible, and RCRA's protectiveness standard, Coal Creek should not be eligible to file a Part A application whose only function in light of its CCR Rule noncompliance would be to delay further UR91's required closure.

D. EPA Must Undertake Enforcement and Compliance Assurance Efforts.

EPA must undertake enforcement and compliance assurance efforts to ensure that Coal Creek and other Part B applicants remedy their substantial CCR Rule noncompliance. EPA has already undertaken some limited CCR enforcement actions, including at the Apache plant, which withdrew its Part B application and was referred to the Regional Enforcement and Compliance Division.[199] EPA must act as soon as possible to ensure that the violations that it has already highlighted in the Proposed Denial are remedied. The enforcement and compliance assurance process is far more appropriately suited to ensuring that these violations are cured than the nebulous "cure before filing Part A" language in EPA's Proposed Denial. The enforcement and compliance assurance process allows for timelines to be set, and enforced if necessary, for each of the steps that the plant must take to remedy the numerous violations highlighted in the Proposed Denial (as well as other potential violations at the plant's other CCR units that all appear to be leaking). It provides for deadlines for utility submissions and would require EPA review and approval of such submissions, as well as EPA oversight of utilities' implementation of curative plans.

The nature and extent of the CCR violations that EPA has documented in some detail at virtually all of the Part A facilities for which it has issued proposed or final decisions, and at all of the Part B facilities, and the long-documented threats posed by CCR units to communities across the country, underscore the need to make CCR enforcement one of EPA's top enforcement priorities.[200]

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[198] Comment letter from Public Service Commission, State of North Dakota, Docket ID No. EPA-HQ-OLEM-2021-0280-0018, at 2 (Mar. 30, 2023) ("NDPSC Letter").

[199] Carolyn Hoskinson, Director, Office of Resource Conservation and Recovery, EPA, Letter to Michelle Freeark, Arizona Electric Power Cooperative, Inc. (Jan. 25, 2023), https://www.epa.gov/system/files/documents/2023-01/AEPCO_Apache_ACL_Certification_Letter_Signature_1_25_23.pdf (attached).

[200] Earthjustice et al., Public Comment on EPA's National Enforcement and Compliance Initiatives for Fiscal Years 2024–2027, Docket ID No. EPA-HQ-OECA-2022-0981-0050 (Mar. 13, 2023) (attached).

V. EPA SHOULD IMPOSE THE FASTEST CEASE RECEIPT DEADLINE POSSIBLE FOR UR91.

A. A Prompt Cease Receipt Deadline Is the Only Outcome Consistent with *USWAG*.

EPA's proposal to allow Coal Creek an additional 135 days after a final denial decision to cease receipt of waste in an unlined impoundment more than lives up to its statement in the Part B Amendments that "EPA intended that the deadline would be tolled during the entire time between an approved application and the final determination on the [alternative liner demonstration]."[201] EPA explains that the proposed 135-day cease-receipt date reflects the amount of time that Coal Creek would have had to comply with the regulatory cease-receipt deadline if EPA had denied its application immediately upon receipt.[202]

No industry party sought judicial review of the Part A or Part B Amendments, including the deadlines for filing applications (November 30, 2020) and the default cease receipt deadline for facilities whose applications were deemed incomplete or denied (April 11, 2021). As discussed above, utilities have known for a long time that unlined ponds such as Coal Creek's UR91 must close.

When issuing its final denial decision for Coal Creek, and specifying the 135-day cease receipt deadline, EPA should make clear that the 135-day deadline runs from the date the final decision is signed, and make clear that the date of signing is the effective date.[203]

B. EPA Should Not Grant a Further Extension (and in No Event Later Than October 15, 2023) Unless MISO Establishes that Grid Reliability Will Be Demonstrably Jeopardized.

EPA's Proposed Denial raises the possibility of an extension beyond the 135-day deadline discussed above for reasons of electric grid reliability.[204]

EPA appears to be concerned about the possibility that Coal Creek might have to shut down (either temporarily or permanently), and potentially cause grid reliability problems, if the plant has not made alternative disposal arrangements before UR91's cease receipt deadline. Because RCRA's protectiveness standard does not allow for considerations of cost or convenience,[205] and the utilities have had years of advance notice of the need to close unlined impoundments, EPA should not extend the cease receipt deadline beyond the 135-day date indicated in the Proposed Denial.

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[201] Part B Amendments, 85 Fed. Reg. at 72,531.
[202] Proposed Denial at 56–57.
[203] Compare Proposed Denial at 57 ("This proposed deadline for Coal Creek Station to cease receipt of waste is the same as the proposed effective date of EPA's final decision (see Section VI below).") with Section VI of Proposed Denial at 63 ("EPA is proposing that the effective date for EPA's final decision in response to Coal Creek Station's application will be the date that the final decision is signed.").
[204] Proposed Denial at 57–62.
[205] *USWAG,* 901 F.3d at 448–49.

EPA should work with Coal Creek and MISO, to the extent possible, to explore non-generation alternative options in a reliability analysis in the event that Coal Creek seeks an extension of the cease-receipt date for electric reliability reasons. In this way, the potential continued use of the unlined UR91, and continued operation of the plant past the 135-day date will be a last resort. Implementation of alternative solutions could take until past the 135-day mark to be complete (and could warrant a limited extension past that date) but has the potential to allow quicker cessation of waste receipt at the unlined impoundment than simply allowing continued coal boiler operation as the reliability-saving solution.

EPA proposed that Coal Creek must submit a planned outage request to MISO within fifteen days after EPA's final decision and must submit any reliability-based disapproval decision (with a formal reliability analysis) to EPA within ten days after receiving it.[206] EPA should amend the phrase "planned outage" to additionally include "suspension or the like" to encompass multiple pathways for generator shutdown that a utility might consider under applicable RTO rules.

EPA notes that if MISO denies a planned outage request

> . . . because of timing considerations taking into account previously approved planned outage requests, [] EPA would expect the plant owner to work with MISO to plan an outage schedule that can be approved by MISO and also satisfies the plant owner's RCRA obligations, without regard to any cost implications[.][207]

> If [] MISO disapproves Coal Creek Station's planned outage request based on a technical demonstration of operational reliability issues, [. . .] EPA could grant a further extension (i.e., beyond 135 days from the date of EPA's final decision) [but] such a request could only be granted if it were supported by the results of the formal reliability assessment(s) conducted by MISO that established that the temporary outage of the boiler during the period needed to complete construction of alternative disposal capacity would have an adverse impact on reliability. In such a case EPA [. . .] could authorize continued use of the impoundments for either the amount of time provided in an alternative schedule proposed by MISO, or the amount of time EPA determines is needed to complete construction of alternative disposal capacity based on its review of the Application , whichever is shorter. EPA is further proposing that a disapproval from MISO without a finding of technical infeasibility for demonstrated reliability concerns would not support EPA's approval of an extension of the date to cease receipt of waste because any concern about outage schedules and their implications for plant economics could be resolved without an extension of RCRA compliance deadlines (e.g., through provision of

[206] Proposed Denial at 61.
[207] *Id.* at 59.

> replacement power and/or capacity; rearranging plant maintenance schedules; reconfiguration of equipment).
> . . .
> EPA expects that Coal Creek Station and MISO will plan the outage(s) and return-to-service periods—and any other needed accommodations—in ways that minimize the period of actual plant operations.[208]

EPA should make clear in its final decision that as part of its consideration of any reliability-based extension request EPA will evaluate whether continued use of UR91 is necessary for the power plant's operation. At a minimum, any request by Coal Creek to extend UR91's cease-receipt date on electric grid reliability grounds must contain a comprehensive accounting and discussion of each waste stream that goes to UR91, all efforts undertaken to arrange for alternative disposal of each wastestream, why no on-site or off-site alternative disposal for the waste stream is feasible – without regard to cost or inconvenience – prior to the 135-day mark, and how boiler operation creates the waste stream.

In this light, EPA reasonably proposed that the latest extension possible would be no later than "the amount of time EPA determines is needed to complete construction of alternative disposal capacity based on its review of the Application."[209] In any decision allowing an extension for electric reliability reasons, EPA must make a specific finding of the earliest practicable time that alternative disposal capacity for each relevant waste stream could be completed and any reliability-based extension should not go beyond the latest such date. In addition, EPA should require in its final decision that, if it grants any reliability-based extension, its decision is conditioned on Coal Creek providing ongoing updates at regular intervals (*e.g.*, every three months) to EPA and the public of all steps undertaken by Coal Creek and/or MISO to overcome the electric reliability issue.

EPA also reasonably states that any reliability-based extension recommended by MISO and granted by EPA should be the minimum period absolutely necessary, in order to minimize the period of adding new CCR waste to the apparently-leaking, unlined UR91 pond.

C. MISO Has Expressed Confidence in System Reliability.

EPA noted that as of now, it has "no evidence" that a planned outage of Coal Creek's electric generation could trigger electric grid reliability violations in MISO.[210] It is worth noting that MISO believes it can maintain system reliability for many years to come.[211] EPA and MISO should work together in good faith to determine whether any genuine grid reliability concerns may arise from any generator shutdown attributable to EPA's decision in this matter. EPA states that the proposed 135-day deadline for ceasing receipt of waste at UR91 "should provide Coal

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[208] *Id.* at 60–61.
[209] *Id.* at 57.
[210] *Id.* at 60.
[211] "MISO studies show it is possible to reliably operate the system with substantially lower levels of thermal resources." MISO, MISO's Response to the Reliability Imperative, at 22 (updated Jan. 2023), https://cdn.misoenergy.org/MISO%20Response%20to%20the%20Reliability%20Imperative504018.pdf (attached).

Creek Station with adequate time to coordinate with and obtain any necessary approvals from MISO for any outage of the coal-fired boiler that may be necessary."[212]

Without even acknowledging MISO's confidence in its grid reliability, the North Dakota Public Service Commission ("PSC") raises the unfounded specter of "significant and immediate danger to reliability in the MISO region" should EPA finalize its Proposed Denial.[213] This claim ignores both the realities of MISO's reliability status and the provisions in EPA's Proposed Denial. As to MISO's reliability status, MISO recently published preliminary data for the upcoming 2023-2024 Planning Resource Auction demonstrating that its Local Resource Zone 1 (which includes North Dakota) has accredited capacity exceeding the zone's Planning Reserve Margin Requirement by several thousand megawatts in all four seasons of the 2023-2024 planning year.[214] In addition, the PSC's suggestion that MISO's higher-than-nameplate capacity rating for Coal Creek "underscores its value to the system" is misleading at best. The capacity rating is simply a reflection of MISO's generic calculations without reference to whether the Coal Creek plant is critical to system reliability[215] As to the Proposed Denial, EPA has suggested a reliability safety valve in the remote possibility that Coal Creek's closure of UR91 – which the plant should have been planning for since at least 2018 – would demonstrably require a temporary shutdown as a last resort.

Should Coal Creek require a shutdown and should MISO deny an outage request on reliability grounds, EPA is expected to work with MISO to determine whether any genuine grid reliability concerns may arise from any generator shutdown attributable to EPA's decision. EPA states that the proposed 135-day deadline for ceasing receipt of waste at UR91 "should provide Coal Creek Station with adequate time to coordinate with and obtain any necessary approvals from MISO for any outage of the coal-fired boiler that may be necessary."[216]

Commenters wish to flag an error in a portion of EPA's Proposed Denial regarding MISO rules. EPA states:

> MISO is responsible for coordinating and approving requests for planned outages of generation and transmission facilities, as necessary, for the reliable operation of the MISO RTO. [quoting MISO protocols] In MISO, power plants are normally required to submit a request at 26 weeks in advance of a planned outage to allow MISO to evaluate whether the resource is needed to maintain grid reliability, among other scheduling considerations. MISO will grant the request unless it determines that the planned outage would

[212] Proposed Denial at 57.
[213] NDPSC Letter at 1.
[214] 2023-2024 Seasonal Preliminary PRA Report (April 3, 2023), https://cdn.misoenergy.org/Seasonal_Prelim_PRA_Report_PY2023_2023-03-31_19-01628441.xlsx (attached): compare cells C7 and C22 in each of the four seasonal tabs.
[215] MISO multiplies a value called "Intermediate Seasonal Accredited Capacity" for each resource by a scalar factor greater than 1 to arrive at the resource's final capacity value. MISO, Planning Year 2023-2024 Seasonal UCAP / ICAP Ratio (Mar. 28, 2023), https://cdn.misoenergy.org/202303281500%20UCAP%20ISAC%20Ratio%20for%20PY23-24627342.pdf; Order, FERC Docket No. ER22-495-000, 180 FERC ¶ 61,141 (Aug. 31, 2022), at para.95.
[216] Proposed Denial at 57.

> adversely affect reliability. MISO has indicated it will be able to provide an initial assessment of reliability within 135 days.[217]

EPA seems to be conflating *planned outages* with *suspension/retirement requests*. In its 2022 proposed Part A proposed decisions for power plants located in MISO, EPA accurately stated MISO rules at the time:

> In MISO, power plants are normally to submit a request at least 120 days in advance of a planned outage or 26 weeks in advance of a planned suspension to allow MISO to evaluate whether the resource is needed to maintain grid reliability, among other scheduling considerations.[218]

Planned outages, then and now, require 120 days' notice (not 26 weeks) to MISO.[219] In addition, MISO's tariff had required 26 weeks' notice for a planned suspension or retirement.[220] However, in February 2023, FERC approved a tariff change to lengthen the required notice for requested suspensions or retirements to one year, and lengthens MISO's response time from 75 days after receipt of notice to 150 days after the subsequent quarterly period.[221] But importantly, new Section 38.2.7.q of MISO's tariff provides that any suspension or retirement requests submitted to MISO by May 31, 2023, would be subject to the old timelines.[222] Based on the discussion in this paragraph, EPA should accordingly update its discussion of MISO's planned outage and suspension/retirement review procedures in its final decision.

EPA has already given Coal Creek at least 75 days' notice prior to EPA's final decision.[223] Considering these 75 days, plus a reasonable time for EPA to consider comments before issuing a final decision, plus 135 days following a final decision of ineligibility, Coal Creek will have had at least 26 weeks (and definitely 120 days) between the time of the proposed decision and the required cease-receipt date, so its proposed shutdown date (based on the anticipated final decision date) will be after the earliest time allowed under MISO rules. Because

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[217] *Id.* at 59.

[218] *See, e.g.*, EPA, Interim Decision: Proposed Date to Cease Receipt of Waste for Meramec Energy Center Based on Interim Determination of Incompleteness of Demonstration, Docket ID No. EPA-HQ-OLEM-2021-0592, at 12 (Jan. 11, 2022).

[219] MISO Tariff Module C, § 38.2.5.g.ix. Recent tariff changes approved by the Federal Energy Regulatory Commission in Docket No. ER22-495-000 (Aug. 31, 2022) modify Section 38.2.5.g.ix in certain ways but generally retain the concept that a generator must provide at least 120 days' advance notice to MISO before requesting a planned outage or else receive a penalty to its capacity accreditation for a future planning year.

[220] MISO Tariff Module C, § 38.2.7.a.i.

[221] Order Accepting Tariff Revisions, *Midcontinent Independent System Operator, Inc.*, 182 FERC ¶ 61,066, FERC Docket No. ER23-630-000 (Feb. 10, 2023) (modifying MISO Tariff § 38.2.7). A "Quarterly Study Period" is defined as March through May, June through August, September through November, or December through February.

[222] New MISO Tariff § 38.2.7.q. Specifically, the tariff states that retirement or suspension notices submitted up to one full quarter after the revision's effective date (the requested effective date under FERC Docket No. ER23-630-000 is February 13, 2023, and the next defined quarterly period ends May 31, 2023) would fall under the old timeline.

[223] EPA published its proposed decision on its Part B website, https://www.epa.gov/coalash/coal-combustion-residuals-ccr-part-b-implementation, on January 25, 2023, which was 75 days before the comment deadline April 10, 2023.

EPA put Coal Creek on notice in January 2023 of its proposed decision to deny the Part B Application, a notice to MISO shortly thereafter would have definitely qualified under the grace period (ending May 31, 2023) to avoid the new MISO suspension/retirement evaluation regime established under FERC Docket No. ER23-630, discussed above.

Additionally, whether a Generator Planned Outage, a Suspension, or a Retirement, MISO's response to the planned outage or suspension request will likely come sufficiently before the scheduled 135-day cease-receipt date so that (allowing for the ten-day notice period to EPA and then sufficient time for EPA's consideration) EPA may decide on the extension request prior to the cease-receipt date. For a planned outage request, MISO is required to issue its reliability-based approval or rejection decision by three months after the request.[224] Assuming Coal Creek submitted a planned outage request in late January 2023 to MISO following the publication of the EPA's proposed denial decision, MISO should provide its reliability determination by late April, likely in advance of the final decision and well in advance of the 135-day cease-receipt date. Alternatively, if Coal Creek submitted a suspension request under MISO's Attachment Y, MISO's response (as noted above) would come within 75 days of the request, well before any final decision.

EPA reasonably proposed that it would accept a reliability-based extension request only if accompanied by a formal reliability assessment conducted by MISO pursuant to MISO's defined processes as discussed above.[225]

VI. CONCLUSION

For the reasons discussed above, EPA should promptly finalize its Proposed Denial of Coal Creek's alternate liner demonstration application for UR91. In addition, EPA should accompany its final decision with enforcement measures to ensure compliance with the numerous, significant CCR Rule violations discussed above.

Sincerely,

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[224] MISO Tariff § 38.2.5.g.ii ("The Transmission Provider shall inform a Market Participant if its schedule is expected to have a material impact on the reliability of the facilities within the Transmission Provider Region within three (3) Months after Generator Planned Outage schedules are submitted"), as cited in the Monroe Proposed Decision at 55, Belle River Proposed Decision at 60–61, and Coal Creek Proposed Decision at 61–62.
[225] Proposed Denial at 57.

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EPA-HQ-OLEM-2021-0280

List of Documents Accompanying Comments Submitted by Earthjustice, et al., on April 10, 2023

Submitted via Regulations.gov

A. Notice of Potential Violations and Opportunity to Confer, Alabama Power Company, Plant Barry – Bucks, Alabama, from Kimberly L Bingham, Chief, Chemical Safety and Land Enforcement Branch, EPA Region 4, to Susan B. Comensky, Vice President, Environmental Affairs, Alabama Power Company (Jan. 31, 2023)

B. Press Release, EPA, EPA reaches settlement with Public Service Company of Colorado over allegations of noncompliance with Coal Combustion Residual Regulations (May 23, 2022)

C. Press Release, EPA, EPA Takes Key Steps to Protect Groundwater from Coal Ash Contamination (Jan. 11, 2022)

D. EPA, Final Decision: Denial of Alternative Closure Deadline for General James M. Gavin Plant, Cheshire, Ohio, Docket ID. No. EPA-HQ-OLEM-2021-0590-100 (Nov. 18, 2022)

E. Mark A. Hutson, P.G., Geo-Hydro, Inc., Observations on Groundwater Monitoring Compliance Issues Identified in EPA's Proposed Denial of Alternate Liner Demonstration Application Coal Creek Station – Upstream Raise 91 (Apr. 10, 2023) ("Hutson Expert Report re Coal Creek") (Apr. 10, 2023) ("Hutson Expert Report re Coal Creek")

F. Mark A. Hutson, P.G., Geo-Hydro, Inc., Observations on Proposed Denials of Alternate Liner Determination Applications (Apr. 3, 2023) ("Hutson Expert Report re Liners")

G. Mike Hughlett, Star Tribune, Great River to sell coal plant, but still buy power from it (June 30, 2021)

H. Adam Willis, INFORUM, Bismarck-based energy company to buy North Dakota's largest coal-fired power plant (June 20, 2021)

I. Golder, Notice of Intent to Close, Upstream Raise 92 CCR Surface Impoundment – Coal Creek Station (June 4, 2021)

J. Golder, Notification of Closure, Drains Pond System East Cell – Coal Creek Station (Mar. 4, 2020)

K. Golder, Closure Post-Closure Plan, Revision 1, Upstream Raise 91 Surface Impoundment (June 27, 2022)

L. Golder, Annual Groundwater Report – 2020, Great River Energy – Coal Creek Station (Jan. 2021) ("2020 Groundwater Monitoring Report")

M. Golder, Annual Coal Combustion Residuals Groundwater Report – 2021, Great River Energy – Coal Creek Station (Jan. 2022) ("2021 Groundwater Monitoring Report")

N. WSP USA Inc. [a/k/a WSP Golder], 2022 Annual Coal Combustion Residuals Groundwater Report, Rainbow Energy Center, Coal Creek Station (Jan. 2023)

O. U.S. Dep't of Health and Human Servs., Climate Change and Health Equity (last reviewed May 6, 2022)

P. EPA, Climate Change and Social Vulnerability in the United States: A Focus on Six Impacts, EPA 430-R-21-003 (Sept. 2021)

Q. Intergovernmental Panel on Climate Change, Synthesis Report of the IPCC Sixth Assessment Report (AR6), Summary for Policymakers (Mar. 2023)

R. Environmental Integrity Project and Earthjustice, Poisonous Coverup: The Widespread Failure of the Power Industry to Clean Up Coal Ash Dumps (Nov. 3, 2022)

S. Environmental Integrity Project & Earthjustice, Coal's Poisonous Legacy: Groundwater Contaminated by Coal Ash Across the U.S. (rev. July 11, 2019)

T. Comments of Earthjustice et al., Docket ID No. EPA-HQ-OLEM-2019-0172-0165 (Jan. 31, 2020)

U. EPA, Fact Sheet: Final Rule on Coal Combustion Residuals Generated by Electric Utilities (Dec. 2014)

V. A Holistic Approach to Closure Part B: Alternate Demonstration for Unlined Surface Impoundments; Implementation of Closure (Apr. 16, 2020), Docket ID. No. EPA-HQ-OLEM-2019-0173-0194

W. EPA, Response to Comments, Vol. 5, at 12 (2014), Docket ID No. EPA-HQ-RCRA-2009-0640-12128

X. EPA (Carolyn Hoskinson, Director, Office of Resource Conservation and Recovery), Letter to Arizona Electric Power Cooperative, Inc. (Michelle Freeark) (Jan. 25, 2023)

Y. Earthjustice et al., Public Comment on EPA's National Enforcement and Compliance Initiatives for Fiscal Years 2024-2027, Docket ID No. EPA-HQ-OECA-2022-0981-0050 (Mar. 13, 2023)

Z. MISO, MISO's Response to the Reliability Imperative (updated Jan. 2022)

AA. 2023-2024 Seasonal Preliminary PRA Report (April 3, 2023),