

United States Court of Appeals  
For the Eighth Circuit

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No. 19-3220

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United States of America

*Plaintiff - Appellee*

Sierra Club

*Intervenor - Appellee*

v.

Ameren Missouri

*Defendant - Appellant*

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Chamber of Commerce of the United States of America; American Chemistry  
Council; America's Power; Missouri Chamber of Commerce and Industry;  
National Association of Manufacturers; National Mining Association

*Amici on Behalf of Appellant(s)*

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Appeal from United States District Court  
for the Eastern District of Missouri - St. Louis

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Submitted: December 16, 2020

Filed: August 20, 2021

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Before SMITH, Chief Judge, LOKEN and MELLOY, Circuit Judges.

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SMITH, Chief Judge.

Ameren Missouri (“Ameren”) appeals an adverse judgment of the district court in a Clean Air Act (CAA) enforcement action brought by the United States of America, acting at the request of the Administrator of the United States Environmental Protection Agency (EPA) (hereinafter, EPA or “government”). Ameren argues that the district court erroneously found it liable for not obtaining permits for projects at its Rush Island Energy Center (“Rush Island”) and, as a result, assessed liability under the applicable federal regulations. In addition, Ameren maintains that the district court ordered legally flawed injunctions at both Rush Island and at a different plant, Labadie Energy Center (“Labadie”). We affirm the district court’s liability determination, but we reverse in part the remedial portion of its order concerning the Labadie plant and remand for further proceedings consistent with this opinion.

### I. *Background*

#### A. *Statutory and Regulatory Background of the CAA*

“Congress enacted the Clean Air Act Amendments of 1970 seeking to guarantee the prompt attainment and maintenance of specified air quality standards.” *Sierra Club v. Otter Tail Power Co.*, 615 F.3d 1008, 1011 (8th Cir. 2010) (quotations omitted). In enacting the CAA amendments, Congress “directed EPA to devise National Ambient Air Quality Standards (NAAQS) limiting various pollutants, which the States were obliged to implement and enforce.” *Id.* (quotation omitted). The New Source Performance Standards (NSPS) program was a key part of the CAA’s regulatory scheme. *Id.* The NSPS program “required EPA to develop technology-based performance standards designed to limit emissions from major new sources of

pollution.” *Id.* (quotation omitted). Both newly constructed facilities and modified facilities with increased emissions constitute “[n]ew sources.” *Id.* “It is ‘unlawful for any owner or operator of any new source to operate such source in violation of’ applicable performance standards.” *Id.* (quoting 42 U.S.C. § 7411(e)).

The NSPS program, however, “did too little to ‘achieve the ambitious goals of the 1970 amendments.’” *Id.* (quoting *Env’t Def. v. Duke Energy Corp.*, 549 U.S. 561, 567 (2007)). “Merely setting emissions limits failed to improve air quality in those areas that had already attained the minimum standards of the NAAQS because polluters had no incentive to diminish emissions below the established limits.” *Id.* As a result, in 1977, Congress amended the CAA “to add the ‘Prevention of Significant Deterioration’ (PSD) program, which seeks to ensure that the ‘air quality floor’ established by the NAAQS does not ‘in effect become a ceiling.’” *Id.* (quoting *Sierra Club v. Thomas*, 828 F.2d 783, 785 (D.C. Cir. 1987)).

The PSD program limited construction of major emitting facilities with specified preconditions. 42 U.S.C. § 7475(a). “The term ‘construction’ when used in connection with any source or facility, includes the *modification* . . . of any source or facility.” *Id.* § 7479(2)(C) (emphasis added). “The term ‘modification’ means any physical change in, or change in the method of operation of, a stationary source which increases the amount of any air pollutant emitted by such source or which results in the emission of any air pollutant not previously emitted.” *Id.* § 7411(a)(4).

The PSD program prohibits the construction of a major emitting facility unless preconditions are satisfied. One precondition is that the proposed facility obtain a permit setting forth applicable emission limitations. *Id.* § 7475(a)(1). Another precondition is that “the owner or operator of such facility demonstrates . . . that emissions from construction or operation of such facility will not cause, or contribute to, air pollution in excess of” prescribed air quality standards. *Id.* § 7475(a)(3). The PSD program also requires the owner or operator to install “the best available control

technology for each pollutant subject to regulation . . . emitted from, or which results from, [the proposed] facility.” *Id.* § 7475(a)(4). The “‘best available control technology’ (BACT) . . . is not a particular type of technology.” *Otter Tail*, 615 F.3d at 1011 (quoting 42 U.S.C. § 7475(a)(4)). Instead, the BACT “is an ‘emission limitation based on the maximum degree of reduction of each pollutant subject to regulation . . . which the permitting authority, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable’ for the facility in question.” *Id.* (alteration in original) (quoting 42 U.S.C. § 7479(3)).

Only *major* modifications to emitting sources are subject to PSD review. *Ala. Power Co. v. Costle*, 636 F.2d 323, 399 (D.C. Cir. 1979). “Major modification means any physical change in or change in the method of operation of a major stationary source that would result in: a significant emissions increase . . . of a regulated NSR [New Source Review] pollutant . . . ; and a significant net emissions increase of that pollutant from the major stationary source.” 40 C.F.R. § 52.21(b)(2)(i).

For projects that only involve “existing emissions units,” the EPA applies what it calls the actual-to-projected-actual applicability test. *Id.* § 52.21(a)(2)(iv)(c).<sup>1</sup> To apply this test, the “baseline actual emissions” must first be calculated. “Baseline actual emissions means the rate of emissions, in tons per year, of a regulated NSR pollutant . . . .” *Id.* § 52.21(b)(48).

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<sup>1</sup>This test provides: “A significant emissions increase of a regulated NSR pollutant is projected to occur if the sum of the difference between the projected actual emissions . . . and the baseline actual emissions . . . , for each existing emissions unit, equals or exceeds the significant amount for that pollutant . . . .” *Id.*



Next, the “projected actual emissions” must be calculated by determining the maximum annual rate, in tons per year, at which an existing emissions unit is projected to emit a regulated NSR pollutant in any one of the 5 years (12-month period) following the date the unit resumes regular operation after the project, or in any one of the 10 years following that date, if the project involves increasing the emissions unit’s design capacity or its potential to emit that regulated NSR pollutant and full utilization of the unit would result in a significant emissions increase or a significant net emissions increase at the major stationary source.

*Id.* § 52.21(b)(41)(i). An “owner or operator of the major stationary source . . . [must] consider all relevant information” to calculate “the projected actual emissions.” *Id.* § 52.21(b)(41)(ii)(a). “[A]ll relevant information . . . include[s] . . . historical operational data, the company’s own representations, the company’s expected business activity and the company’s highest projections of business activity, the company’s filings with the State or Federal regulatory authorities, and compliance plans under the approved State Implementation Plan . . . .” *Id.* But the owner or operator “[s]hall exclude” from the projected actual emissions “that portion of the unit’s emissions following the project that an existing unit could have accommodated during the consecutive 24-month period used to establish the baseline actual emissions . . . and that are also unrelated to the particular project, including any increased utilization due to product demand growth.” *Id.* § 52.21(b)(41)(ii)(c). The “exclu[sion] [of] increases stemming from unrelated demand growth” is referred to as “the ‘demand growth exclusion.’” *New York v. EPA*, 413 F.3d 3, 16 (D.C. Cir. 2005).

Finally, the baseline actual emissions calculation is subtracted from the projected actual emissions calculation to determine if the difference between the numbers is “significant.” 40 C.F.R. § 52.21(a)(2)(iv)(c). A table in the regulations sets forth the numeric thresholds that are considered “significant” for each regulated

pollutant. *Id.* § 52.21(b)(23)(i). If the difference in the projected actual emissions and the baseline actual emissions is significant, *see id.*, then a permit is required before beginning construction on the project. *Id.* § 52.21(a)(2)(iii).

The actual-to-projected-actual test is distinguishable from “a potential-to-potential test,” which “compare[s] past potential emissions with future potential emissions.” *New York*, 413 F.3d at 17. “[T]he plain language of the CAA indicates that Congress intended to apply NSR to changes that increase actual emissions instead of potential or allowable emissions . . . .” *Id.* at 40.

### B. *Missouri’s State Implementation Plan*

“The PSD program is primarily implemented by the states through ‘state implementation plans’ (SIPs).” *Otter Tail*, 615 F.3d at 1011 (citing 42 U.S.C. § 7471). While “[s]tates have broad discretion in designing their SIPs,” their “plans must include certain federal standards.” *Id.* The EPA reviews and approves States’ SIPs. *Id.* at 1011–12.

Missouri expressly incorporated the EPA’s PSD regulations into its SIP (“Missouri SIP”). *See* Mo. Code Regs. Ann. tit. 10, § 6.060(8)(A) (2007) (“All of the subsections of 40 CFR 52.21, other than [certain subsections], are hereby incorporated by reference.”). The EPA approved Missouri’s SIP, explaining that “the provisions of § 52.21 supersede the state provisions for purposes of the PSD program.” Approval and Promulgation of Implementation Plans; State of Missouri, 71 Fed. Reg. 36,486-02, 36,487 (June 27, 2006); *see also id.* at 36,489 (“This revision also incorporates by reference the other provisions of 40 CFR 52.21 as in effect on July 1, 2003, which supersedes any conflicting provisions in the Missouri rule. Section 9, pertaining to hazardous air pollutants, is not SIP approved.”).

### *C. Title V Program*

In addition to the CAA's PSD program, "the CAA . . . require[s] each covered facility to obtain a comprehensive operating permit setting forth all CAA standards applicable to that facility." *Otter Tail*, 615 F.3d at 1012 (citing 42 U.S.C. § 7661a(a)). The operating permits "incorporate into a single document all of the CAA requirements governing a facility. Similar to other CAA programs, Title V is implemented primarily by the states under EPA oversight. In states with EPA approved programs," the state permitting authority issues the Title V permits. *Id.* (citations omitted). These permits "are subject to EPA review and veto." *Id.* The EPA has approved Missouri's operating permit program under Title V of the CAA. This program is incorporated into the Missouri SIP. *See* Mo. Code. Regs. Ann. tit. 10, § 6.065 (2007).

### *D. Factual Background and Procedural History*

This case involves Ameren's Rush Island power plant, which includes two coal-fired electric generating units, Units 1 and 2. These units began service in 1976 and 1977. They were grandfathered into the PSD program. They do not have air pollution control devices for sulfur dioxide. Rush Island currently emits approximately 18,000 tons of sulfur dioxide per year. Small performance improvements or increases in unit availability can result in a 40-ton increase in sulfur dioxide. For the Rush Island units to emit more than 40 tons of sulfur dioxide, it takes only an availability of 0.3 percent or an additional 21 hours of operation at full power.

By 2005, problems with Units 1's and 2's major boiler components forced Ameren to frequently take the units out of service. This made the units underperform and reduced the amount of electricity Ameren could generate and sell from the units. Ameren decided to replace the problem components with new, redesigned components. Ameren, however, did not do any quantitative PSD review for Unit 1's project and belatedly performed PSD review for Unit 2's project. Ameren proceeded with the projects without reporting its planned modifications to the EPA, obtaining

the necessary permits, or installing pollution controls. To replace the major boiler components, Ameren took Unit 1 offline in 2007 and Unit 2 offline in 2010. Each unit was completely offline for three to four months to complete the projects. Ameren spent more than \$20 million per project.

By replacing the failing components with new, redesigned components, Ameren expected unit availability to improve by much more than 0.3 percent, allowing the units to operate hundreds of hours more per year after the projects. Ameren expected to use that increased availability (and increased capacity for Unit 2) to burn more coal and generate more electricity. Unavoidably, the units would also emit more sulfur dioxide pollution.

As Ameren expected, its replacement of the failing components resulted in increased availability at Units 1 and 2 by eliminating hundreds of outage hours per year. And, Unit 2's capacity increased. The units ran more, burned more coal, and consequently emitted hundreds of tons more sulfur dioxide per year because of the operational increases.

The government filed suit against Ameren in response to the projects. It alleged that Ameren violated the CAA, the Missouri SIP, and Ameren's Rush Island Plant Title V Permit by performing major modifications on Units 1 and 2 without obtaining the necessary permits, installing pollution control technology, or otherwise complying with all applicable requirements.

### *1. Liability Phase*

#### *a. Summary Judgment*

The district court bifurcated the proceedings into a liability phase and a remedy phase. During the liability phase, the district court issued two summary-judgment orders. In the first summary-judgment order, the district court rejected Ameren's argument that the major-modification test set forth in the federal regulations did not

provide the relevant PSD liability test because the Missouri SIP elsewhere separately defined *modification* to mean that “the source’s *potential* emissions would significantly increase.” *United States v. Missouri (Ameren I)*, 158 F. Supp. 3d 802, 808 (E.D. Mo. 2016) (emphasis added). According to Ameren, the government could not establish liability because it never alleged that “the [Rush Island] projects increased the units’ *potential* emissions.” *Id.* (emphasis added). In rejecting this argument, the court first explained that “the PSD rules impose their own independent, stand-alone applicability provisions in Section (8) of the Missouri SIP (incorporating EPA’s PSD rules set out at 40 C.F.R. 52.21).” *Id.* at 809. The court reasoned that “the PSD-specific applicability language should trump the general applicability language in Section (1) of the [Missouri] SIP.” *Id.*

The court next cited the “well-established” “regulatory and statutory history of the PSD rules” as leaving “no doubt that the federal PSD rules are focused on ‘major modifications’ which are based on actual emissions determinations,” not potential emissions. *Id.* at 810. The court found “most persuasive[] [that the] EPA’s approval of the SIP provided that the CAA and the program requirements as set out in 40 C.F.R. § 52.21 would supersede any conflicting provisions in the state SIP.” *Id.* (citing Approval and Promulgation of Implementation Plans; State of Missouri, 71 Fed. Reg. at 36,489).

Finally, the district court concluded that Ameren urged an interpretation of the SIP that would conflict with the PSD rules and, in the court’s view, “render a portion of the PSD rules superfluous.” *Id.*

In its second summary-judgment order, the district court addressed causation and “the PSD program’s demand growth exclusion.” *United States v. Ameren Mo. (Ameren II)*, No. 4:11-cv-77-RWS, 2016 WL 728234, at \*9 (E.D. Mo. Feb. 24, 2016). According to the district court, “two main criteria . . . determine whether a major source of pollution must obtain a PSD permit. First, there must be a physical change,

and second, that change would be expected to cause a significant net increase in actual emissions.” *Id.* The demand growth exclusion is relevant to the second criteria—“how to determine whether the physical changes would have caused a significant net emissions increase, and if so, whether any of the increased emissions may be excluded from review under the ‘demand growth exclusion.’” *Id.* The district court rejected Ameren’s proposed interpretation of the exclusion as applying to “any emissions increases a unit could have accommodated at baseline.” *Id.* Instead, the court held “that the demand growth exclusion requires a showing that the unit ‘could have accommodated’ the emissions at baseline *and* that . . . those increases were unrelated to the project.” *Id.* at \*11. The court also held that “while it remains the EPA’s burden to prove that Ameren should have expected the projects to cause an increase in emissions, the burden is Ameren’s to prove that the demand growth exclusion applies.” *Id.*

Also in the second summary-judgment order, the district court addressed Ameren’s argument that “because EPA brought suit *after* the challenged projects’ completion,” it was “limited to an ‘actual increase’ theory.” *Id.* at \*13. Under Ameren’s actual-increase theory, the EPA would have to show that “the Projects actually caused emissions to increase” to establish Ameren’s liability. *Id.* By contrast, under “an ‘expectations’ theory,” the EPA could establish liability by showing “that Ameren ‘should have expected’ the Projects to increase emissions.” *Id.* The court held that the government could proceed on the expectations theory. *Id.* at \*13–16.

Additionally, the court considered Ameren’s argument that the government had to “come forward with admissible evidence of what a reasonable power plant operator or owner would expect, and its failure to do so [was] fatal to EPA’s expectations theory case.” *Id.* at \*18. But the court agreed with the government “that no special standard of care evidence is required for the factfinder to be able to determine whether a reasonable power plant operator or owner would have expected the projects



to cause a significant emissions increase”; instead, “the PSD regulations themselves . . . guide the factfinder’s determination.” *Id.*

Finally, the court rejected Ameren’s argument that the court “lack[ed] subject matter jurisdiction to hear EPA’s [Title V] claim that Ameren [was] operating under an inadequate or deficient permit.” *Id.* at \*24.

b. *Trial*

Subsequently, the district court held a trial on the merits. After trial, the district court entered an order setting forth its factual findings and legal conclusions. *See United States v. Ameren Mo. (Ameren III)*, 229 F. Supp. 3d 906 (E.D. Mo. 2017). The court concluded that Ameren’s Rush Island overhauls were major modifications that triggered PSD pollution-control requirements. The district court found that “[t]he emissions evidence show[ed] [that] an increase related to the projects should have been expected and actually occurred.” *Id.* at 997 (emphasis omitted). The court identified categories of evidence that “all establish that there is a significant net [sulfur dioxide] increase of more than 40 tons that was caused by the projects.” *Id.* at 998.

First, the court identified “[t]wo key—and undisputed—characteristics of the Rush Island units.” *Id.* at 988. The first characteristic was that “the Rush Island units are big sources of pollution.” *Id.* The second characteristic was that “the Rush Island units are ‘baseload’ units” that are “cheap sources of electricity” and “operate as much as they can.” *Id.* According to the court, “[t]hese two facts lead to a logical conclusion [that] if the Rush Island units are upgraded so they *can* generate more electricity, they *will*. Performance improvements have a direct impact on annual generation and pollution levels.” *Id.*

Second, Robert Koppe, a power plant performance expert, opined that the Rush Island’s plant availability increased because it replaced “these problematic

components.” *Id.* at 989. Thereafter, “Dr. Ranajit Sahu, a permitting engineer and expert for the United States, took Mr. Koppe’s findings on expected improved availability and used them to calculate the expected additional pollution that would result from the improvements.” *Id.* at 990. He “calculated an expected increase in emissions of 608 tons of [sulfur dioxide] post-project for Unit 1.” *Id.* And, “[b]ased on Mr. Koppe’s prediction of regained availability, . . . Dr. Sahu calculated an expected increase of 415 tons per year of [sulfur dioxide] in Unit 2 that would result from the availability improvement alone.” *Id.* at 992.

Third, Dr. Ezra Hausman, a modeler and market consultant with 20 years’ experience in the electric industry, explained that the “sophisticated computer modeling program” that Ameren used “to model and predict the Rush Island units’ fuel needs . . . for the years after the 2007 and 2010 major boiler outages” “showed that both a unit’s capacity level and its availability are linearly related to the unit’s projected coal consumption.” *Id.* at 994, 995. Thus, “if Ameren increased the number of hours its Rush Island units were able to run, or if the company enabled the units to operate at higher output levels during those hours, then the units would . . . burn[] more coal and, as a result, emit[] more pollution.” *Id.* at 994–95. Dr. Hausman’s “results show[ed] that Ameren’s modeling would predict significant emissions increases at the Rush Island units as a result of the projects.” *Id.* at 996.

Finally, “the actual post-project data” showed “a significant net [sulfur dioxide] increase of more than 40 tons that was caused by the projects.” *Id.* at 998. Both units were available more and operated every hour that they were available. Both units also increased their maximum generating levels. This resulted in both units increasing their sulfur dioxide pollution.

In summary, the court determined that “[b]ased on the known facts that the Rush Island units are low-cost, baseload units, common sense compels the same



conclusion: improving availability or capacity at baseload units like Rush Island will result in additional operations and pollution.” *Id.*

Regarding liability, the district court also rejected Ameren’s defenses. First, the district court concluded that Ameren failed to satisfy “its burden of proving that the Rush Island projects fall within the narrow routine maintenance exemption.” *Id.* at 1003. The court characterized “[t]he 2007 and 2010 major boiler outages [as] unprecedented events for Rush Island Units 1 and 2—they were the centerpieces of the ‘most significant’ outages in plant history.” *Id.* (citation omitted).

Second, the court rejected Ameren’s argument that any increases in production and pollution were merely the result of demand growth that should be excluded from the liability assessment. According to the court, the “relevant information” that Ameren had “showed that the Rush Island units’ performance would improve, resulting in increased generation and emissions.” *Id.* at 1010.

In summary, the district court “enter[ed] a finding of liability against Ameren,” concluding that the Rush Island Unit 1 and 2 projects described above were major modifications under the CAA, Ameren violated the PSD program’s requirements “by failing to obtain a preconstruction permit and install best available pollution control technology,” and Ameren violated Title V of the CAA. *Id.* at 1017.

## 2. Remedy Phase

### a. Summary Judgment

After entering its post-trial order on liability, the district court proceeded to the remedy phase. The court addressed the parties’ summary-judgment motions. First, the court rejected Ameren’s argument “that the Clean Air Act does not authorize injunctions as a remedy for past violations.” *United States v. Ameren Mo. (Ameren IV)*, 372 F. Supp. 3d 868, 871 (E.D. Mo. 2019). According to the court, “[t]he plain language of § 7413(b) gives the EPA authority to ‘commence a civil action’ for

injunctive relief or civil penalties, ‘or both,’ whenever a person ‘*has* violated or is in violation of any requirement or prohibition of’ EPA air quality control programs.” *Id.* (quoting 42 U.S.C. § 7413(b)). The court reasoned that § 7413(b)’s plain “language places no restriction on injunctive relief for past violations” and instead “authorizes the EPA to seek injunctive relief whenever a person *has violated* the Clean Air Act.” *Id.*

In addition, the district court rejected Ameren’s argument that the court could not “order injunctive relief that includes emissions reductions or control technology at the Labadie Energy Center (Labadie) coal-fired power plant.” *Id.* at 874.

b. *Trial*

The district court subsequently held a remedy trial. Following the trial, the court issued an order imposing a two-pronged remedy with the purpose of “[1] bring[ing] Ameren’s Rush Island facility into compliance with the law and [2] . . . remediat[ing] the harm from the more than 162,000 tons—and counting—in excess [sulfur dioxide] that Rush Island emitted after Ameren failed to obtain a PSD permit there.” *United States v. Ameren Mo. (Ameren V)*, 421 F. Supp. 3d 729, 802 (E.D. Mo. 2019).

As to compliance, the district court concluded that “Ameren must make Rush Island compliant by obtaining a PSD permit with emissions limitations based on wet FGD [flue gas desulfurization technology]” used as the BACT. *Id.* at 806 (emphasis omitted). The court determined that FGD technology is technically and economically feasible and “can remove 95% or more of [sulfur dioxide] emissions.” *Id.* at 812.

As to remediation, the district court concluded that “Rush Island’s excess pollution is best remediated by decreasing emissions at the nearby Labadie Energy Center.” *Id.* at 789 (emphasis omitted). Labadie consists of four coal-burning units and is located 35 miles west of St. Louis. Ameren argued that imposition of the

remedy was “extreme” and “constitute[d] a penalty” “because Labadie is ‘totally innocent,’ and Ameren has not violated the Clean Air Act there.” *Id.* at 820. The district court rejected Ameren’s argument, reasoning that its “remedy is based on straightforward equitable principles and the authority [it] ha[s] under the Clean Air Act ‘to restrain’ violations, ‘to require compliance,’ and ‘to award any other appropriate relief.’” *Id.* (quoting 42 U.S.C. § 7413(b)). According to the court, its remedy was “narrowly tailored” because “a tight geographic nexus [exists] between the harms Rush Island caused and the benefits gained through reducing Labadie’s emissions. Pollution from Labadie affects the same communities as those affected by Rush Island, and to the same degree.” *Id.* at 820–21. The court reasoned that its remedy “achieve[d] the maximum possible environmental benefit”: “When Ameren reduces emissions at Labadie commensurate with the excess emissions from Rush Island, Ameren will have put the public in the place it would have been absent Ameren’s Clear Air Act violation.” *Id.* at 821. The court explained that “Ameren’s ton-for-ton reductions at Labadie will lower the risks of premature mortality and disease in the same communities impacted by Ameren’s Rush Island violations.” *Id.*

The court rejected Ameren’s argument “that any injunction against its Labadie plant would constitute a penalty.” *Id.* While the court acknowledged it could not “issue injunctive relief that would constitute a penalty,” it concluded that “[b]y ordering emissions reductions up to, but not surpassing, the excess emissions from Rush Island, [the court was] ordering relief that goes exactly to ‘remedying the damage caused to the harmed parties by the defendant’s action.’” *Id.* (quoting *United States v. Ameren Mo.*, No. 4:11-cv-77-RWS, 2016 WL 468557, at \*1 (E.D. Mo. Feb. 8, 2016)). The court “order[ed] Ameren to base its relief at Labadie on DSI [dry sorbent injection] control technology” “[t]o . . . ensure that any relief at Labadie does not surpass the damage caused by Rush Island.” *Id.* Installation of DSI technology on Labadie’s units would allow Ameren to “operate DSI for as many years as necessary to remediate Rush Island’s excess emissions[] and terminate its use of DSI without suffering significant lost capital assets.” *Id.* The court “order[ed] Ameren to begin

operating Labadie with DSI, or a more effective pollution control, beginning no later than three years after [its] order.” *Id.* at 822.

### 3. *Summary*

In summary, the district court found Ameren in violation of the CAA for “mak[ing] major modifications to expand Rush Island’s capacity” without “apply[ing] for a PSD permit and meet[ing] reduced emissions requirements.” *Id.* at 824. By failing to “apply for the required PSD permit,” Ameren “skirted PSD’s requirement to install the best available technology to control the pollution Rush Island emits.” *Id.*

“To remedy [Ameren’s] violation of the Clean Air Act,” the district court ordered Ameren to “apply for a PSD permit for Rush Island within ninety days, propose wet FGD as BACT in its permit application, and implement BACT no later than four and one-half years from [the] order.” *Id.* “In addition to the relief [the court] order[ed] at Rush Island, [it] also order[ed] Ameren to reduce its pollution at Labadie in an amount equal to Ameren’s excess emissions at Rush Island.” *Id.* It left Ameren the option whether to “install[] DSI or some other more effective pollution control at Labadie.” *Id.*

## II. *Discussion*

Ameren appeals the district court’s orders. It raises five arguments: (1) the Rush Island projects did not require permits under the Missouri SIP; (2) the Rush Island projects did not constitute major modifications; (3) the district court lacked jurisdiction under Article III and statutory authority under the CAA to enter the injunctions; (4) the injunctive relief ordered at Labadie is punitive, not remedial, and therefore prohibited; and (5) the district court lacked jurisdiction over the Title V claims. We address each in turn.

### A. Missouri SIP

Ameren first argues that “under the plain language of Missouri’s SIP, permits are required only for increases in potential emissions” and “it [is] undisputed that the [Rush Island] Projects would not, and did not, increase potential emissions.” Appellant’s Br. at 30. According to Ameren, the district court erroneously “substituted the federal regulations’ applicability standard,” which “nullified the SIP Permit Rule’s Applicability Provision.” *Id.* at 30–31.

The Missouri SIP identifies which construction or modification projects at emission sources require prior construction permits. Mo. Code Regs. Ann. tit. 10, § 6.060 (2007). Ameren cites to § 6.060(1) of the Missouri SIP, entitled “Applicability” (“Applicability Section”). This section governs Missouri’s air quality construction permit programs. The Applicability Section provides, in relevant part, that

[n]o owner or operator shall commence construction<sup>[2]</sup> or *modification* of any installation subject to this rule, begin operation after that construction or *modification*, or begin operation of any installation which has been shut down longer than five (5) years without first obtaining a permit from the permitting authority under this rule.

Mo. Code Regs. Ann. tit. 10, § 6.060(1)(C) (2007) (emphases added).

In turn, the Missouri SIP offers two definitions of *modification*. First, it generally defines “[m]odification” as “[a]ny physical change, or change in method of operation of, a source operation or attendant air pollution control equipment which would cause an increase in *potential emissions* of any air pollutant emitted by the source operation.” *Id.* § 6.020(2)(M)(10) (emphasis added). “Potential to emit” means

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<sup>2</sup>“It is undisputed that the projects at issue were not ‘construction’ as defined by the Missouri SIP or the PSD rules.” *Ameren I*, 158 F. Supp. 3d at 809 n.5.

the unit’s ability to emit at full design capacity “assuming continuous year-round operation.” *Id.* at § 6.020(2)(P)(19).

Second, the Missouri SIP separately defines “Title I modification.” *Id.* § 6.020(2)(M)(11). A “Title I modification” is “[a]ny modification that requires a permit under 10 CSR 10-6.060 section (7) or (8), or that is subject to any requirement under 10 CSR 10-6.070 or 10 CSR 10-6.080.” *Id.* § 6.020(2)(T)(3) (emphasis added).<sup>3</sup>

Ameren maintains that the Missouri SIP limits PSD applicability to only projects increasing both actual *and* potential emissions. According to Ameren, the Missouri SIP’s Applicability Section and definitional sections mean that “[i]f a project would *not* increase a unit’s potential emissions, it is *not* a modification and does *not* trigger permitting under the Applicability Provision.” Appellant’s Br. at 35. Because the government “never alleged that the projects increased the units’ potential emissions, Ameren argues that it [was] entitled to full summary judgment.” *Ameren I*, 158 F. Supp. 3d at 808–09.

Ameren, however, overlooks that, in contrast to the general definition of *modification* in § 6.020(2)(M)(10), § 6.060(8)(A) of the Missouri SIP contains “*PSD-specific* applicability language.” *Id.* at 809 (emphasis added) (citing *RadLAX Gateway Hotel, LLC v. Amalgamated Bank*, 566 U.S. 639, 645 (2012)). That section—expressly referenced in the Missouri SIP’s definition of “Title I modification”—provides, in relevant part:

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<sup>3</sup>In addition to defining *modification*, the Missouri SIP independently defines “[m]ajor modification” as “[a]ny physical change or change in the method of operation at an installation or in the attendant air pollution control equipment that would result in a significant net emissions increase of any pollutant.” *Id.* § 6.020(2)(M)(3). The Missouri SIP uses the term *major modification* in a section concerning BACT. *See id.* § 6.020(2)(B)(5).



(8) Attainment and Unclassified Area Permits.

(A) *All of the subsections of 40 CFR 52.21 other than (a) Plan disapproval, (q) Public participation, (s) Environmental impact statements and (u) Delegation of authority are incorporated by reference.* 40 CFR 52.21 as used in this rule refers to 40 CFR 52.21 promulgated as of July 1, 2003 as published by the Office of the Federal Register, U.S. National Archives and Records, 700 Pennsylvania Avenue NW, Washington, D.C. 20408. This rule does not incorporate any subsequent amendments or additions.

Mo. Code Regs. Ann. tit. 10, § 6.060(8)(A) (2007) (emphases added).

In turn, the federal regulation referenced in § 6.060(8)(A) of the Missouri SIP provides that the PSD’s “[a]pplicability procedures” “apply to the construction of any new major stationary source or the *major modification* of any existing major stationary source” located in a PSD area. 40 C.F.R. § 52.21(a)(2)(ii) (emphasis added). The regulations explicitly define major modification. “*Major modification* means any physical change in or change in the method of operation of a major stationary source that would result in: a significant emissions increase . . . of a regulated NSR pollutant . . . ; and a significant net emissions increase of that pollutant from the major stationary source.” *Id.* § 52.21(b)(2)(i) (emphasis added). “A . . . major modification shall meet each applicable emissions limitation under the [SIP] and each applicable emissions standard and standard of performance under 40 CFR parts 60 and 61.” *Id.* § 52.21(j)(1).

The federal regulation establishes that a *major modification* triggers the PSD requirements. According to the regulation, “[n]o . . . major modification . . . shall begin actual construction without a permit that states that the . . . major modification will meet those requirements.” *Id.* § 52.21(a)(2)(iii). To assess whether a major modification occurred, the federal regulation states that an

“[a]ctual-to-projected-actual applicability test [applies] for projects that only involve existing emissions units.” *Id.* § 52.21(a)(2)(iv)(c) (emphasis added). Under that test,

[a] significant emissions increase of a regulated NSR pollutant is projected to occur if the sum of the difference between the projected actual emissions . . . and the baseline actual emissions . . . , for each existing emissions unit, equals or exceeds the significant amount for that pollutant . . . .

*Id.*

As the district court observed, “EPA’s approval of the [Missouri] SIP illustrates why the specific PSD rules control.” *Ameren I*, 158 F. Supp. 3d at 810. In approving the Missouri SIP, the EPA stated, “[W]e are approving most of the revisions to the Construction Permits Required rule because the revisions incorporate, by reference, the Federal New Source Review reforms . . . .” Approval and Promulgation of Implementation Plans; State of Missouri, 71 Fed. Reg. at 36,486. More specifically, it stated that it was “approving revisions to Missouri rule, 10 CSR 10-6.060, Construction Permits Required, into the SIP. This rule incorporates by reference the . . . PSD . . . program in 40 CFR 52.21 . . . .” *Id.* at 36,487.

Importantly, the “EPA’s approval of the SIP provided that the CAA and the program requirements as set out in 40 C.F.R. 52.21 would supersede any conflicting provisions in the state SIP.” *Ameren I*, 158 F. Supp. 3d at 810 (quoting 71 Fed. Reg. at 36,486 (“This revision incorporates by reference the other provisions of 40 C.F.R. 52.21 as in effect on July 1, 2003, which supersedes any conflicting provisions in the Missouri rule.” (emphasis added in *Ameren I*))).

Furthermore, as the district court pointed out, Ameren’s argument that “the [Missouri] SIP first requires . . . that a threshold determination be made that a project is a ‘modification’” under § 6.020(2)(M)(1), “would render a portion of the PSD rules



superfluous.” *Id.* at 810. The Supreme Court rejected a similar argument in *Duke Energy*. In that case, the Court held that the EPA is not required “to conform its PSD regulations on ‘modification’ to their NSPS counterparts.” 549 U.S. at 565. According to the Court, aligning the PSD regulations with the NSPS regulations “was inconsistent with their terms and effectively invalidated them.” *Id.* Relevant to the present case, the Court rejected the defendant power company’s argument that, “before a project can become a ‘major modification’ under the PSD regulations, it must meet the definition of ‘modification’ under the NSPS regulations.” *Id.* at 581 n.8 (citations omitted). According to the Court, “the language of the regulations [did] not support” such a reading because it would render portions of the PSD regulations superfluous. *Id.* (“[I]t would be superfluous for PSD regulations to require a ‘major modification’ to be a ‘physical change in or change in the method of operation,’ if they presupposed that the NSPS definition of ‘modification,’ which contains the same prerequisite, had already been satisfied.” (citations omitted)).

Finally, *United States v. Cinergy Corp.*, 623 F.3d 455 (7th Cir. 2010), upon which Ameren relies, is distinguishable. There, the EPA brought an enforcement action against several coal-fired power plants. *Id.* at 456. As in the present case, the EPA alleged that the plants’ projects were major modifications requiring a PSD permit. *Id.* The plants argued that no permit was required because the projects did not increase the units’ potential emissions under the Indiana SIP, which based applicability on increases in potential emissions instead of actual emissions. *Id.* at 458. On appeal, the Seventh Circuit held that “[t]he Clean Air Act does not authorize the imposition of sanctions for conduct that complies with a [SIP] that the EPA has approved.” *Id.* (citing 42 U.S.C. § 7413(a)(1)).

Like the power plants in *Cinergy*, Ameren maintains that it lacked notice “that EPA would treat its approval of Sections 10–6.060(1)(C) (Applicability) and 10–6.020(2)(M)(10) (definition of ‘modification’) as a rejection of them”; furthermore, it asserts that “allowing EPA to impose liability when it is undisputed

no modification has occurred would violate basic principles of due process and fair notice.” *Ameren I*, 158 F. Supp. 3d at 812. But *Cinergy* is distinguishable from the present case because (1) the Indiana SIP did not incorporate the PSD rules into the State’s plan; (2) the “EPA’s approval of the Indiana SIP did not expressly provide that the PSD rules as set out in the Code of Federal Regulations supersede any conflicting provisions in the state SIP”; and (3) the power plants in *Cinergy* had “actual notice” of the Indiana SIP provision, whereas “it is not clear that Ameren had actual notice of the SIP provision.” *Id.* Furthermore, *Cinergy* is merely persuasive authority and not binding on this court. *See Duluth, Winnipeg & Pac. Ry. Co. v. City of Orr*, 529 F.3d 794, 798 (8th Cir. 2008).

Accordingly, we hold that the district court did not err in holding that the Rush Island projects required permits through application of the actual-to-projected-actual applicability test under 40 C.F.R. § 52.21(a)(2)(iv)(c), incorporated by reference in § 6.060(8)(A) of the Missouri SIP.

#### B. Major Modification

Alternatively, Ameren argues that “even if federal regulations governed applicability, Ameren was held liable under the wrong legal standards, independently requiring reversal.” Appellant’s Br. at 45. Ameren maintains that the district court erred in concluding the Rush Island projects constituted *major modifications*. Specifically, Ameren contends that the district court erroneously (1) shifted the burden of proof on causation; (2) “applied new interpretations of the federal regulations’ causation provision”; and (3) applied a “reasonable power plant operator’ standard the regulations do not require.” *Id.* at 45–46. In addition, Ameren asserts that the district court erred by permitting the government to use expert opinions on actual post-project emissions that were not disclosed. *Id.* at 56.

A “[m]ajor modification” at emission sources occurs when a physical change in the facility would result in “a significant emissions increase.” 40 C.F.R.

§ 52.21(b)(2)(i). “To satisfy its burden under the [CAA], the government ha[s] to show that at the time of the projects [Ameren] expected, or should have expected, that its modifications would result in a ‘significant net emissions increase’ . . . .” *United States v. Ala. Power Co.*, 730 F.3d 1278, 1282 (11th Cir. 2013).

### 1. *Burden of Proof*

One feature of the federal regulation’s “projected-actual-emissions methodology [is] the exclusion from the emissions projection of any emissions due to increased demand.” *New York*, 413 F.3d at 31. This demand-growth exclusion functions as a type of defense for the source to avoid triggering PSD requirements. The federal regulation “allow[s] exclusion of emissions that could have been accommodated during the baseline period and ‘that are also unrelated to the particular project.’” *Id.* at 33 (quoting 40 C.F.R. § 52.21(b)(41)(ii)(c)). Emissions “unrelated to the particular project . . . include[] any increased utilization due to product demand growth.” *Id.* (quoting 40 C.F.R. § 52.21(b)(41)(ii)(c)).

Thus, under the regulation, “a source must”

establish[] two criteria . . . before excluding emissions from its projection: “(1) [t]he unit could have achieved the necessary level of utilization during the consecutive 24-month period [the source] selected to establish the baseline actual emissions; and (2) the increase is not related to the physical or operational change(s) made to the unit.”

*Id.* (alterations in original) (emphasis added) (quoting Prevention of Significant Deterioration (PSD) and Nonattainment New Source Review (NSR): Baseline Emissions Determination, Actual-to-Future-Actual Methodology, Plantwide Applicability Limitations, Clean Units, Pollution Control Projects, 67 Fed. Reg. 80,186-01, 80,203 (Dec. 31, 2002)); *see also United States v. DTE Energy Co.*, 845 F.3d 735, 737 (6th Cir. 2017).

Ameren argues that “the [d]istrict [c]ourt improperly shifted the burden of proving causation to Ameren.” Appellant’s Br. at 46. Before the district court, the parties disputed who bore the burden of proving “that any increases in emissions were caused by demand growth.” *Ameren II*, 2016 WL 728234, at \*11. Ameren argued that the EPA bore the burden of proving demand growth “because under the definition of ‘projected actual emissions,’ the regulations require that unrelated emissions be exempted from the calculation.” *Id.* By contrast, the EPA maintained that Ameren bore the burden of proof on demand growth as “the party seeking to benefit from an exemption.” *Id.* The district court held that “*while it remains EPA’s burden to prove that Ameren should have expected the projects to cause an increase in emissions, the burden is Ameren’s to prove that the demand growth exclusion applies.*” *Id.* (emphasis added).

The district court is correct. As recognized in *New York* and *DTE Energy*, it is the source’s burden to prove the applicability of the demand-growth exclusion. This is in accordance with the Supreme Court precedent that the party asserting the exception bears the burden of proving its applicability. *NLRB v. Ky. River Cmty. Care, Inc.*, 532 U.S. 706, 711 (2001) (“The burden of proving the applicability of the supervisory exception . . . should thus fall on the party asserting it.”); *FTC v. Morton Salt Co.*, 334 U.S. 37, 44–45 (1948) (“[T]he general rule of statutory construction that the burden of proving justification or exemption under a special exception to the prohibitions of a statute generally rests on one who claims its benefits . . .”).

As a result, we hold that the district court did not impermissibly shift the burden of proof to Ameren in proving the applicability of the demand-growth exclusion.

## 2. Causation

According to Ameren, in post-trial briefing, the government switched theories on how the district court should analyze increased demand to satisfy the demand-

growth exclusion. Ameren also asserts that the government, in effect, promulgated a new causation standard without following notice-and-comment rulemaking. Specifically, Ameren contends, the government persuaded the district court that Ameren had to show “demand growth for a specific unit’s generation.” Appellant’s Br. at 47. Ameren argues that this causation standard is “the exact opposite of EPA’s prior statements [that] ‘[d]emand growth refers to what the utility expects to be required to produce in the way of energy system wide, *not for a single unit*, but system wide.’” *Id.* (citation omitted).

We hold that the district court did not apply an improper causation standard. Citing *New York*, the district court expressly acknowledged that Ameren had to satisfy “two criteria . . . before excluding emissions from its projection.” *Ameren III*, 229 F. Supp. 3d at 1003 (quoting *New York*, 413 F.3d at 33). The first requirement is that “*the unit* could have achieved the necessary level of utilization during the [baseline period].” *Id.* (emphasis added) (alteration in original) (quoting *New York*, 413 F.3d at 33). The second requirement is that “the increase is not related to the physical or operational change(s) made to *the unit*.” *Id.* (emphasis added) (quoting *New York*, 413 F.3d at 33). This accurately states the appropriate causation standard. As a result, the district court did not err in holding that to prove the applicability of the demand-growth exclusion, Ameren had to establish “that demand *on the unit* increases.” *Id.* at 1003.

### 3. Reasonable Power Plant Operator

“In order to be deemed a major modification, [the government] . . . [must] show (1) a physical change to the plant; (2) a significant net emissions increase; and (3) a causal link between the two.” *United States v. La. Generating, LLC*, 929 F. Supp. 2d 591, 593 (M.D. La. 2012). As explained *supra*, “the government had to show that at the time of the projects [Ameren] expected, or should have expected, that its

modifications would result in a ‘significant net emissions increase’ . . . .” *Ala. Power Co.*, 730 F.3d at 1282.<sup>4</sup>

“[T]he [federal] regulations do not require a utility to be prescient, rather they require the company to undertake a *reasonable estimate* of what post-project emissions would be.” *United States v. Duke Energy Corp.*, No. 1:00-cv-1262, 2010 WL 3023517, at \*6 (M.D.N.C. July 28, 2010) (emphasis added) (citing *United States v. Cinergy Corp.*, 458 F.3d 705, 709 (7th Cir. 2006)). “[T]he question [is] whether the owner of the facility at the time of the work . . . expected or *reasonably should have expected*, the work to increase emissions . . . .” *La. Generating*, 929 F. Supp. 2d at 593 (emphasis added).

In its motion for summary judgment at the liability phase, Ameren argued that “under an expectations theory,” the EPA had to “come forward with admissible evidence of what a reasonable power plant operator or owner would expect, and its failure to do so is fatal to EPA’s expectations theory case, warranting a grant of partial summary judgment.” *Ameren II*, 2016 WL 728234, at \*18. While “Ameren acknowledge[d] that the determination of whether a party acted reasonably is generally a question for the factfinder,” it maintained that “when the touchstone for objective reasonableness requires a technical understanding of the subject matter that is beyond a layperson’s normal understanding, the factfinder must have guidance to make that determination.” *Id.*

The district court, however, determined “that no special standard of care evidence is required for the factfinder to be able to determine whether a reasonable power plant operator or owner would have expected the projects to cause a significant emissions increase.” *Id.* The court reasoned that (1) “[t]he legal standards supplied

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<sup>4</sup>Alternatively, the government can prove a project actually resulted in a significant increase in emissions. *See* 40 C.F.R. § 52.21(a)(2)(iv)(b).



by the PSD rules are sufficient to guide the analysis,” and (2) “the parties . . . submitted mountains of evidence regarding what they believe a reasonable power plant operator or owner would have concluded.” *Id.* Specifically, the parties’ experts would “testify about what Ameren did to make its projections, what information Ameren considered or did not consider, and why, and what the projections showed.” *Id.* The court noted that other “courts that have considered expectations theory enforcement actions” have applied “[t]his method.” *Id.* (first citing *United States v. Duke Energy Corp.*, 981 F. Supp. 2d 435, 439 (M.D.N.C. 2013); then citing *Cinergy*, 623 F.3d at 459; and then citing *La. Generating*, 929 F. Supp. 2d at 593).

On appeal, Ameren now asserts that the district court erroneously denied “[s]tandard-of-care evidence [in] defining the specific boundaries of reasonableness.” Appellant’s Br. at 50. According to Ameren, “the written requirements of the regulations,” as opposed to the “expert witnesses’ subjective views,” “should have governed liability.” *Id.* Ameren maintains that “[b]y superimposing a[] [reasonable power plant operator] standard, the [d]istrict [c]ourt allowed EPA’s experts to second-guess Ameren’s conclusions even though Ameren followed the regulations’ written requirements.” *Id.* at 51.

We conclude that the district court did not err in holding that “no special standard of care evidence is required for the factfinder to be able to determine whether a reasonable power plant operator or owner would have expected the projects to cause a significant emissions increase.” *Ameren II*, 2016 WL 728234, at \*18. Instead, the district court, as the factfinder, was entitled to “consider all relevant information available to [Ameren] at the time of the project, including prior operating data and [Ameren’s] own statements and documents” in determining whether Ameren “should have predicted that a project would have caused a [significant] net increase.” *Id.* at \*19 (quoting Jury Instr. No. 23, *United States v. Cinergy*, 1:99-cv-1693-LJM-JMS (S.D. Ind. 2008), ECF No. 1335).

#### 4. *Expert Testimony*

Ameren argues that the district court abused its discretion in admitting and relying on undisclosed expert opinions. *See Ryan v. Bd. of Police Comm'rs of St. Louis*, 96 F.3d 1076, 1081 (8th Cir. 1996) (“We review the district court’s decision to admit evidence over a party’s objection for abuse of discretion.”).

In two motions filed during the trial on the liability phase and in post-trial briefs, Ameren moved to exclude the expert testimony of Koppe and Dr. Sahu “concerning causation of the actual emissions increases.” *Ameren III*, 229 F. Supp. 3d at 1015. Ameren argued to the district court that “the testimony concerning the causation of the actual emissions increases are new, undisclosed opinions.” *Id.*

The district court denied Ameren’s motions to exclude Koppe’s and Dr. Sahu’s testimony. First, it rejected Ameren’s argument that the experts’ opinions were “new” and concluded that Ameren had “sufficient notice of both the United States’ actual emissions case and of Mr. Koppe and Dr. Sahu’s opinions.” *Id.* at 1016. The court highlighted that the experts “(1) analyzed the actual post-project data in their reports, the attachments, and their work papers, and (2) stated that the projected increases actually materialized.” *Id.* at 1015. Additionally, the court noted that the experts discussed in their reports and depositions “how the projects enable increased availability and contribute to increases in emissions.” *Id.* The court explained that the experts were not required to “state[] their opinions in the precise words that Ameren thinks they should have used” because the “notice required of expert opinions is not so formulaic.” *Id.*; *see also Thompson v. Doane Pet Care Co.*, 470 F.3d 1201, 1202–03 (6th Cir. 2006) (explaining that Federal Rule of Evidence 26(a)(2)(B) “contemplates that the expert will supplement, elaborate upon, explain and subject himself to cross-examination upon his report”).

Second, the district court concluded that even if it erroneously admitted the expert testimony, Ameren was unable to “show that it was prejudiced by the



challenged testimony or the admission of the exhibits.” *Ameren III*, 229 F. Supp. 3d at 1016. This was because “[t]he evidence the United States presented to show that the actual emissions increases were caused by the projects was also presented in the context of its expectations case regarding the expected causes of projected emissions increases, so the challenged testimony is in part cumulative evidence.” *Id.* The court also noted Ameren’s “opportunity both during pre-trial discovery and during cross-examination at trial to test those opinions.” *Id.*

Here, even assuming that the district court abused its discretion by admitting the expert testimony, “any error would be harmless.” *Smith v. Tenet Healthsystem SL, Inc.*, 436 F.3d 879, 889 (8th Cir. 2006). Harmless error applies here because the district court, as the factfinder, expressly stated that had the expert testimony on actual emissions not been admitted, the result would not be different.

### *C. Injunctive Relief*

Ameren argues generally that the district court lacked Article III jurisdiction and statutory jurisdiction to issue injunctive relief “based on Rush Island’s operation.” Appellant’s Br. at 66. According to Ameren, the district court found during the liability phase “that the Rush Island Projects were major modifications requiring permits before Ameren could commence construction.” *Id.* at 67. But, during the remedy phase, the government “did not seek to prove any injury from the violation it proved” and “[i]nstead . . . sought to obtain relief based on the harm from Rush Island’s operation without a PSD permit.” *Id.* Ameren maintains that “[o]perations do not cause an injury that the PSD program recognizes.” *Id.* Ameren further argues that the district court lacked jurisdiction to impose injunctive relief redressing “excess emissions.” *Id.* at 69. Ameren asserts that the government waived “penal relief, including civil penalties; an injunction to prevent construction; an injunction to obtain information about future planned projects; and declaratory relief.” *Id.* at 71 (citations omitted). Finally, Ameren argues that the CAA “does not

authorize injunctions for wholly past violations” and that “[o]nly past violations are at issue here.” *Id.* at 72.

“We review a district court’s grant of a permanent injunction for abuse of discretion.” *Kittle-Aikeley v. Strong*, 844 F.3d 727, 735 (8th Cir. 2016). An abuse of discretion occurs when a district court “reaches its conclusion by applying erroneous legal principles or relying on clearly erroneous factual findings.” *Id.* (citation omitted). “Where the determinative question is purely legal, our review is more accurately characterized as *de novo*.” *Id.* (quotation omitted).

“Whenever . . . the [government] finds that any person *has violated* or is in violation of any requirement . . . of an applicable implementation plan or permit, [the government] [must] notify the person . . . of such finding.” 42 U.S.C. § 7413(a)(1) (emphasis added). Only after the “expiration of 30 days following the date on which such notice of a violation [was] issued” may the government “bring a civil [enforcement] action.” *Id.* § 7413(a)(1)(C). The government is authorized to “commence a civil action for a permanent or temporary injunction, or to assess and recover a civil penalty . . . , or both,” “[w]hensoever such person *has violated*, or is in violation of” a requirement of Title I of the CAA. *Id.* § 7413(b)(1) (emphasis added). A civil enforcement action

may be brought in the district court of the United States for the district in which the *violation* is alleged to have occurred, or is occurring, or in which the defendant resides, or where the defendant’s principal place of business is located, and such *court shall have jurisdiction to restrain such violation, to require compliance, to assess such civil penalty, to collect any fees owed the United States under this chapter (other than subchapter II) and any noncompliance assessment and nonpayment penalty owed under section 7420 of this title, and to award any other appropriate relief.*

*Id.* § 7413(b) (emphases added).

In summary,

[t]he Clean Air Act authorizes the EPA to bring a civil enforcement action when any person *has violated* a permit or SIP, *has violated* any requirement in certain subchapters of the Clean Air Act (including the PSD program), or “attempts to construct or modify a major stationary source” in any state that the EPA Administrator has found out of compliance with the New Source Review program.

*United States v. EME Homer City Generation, L.P.*, 727 F.3d 274, 291–92 (3d Cir. 2013) (emphases added).

Section 7413(b) “limits a district court’s jurisdiction to awarding certain kinds of relief.” *Id.* at 292. “Each type of relief in [§ 7413(b)] (except for civil penalties) is necessarily forward-looking.” *Id.* (footnote omitted). The remaining term — “[a]ny other appropriate relief”—is merely a “catch-all” provision that “follows ‘a list of specific items separated by commas.’” *Id.* at 293 (quoting *Ali v. Fed. Bureau of Prisons*, 552 U.S. 214, 225 (2008)). “As the word ‘other’ demonstrates, this general phrase is a residual category of the same type as the preceding items (namely, kinds of relief).” *Id.* “[T]he canon of *eiusdem generis* requires us to interpret this catch-all as permitting forward-looking relief, consistent with the preceding types of relief in the list.” *Id.* at 295.

In *Homer City*, the Third Circuit held that “[t]he text of the Clean Air Act does not authorize an injunction against *former* owners and operators for a *wholly past PSD violation*, even if that violation causes *ongoing harm*.” *Id.* at 291 (emphases added). But the court “express[ed] no opinion” on whether injunctions are “available in general to remedy *ongoing harm* from *wholly past violations*.” *Id.* at 291 n.19 (emphases added). Indeed, as against the current owners, the court explained that the government could, after “*completion* of a facility’s modification, . . . still obtain an *injunction* requiring the owner or operator to comply with the PSD requirements.” *Id.*

at 289 (emphases added); *see also United States v. U.S. Steel Corp.*, 16 F. Supp. 3d 944, 950 (N.D. Ind. 2014) (“Requiring a company to do ‘a further round of modifications to get the permit’ could only be done through injunctive relief.” (quoting *United States v. Midwest Generation, LLC*, 720 F.3d 644, 646 (7th Cir. 2013))).

*Homer City* is distinguishable from the present case because it concerned injunctive relief against a facility’s *former* owners. *United States v. Luminant Generation Co., L.L.C.*, 905 F.3d 874, 888 (5th Cir. 2018), *reh’g en banc granted*, 929 F.3d 316 (5th Cir. 2019).<sup>5</sup> It does not detract from the plain language of § 7413(b), which “plainly gives district courts jurisdiction to restrain a violation, require compliance, and award any other appropriate relief whenever a person has committed a . . . violation” *Id.*

Here, however, Ameren also specifically challenges the district court’s injunction against its Labadie plant, which committed no violations of the CAA. According to Ameren, neither the CAA nor the regulations authorize such relief.

Under § 7413, a district court “has the authority to order [a defendant] to take appropriate actions that remedy, mitigate and offset harms to the public and the environment *caused by the [defendant’s] proven violations* of the CAA.” *United States v. Cinergy Corp.*, 582 F. Supp. 2d 1055, 1060 (S.D. Ind. 2008) (emphasis added); *see also United States v. Oliver*, No. 3:06-CV-196-JWS, 2009 WL 10671371, at \*13 (D. Alaska June 25, 2009) (“Section 113(b) of the Clean Air Act, 42 U.S.C. § 7413(b), expressly provides for injunctive relief to *redress violations* of the Act.” (emphasis added)), *aff’d*, 394 F. App’x 376 (9th Cir. 2010).

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<sup>5</sup>The Fifth Circuit ultimately dismissed the appeal in *Luminant* on the parties’ motion.

Here, the government never provided notice of or alleged that the Ameren’s Labadie plant committed a *violation* of the CAA. The plain language of § 7413(b) and caselaw make clear that the injunctive relief a district court may award must redress a *violation* of the CAA. *See* 42 U.S.C. § 7413(b)(1)–(3) (permitting civil enforcement actions “[w]henver such person has violated, or is in violation of” certain requirements and noting that the district “court shall have jurisdiction to restrain such violation”). Because Ameren committed no violation of the CAA at its Labadie plant, the district court lacked authority to authorize injunctive relief as to it. *Cf. United States v. Cinergy Corp.*, 618 F. Supp. 2d 942, 967 (S.D. Ind. 2009) (denying government’s requested relief because the remedy would be punitive as the government proved no violation at the non-source unit against which it was sought.), *rev’d on other grounds*, 623 F.3d 455 (7th Cir. 2010); *United States v. Westvaco Corp.*, No. MJG-00-2602, 2015 WL 10323214, at \*12 & n.27 (D. Md. Feb. 26, 2015) (rejecting government’s request for the district court to order the defendant “to install control technology on a totally ‘innocent’ boiler” that the government never alleged “violated PSD regulations” (footnote omitted)).

Accordingly, we reverse the Labadie injunction and remand for further proceedings consistent with this opinion.

#### E. *Jurisdiction over Title V Claims*

Finally, Ameren challenges the district court’s jurisdiction over the Title V claims.

Ameren operates Rush Island under a Title V permit issued by the Missouri Department of Natural Resources. This permit “restat[ed] the requirement that Ameren was prohibited from performing any unpermitted major modifications of Rush Island Units 1 or 2.” *Ameren III*, 229 F. Supp. 3d at 985.

The government brought Title V claims against Ameren, and Ameren challenged the district court’s subject matter jurisdiction to hear those claims. It argued—as it does here—that the Title V violation “is reviewable exclusively by the courts of appeals, not collaterally in civil . . . enforcement actions in the district courts.” Appellant’s Br. at 73 (alteration in original) (quoting *Homer City*, 727 F.3d at 296–97).

Ameren’s jurisdictional argument lacks merit. “The EPA has authority to bring a civil enforcement action against a person who, among other things, ‘has violated, or is in violation of, any other requirement or prohibition of [various subchapters, including Title V].’” *Homer City*, 727 F.3d at 298 (alteration in original) (quoting 42 U.S.C. § 7413(b)(2)). In turn, Title V’s plain text “lists only two ways in which it can be violated: operating without a Title V permit or *violating the terms of a Title V permit while operating a source.*” *Id.* (emphasis added) (citing 42 U.S.C. § 7661a(a)).

The district court expressly found that Ameren violated an express permit term prohibiting it from performing unpermitted major modifications. *Cf. Otter Tail*, 615 F.3d at 1020. Under § 7413(b), the district court had jurisdiction to consider whether Ameren violated the express terms of its Title V permit.

### III. Conclusion

Accordingly, we affirm the judgment of the district court in all respects *except* as to the injunctive relief entered against Ameren’s Labadie plant. We remand for further proceedings consistent with this opinion.

United States Court of Appeals  
For the Eighth Circuit

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No. 19-3220

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United States of America

*Plaintiff - Appellee*

Sierra Club

*Intervenor - Appellee*

v.

Ameren Missouri

*Defendant - Appellant*

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Chamber of Commerce of the United States of America; American Chemistry  
Council; America's Power; Missouri Chamber of Commerce and Industry;  
National Association of Manufacturers; National Mining Association

*Amici on Behalf of Appellant(s)*

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Appeal from United States District Court  
for the Eastern District of Missouri - St. Louis

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Submitted: December 16, 2020

Filed: August 20, 2021

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Case No. EF-2024-0021  
Schedule KM-r3



Before SMITH, Chief Judge, LOKEN and MELLOY, Circuit Judges.

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SMITH, Chief Judge.

Ameren Missouri (“Ameren”) appeals an adverse judgment of the district court in a Clean Air Act (CAA) enforcement action brought by the United States of America, acting at the request of the Administrator of the United States Environmental Protection Agency (EPA) (hereinafter, EPA or “government”). Ameren argues that the district court erroneously found it liable for not obtaining permits for projects at its Rush Island Energy Center (“Rush Island”) and, as a result, assessed liability under the applicable federal regulations. In addition, Ameren maintains that the district court ordered legally flawed injunctions at both Rush Island and at a different plant, Labadie Energy Center (“Labadie”). We affirm the district court’s liability determination, but we reverse in part the remedial portion of its order concerning the Labadie plant and remand for further proceedings consistent with this opinion.

### I. *Background*

#### A. *Statutory and Regulatory Background of the CAA*

“Congress enacted the Clean Air Act Amendments of 1970 seeking to guarantee the prompt attainment and maintenance of specified air quality standards.” *Sierra Club v. Otter Tail Power Co.*, 615 F.3d 1008, 1011 (8th Cir. 2010) (quotations omitted). In enacting the CAA amendments, Congress “directed EPA to devise National Ambient Air Quality Standards (NAAQS) limiting various pollutants, which the States were obliged to implement and enforce.” *Id.* (quotation omitted). The New Source Performance Standards (NSPS) program was a key part of the CAA’s regulatory scheme. *Id.* The NSPS program “required EPA to develop technology-based performance standards designed to limit emissions from major new sources of



pollution.” *Id.* (quotation omitted). Both newly constructed facilities and modified facilities with increased emissions constitute “[n]ew sources.” *Id.* “It is ‘unlawful for any owner or operator of any new source to operate such source in violation of applicable performance standards.’” *Id.* (quoting 42 U.S.C. § 7411(e)).

The NSPS program, however, “did too little to ‘achieve the ambitious goals of the 1970 amendments.’” *Id.* (quoting *Env’t Def. v. Duke Energy Corp.*, 549 U.S. 561, 567 (2007)). “Merely setting emissions limits failed to improve air quality in those areas that had already attained the minimum standards of the NAAQS because polluters had no incentive to diminish emissions below the established limits.” *Id.* As a result, in 1977, Congress amended the CAA “to add the ‘Prevention of Significant Deterioration’ (PSD) program, which seeks to ensure that the ‘air quality floor’ established by the NAAQS does not ‘in effect become a ceiling.’” *Id.* (quoting *Sierra Club v. Thomas*, 828 F.2d 783, 785 (D.C. Cir. 1987)).

The PSD program limited construction of major emitting facilities with specified preconditions. 42 U.S.C. § 7475(a). “The term ‘construction’ when used in connection with any source or facility, includes the *modification* . . . of any source or facility.” *Id.* § 7479(2)(C) (emphasis added). “The term ‘modification’ means any physical change in, or change in the method of operation of, a stationary source which increases the amount of any air pollutant emitted by such source or which results in the emission of any air pollutant not previously emitted.” *Id.* § 7411(a)(4).

The PSD program prohibits the construction of a major emitting facility unless preconditions are satisfied. One precondition is that the proposed facility obtain a permit setting forth applicable emission limitations. *Id.* § 7475(a)(1). Another precondition is that “the owner or operator of such facility demonstrates . . . that emissions from construction or operation of such facility will not cause, or contribute to, air pollution in excess of” prescribed air quality standards. *Id.* § 7475(a)(3). The PSD program also requires the owner or operator to install “the best available control

technology for each pollutant subject to regulation . . . emitted from, or which results from, [the proposed] facility.” *Id.* § 7475(a)(4). The “‘best available control technology’ (BACT) . . . is not a particular type of technology.” *Otter Tail*, 615 F.3d at 1011 (quoting 42 U.S.C. § 7475(a)(4)). Instead, the BACT “is an ‘emission limitation based on the maximum degree of reduction of each pollutant subject to regulation . . . which the permitting authority, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable’ for the facility in question.” *Id.* (alteration in original) (quoting 42 U.S.C. § 7479(3)).

Only *major* modifications to emitting sources are subject to PSD review. *Ala. Power Co. v. Costle*, 636 F.2d 323, 399 (D.C. Cir. 1979). “Major modification means any physical change in or change in the method of operation of a major stationary source that would result in: a significant emissions increase . . . of a regulated NSR [New Source Review] pollutant . . . ; and a significant net emissions increase of that pollutant from the major stationary source.” 40 C.F.R. § 52.21(b)(2)(i).

For projects that only involve “existing emissions units,” the EPA applies what it calls the actual-to-projected-actual applicability test. *Id.* § 52.21(a)(2)(iv)(c).<sup>1</sup> To apply this test, the “baseline actual emissions” must first be calculated. “Baseline actual emissions means the rate of emissions, in tons per year, of a regulated NSR pollutant . . . .” *Id.* § 52.21(b)(48).

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<sup>1</sup>This test provides: “A significant emissions increase of a regulated NSR pollutant is projected to occur if the sum of the difference between the projected actual emissions . . . and the baseline actual emissions . . . , for each existing emissions unit, equals or exceeds the significant amount for that pollutant . . . .” *Id.*

Next, the “projected actual emissions” must be calculated by determining the maximum annual rate, in tons per year, at which an existing emissions unit is projected to emit a regulated NSR pollutant in any one of the 5 years (12–month period) following the date the unit resumes regular operation after the project, or in any one of the 10 years following that date, if the project involves increasing the emissions unit’s design capacity or its potential to emit that regulated NSR pollutant and full utilization of the unit would result in a significant emissions increase or a significant net emissions increase at the major stationary source.

*Id.* § 52.21(b)(41)(i). An “owner or operator of the major stationary source . . . [must] consider all relevant information” to calculate “the projected actual emissions.” *Id.* § 52.21(b)(41)(ii)(a). “[A]ll relevant information . . . include[s] . . . historical operational data, the company’s own representations, the company’s expected business activity and the company’s highest projections of business activity, the company’s filings with the State or Federal regulatory authorities, and compliance plans under the approved State Implementation Plan . . . .” *Id.* But the owner or operator “[s]hall exclude” from the projected actual emissions “that portion of the unit’s emissions following the project that an existing unit could have accommodated during the consecutive 24-month period used to establish the baseline actual emissions . . . and that are also unrelated to the particular project, including any increased utilization due to product demand growth.” *Id.* § 52.21(b)(41)(ii)(c). The “exclu[sion] [of] increases stemming from unrelated demand growth” is referred to as “the ‘demand growth exclusion.’” *New York v. EPA*, 413 F.3d 3, 16 (D.C. Cir. 2005).

Finally, the baseline actual emissions calculation is subtracted from the projected actual emissions calculation to determine if the difference between the numbers is “significant.” 40 C.F.R. § 52.21(a)(2)(iv)(c). A table in the regulations sets forth the numeric thresholds that are considered “significant” for each regulated

pollutant. *Id.* § 52.21(b)(23)(i). If the difference in the projected actual emissions and the baseline actual emissions is significant, *see id.*, then a permit is required before beginning construction on the project. *Id.* § 52.21(a)(2)(iii).

The actual-to-projected-actual test is distinguishable from “a potential-to-potential test,” which “compare[s] past potential emissions with future potential emissions.” *New York*, 413 F.3d at 17. “[T]he plain language of the CAA indicates that Congress intended to apply NSR to changes that increase actual emissions instead of potential or allowable emissions . . . .” *Id.* at 40.

### B. *Missouri’s State Implementation Plan*

“The PSD program is primarily implemented by the states through ‘state implementation plans’ (SIPs).” *Otter Tail*, 615 F.3d at 1011 (citing 42 U.S.C. § 7471). While “[s]tates have broad discretion in designing their SIPs,” their “plans must include certain federal standards.” *Id.* The EPA reviews and approves States’ SIPs. *Id.* at 1011–12.

Missouri expressly incorporated the EPA’s PSD regulations into its SIP (“Missouri SIP”). *See* Mo. Code Regs. Ann. tit. 10, § 6.060(8)(A) (2007) (“All of the subsections of 40 CFR 52.21, other than [certain subsections], are hereby incorporated by reference.”). The EPA approved Missouri’s SIP, explaining that “the provisions of § 52.21 supersede the state provisions for purposes of the PSD program.” Approval and Promulgation of Implementation Plans; State of Missouri, 71 Fed. Reg. 36,486-02, 36,487 (June 27, 2006); *see also id.* at 36,489 (“This revision also incorporates by reference the other provisions of 40 CFR 52.21 as in effect on July 1, 2003, which supersedes any conflicting provisions in the Missouri rule. Section 9, pertaining to hazardous air pollutants, is not SIP approved.”).

### *C. Title V Program*

In addition to the CAA's PSD program, "the CAA . . . require[s] each covered facility to obtain a comprehensive operating permit setting forth all CAA standards applicable to that facility." *Otter Tail*, 615 F.3d at 1012 (citing 42 U.S.C. § 7661a(a)). The operating permits "incorporate into a single document all of the CAA requirements governing a facility. Similar to other CAA programs, Title V is implemented primarily by the states under EPA oversight. In states with EPA approved programs," the state permitting authority issues the Title V permits. *Id.* (citations omitted). These permits "are subject to EPA review and veto." *Id.* The EPA has approved Missouri's operating permit program under Title V of the CAA. This program is incorporated into the Missouri SIP. *See* Mo. Code. Regs. Ann. tit. 10, § 6.065 (2007).

### *D. Factual Background and Procedural History*

This case involves Ameren's Rush Island power plant, which includes two coal-fired electric generating units, Units 1 and 2. These units began service in 1976 and 1977. They were grandfathered into the PSD program. They do not have air pollution control devices for sulfur dioxide. Rush Island currently emits approximately 18,000 tons of sulfur dioxide per year. Small performance improvements or increases in unit availability can result in a 40-ton increase in sulfur dioxide. For the Rush Island units to emit more than 40 tons of sulfur dioxide, it takes only an availability of 0.3 percent or an additional 21 hours of operation at full power.

By 2005, problems with Units 1's and 2's major boiler components forced Ameren to frequently take the units out of service. This made the units underperform and reduced the amount of electricity Ameren could generate and sell from the units. Ameren decided to replace the problem components with new, redesigned components. Ameren, however, did not do any quantitative PSD review for Unit 1's project and belatedly performed PSD review for Unit 2's project. Ameren proceeded with the projects without reporting its planned modifications to the EPA, obtaining

the necessary permits, or installing pollution controls. To replace the major boiler components, Ameren took Unit 1 offline in 2007 and Unit 2 offline in 2010. Each unit was completely offline for three to four months to complete the projects. Ameren spent more than \$20 million per project.

By replacing the failing components with new, redesigned components, Ameren expected unit availability to improve by much more than 0.3 percent, allowing the units to operate hundreds of hours more per year after the projects. Ameren expected to use that increased availability (and increased capacity for Unit 2) to burn more coal and generate more electricity. Unavoidably, the units would also emit more sulfur dioxide pollution.

As Ameren expected, its replacement of the failing components resulted in increased availability at Units 1 and 2 by eliminating hundreds of outage hours per year. And, Unit 2's capacity increased. The units ran more, burned more coal, and consequently emitted hundreds of tons more sulfur dioxide per year because of the operational increases.

The government filed suit against Ameren in response to the projects. It alleged that Ameren violated the CAA, the Missouri SIP, and Ameren's Rush Island Plant Title V Permit by performing major modifications on Units 1 and 2 without obtaining the necessary permits, installing pollution control technology, or otherwise complying with all applicable requirements.

### *1. Liability Phase*

#### *a. Summary Judgment*

The district court bifurcated the proceedings into a liability phase and a remedy phase. During the liability phase, the district court issued two summary-judgment orders. In the first summary-judgment order, the district court rejected Ameren's argument that the major-modification test set forth in the federal regulations did not

provide the relevant PSD liability test because the Missouri SIP elsewhere separately defined *modification* to mean that “the source’s *potential* emissions would significantly increase.” *United States v. Missouri (Ameren I)*, 158 F. Supp. 3d 802, 808 (E.D. Mo. 2016) (emphasis added). According to Ameren, the government could not establish liability because it never alleged that “the [Rush Island] projects increased the units’ *potential* emissions.” *Id.* (emphasis added). In rejecting this argument, the court first explained that “the PSD rules impose their own independent, stand-alone applicability provisions in Section (8) of the Missouri SIP (incorporating EPA’s PSD rules set out at 40 C.F.R. 52.21).” *Id.* at 809. The court reasoned that “the PSD-specific applicability language should trump the general applicability language in Section (1) of the [Missouri] SIP.” *Id.*

The court next cited the “well-established” “regulatory and statutory history of the PSD rules” as leaving “no doubt that the federal PSD rules are focused on ‘major modifications’ which are based on actual emissions determinations,” not potential emissions. *Id.* at 810. The court found “most persuasive[] [that the] EPA’s approval of the SIP provided that the CAA and the program requirements as set out in 40 C.F.R. § 52.21 would supersede any conflicting provisions in the state SIP.” *Id.* (citing Approval and Promulgation of Implementation Plans; State of Missouri, 71 Fed. Reg. at 36,489).

Finally, the district court concluded that Ameren urged an interpretation of the SIP that would conflict with the PSD rules and, in the court’s view, “render a portion of the PSD rules superfluous.” *Id.*

In its second summary-judgment order, the district court addressed causation and “the PSD program’s demand growth exclusion.” *United States v. Ameren Mo. (Ameren II)*, No. 4:11-cv-77-RWS, 2016 WL 728234, at \*9 (E.D. Mo. Feb. 24, 2016). According to the district court, “two main criteria . . . determine whether a major source of pollution must obtain a PSD permit. First, there must be a physical change,



and second, that change would be expected to cause a significant net increase in actual emissions.” *Id.* The demand growth exclusion is relevant to the second criteria—“how to determine whether the physical changes would have caused a significant net emissions increase, and if so, whether any of the increased emissions may be excluded from review under the ‘demand growth exclusion.’” *Id.* The district court rejected Ameren’s proposed interpretation of the exclusion as applying to “any emissions increases a unit could have accommodated at baseline.” *Id.* Instead, the court held “that the demand growth exclusion requires a showing that the unit ‘could have accommodated’ the emissions at baseline *and* that . . . those increases were unrelated to the project.” *Id.* at \*11. The court also held that “while it remains the EPA’s burden to prove that Ameren should have expected the projects to cause an increase in emissions, the burden is Ameren’s to prove that the demand growth exclusion applies.” *Id.*

Also in the second summary-judgment order, the district court addressed Ameren’s argument that “because EPA brought suit *after* the challenged projects’ completion,” it was “limited to an ‘actual increase’ theory.” *Id.* at \*13. Under Ameren’s actual-increase theory, the EPA would have to show that “the Projects actually caused emissions to increase” to establish Ameren’s liability. *Id.* By contrast, under “an ‘expectations’ theory,” the EPA could establish liability by showing “that Ameren ‘should have expected’ the Projects to increase emissions.” *Id.* The court held that the government could proceed on the expectations theory. *Id.* at \*13–16.

Additionally, the court considered Ameren’s argument that the government had to “come forward with admissible evidence of what a reasonable power plant operator or owner would expect, and its failure to do so [was] fatal to EPA’s expectations theory case.” *Id.* at \*18. But the court agreed with the government “that no special standard of care evidence is required for the factfinder to be able to determine whether a reasonable power plant operator or owner would have expected the projects

to cause a significant emissions increase”; instead, “the PSD regulations themselves . . . guide the factfinder’s determination.” *Id.*

Finally, the court rejected Ameren’s argument that the court “lack[ed] subject matter jurisdiction to hear EPA’s [Title V] claim that Ameren [was] operating under an inadequate or deficient permit.” *Id.* at \*24.

b. *Trial*

Subsequently, the district court held a trial on the merits. After trial, the district court entered an order setting forth its factual findings and legal conclusions. *See United States v. Ameren Mo. (Ameren III)*, 229 F. Supp. 3d 906 (E.D. Mo. 2017). The court concluded that Ameren’s Rush Island overhauls were major modifications that triggered PSD pollution-control requirements. The district court found that “[t]he emissions evidence show[ed] [that] an increase related to the projects should have been expected and actually occurred.” *Id.* at 997 (emphasis omitted). The court identified categories of evidence that “all establish that there is a significant net [sulfur dioxide] increase of more than 40 tons that was caused by the projects.” *Id.* at 998.

First, the court identified “[t]wo key—and undisputed—characteristics of the Rush Island units.” *Id.* at 988. The first characteristic was that “the Rush Island units are big sources of pollution.” *Id.* The second characteristic was that “the Rush Island units are ‘baseload’ units” that are “cheap sources of electricity” and “operate as much as they can.” *Id.* According to the court, “[t]hese two facts lead to a logical conclusion [that] if the Rush Island units are upgraded so they *can* generate more electricity, they *will*. Performance improvements have a direct impact on annual generation and pollution levels.” *Id.*

Second, Robert Koppe, a power plant performance expert, opined that the Rush Island’s plant availability increased because it replaced “these problematic

components.” *Id.* at 989. Thereafter, “Dr. Ranajit Sahu, a permitting engineer and expert for the United States, took Mr. Koppe’s findings on expected improved availability and used them to calculate the expected additional pollution that would result from the improvements.” *Id.* at 990. He “calculated an expected increase in emissions of 608 tons of [sulfur dioxide] post-project for Unit 1.” *Id.* And, “[b]ased on Mr. Koppe’s prediction of regained availability, . . . Dr. Sahu calculated an expected increase of 415 tons per year of [sulfur dioxide] in Unit 2 that would result from the availability improvement alone.” *Id.* at 992.

Third, Dr. Ezra Hausman, a modeler and market consultant with 20 years’ experience in the electric industry, explained that the “sophisticated computer modeling program” that Ameren used “to model and predict the Rush Island units’ fuel needs . . . for the years after the 2007 and 2010 major boiler outages” “showed that both a unit’s capacity level and its availability are linearly related to the unit’s projected coal consumption.” *Id.* at 994, 995. Thus, “if Ameren increased the number of hours its Rush Island units were able to run, or if the company enabled the units to operate at higher output levels during those hours, then the units would . . . burn[] more coal and, as a result, emit[] more pollution.” *Id.* at 994–95. Dr. Hausman’s “results show[ed] that Ameren’s modeling would predict significant emissions increases at the Rush Island units as a result of the projects.” *Id.* at 996.

Finally, “the actual post-project data” showed “a significant net [sulfur dioxide] increase of more than 40 tons that was caused by the projects.” *Id.* at 998. Both units were available more and operated every hour that they were available. Both units also increased their maximum generating levels. This resulted in both units increasing their sulfur dioxide pollution.

In summary, the court determined that “[b]ased on the known facts that the Rush Island units are low-cost, baseload units, common sense compels the same

conclusion: improving availability or capacity at baseload units like Rush Island will result in additional operations and pollution.” *Id.*

Regarding liability, the district court also rejected Ameren’s defenses. First, the district court concluded that Ameren failed to satisfy “its burden of proving that the Rush Island projects fall within the narrow routine maintenance exemption.” *Id.* at 1003. The court characterized “[t]he 2007 and 2010 major boiler outages [as] unprecedented events for Rush Island Units 1 and 2—they were the centerpieces of the ‘most significant’ outages in plant history.” *Id.* (citation omitted).

Second, the court rejected Ameren’s argument that any increases in production and pollution were merely the result of demand growth that should be excluded from the liability assessment. According to the court, the “relevant information” that Ameren had “showed that the Rush Island units’ performance would improve, resulting in increased generation and emissions.” *Id.* at 1010.

In summary, the district court “enter[ed] a finding of liability against Ameren,” concluding that the Rush Island Unit 1 and 2 projects described above were major modifications under the CAA, Ameren violated the PSD program’s requirements “by failing to obtain a preconstruction permit and install best available pollution control technology,” and Ameren violated Title V of the CAA. *Id.* at 1017.

## 2. *Remedy Phase*

### a. *Summary Judgment*

After entering its post-trial order on liability, the district court proceeded to the remedy phase. The court addressed the parties’ summary-judgment motions. First, the court rejected Ameren’s argument “that the Clean Air Act does not authorize injunctions as a remedy for past violations.” *United States v. Ameren Mo. (Ameren IV)*, 372 F. Supp. 3d 868, 871 (E.D. Mo. 2019). According to the court, “[t]he plain language of § 7413(b) gives the EPA authority to ‘commence a civil action’ for

injunctive relief or civil penalties, ‘or both,’ whenever a person ‘*has* violated or is in violation of any requirement or prohibition of’ EPA air quality control programs.” *Id.* (quoting 42 U.S.C. § 7413(b)). The court reasoned that § 7413(b)’s plain “language places no restriction on injunctive relief for past violations” and instead “authorizes the EPA to seek injunctive relief whenever a person *has violated* the Clean Air Act.” *Id.*

In addition, the district court rejected Ameren’s argument that the court could not “order injunctive relief that includes emissions reductions or control technology at the Labadie Energy Center (Labadie) coal-fired power plant.” *Id.* at 874.

#### b. *Trial*

The district court subsequently held a remedy trial. Following the trial, the court issued an order imposing a two-pronged remedy with the purpose of “[1] bring[ing] Ameren’s Rush Island facility into compliance with the law and [2] . . . remediat[ing] the harm from the more than 162,000 tons—and counting—in excess [sulfur dioxide] that Rush Island emitted after Ameren failed to obtain a PSD permit there.” *United States v. Ameren Mo. (Ameren V)*, 421 F. Supp. 3d 729, 802 (E.D. Mo. 2019).

As to compliance, the district court concluded that “Ameren must make Rush Island compliant by obtaining a PSD permit with emissions limitations based on wet FGD [flue gas desulfurization technology]” used as the BACT. *Id.* at 806 (emphasis omitted). The court determined that FGD technology is technically and economically feasible and “can remove 95% or more of [sulfur dioxide] emissions.” *Id.* at 812.

As to remediation, the district court concluded that “Rush Island’s excess pollution is best remediated by decreasing emissions at the nearby Labadie Energy Center.” *Id.* at 789 (emphasis omitted). Labadie consists of four coal-burning units and is located 35 miles west of St. Louis. Ameren argued that imposition of the

remedy was “extreme” and “constitute[d] a penalty” “because Labadie is ‘totally innocent,’ and Ameren has not violated the Clean Air Act there.” *Id.* at 820. The district court rejected Ameren’s argument, reasoning that its “remedy is based on straightforward equitable principles and the authority [it] ha[s] under the Clean Air Act ‘to restrain’ violations, ‘to require compliance,’ and ‘to award any other appropriate relief.’” *Id.* (quoting 42 U.S.C. § 7413(b)). According to the court, its remedy was “narrowly tailored” because “a tight geographic nexus [exists] between the harms Rush Island caused and the benefits gained through reducing Labadie’s emissions. Pollution from Labadie affects the same communities as those affected by Rush Island, and to the same degree.” *Id.* at 820–21. The court reasoned that its remedy “achieve[d] the maximum possible environmental benefit”: “When Ameren reduces emissions at Labadie commensurate with the excess emissions from Rush Island, Ameren will have put the public in the place it would have been absent Ameren’s Clear Air Act violation.” *Id.* at 821. The court explained that “Ameren’s ton-for-ton reductions at Labadie will lower the risks of premature mortality and disease in the same communities impacted by Ameren’s Rush Island violations.” *Id.*

The court rejected Ameren’s argument “that any injunction against its Labadie plant would constitute a penalty.” *Id.* While the court acknowledged it could not “issue injunctive relief that would constitute a penalty,” it concluded that “[b]y ordering emissions reductions up to, but not surpassing, the excess emissions from Rush Island, [the court was] ordering relief that goes exactly to ‘remedying the damage caused to the harmed parties by the defendant’s action.’” *Id.* (quoting *United States v. Ameren Mo.*, No. 4:11-cv-77-RWS, 2016 WL 468557, at \*1 (E.D. Mo. Feb. 8, 2016)). The court “order[ed] Ameren to base its relief at Labadie on DSI [dry sorbent injection] control technology” “[t]o . . . ensure that any relief at Labadie does not surpass the damage caused by Rush Island.” *Id.* Installation of DSI technology on Labadie’s units would allow Ameren to “operate DSI for as many years as necessary to remediate Rush Island’s excess emissions[] and terminate its use of DSI without suffering significant lost capital assets.” *Id.* The court “order[ed] Ameren to begin

operating Labadie with DSI, or a more effective pollution control, beginning no later than three years after [its] order.” *Id.* at 822.

### 3. *Summary*

In summary, the district court found Ameren in violation of the CAA for “mak[ing] major modifications to expand Rush Island’s capacity” without “apply[ing] for a PSD permit and meet[ing] reduced emissions requirements.” *Id.* at 824. By failing to “apply for the required PSD permit,” Ameren “skirted PSD’s requirement to install the best available technology to control the pollution Rush Island emits.” *Id.*

“To remedy [Ameren’s] violation of the Clean Air Act,” the district court ordered Ameren to “apply for a PSD permit for Rush Island within ninety days, propose wet FGD as BACT in its permit application, and implement BACT no later than four and one-half years from [the] order.” *Id.* “In addition to the relief [the court] order[ed] at Rush Island, [it] also order[ed] Ameren to reduce its pollution at Labadie in an amount equal to Ameren’s excess emissions at Rush Island.” *Id.* It left Ameren the option whether to “install[] DSI or some other more effective pollution control at Labadie.” *Id.*

## II. *Discussion*

Ameren appeals the district court’s orders. It raises five arguments: (1) the Rush Island projects did not require permits under the Missouri SIP; (2) the Rush Island projects did not constitute major modifications; (3) the district court lacked jurisdiction under Article III and statutory authority under the CAA to enter the injunctions; (4) the injunctive relief ordered at Labadie is punitive, not remedial, and therefore prohibited; and (5) the district court lacked jurisdiction over the Title V claims. We address each in turn.



A. *Missouri SIP*

Ameren first argues that “under the plain language of Missouri’s SIP, permits are required only for increases in potential emissions” and “it [is] undisputed that the [Rush Island] Projects would not, and did not, increase potential emissions.” Appellant’s Br. at 30. According to Ameren, the district court erroneously “substituted the federal regulations’ applicability standard,” which “nullified the SIP Permit Rule’s Applicability Provision.” *Id.* at 30–31.

The Missouri SIP identifies which construction or modification projects at emission sources require prior construction permits. Mo. Code Regs. Ann. tit. 10, § 6.060 (2007). Ameren cites to § 6.060(1) of the Missouri SIP, entitled “Applicability” (“Applicability Section”). This section governs Missouri’s air quality construction permit programs. The Applicability Section provides, in relevant part, that

[n]o owner or operator shall commence construction<sup>[2]</sup> or *modification* of any installation subject to this rule, begin operation after that construction or *modification*, or begin operation of any installation which has been shut down longer than five (5) years without first obtaining a permit from the permitting authority under this rule.

Mo. Code Regs. Ann. tit. 10, § 6.060(1)(C) (2007) (emphases added).

In turn, the Missouri SIP offers two definitions of *modification*. First, it generally defines “[m]odification” as “[a]ny physical change, or change in method of operation of, a source operation or attendant air pollution control equipment which would cause an increase in *potential emissions* of any air pollutant emitted by the source operation.” *Id.* § 6.020(2)(M)(10) (emphasis added). “Potential to emit” means

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<sup>2</sup>“It is undisputed that the projects at issue were not ‘construction’ as defined by the Missouri SIP or the PSD rules.” *Ameren I*, 158 F. Supp. 3d at 809 n.5.

the unit’s ability to emit at full design capacity “assuming continuous year-round operation.” *Id.* at § 6.020(2)(P)(19).

Second, the Missouri SIP separately defines “Title I modification.” *Id.* § 6.020(2)(M)(11). A “Title I modification” is “[a]ny modification that requires a permit under 10 CSR 10-6.060 section (7) or (8), or that is subject to any requirement under 10 CSR 10-6.070 or 10 CSR 10-6.080.” *Id.* § 6.020(2)(T)(3) (emphasis added).<sup>3</sup>

Ameren maintains that the Missouri SIP limits PSD applicability to only projects increasing both actual *and* potential emissions. According to Ameren, the Missouri SIP’s Applicability Section and definitional sections mean that “[i]f a project would *not* increase a unit’s potential emissions, it is *not* a modification and does *not* trigger permitting under the Applicability Provision.” Appellant’s Br. at 35. Because the government “never alleged that the projects increased the units’ potential emissions, Ameren argues that it [was] entitled to full summary judgment.” *Ameren I*, 158 F. Supp. 3d at 808–09.

Ameren, however, overlooks that, in contrast to the general definition of *modification* in § 6.020(2)(M)(10), § 6.060(8)(A) of the Missouri SIP contains “*PSD-specific* applicability language.” *Id.* at 809 (emphasis added) (citing *RadLAX Gateway Hotel, LLC v. Amalgamated Bank*, 566 U.S. 639, 645 (2012)). That section—expressly referenced in the Missouri SIP’s definition of “Title I modification”—provides, in relevant part:

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<sup>3</sup>In addition to defining *modification*, the Missouri SIP independently defines “[m]ajor modification” as “[a]ny physical change or change in the method of operation at an installation or in the attendant air pollution control equipment that would result in a significant net emissions increase of any pollutant.” *Id.* § 6.020(2)(M)(3). The Missouri SIP uses the term *major modification* in a section concerning BACT. *See id.* § 6.020(2)(B)(5).

(8) Attainment and Unclassified Area Permits.

(A) *All of the subsections of 40 CFR 52.21 other than (a) Plan disapproval, (q) Public participation, (s) Environmental impact statements and (u) Delegation of authority are incorporated by reference.* 40 CFR 52.21 as used in this rule refers to 40 CFR 52.21 promulgated as of July 1, 2003 as published by the Office of the Federal Register, U.S. National Archives and Records, 700 Pennsylvania Avenue NW, Washington, D.C. 20408. This rule does not incorporate any subsequent amendments or additions.

Mo. Code Regs. Ann. tit. 10, § 6.060(8)(A) (2007) (emphases added).

In turn, the federal regulation referenced in § 6.060(8)(A) of the Missouri SIP provides that the PSD’s “[a]pplicability procedures” “apply to the construction of any new major stationary source or the *major modification* of any existing major stationary source” located in a PSD area. 40 C.F.R. § 52.21(a)(2)(ii) (emphasis added). The regulations explicitly define major modification. “*Major modification* means any physical change in or change in the method of operation of a major stationary source that would result in: a significant emissions increase . . . of a regulated NSR pollutant . . . ; and a significant net emissions increase of that pollutant from the major stationary source.” *Id.* § 52.21(b)(2)(i) (emphasis added). “A . . . major modification shall meet each applicable emissions limitation under the [SIP] and each applicable emissions standard and standard of performance under 40 CFR parts 60 and 61.” *Id.* § 52.21(j)(1).

The federal regulation establishes that a *major modification* triggers the PSD requirements. According to the regulation, “[n]o . . . major modification . . . shall begin actual construction without a permit that states that the . . . major modification will meet those requirements.” *Id.* § 52.21(a)(2)(iii). To assess whether a major modification occurred, the federal regulation states that an

“[a]ctual-to-projected-actual applicability test [applies] for projects that only involve existing emissions units.” *Id.* § 52.21(a)(2)(iv)(c) (emphasis added). Under that test,

[a] significant emissions increase of a regulated NSR pollutant is projected to occur if the sum of the difference between the projected actual emissions . . . and the baseline actual emissions . . . , for each existing emissions unit, equals or exceeds the significant amount for that pollutant . . . .

*Id.*

As the district court observed, “EPA’s approval of the [Missouri] SIP illustrates why the specific PSD rules control.” *Ameren I*, 158 F. Supp. 3d at 810. In approving the Missouri SIP, the EPA stated, “[W]e are approving most of the revisions to the Construction Permits Required rule because the revisions incorporate, by reference, the Federal New Source Review reforms . . . .” Approval and Promulgation of Implementation Plans; State of Missouri, 71 Fed. Reg. at 36,486. More specifically, it stated that it was “approving revisions to Missouri rule, 10 CSR 10-6.060, Construction Permits Required, into the SIP. This rule incorporates by reference the . . . PSD . . . program in 40 CFR 52.21 . . . .” *Id.* at 36,487.

Importantly, the “EPA’s approval of the SIP provided that the CAA and the program requirements as set out in 40 C.F.R. 52.21 would supersede any conflicting provisions in the state SIP.” *Ameren I*, 158 F. Supp. 3d at 810 (quoting 71 Fed. Reg. at 36,486 (“This revision incorporates by reference the other provisions of 40 C.F.R. 52.21 as in effect on July 1, 2003, which supersedes any conflicting provisions in the Missouri rule.” (emphasis added in *Ameren I*))).

Furthermore, as the district court pointed out, Ameren’s argument that “the [Missouri] SIP first requires . . . that a threshold determination be made that a project is a ‘modification’” under § 6.020(2)(M)(1), “would render a portion of the PSD rules

superfluous.” *Id.* at 810. The Supreme Court rejected a similar argument in *Duke Energy*. In that case, the Court held that the EPA is not required “to conform its PSD regulations on ‘modification’ to their NSPS counterparts.” 549 U.S. at 565. According to the Court, aligning the PSD regulations with the NSPS regulations “was inconsistent with their terms and effectively invalidated them.” *Id.* Relevant to the present case, the Court rejected the defendant power company’s argument that, “before a project can become a ‘major modification’ under the PSD regulations, it must meet the definition of ‘modification’ under the NSPS regulations.” *Id.* at 581 n.8 (citations omitted). According to the Court, “the language of the regulations [did] not support” such a reading because it would render portions of the PSD regulations superfluous. *Id.* (“[I]t would be superfluous for PSD regulations to require a ‘major modification’ to be a ‘physical change in or change in the method of operation,’ if they presupposed that the NSPS definition of ‘modification,’ which contains the same prerequisite, had already been satisfied.” (citations omitted)).

Finally, *United States v. Cinergy Corp.*, 623 F.3d 455 (7th Cir. 2010), upon which Ameren relies, is distinguishable. There, the EPA brought an enforcement action against several coal-fired power plants. *Id.* at 456. As in the present case, the EPA alleged that the plants’ projects were major modifications requiring a PSD permit. *Id.* The plants argued that no permit was required because the projects did not increase the units’ potential emissions under the Indiana SIP, which based applicability on increases in potential emissions instead of actual emissions. *Id.* at 458. On appeal, the Seventh Circuit held that “[t]he Clean Air Act does not authorize the imposition of sanctions for conduct that complies with a [SIP] that the EPA has approved.” *Id.* (citing 42 U.S.C. § 7413(a)(1)).

Like the power plants in *Cinergy*, Ameren maintains that it lacked notice “that EPA would treat its approval of Sections 10–6.060(1)(C) (Applicability) and 10–6.020(2)(M)(10) (definition of ‘modification’) as a rejection of them”; furthermore, it asserts that “allowing EPA to impose liability when it is undisputed

no modification has occurred would violate basic principles of due process and fair notice.” *Ameren I*, 158 F. Supp. 3d at 812. But *Cinergy* is distinguishable from the present case because (1) the Indiana SIP did not incorporate the PSD rules into the State’s plan; (2) the “EPA’s approval of the Indiana SIP did not expressly provide that the PSD rules as set out in the Code of Federal Regulations supersede any conflicting provisions in the state SIP”; and (3) the power plants in *Cinergy* had “actual notice” of the Indiana SIP provision, whereas “it is not clear that Ameren had actual notice of the SIP provision.” *Id.* Furthermore, *Cinergy* is merely persuasive authority and not binding on this court. *See Duluth, Winnipeg & Pac. Ry. Co. v. City of Orr*, 529 F.3d 794, 798 (8th Cir. 2008).

Accordingly, we hold that the district court did not err in holding that the Rush Island projects required permits through application of the actual-to-projected-actual applicability test under 40 C.F.R. § 52.21(a)(2)(iv)(c), incorporated by reference in § 6.060(8)(A) of the Missouri SIP.

#### B. Major Modification

Alternatively, Ameren argues that “even if federal regulations governed applicability, Ameren was held liable under the wrong legal standards, independently requiring reversal.” Appellant’s Br. at 45. Ameren maintains that the district court erred in concluding the Rush Island projects constituted *major modifications*. Specifically, Ameren contends that the district court erroneously (1) shifted the burden of proof on causation; (2) “applied new interpretations of the federal regulations’ causation provision”; and (3) applied a “reasonable power plant operator’ standard the regulations do not require.” *Id.* at 45–46. In addition, Ameren asserts that the district court erred by permitting the government to use expert opinions on actual post-project emissions that were not disclosed. *Id.* at 56.

A “[m]ajor modification” at emission sources occurs when a physical change in the facility would result in “a significant emissions increase.” 40 C.F.R.

§ 52.21(b)(2)(i). “To satisfy its burden under the [CAA], the government ha[s] to show that at the time of the projects [Ameren] expected, or should have expected, that its modifications would result in a ‘significant net emissions increase’ . . . .” *United States v. Ala. Power Co.*, 730 F.3d 1278, 1282 (11th Cir. 2013).

### 1. *Burden of Proof*

One feature of the federal regulation’s “projected-actual-emissions methodology [is] the exclusion from the emissions projection of any emissions due to increased demand.” *New York*, 413 F.3d at 31. This demand-growth exclusion functions as a type of defense for the source to avoid triggering PSD requirements. The federal regulation “allow[s] exclusion of emissions that could have been accommodated during the baseline period and ‘that are also unrelated to the particular project.’” *Id.* at 33 (quoting 40 C.F.R. § 52.21(b)(41)(ii)(c)). Emissions “unrelated to the particular project . . . include[] any increased utilization due to product demand growth.” *Id.* (quoting 40 C.F.R. § 52.21(b)(41)(ii)(c)).

Thus, under the regulation, “a source must”

establish[] two criteria . . . before excluding emissions from its projection: “(1) [t]he unit could have achieved the necessary level of utilization during the consecutive 24-month period [the source] selected to establish the baseline actual emissions; and (2) the increase is not related to the physical or operational change(s) made to the unit.”

*Id.* (alterations in original) (emphasis added) (quoting Prevention of Significant Deterioration (PSD) and Nonattainment New Source Review (NSR): Baseline Emissions Determination, Actual-to-Future-Actual Methodology, Plantwide Applicability Limitations, Clean Units, Pollution Control Projects, 67 Fed. Reg. 80,186-01, 80,203 (Dec. 31, 2002)); *see also United States v. DTE Energy Co.*, 845 F.3d 735, 737 (6th Cir. 2017).



Ameren argues that “the [d]istrict [c]ourt improperly shifted the burden of proving causation to Ameren.” Appellant’s Br. at 46. Before the district court, the parties disputed who bore the burden of proving “that any increases in emissions were caused by demand growth.” *Ameren II*, 2016 WL 728234, at \*11. Ameren argued that the EPA bore the burden of proving demand growth “because under the definition of ‘projected actual emissions,’ the regulations require that unrelated emissions be exempted from the calculation.” *Id.* By contrast, the EPA maintained that Ameren bore the burden of proof on demand growth as “the party seeking to benefit from an exemption.” *Id.* The district court held that “*while it remains EPA’s burden to prove that Ameren should have expected the projects to cause an increase in emissions, the burden is Ameren’s to prove that the demand growth exclusion applies.*” *Id.* (emphasis added).

The district court is correct. As recognized in *New York* and *DTE Energy*, it is the source’s burden to prove the applicability of the demand-growth exclusion. This is in accordance with the Supreme Court precedent that the party asserting the exception bears the burden of proving its applicability. *NLRB v. Ky. River Cmty. Care, Inc.*, 532 U.S. 706, 711 (2001) (“The burden of proving the applicability of the supervisory exception . . . should thus fall on the party asserting it.”); *FTC v. Morton Salt Co.*, 334 U.S. 37, 44–45 (1948) (“[T]he general rule of statutory construction that the burden of proving justification or exemption under a special exception to the prohibitions of a statute generally rests on one who claims its benefits . . .”).

As a result, we hold that the district court did not impermissibly shift the burden of proof to Ameren in proving the applicability of the demand-growth exclusion.

## 2. Causation

According to Ameren, in post-trial briefing, the government switched theories on how the district court should analyze increased demand to satisfy the demand-

growth exclusion. Ameren also asserts that the government, in effect, promulgated a new causation standard without following notice-and-comment rulemaking. Specifically, Ameren contends, the government persuaded the district court that Ameren had to show “demand growth for a specific unit’s generation.” Appellant’s Br. at 47. Ameren argues that this causation standard is “the exact opposite of EPA’s prior statements [that] ‘[d]emand growth refers to what the utility expects to be required to produce in the way of energy system wide, *not for a single unit*, but system wide.’” *Id.* (citation omitted).

We hold that the district court did not apply an improper causation standard. Citing *New York*, the district court expressly acknowledged that Ameren had to satisfy “two criteria . . . before excluding emissions from its projection.” *Ameren III*, 229 F. Supp. 3d at 1003 (quoting *New York*, 413 F.3d at 33). The first requirement is that “*the unit* could have achieved the necessary level of utilization during the [baseline period].” *Id.* (emphasis added) (alteration in original) (quoting *New York*, 413 F.3d at 33). The second requirement is that “the increase is not related to the physical or operational change(s) made to *the unit*.” *Id.* (emphasis added) (quoting *New York*, 413 F.3d at 33). This accurately states the appropriate causation standard. As a result, the district court did not err in holding that to prove the applicability of the demand-growth exclusion, Ameren had to establish “that demand *on the unit* increases.” *Id.* at 1003.

### 3. Reasonable Power Plant Operator

“In order to be deemed a major modification, [the government] . . . [must] show (1) a physical change to the plant; (2) a significant net emissions increase; and (3) a causal link between the two.” *United States v. La. Generating, LLC*, 929 F. Supp. 2d 591, 593 (M.D. La. 2012). As explained *supra*, “the government had to show that at the time of the projects [Ameren] expected, or should have expected, that its

modifications would result in a ‘significant net emissions increase’ . . . .” *Ala. Power Co.*, 730 F.3d at 1282.<sup>4</sup>

“[T]he [federal] regulations do not require a utility to be prescient, rather they require the company to undertake a *reasonable estimate* of what post-project emissions would be.” *United States v. Duke Energy Corp.*, No. 1:00-cv-1262, 2010 WL 3023517, at \*6 (M.D.N.C. July 28, 2010) (emphasis added) (citing *United States v. Cinergy Corp.*, 458 F.3d 705, 709 (7th Cir. 2006)). “[T]he question [is] whether the owner of the facility at the time of the work . . . expected or *reasonably should have expected*, the work to increase emissions . . . .” *La. Generating*, 929 F. Supp. 2d at 593 (emphasis added).

In its motion for summary judgment at the liability phase, Ameren argued that “under an expectations theory,” the EPA had to “come forward with admissible evidence of what a reasonable power plant operator or owner would expect, and its failure to do so is fatal to EPA’s expectations theory case, warranting a grant of partial summary judgment.” *Ameren II*, 2016 WL 728234, at \*18. While “Ameren acknowledge[d] that the determination of whether a party acted reasonably is generally a question for the factfinder,” it maintained that “when the touchstone for objective reasonableness requires a technical understanding of the subject matter that is beyond a layperson’s normal understanding, the factfinder must have guidance to make that determination.” *Id.*

The district court, however, determined “that no special standard of care evidence is required for the factfinder to be able to determine whether a reasonable power plant operator or owner would have expected the projects to cause a significant emissions increase.” *Id.* The court reasoned that (1) “[t]he legal standards supplied

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<sup>4</sup>Alternatively, the government can prove a project actually resulted in a significant increase in emissions. *See* 40 C.F.R. § 52.21(a)(2)(iv)(b).

by the PSD rules are sufficient to guide the analysis,” and (2) “the parties . . . submitted mountains of evidence regarding what they believe a reasonable power plant operator or owner would have concluded.” *Id.* Specifically, the parties’ experts would “testify about what Ameren did to make its projections, what information Ameren considered or did not consider, and why, and what the projections showed.” *Id.* The court noted that other “courts that have considered expectations theory enforcement actions” have applied “[t]his method.” *Id.* (first citing *United States v. Duke Energy Corp.*, 981 F. Supp. 2d 435, 439 (M.D.N.C. 2013); then citing *Cinergy*, 623 F.3d at 459; and then citing *La. Generating*, 929 F. Supp. 2d at 593).

On appeal, Ameren now asserts that the district court erroneously denied “[s]tandard-of-care evidence [in] defining the specific boundaries of reasonableness.” Appellant’s Br. at 50. According to Ameren, “the written requirements of the regulations,” as opposed to the “expert witnesses’ subjective views,” “should have governed liability.” *Id.* Ameren maintains that “[b]y superimposing a[] [reasonable power plant operator] standard, the [d]istrict [c]ourt allowed EPA’s experts to second-guess Ameren’s conclusions even though Ameren followed the regulations’ written requirements.” *Id.* at 51.

We conclude that the district court did not err in holding that “no special standard of care evidence is required for the factfinder to be able to determine whether a reasonable power plant operator or owner would have expected the projects to cause a significant emissions increase.” *Ameren II*, 2016 WL 728234, at \*18. Instead, the district court, as the factfinder, was entitled to “consider all relevant information available to [Ameren] at the time of the project, including prior operating data and [Ameren’s] own statements and documents” in determining whether Ameren “should have predicted that a project would have caused a [significant] net increase.” *Id.* at \*19 (quoting Jury Instr. No. 23, *United States v. Cinergy*, 1:99-cv-1693-LJM-JMS (S.D. Ind. 2008), ECF No. 1335).

#### 4. *Expert Testimony*

Ameren argues that the district court abused its discretion in admitting and relying on undisclosed expert opinions. *See Ryan v. Bd. of Police Comm'rs of St. Louis*, 96 F.3d 1076, 1081 (8th Cir. 1996) (“We review the district court’s decision to admit evidence over a party’s objection for abuse of discretion.”).

In two motions filed during the trial on the liability phase and in post-trial briefs, Ameren moved to exclude the expert testimony of Koppe and Dr. Sahu “concerning causation of the actual emissions increases.” *Ameren III*, 229 F. Supp. 3d at 1015. Ameren argued to the district court that “the testimony concerning the causation of the actual emissions increases are new, undisclosed opinions.” *Id.*

The district court denied Ameren’s motions to exclude Koppe’s and Dr. Sahu’s testimony. First, it rejected Ameren’s argument that the experts’ opinions were “new” and concluded that Ameren had “sufficient notice of both the United States’ actual emissions case and of Mr. Koppe and Dr. Sahu’s opinions.” *Id.* at 1016. The court highlighted that the experts “(1) analyzed the actual post-project data in their reports, the attachments, and their work papers, and (2) stated that the projected increases actually materialized.” *Id.* at 1015. Additionally, the court noted that the experts discussed in their reports and depositions “how the projects enable increased availability and contribute to increases in emissions.” *Id.* The court explained that the experts were not required to “state[] their opinions in the precise words that Ameren thinks they should have used” because the “notice required of expert opinions is not so formulaic.” *Id.*; *see also Thompson v. Doane Pet Care Co.*, 470 F.3d 1201, 1202–03 (6th Cir. 2006) (explaining that Federal Rule of Evidence 26(a)(2)(B) “contemplates that the expert will supplement, elaborate upon, explain and subject himself to cross-examination upon his report”).

Second, the district court concluded that even if it erroneously admitted the expert testimony, Ameren was unable to “show that it was prejudiced by the

challenged testimony or the admission of the exhibits.” *Ameren III*, 229 F. Supp. 3d at 1016. This was because “[t]he evidence the United States presented to show that the actual emissions increases were caused by the projects was also presented in the context of its expectations case regarding the expected causes of projected emissions increases, so the challenged testimony is in part cumulative evidence.” *Id.* The court also noted Ameren’s “opportunity both during pre-trial discovery and during cross-examination at trial to test those opinions.” *Id.*

Here, even assuming that the district court abused its discretion by admitting the expert testimony, “any error would be harmless.” *Smith v. Tenet Healthsystem SL, Inc.*, 436 F.3d 879, 889 (8th Cir. 2006). Harmless error applies here because the district court, as the factfinder, expressly stated that had the expert testimony on actual emissions not been admitted, the result would not be different.

### *C. Injunctive Relief*

Ameren argues generally that the district court lacked Article III jurisdiction and statutory jurisdiction to issue injunctive relief “based on Rush Island’s operation.” Appellant’s Br. at 66. According to Ameren, the district court found during the liability phase “that the Rush Island Projects were major modifications requiring permits before Ameren could commence construction.” *Id.* at 67. But, during the remedy phase, the government “did not seek to prove any injury from the violation it proved” and “[i]nstead . . . sought to obtain relief based on the harm from Rush Island’s operation without a PSD permit.” *Id.* Ameren maintains that “[o]perations do not cause an injury that the PSD program recognizes.” *Id.* Ameren further argues that the district court lacked jurisdiction to impose injunctive relief redressing “excess emissions.” *Id.* at 69. Ameren asserts that the government waived “penal relief, including civil penalties; an injunction to prevent construction; an injunction to obtain information about future planned projects; and declaratory relief.” *Id.* at 71 (citations omitted). Finally, Ameren argues that the CAA “does not



authorize injunctions for wholly past violations” and that “[o]nly past violations are at issue here.” *Id.* at 72.

“We review a district court’s grant of a permanent injunction for abuse of discretion.” *Kittle-Aikeley v. Strong*, 844 F.3d 727, 735 (8th Cir. 2016). An abuse of discretion occurs when a district court “reaches its conclusion by applying erroneous legal principles or relying on clearly erroneous factual findings.” *Id.* (citation omitted). “Where the determinative question is purely legal, our review is more accurately characterized as *de novo*.” *Id.* (quotation omitted).

“Whenever . . . the [government] finds that any person *has violated* or is in violation of any requirement . . . of an applicable implementation plan or permit, [the government] [must] notify the person . . . of such finding.” 42 U.S.C. § 7413(a)(1) (emphasis added). Only after the “expiration of 30 days following the date on which such notice of a violation [was] issued” may the government “bring a civil [enforcement] action.” *Id.* § 7413(a)(1)(C). The government is authorized to “commence a civil action for a permanent or temporary injunction, or to assess and recover a civil penalty . . . , or both,” “[w]hensoever such person *has violated*, or is in violation of” a requirement of Title I of the CAA. *Id.* § 7413(b)(1) (emphasis added). A civil enforcement action

may be brought in the district court of the United States for the district in which the *violation* is alleged to have occurred, or is occurring, or in which the defendant resides, or where the defendant’s principal place of business is located, and such *court shall have jurisdiction to restrain such violation, to require compliance, to assess such civil penalty, to collect any fees owed the United States under this chapter (other than subchapter II) and any noncompliance assessment and nonpayment penalty owed under section 7420 of this title, and to award any other appropriate relief.*

*Id.* § 7413(b) (emphases added).



In summary,

[t]he Clean Air Act authorizes the EPA to bring a civil enforcement action when any person *has violated* a permit or SIP, *has violated* any requirement in certain subchapters of the Clean Air Act (including the PSD program), or “attempts to construct or modify a major stationary source” in any state that the EPA Administrator has found out of compliance with the New Source Review program.

*United States v. EME Homer City Generation, L.P.*, 727 F.3d 274, 291–92 (3d Cir. 2013) (emphases added).

Section 7413(b) “limits a district court’s jurisdiction to awarding certain kinds of relief.” *Id.* at 292. “Each type of relief in [§ 7413(b)] (except for civil penalties) is necessarily forward-looking.” *Id.* (footnote omitted). The remaining term — “[a]ny other appropriate relief”—is merely a “catch-all” provision that “follows ‘a list of specific items separated by commas.’” *Id.* at 293 (quoting *Ali v. Fed. Bureau of Prisons*, 552 U.S. 214, 225 (2008)). “As the word ‘other’ demonstrates, this general phrase is a residual category of the same type as the preceding items (namely, kinds of relief).” *Id.* “[T]he canon of *ejusdem generis* requires us to interpret this catch-all as permitting forward-looking relief, consistent with the preceding types of relief in the list.” *Id.* at 295.

In *Homer City*, the Third Circuit held that “[t]he text of the Clean Air Act does not authorize an injunction against *former* owners and operators for a *wholly past PSD violation*, even if that violation causes *ongoing harm*.” *Id.* at 291 (emphases added). But the court “express[ed] no opinion” on whether injunctions are “available in general to remedy *ongoing harm* from *wholly past violations*.” *Id.* at 291 n.19 (emphases added). Indeed, as against the current owners, the court explained that the government could, after “*completion* of a facility’s modification, . . . still obtain an *injunction* requiring the owner or operator to comply with the PSD requirements.” *Id.*

at 289 (emphases added); *see also United States v. U.S. Steel Corp.*, 16 F. Supp. 3d 944, 950 (N.D. Ind. 2014) (“Requiring a company to do ‘a further round of modifications to get the permit’ could only be done through injunctive relief.” (quoting *United States v. Midwest Generation, LLC*, 720 F.3d 644, 646 (7th Cir. 2013))).

*Homer City* is distinguishable from the present case because it concerned injunctive relief against a facility’s *former* owners. *United States v. Luminant Generation Co., L.L.C.*, 905 F.3d 874, 888 (5th Cir. 2018), *reh’g en banc granted*, 929 F.3d 316 (5th Cir. 2019).<sup>5</sup> It does not detract from the plain language of § 7413(b), which “plainly gives district courts jurisdiction to restrain a violation, require compliance, and award any other appropriate relief whenever a person has committed a . . . violation” *Id.*

Here, however, Ameren also specifically challenges the district court’s injunction against its Labadie plant, which committed no violations of the CAA. According to Ameren, neither the CAA nor the regulations authorize such relief.

Under § 7413, a district court “has the authority to order [a defendant] to take appropriate actions that remedy, mitigate and offset harms to the public and the environment *caused by the [defendant’s] proven violations* of the CAA.” *United States v. Cinergy Corp.*, 582 F. Supp. 2d 1055, 1060 (S.D. Ind. 2008) (emphasis added); *see also United States v. Oliver*, No. 3:06-CV-196-JWS, 2009 WL 10671371, at \*13 (D. Alaska June 25, 2009) (“Section 113(b) of the Clean Air Act, 42 U.S.C. § 7413(b), expressly provides for injunctive relief to *redress violations* of the Act.” (emphasis added)), *aff’d*, 394 F. App’x 376 (9th Cir. 2010).

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<sup>5</sup>The Fifth Circuit ultimately dismissed the appeal in *Luminant* on the parties’ motion.

Here, the government never provided notice of or alleged that the Ameren’s Labadie plant committed a *violation* of the CAA. The plain language of § 7413(b) and caselaw make clear that the injunctive relief a district court may award must redress a *violation* of the CAA. *See* 42 U.S.C. § 7413(b)(1)–(3) (permitting civil enforcement actions “[w]henver such person has violated, or is in violation of” certain requirements and noting that the district “court shall have jurisdiction to restrain such violation”). Because Ameren committed no violation of the CAA at its Labadie plant, the district court lacked authority to authorize injunctive relief as to it. *Cf. United States v. Cinergy Corp.*, 618 F. Supp. 2d 942, 967 (S.D. Ind. 2009) (denying government’s requested relief because the remedy would be punitive as the government proved no violation at the non-source unit against which it was sought.), *rev’d on other grounds*, 623 F.3d 455 (7th Cir. 2010); *United States v. Westvaco Corp.*, No. MJG-00-2602, 2015 WL 10323214, at \*12 & n.27 (D. Md. Feb. 26, 2015) (rejecting government’s request for the district court to order the defendant “to install control technology on a totally ‘innocent’ boiler” that the government never alleged “violated PSD regulations” (footnote omitted)).

Accordingly, we reverse the Labadie injunction and remand for further proceedings consistent with this opinion.

#### *E. Jurisdiction over Title V Claims*

Finally, Ameren challenges the district court’s jurisdiction over the Title V claims.

Ameren operates Rush Island under a Title V permit issued by the Missouri Department of Natural Resources. This permit “restat[ed] the requirement that Ameren was prohibited from performing any unpermitted major modifications of Rush Island Units 1 or 2.” *Ameren III*, 229 F. Supp. 3d at 985.

The government brought Title V claims against Ameren, and Ameren challenged the district court’s subject matter jurisdiction to hear those claims. It argued—as it does here—that the Title V violation “is reviewable exclusively by the courts of appeals, not collaterally in civil . . . enforcement actions in the district courts.” Appellant’s Br. at 73 (alteration in original) (quoting *Homer City*, 727 F.3d at 296–97).

Ameren’s jurisdictional argument lacks merit. “The EPA has authority to bring a civil enforcement action against a person who, among other things, ‘has violated, or is in violation of, any other requirement or prohibition of [various subchapters, including Title V].’” *Homer City*, 727 F.3d at 298 (alteration in original) (quoting 42 U.S.C. § 7413(b)(2)). In turn, Title V’s plain text “lists only two ways in which it can be violated: operating without a Title V permit or *violating the terms of a Title V permit while operating a source.*” *Id.* (emphasis added) (citing 42 U.S.C. § 7661a(a)).

The district court expressly found that Ameren violated an express permit term prohibiting it from performing unpermitted major modifications. *Cf. Otter Tail*, 615 F.3d at 1020. Under § 7413(b), the district court had jurisdiction to consider whether Ameren violated the express terms of its Title V permit.

### III. Conclusion

Accordingly, we affirm the judgment of the district court in all respects *except* as to the injunctive relief entered against Ameren’s Labadie plant. We remand for further proceedings consistent with this opinion.