

BEFORE THE ADMINISTRATOR
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

IN THE MATTER OF)	PETITION No. V-2021-9
)	
BP PRODUCTS NORTH AMERICA, INC.)	ORDER RESPONDING TO
WHITING BUSINESS UNIT)	PETITION REQUESTING
LAKE COUNTY, INDIANA)	OBJECTION TO THE ISSUANCE OF
PERMIT No. 089-43173-00453)	TITLE V OPERATING PERMIT
)	
ISSUED BY THE INDIANA DEPARTMENT OF)	
ENVIRONMENTAL MANAGEMENT)	

**ORDER GRANTING IN PART AND DENYING IN PART A PETITION FOR
OBJECTION TO PERMIT**

I. INTRODUCTION

The U.S. Environmental Protection Agency (EPA) received a petition dated July 22, 2021 (the Petition) from the Environmental Integrity Project and the Hoosiers Chapter of the Sierra Club (the Petitioners), pursuant to section 505(b)(2) of the Clean Air Act (CAA or Act), 42 United States Code (U.S.C.) § 7661d(b)(2). The Petition requests that the EPA Administrator object to a revision of operating permit No. 089-43173-00453 (the Permit) issued by the Indiana Department of Environmental Management (IDEM) to the BP Products North America, Inc. Whiting Business Unit (BP Whiting or the facility) in Lake County, Indiana. The operating permit was issued pursuant to title V of the CAA, 42 U.S.C. §§ 7661–7661f, and 326 Indiana Administrative Code (IAC) 2-7-1 *et seq.* See also 40 Code of Federal Regulations (C.F.R.) part 70 (title V implementing regulations). This type of operating permit is also known as a title V permit or part 70 permit.

Based on a review of the Petition and other relevant materials, including the Permit, the permit record, and relevant statutory and regulatory authorities, and as explained in Section IV of this Order, the EPA grants in part and denies in part the Petition requesting that the EPA Administrator object to the Permit. Specifically, the EPA grants Claims C and D, and denies Claims A and B requesting an EPA objection.¹

¹ In the same document as the Petition submitted under CAA § 505(b)(2), the Petitioners also advance two requests for the EPA to reopen the Permit for cause, pursuant to CAA § 505(e). Finding cause to reopen (that is, terminate, modify, or revoke and revise) a permit under CAA § 505(e) and 40 C.F.R. §§ 70.7(f) and (g) is a discretionary action distinct from objecting to the issuance of a permit under CAA § 505(b)(2) and 40 C.F.R. § 70.8. See 56 Fed. Reg. 21712, 21744–45 (May 10, 1991); see also 57 Fed. Reg. 32250, 32256 (July 21, 1992). In this Order, the EPA is responding to the Petitioner’s request that the EPA object to the Permit. This Order does not address the Petitioners’ requests for the EPA to exercise its discretion to initiate the process to reopen the Permit for cause. The EPA notes that the Petitioners should have the opportunity to raise concerns not addressed by this Order as part of the pending renewal permit cycle for BP Whiting.

II. STATUTORY AND REGULATORY FRAMEWORK

A. Title V Permits

Section 502(d)(1) of the CAA, 42 U.S.C. § 7661a(d)(1), requires each state to develop and submit to the EPA an operating permit program to meet the requirements of title V of the CAA and the EPA's implementing regulations at 40 C.F.R. part 70. The state of Indiana submitted a title V program governing the issuance of operating permits on August 10, 1994. The EPA granted interim approval of Indiana's title V operating permit program on November 14, 1995. The EPA granted full approval of Indiana's title V operating permit program in 2001. 66 Fed. Reg. 62969 (December 4, 2001). This program, which became effective on November 30, 2001, is codified in 326 IAC 2-7-1 *et seq.*

All major stationary sources of air pollution and certain other sources are required to apply for and operate in accordance with title V operating permits that include emission limitations and other conditions as necessary to assure compliance with applicable requirements of the CAA, including the requirements of the applicable implementation plan. 42 U.S.C. §§ 7661a(a), 7661b, 7661c(a). The title V operating permit program generally does not impose new substantive air quality control requirements, but does require permits to contain adequate monitoring, recordkeeping, reporting, and other requirements to assure compliance with applicable requirements. 57 Fed. Reg. 32250, 32251 (July 21, 1992); *see* 42 U.S.C. § 7661c(c). One purpose of the title V program is to "enable the source, States, EPA, and the public to understand better the requirements to which the source is subject, and whether the source is meeting those requirements." 57 Fed. Reg. at 32251. Thus, the title V operating permit program is a vehicle for compiling the air quality control requirements as they apply to the source's emission units and for providing adequate monitoring, recordkeeping, and reporting to assure compliance with such requirements.

B. Review of Issues in a Petition

State and local permitting authorities issue title V permits pursuant to their EPA-approved title V programs. Under CAA § 505(a) and the relevant implementing regulations found at 40 C.F.R. § 70.8(a), states are required to submit each proposed title V operating permit to the EPA for review. 42 U.S.C. § 7661d(a). Upon receipt of a proposed permit, the EPA has 45 days to object to final issuance of the proposed permit if the EPA determines that the proposed permit is not in compliance with applicable requirements under the Act. 42 U.S.C. § 7661d(b)(1); *see also* 40 C.F.R. § 70.8(c). If the EPA does not object to a permit on its own initiative, any person may, within 60 days of the expiration of the EPA's 45-day review period, petition the Administrator to object to the permit. 42 U.S.C. § 7661d(b)(2); 40 C.F.R. § 70.8(d).

Each petition must identify the proposed permit on which the petition is based and identify the petition claims. 40 C.F.R. § 70.12(a). Any issue raised in the petition as grounds for an objection must be based on a claim that the permit, permit record, or permit process is not in compliance with applicable requirements or requirements under part 70. 40 C.F.R. § 70.12(a)(2). Any

arguments or claims the petitioner wishes the EPA to consider in support of each issue raised must generally be contained within the body of the petition.² *Id.*

The petition shall be based only on objections to the permit that were raised with reasonable specificity during the public comment period provided by the permitting authority (unless the petitioner demonstrates in the petition to the Administrator that it was impracticable to raise such objections within such period or unless the grounds for such objection arose after such period). 42 U.S.C. § 7661d(b)(2); 40 C.F.R. § 70.8(d); *see also* 40 C.F.R. § 70.12(a)(2)(v).

In response to such a petition, the Act requires the Administrator to issue an objection if a petitioner demonstrates that a permit is not in compliance with the requirements of the Act. 42 U.S.C. § 7661d(b)(2); 40 C.F.R. § 70.8(c)(1).³ Under section 505(b)(2) of the Act, the burden is on the petitioner to make the required demonstration to the EPA.⁴ The petitioner’s demonstration burden is a critical component of CAA § 505(b)(2). As courts have recognized, CAA § 505(b)(2) contains both a “discretionary component,” under which the Administrator determines whether a petition demonstrates that a permit is not in compliance with the requirements of the Act, and a nondiscretionary duty on the Administrator’s part to object where such a demonstration is made. *Sierra Club v. Johnson*, 541 F.3d at 1265–66 (“[I]t is undeniable [that CAA § 505(b)(2)] also contains a discretionary component: it requires the Administrator to make a judgment of whether a petition demonstrates a permit does not comply with clean air requirements.”); *NYPIRG*, 321 F.3d at 333. Courts have also made clear that the Administrator is only obligated to grant a petition to object under CAA § 505(b)(2) if the Administrator determines that the petitioner has demonstrated that the permit is not in compliance with requirements of the Act. *Citizens Against Ruining the Environment*, 535 F.3d at 677 (stating that § 505(b)(2) “clearly obligates the Administrator to (1) determine whether the petition demonstrates noncompliance and (2) object if such a demonstration is made” (emphasis added)).⁵ When courts have reviewed the EPA’s interpretation of the ambiguous term “demonstrates” and its determination as to whether the demonstration has been made, they have applied a deferential standard of review. *See, e.g., MacClarence*, 596 F.3d at 1130–31.⁶ Certain aspects of the petitioner’s demonstration burden are discussed in the following paragraph. A more detailed discussion can be found in the preamble to the EPA’s proposed petitions rule. *See* 81 Fed. Reg. 57822, 57829–31 (August 24, 2016); *see also In the Matter of Consolidated Environmental Management, Inc., Nucor Steel Louisiana*, Order on Petition Nos. VI-2011-06 and VI-2012-07 at 4–7 (June 19, 2013) (*Nucor II Order*).

² If reference is made to an attached document, the body of the petition must provide a specific citation to the referenced information, along with a description of how that information supports the claim. In determining whether to object, the Administrator will not consider arguments, assertions, claims, or other information incorporated into the petition by reference. *Id.*

³ *See also New York Public Interest Research Group, Inc. v. Whitman*, 321 F.3d 316, 333 n.11 (2d Cir. 2003) (*NYPIRG*).

⁴ *WildEarth Guardians v. EPA*, 728 F.3d 1075, 1081–82 (10th Cir. 2013); *MacClarence v. EPA*, 596 F.3d 1123, 1130–33 (9th Cir. 2010); *Sierra Club v. EPA*, 557 F.3d 401, 405–07 (6th Cir. 2009); *Sierra Club v. Johnson*, 541 F.3d 1257, 1266–67 (11th Cir. 2008); *Citizens Against Ruining the Environment v. EPA*, 535 F.3d 670, 677–78 (7th Cir. 2008); *cf. NYPIRG*, 321 F.3d at 333 n.11.

⁵ *See also Sierra Club v. Johnson*, 541 F.3d at 1265 (“Congress’s use of the word ‘shall’ . . . plainly mandates an objection whenever a petitioner demonstrates noncompliance.” (emphasis added)).

⁶ *See also Sierra Club v. Johnson*, 541 F.3d at 1265–66; *Citizens Against Ruining the Environment*, 535 F.3d at 678.

The EPA considers a number of criteria in determining whether a petitioner has demonstrated noncompliance with the Act. *See generally Nucor II Order* at 7. For example, one such criterion is whether a petitioner has provided the relevant analyses and citations to support its claims. For each claim, the petitioner must identify (1) the specific grounds for an objection, citing to a specific permit term or condition where applicable; (2) the applicable requirement as defined in 40 C.F.R. § 70.2, or requirement under part 70, that is not met; and (3) an explanation of how the term or condition in the permit, or relevant portion of the permit record or permit process, is not adequate to comply with the corresponding applicable requirement or requirement under part 70. 40 C.F.R. § 70.12(a)(2)(i)–(iii). If a petitioner does not identify these elements, the EPA is left to work out the basis for the petitioner’s objection, contrary to Congress’s express allocation of the burden of demonstration to the petitioner in CAA § 505(b)(2). *See MacClarence*, 596 F.3d at 1131 (“[T]he Administrator’s requirement that [a title V petitioner] support his allegations with legal reasoning, evidence, and references is reasonable and persuasive.”).⁷ Relatedly, the EPA has pointed out in numerous previous orders that general assertions or allegations did not meet the demonstration standard. *See, e.g., In the Matter of Luminant Generation Co., Sandow 5 Generating Plant*, Order on Petition Number VI-2011-05 at 9 (January 15, 2013).⁸ Also, the failure to address a key element of a particular issue presents further grounds for the EPA to determine that a petitioner has not demonstrated a flaw in the permit. *See, e.g., In the Matter of EME Homer City Generation LP and First Energy Generation Corp.*, Order on Petition Nos. III-2012-06, III-2012-07, and III-2013-02 at 48 (July 30, 2014).⁹

Another factor the EPA examines is whether the petitioner has addressed the state or local permitting authority’s decision and reasoning. Petitioners are required to address the permitting authority’s final decision and final reasoning (including the state’s response to comments) where these documents were available during the timeframe for filing the petition. 40 C.F.R. § 70.12(a)(2)(vi); *see MacClarence*, 596 F.3d at 1132–33.¹⁰ Specifically, the petition must identify where the permitting authority responded to the public comment and explain how the permitting authority’s response is inadequate to address (or does not address) the issue raised in the public comment. *Id.*

⁷ *See also In the Matter of Murphy Oil USA, Inc.*, Order on Petition No. VI-2011-02 at 12 (September 21, 2011) (denying a title V petition claim where petitioners did not cite any specific applicable requirement that lacked required monitoring); *In the Matter of Portland Generating Station*, Order on Petition at 7 (June 20, 2007) (*Portland Generating Station Order*).

⁸ *See also Portland Generating Station Order* at 7 (“[C]onclusory statements alone are insufficient to establish the applicability of [an applicable requirement].”); *In the Matter of BP Exploration (Alaska) Inc., Gathering Center #1*, Order on Petition Number VII-2004-02 at 8 (April 20, 2007); *Georgia Power Plants Order* at 9–13; *In the Matter of Chevron Products Co., Richmond, Calif. Facility*, Order on Petition No. IX-2004–10 at 12, 24 (March 15, 2005).

⁹ *See also In the Matter of Hu Honua Bioenergy*, Order on Petition No. IX-2011-1 at 19–20 (February 7, 2014); *Georgia Power Plants Order* at 10.

¹⁰ *See also, e.g., Finger Lakes Zero Waste Coalition v. EPA*, 734 Fed. App’x *11, *15 (2d Cir. 2018) (summary order); *In the Matter of Noranda Alumina, LLC*, Order on Petition No. VI-2011-04 at 20–21 (December 14, 2012) (denying a title V petition issue where petitioners did not respond to the state’s explanation in response to comments or explain why the state erred or why the permit was deficient); *In the Matter of Kentucky Syngas, LLC*, Order on Petition No. IV-2010-9 at 41 (June 22, 2012) (denying a title V petition issue where petitioners did not acknowledge or reply to the state’s response to comments or provide a particularized rationale for why the state erred or the permit was deficient); *In the Matter of Georgia Power Company*, Order on Petitions at 9–13 (January 8, 2007) (*Georgia Power Plants Order*) (denying a title V petition issue where petitioners did not address a potential defense that the state had pointed out in the response to comments).

The information that the EPA considers in making a determination whether to grant or deny a petition submitted under 40 C.F.R. § 70.8(d) generally includes, but is not limited to, the administrative record for the proposed permit and the petition, including attachments to the petition. 40 C.F.R. § 70.13. The administrative record for a particular proposed permit includes the draft and proposed permits; any permit applications that relate to the draft or proposed permits; the statement required by § 70.7(a)(5) (sometimes referred to as the ‘statement of basis’); any comments the permitting authority received during the public participation process on the draft permit; the permitting authority’s written responses to comments, including responses to all significant comments raised during the public participation process on the draft permit; and all materials available to the permitting authority that are relevant to the permitting decision and that the permitting authority made available to the public according to § 70.7(h)(2). *Id.* If a final permit and a statement of basis for the final permit are available during the agency’s review of a petition on a proposed permit, those documents may also be considered when making a determination whether to grant or deny the petition. *Id.*

If the EPA grants a title V petition, a permitting authority may address the EPA’s objection by, among other things, providing the EPA with a revised permit. *See, e.g.*, 40 C.F.R. § 70.7(g)(4); *see generally* 81 Fed. Reg. 57822, 57842 (August 24, 2016) (describing post-petition procedures); *Nucor II Order* at 14–15 (same). In some cases, the permitting authority’s response to an EPA objection may not involve a revision to the permit terms and conditions themselves, but may instead involve revisions to the permit record. For example, when the EPA has issued a title V objection on the ground that the permit record does not adequately support the permitting decision, it may be acceptable for the permitting authority to respond only by providing an additional rationale to support its permitting decision.

When the permitting authority revises a permit or permit record in order to resolve an EPA objection, it must go through the appropriate procedures for that revision. The permitting authority should determine whether its response is a minor modification or a significant modification to the title V permit, as described in 40 C.F.R. § 70.7(e)(2) and (4) or the corresponding regulations in the state’s EPA-approved title V program. If the permitting authority determines that the modification is a significant modification, then the permitting authority must provide for notice and opportunity for public comment for the significant modification consistent with 40 C.F.R. § 70.7(h) or the state’s corresponding regulations.

In any case, whether the permitting authority submits revised permit terms, a revised permit record, or other revisions to the permit, and regardless of the procedures used to make such revision, the permitting authority’s response is generally treated as a new proposed permit for purposes of CAA § 505(b) and 40 C.F.R. § 70.8(c) and (d). *See Nucor II Order* at 14. As such, it would be subject to the EPA’s 45-day review per CAA § 505(b)(1) and 40 C.F.R. § 70.8(c), and an opportunity for the public to petition under CAA § 505(b)(2) and 40 C.F.R. § 70.8(d) if the EPA does not object during its 45-day review period.

When a permitting authority responds to an EPA objection, it may choose to do so by modifying the permit terms or conditions or the permit record with respect to the specific deficiencies that the EPA identified; permitting authorities need not address elements of the permit or the permit record that are unrelated to the EPA’s objection. As described in various title V petition orders,

the scope of the EPA’s review (and accordingly, the appropriate scope of a petition) on such a response would be limited to the specific permit terms or conditions or elements of the permit record modified in that permit action. *See In The Matter of Hu Honua Bioenergy, LLC*, Order on Petition No. VI-2014-10 at 38–40 (September 14, 2016); *In the Matter of WPSC, Weston*, Order on Petition No. V-2006-4 at 5–6, 10 (December 19, 2007).

C. New Source Review

The major New Source Review (NSR) program is comprised of two core types of preconstruction permit requirements for major stationary sources. Part C of title I of the CAA establishes the Prevention of Significant Deterioration (PSD) program, which applies to new major stationary sources and major modifications of existing major stationary sources for pollutants for which an area is designated as attainment or unclassifiable for the national ambient air quality standards (NAAQS) and for other pollutants regulated under the CAA. 42 U.S.C. §§ 7470–7479. Part D of title I of the Act establishes the major nonattainment NSR (NNSR) program, which applies to new major stationary sources and major modifications of existing major stationary sources for those NAAQS pollutants for which an area is designated as nonattainment. 42 U.S.C. §§ 7501–7515. The EPA has two largely identical sets of regulations implementing the PSD program. One set, found at 40 C.F.R. § 51.166, contains the requirements that state PSD programs must meet to be approved as part of a state implementation plan (SIP). The other set of regulations, found at 40 C.F.R. § 52.21, contains the EPA’s federal PSD program, which applies in areas without a SIP-approved PSD program. The EPA’s regulations specifying requirements for state NNSR programs are contained in 40 C.F.R. § 51.165.

While parts C and D of title I of the Act address the major NSR program for major sources, section 110(a)(2)(C) addresses the permitting program for new and modified minor sources and for minor modifications to major sources. The EPA commonly refers to the latter program as the “minor NSR” program. States must also develop minor NSR programs to, along with the major source programs, attain and maintain the NAAQS. The federal requirements for state minor NSR programs are outlined in 40 C.F.R. §§ 51.160 through 51.164. These federal requirements for minor NSR programs are less prescriptive than those for major sources, and, as a result, there is a larger variation of requirements in EPA-approved state minor NSR programs than in major source programs.

The EPA has approved Indiana’s major and minor NSR provisions as part of its SIP. *See* 40 C.F.R. § 52.800 (identifying EPA-approved regulations in the Indiana SIP). Indiana’s major and minor NSR provisions, as incorporated into Indiana’s EPA-approved SIP, are contained in portions of 326 IAC 2-2-1 *et seq.*

III. BACKGROUND

A. The BP Whiting Facility

BP’s Whiting Business Unit owns and operates a petroleum refinery in Whiting, Lake County, Indiana. The BP Whiting refinery is an existing major stationary source of air pollution and is subject to requirements under multiple CAA programs, including various New Source

Performance Standards (NSPS), National Emission Standards for Hazardous Air Pollutants (NESHAP), preconstruction permitting requirements and other requirements of the Indiana SIP, and the title V permitting program. The facility includes numerous emission units. Relevant to this Petition are a series of five refinery gas-powered boilers that comprise the No. 3 Stanolind Power Station (known as the 3SPS Steam Plant or 3SPS boilers), five duct burners and selective catalytic reduction (SCR) devices associated with each of the 3SPS boilers, and other units including fluidized catalytic cracking units (FCCUs) and Claus offgas treatment tail gas units (TGUs). Among other pollutants emitted by the facility, the Petition primarily concerns emissions of particulate matter with diameters that are 10 microns or smaller (PM₁₀).

The EPA conducted an analysis using EPA's EJSCREEN¹¹ to assess key demographic and environmental indicators within a five kilometer-radius of the BP Whiting refinery. This analysis showed a total population of approximately 45,822 residents within a five-kilometer radius, of which approximately 75 percent are people of color and 49 percent are low income. In addition, the EPA reviewed the EJSCREEN Environmental Justice Indices, which combine certain demographic indicators with eleven environmental indicators. All 11 Environmental Justice Indices in this five-kilometer area exceed the 90th percentile in the state of Indiana, with six of the 11 Environmental Justice indices exceeding the 95th percentile.

B. Permitting History

BP Whiting's predecessor (BP Amoco Whiting Refinery) first applied for a title V permit on September 30, 1996. BP Whiting's most recent title V permit renewal was effective January 1, 2015. The current permit action involves a significant permit modification (SPM) to this 2015 permit; the current action is identified as Permit No. 089-43173-00453 (SPM 43173). BP Whiting submitted an application for this title V permit modification on August 19, 2020. On November 6, 2020, IDEM published notice of a draft permit modification along with a Technical Support Document (TSD), subject to a public comment period. On April 14, 2021, IDEM transmitted to the EPA the proposed permit modification (Proposed Permit), along with its response to comments (contained in an Addendum to the TSD, or ATSD). During the EPA's 45-day review period, which ended on May 31, 2021, the Agency did not object to the Proposed Permit. On June 2, 2021, IDEM finalized the permit modification. The Petitioners filed the Petition on July 22, 2021.

C. Timeliness of Petition

Pursuant to the CAA, if the EPA does not object to a proposed permit during its 45-day review period, any person may petition the Administrator within 60 days after the expiration of the 45-day review period to object. 42 U.S.C § 7661d(b)(2). The EPA's 45-day review period expired on May 31, 2021. Thus, any petition seeking the EPA's objection to the Proposed Permit was due on or before July 30, 2021. The Petition was dated and received on July 22, 2021, and, therefore, the EPA finds that the Petitioners timely filed the Petition.

¹¹ EJSCREEN is an environmental justice mapping and screening tool that provides EPA with a nationally consistent dataset and approach for combining environmental and demographic indicators. *See* <https://www.epa.gov/ejscreen/what-ejscreen>.

IV. DETERMINATIONS ON CLAIMS RAISED BY THE PETITIONERS

Claim A: The Petitioners Claim That “Proposed SPM 43173 Fails to Assure Compliance with 326 IAC 6.8-2-6(a) of the Indiana State Implementation Plan, Which Applies to All PM₁₀ Emissions from Each Boiler Stack.”

Petitioners’ Claim: The Petitioners claim that the Permit does not assure compliance with SIP-based PM₁₀ emission limits because the Permit applies these limits only to emissions from the 3SPS boilers and excludes emissions from the duct burners and SCRs, even though emissions from all three of these components pass through the same stack. Petition at 20–21.

The Petitioners state that title V permits must include and assure compliance with all applicable requirements, including requirements of the Indiana SIP. *Id.* at 20 (citing 42 U.S.C. § 7661c(a)). The Petitioners further assert that “State permitting authorities may not use Title V permits to modify applicable requirements in a SIP” *Id.* (citing 42 U.S.C. § 7410(i)).

The Petitioners explain that the Indiana SIP establishes PM₁₀ limits of 0.0075 pounds per million British thermal units (lbs/MMBtu) and 4.28 lbs/hr on “each stack serving No. 3 power station, boilers 1, 2, 3, 4, and 6,” *i.e.*, the 3SPS boilers. *Id.* at 20 (quoting 326 IAC 6.8-2-6(a)). The Petitioners further explain that Permit Condition D.24.1 states that these limits “are specific to the boilers and do not apply to the duct burners or collateral emissions associated with selective catalytic reduction” that are served by the same stack. *Id.* at 21.

The Petitioners assert that this restriction is erroneous, and that the SIP limits should instead apply to *all* emissions from the relevant “stacks” (including emissions from the 3SPS boilers, duct burners and SCRs). *Id.* In support, the Petitioners claim, first, that the SIP provision specifically refers to stacks “serving” the power station, and not to emissions from the boilers alone. *Id.* (citing 326 IAC 6.8-2-6(a)). The Petitioners contend that “it strains logic to suggest that this language was meant to exclude emissions from any pollution controls later added to the 3SPS Steam Plant’s boilers that contribute to the combined emissions vented through those stacks.” *Id.*

Second, the Petitioners claim that the SIP distinguishes emission limits that apply to “stacks” from limits that apply directly to emission units. *Id.* The Petitioners contend this distinction is meaningful because the SIP states that each limit “applies to one (1) stack serving one (1) facility unless otherwise noted,” and defines “stack serving” to mean “[o]ne (1) stack serving multiple units,” and “each stack serving” to mean “[e]ach stack of multiple stacks serving multiple facilities.” *Id.* at 21–22 (quoting 326 IAC 6.8-2-2).

Third, the Petitioners assert that the duct burners and SCR controls were installed to limit emissions of nitrogen oxides (NO_x) from each boiler, and should not be considered separate, new emission units. *Id.* at 22. The Petitioners also enumerate two additional arguments that do not

specifically address the applicability of these SIP limits to the boilers, duct burners, and SCRs. *See id.*¹²

The Petitioners address IDEM's response to comments relating to this topic. The Petitioners claim that IDEM did not address the fact that emissions from the boilers, duct burners, and SCRs all exit through the same stack, which the Petitioners reiterate is the point at which the SIP emission limits apply. *Id.* at 24. The Petitioners reject IDEM's suggestion that "the distinction between boiler emissions subject to the 326 IAC 6.8-2-6(a) limit and emissions of the duct burners and SCR subject to 326 IAC 6.8-1-2(a) has always been clear." *Id.* (quoting ATSD at 4).¹³ The Petitioners assert the public must rely on the plain language of the SIP—which addresses emissions from each stack serving the 3SPS units—as opposed to IDEM's unstated intentions. *Id.* at 25. The Petitioners also contest IDEM's suggestion that the SIP limits apply only to facilities as they were configured as of the date the SIP became effective, arguing that IDEM provides no authority to support this position. *Id.*

EPA's Response: For the following reasons, the EPA denies the Petitioners' request for an objection on this claim.

Since the EPA first promulgated regulations governing the title V program in 1992, it has limited the scope of petitions on permit modifications to issues that are directly related to those permit modifications—*i.e.*, to portions of the permit being changed. *See In the Matter of Wisconsin Public Service Corporation – Weston Generating Station*, Order on Petition No. V-2006-4 at 5–7 (December 19, 2007) (*Weston Order*).¹⁴ In proceedings relating to initial and renewal permits, by contrast, all permit terms may be subject to review. *Id.* at 6.

¹² The Petitioners discuss certain implications of the treatment of the duct burners and SCR controls as separate, new emission units, as opposed to modifications of the 3SPS boilers. *Id.* at 22; *see id.* at 23–24 (addressing IDEM's response to comments on this topic). Relatedly, the Petitioners assert that although the duct burners and SCR were installed as pollution controls, they are nonetheless physical and operational changes that may be subject to NSR as "modifications." *Id.* at 22, 24. Additionally, Petitioners briefly suggest that separate emission limits—discussed in Claim B—should have taken into account this SIP limit, which the Petitioners again contend should be applied to the collection of boilers, duct burners, and SCRs. *Id.*

¹³ The Petitioners note that IDEM has not identified any SIP limits that apply only to the SCR controls, notwithstanding that the SCR controls are responsible for most of the PM₁₀ emission increases from the 3SPS boilers. *Id.* at 25. Elsewhere in the Petition, the Petitioners acknowledge that the duct burners are subject to a separate SIP limit. *Id.* at 11, 17.

¹⁴ As explained in more depth in the 2007 *Weston Order*, this position is based on multiple provisions within the CAA and EPA's part 70 regulations and dates back to statements made in the preamble to the initial part 70 rules. *See* 57 Fed. Reg. 32250, 32289–90 (July 21, 1992) ("Public objections to a draft permit, permit revision, or permit renewal must be germane to the applicable requirements implicated by the permit action in question. For example, objections addressed to portions of an existing permit that would no way be affected by a proposed permit revision would not be germane."); *see also* 42 U.S.C. § 7661a(b)(6); 40 C.F.R. § 70.7(a)(1), (a)(5), (e)(4)(ii), (h)(2). The EPA has consistently applied this policy. *See In the Matter Tennessee Valley Authority, Shawnee Fossil Plant*, Order on Petition No. IV-2011-1 at 5–7 (August 31, 2012); *In the Matter of Wisconsin Public Service Corporation's JP Pulliam Power Plant*, Order on Petition No. V-2012-01 at 8–9 (January 7, 2013); *In the Matter of Consolidated Environmental Management, Inc. – Nucor Steel*, Order on Petition Nos. VI-2010-05, VI-2011-06 & VI-2012-07 at 66–67 (January 30, 2014); *In the Matter of Hu Honua Bioenergy Facility*, Order on Petition No. VI-2014-10 at 38–40 (September 14, 2016); *In the Matter of AK Steel Dearborn Works*, Order On Petition No. V-2016-16 at 18 n.33 (January 15, 2021) (*AK Steel Order*).

This claim concerns Permit Condition D.24.1, which reflects certain SIP-based PM₁₀ limits and specifies the units to which these limits apply. The only aspect of Condition D.24.1 identified by the Petitioners as a basis for EPA's objection is the language that restricts the applicability of these limits to the 3SPS boilers alone, and which excludes emissions from the duct burners or SCRs that exhaust from the same stack as the boilers. The relevant limits first appeared in BP Whiting's title V Permit in 2008 (SPM 25488, effective June 16, 2008). The qualifying language that the Petitioners now challenge was added in a 2012 permit modification (SPM 31849, effective December 3, 2012) and was retained in the source's last title V permit renewal (Renewal 30396, effective January 1, 2015).¹⁵ Condition D.24.1 was not changed in any way in the current permit modification (SPM 43173).¹⁶ Accordingly, the Petitioners' concerns with Condition D.24.1 are beyond the scope of issues that can be challenged in the current title V petition challenging SPM 43173. The EPA therefore denies Claim A.

The EPA observes that the Petitioners should have an opportunity to raise challenges to this permit term during the next title V permit renewal (an application for which is currently pending).

Claim B: The Petitioners Claim That “The 494.99 Ton PM₁₀ Limit in SPM 43173 Is Based on Maximum Firing Rates for the 3SPS Boilers and Duct Burners That Cannot Be Achieved in Practice.”

Petitioners' Claim: The Petitioners claim that the EPA must object to title V permits that violate applicable SIP or federal NSR requirements. Petition at 25. The Petitioners further claim that the Indiana SIP states that “[p]otential emissions from a facility shall take into account the hours of operation per year.” *Id.* (quoting 326 IAC 1-2-55).

The Petitioners challenge a new emission limit established by the current permit modification (SPM 43173), which restricts cumulative PM₁₀ emissions from the 3SPS boilers, FCCUs 500 and 600, and TGU's A and B, to 494.99 tons per rolling 12-month period. *Id.* (citing Permit

¹⁵ The appropriate time to challenge this permit term was when it was established during the 2012 permit revision, or when the permit was renewed in 2015. The Petitioners may have believed that they were barred from raising challenges to Condition D.24.1 in 2015, as a result of a 2012 Consent Decree (the 2012 CD) that restricted the Petitioners' ability to challenge (*e.g.*, file petitions seeking EPA objections on) certain portions of the BP Whiting title V permit that were “required by, contemplated by or necessary to implement this Consent Decree and the settlement of claims embodied herein” Consent Decree at ¶ 198(a) in *United States v. BP Products North America Inc.*, No. 2:12-CV-207, 2012 WL 5411713 (N.D. Ind. November 6, 2012); *see* Petition at 14. The Petitioners suggest that they forfeited their ability to challenge the SIP-based PM₁₀ limit when they reviewed the title V permit in 2012 but did not voice any objection as part of the CD negotiation process. Petition at 14. The Petitioners now assert that they are freed from this restraint due to modifications of other portions of the title V permit. *Id.* However, it does not appear that they were ever bound by this Consent Decree limitation with respect to Condition D.24.1, which was not required by the 2012 CD, or necessary to implement the CD, or directly related to the CD in any way.

¹⁶ The current permit modification did include an addition to the monitoring associated with this SIP limit. However, this additional monitoring provision, which is contained in a separate permit term, D.02.3(b), did not impact the SIP limit itself, the scope of emission units subject to this limit, or any other aspect of Condition D.24.1 relevant to Claim A.

Condition D.02.1(a)).¹⁷ The Petitioners assert that this emission limit was based on mistaken calculations of the facility’s current potential to emit (PTE). *Id.* at 26. Specifically, the Petitioners claim that this limit was set based on the assumption that all five 3SPS boilers can operate continuously year-round (*i.e.*, 8760 hours per year) at their designed maximum firing rate (*i.e.*, 26.3 million MMBtu annually from all five 3SPS boilers and associated duct burners). *Id.*

The Petitioners contend that these boilers are not physically capable of maintaining continuous operations or achieving these maximum firing rates, for multiple reasons. First, the Petitioners claim that the 3SPS boilers cannot operate continuously, and assert that the boilers did not operate 13 percent of the time between 2012 and 2016. *Id.* Second, the Petitioners state that the actual annual firing rate of the 3SPS boilers has never exceeded 17.8 million MMBtu (68 percent of their supposed maximum capacity) over the last 14 years. *Id.* Third, the Petitioners state that in a 2018 permit action, BP projected that the future firing rates of the 3SPS boilers could not exceed 20.44 million MMBtu without being modified. *Id.* at 26–27; *see id.* at 28–29. Fourth, the Petitioners claim that firing rates during stack tests—which are required to be conducted at a 95 percent firing rate—have ranged from 78.6 to 89 percent of the theoretical maximum hourly firing rate. *Id.* at 27 (citing 326 IAC 3-6-3(b)(1)); *see also id.* at 29.

The Petitioners challenge IDEM’s contention that design firing rates are not relevant to the current permit action and assert that the design firing rates “were clearly used by IDEM to estimate the potential to emit of the 3SPS Steam Plant, which in turn was used to calculate the new rolling 12-month emission limit of 494.99 tons.” *Id.* at 28 (citing TSD at 16, 51). The Petitioners assert that IDEM did not respond to evidence that actual firing rates “have never come close to” the maximum firing rates, or that the Indiana SIP requires PTE to take into account hours of operation. *Id.* at 28.

EPA’s Response: For the following reasons, the EPA denies the Petitioners’ request for an objection on this claim.

Permit History

Before addressing the Petitioners’ claim, the EPA will briefly address the history of the emission limits implicated by Claim B.¹⁸ In 2008, IDEM issued a minor NSR permit (SSM 25484) approving a project now called the Whiting Refinery Modernization Project (WRMP). Following a 2009 EPA objection to a related 2008 title V permit¹⁹ and enforcement proceedings that

¹⁷ Elsewhere in the Petition, the Petitioners explain that this multi-unit rolling 12-month limit replaced a short-term 0.010 lb/MMBtu PM₁₀ emission limit that previously applied to each of the 3SPS boilers, duct burners, and SCR. Petition at 16. The Petitioners assert that this change will effectively authorize more than a hundred tons of additional PM₁₀ emissions from the facility. *Id.* at 5.

¹⁸ Unless otherwise indicated, this information is based on IDEM’s explanation in the TSD at 11–17.

¹⁹ The 2008 minor NSR permit (SSM 25484) was associated with a modification to the title V permit (SPM 25488). In response to a petition challenging the title V permit, the EPA issued an Order requiring IDEM to reconsider its NSR applicability analysis associated with the WRMP. The EPA’s order did not specifically involve PM₁₀ emissions associated with the 3SPS boilers, duct burners, or SCR. *See In the Matter of BP Products North America, Inc., Whiting Business Unit*, Order on Petition (October 16, 2009).

culminated in the 2012 CD,²⁰ IDEM issued another NSR permit in 2012 authorizing the WRMP (SSM 32033). As part of this 2012 permit, IDEM revisited its calculation of emissions increases from multiple emission units for purposes of determining whether the WRMP should be considered a major modification under NSR. Relevant to the 3SPS boilers, SCRs, and duct burners, IDEM calculated the PTE of these units based on two permit limits: a 0.010 lb/MMBtu PM₁₀ limit and a set of annual heat input limits (24,303,535 MMBtu per 12-month period on all five boilers and a 1,732,947 MMBtu per 12-month period limit on all five duct burners). Restricted by this combination of limits, the collective PTE from the 3SPS boilers, duct burners, and SCRs was established at a level that ensured that the emissions increase associated with these units, as well as other units, remained below the NSR major modification thresholds. Accordingly, IDEM again authorized the WRMP as a minor NSR modification in its 2012 permit action.

Since 2012, BP Whiting has failed to demonstrate compliance with the 0.010 lb/MMBtu PM₁₀ limit during multiple stack tests, and the Petitioners have filed a citizen suit in the United States District Court for the Northern District of Indiana concerning these alleged violations.²¹ That case is ongoing.

In the present title V permit action (SPM 43173), IDEM changed the form of the PM₁₀ emission limits that were used to restrict and/or calculate the PTE of certain emission units in the 2012 (and 2008) NSR permit actions. Specifically, among other changes, IDEM replaced the 0.010 lb/MMBtu PM₁₀ limit (which applied to the 3SPS boilers, duct burners, and SCRs) with a 12-month rolling emission limit of 494.99 tons PM₁₀ (which applies not only to the collection of 3SPS boilers, duct burners, and SCRs,²² but also to other emission units, the FCCUs and TGUs). Permit, Condition D.02.1(a). IDEM explains that the new emission limit constrains the PTE of this group of units to the exact same PTE value as did the individual 2012 limits that previously applied to these units. TSD at 17.²³ Because the PTE of these affected units has not changed, IDEM states that the changes to the emission limits do not change the analysis of emissions increases upon which the 2012 (and 2008) NSR non-applicability determinations were made. TSD at 17; ATSD at 5.

EPA Analysis

Claim B involves various technical challenges concerning the calculation of BP Whiting's PTE. Specifically, the Petitioners allege that the 3SPS boilers are incapable of sustaining annual heat

²⁰ Neither the 2012 CD nor subsequent amendments to that CD specifically involved PM₁₀ emissions associated with the 3SPS boilers, duct burners, or SCRs. See 2012 CD, *supra* note 15; see also Amendment 1 (Ex. 13, April 3, 2015), Amendment 2 (Ex. 59, June 8, 2020), and Amendment 3 (Ex. 87, December 2, 2021) in *United States v. BP Products North America Inc.*, No. 2:12-CV-207, 2012 WL 5411713 (N.D. Ind. November 6, 2012).

²¹ *Sierra Club v. BP Products North America, Inc.*, No. 2:19-CV-337, 2021 WL 1399805 (N.D. Ind. April 14, 2021) (granting partial summary judgment to the Plaintiffs/Petitioners).

²² Strictly speaking, this limit does not apply to PM₁₀ emissions attributable to the 3SPS boilers themselves, but instead applies to the emissions *increases* associated with adding the duct burners and SCRs to the boilers (as well as emissions associated with the FCCUs and TGUs). Permit, Condition D.02.1(a); see also TSD at 16–17. For ease of reference, this Order will refer to the collection of 3SPS boilers, duct burners, and SCRs.

²³ IDEM established this limit by adding the PTE of each relevant emission unit, as previously established by the 2012 permit limits. See TSD at 15–17.

input at the levels used to establish PTE. According to the Petitioners, these technical challenges are ostensibly related to the PM₁₀ limit established in SPM 43173. However, the only change to this Permit is the new emission limit IDEM created by adding the existing, individual limits. The Petitioners do not explain any connection between their technical concerns relating to PTE and the applicable legal requirements that would govern IDEM in establishing this PM₁₀ limit. The Petitioners do not address—much less demonstrate—how IDEM’s decision to replace the former 0.010 lb/MMBtu PM₁₀ limit with the 494.99 tons PM₁₀ limit may result in the title V permit omitting or failing to assure compliance with any applicable requirements. Thus, although the Petitioners claim generally that the “EPA is obligated to object to Title V conditions that violate SIP or federal NSR requirements,” Petition at 25,²⁴ the Petitioners have not demonstrated any way in which the new 494.99 tons PM₁₀ limit violates SIP or federal NSR requirements.

The only legal authorities cited by the Petitioners are either not applicable or not relevant. Most notably, the Petitioners cite the definition of “potential emissions” in 326 IAC 1-2-55 to support their suggestion that PTE must take into account hours of operation. However, the Petitioners have not shown that the definition of “potential emissions” controls the current permitting inquiry. To the extent any definition of PTE is relevant, it would be the permit-focused definition of “potential to emit,” which contains different criteria than the definition cited by the Petitioners. *See* 326 IAC 2-1.1-1(12).²⁵ The Petitioners have not analyzed this relevant definition or explained how the current permit action runs afoul of it. The Petitioners cite no other relevant authorities to support their claim.²⁶

The problem is not simply that the Petitioners have neglected to cite an applicable requirement with which the Permit does not comply or assure compliance. The Petitioners have also failed to demonstrate *how* their concerns related to PTE render the 494.99 tons PM₁₀ limit established in the Permit contrary to or out of compliance with the requirements of the Act. The Petitioners argue: “IDEM improperly relied upon mistaken calculations of the current PTE for PM₁₀ for all of the units in determining that this limit is appropriate.” Petition at 26. But the Petitioners do not explain what is improper or inappropriate about the new limit, which, as noted, is simply the sum of the old limits. That is, the Petition contains no discussion of the *context* of how the purportedly incorrect PTE calculations relate to the new 494.99 tons PM₁₀ limit. This is despite the fact that

²⁴ For support, the Petitioners cite *Sierra Club v. EPA*, 964 F.3d 882 (10th Cir. 2020). There, the Tenth Circuit concluded that EPA had erroneously failed to consider, in the context of a petition on a title V permit, whether a state had, years earlier, properly issued a minor NSR permit rather than a major NSR permit. Here, the Petitioners do not directly challenge any NSR permitting action or decision, but instead challenge an emission limit established in the present title V permit modification. The Tenth Circuit decision is, accordingly, inapposite. In any event, the Tenth Circuit decision is not controlling in Indiana (which is outside the Tenth Circuit’s jurisdiction).

²⁵ This permitting-focused section of the SIP states: “For purposes of this article, the definition given for a term in this rule shall control in any conflict between 326 IAC 1-2 and this article.” 326 IAC 2-1.1-1. Indiana’s permitting regulations (like the EPA’s permitting regulations) generally use the term “potential to emit,” as opposed to “potential emissions” (as defined in 326 IAC 1-2, cited by the Petitioners). *See generally* 326 IAC Article 2.

²⁶ The only other SIP provision cited within Claim B is 326 IAC 3-6-3(b)(1), which requires (among other things) that stack tests must be conducted at a minimum of 95 percent of a unit’s maximum permitted capacity. *See* Petition at 25. The Petitioners do not clearly allege that any alleged violations of this SIP requirement form a basis for the EPA’s objection to the Permit. Even if they had, it does not appear that there is any direct connection between this stack testing requirement and the establishment of the 494.99 tons PM₁₀ limit (the focus of Claim B’s request for objection). Instead, it appears that the Petitioners cite this authority, and discuss BP Whiting’s alleged failure to comply with this authority, to support their technical argument that the source is not physically capable of sustaining heat input levels assumed in the calculation of PTE. *See id.* at 27, 29.

IDEM clearly explained the relationship between the prior PM₁₀ limits, the new PM₁₀ limit, the facility's PTE, and the relevant NSR requirements that are implicated by these limits and PTE determinations. *See* TSD at 11–17; ATSD at 5, 6, 9. The Petitioners did not acknowledge or engage with IDEM's discussion in any meaningful way. 40 C.F.R. § 70.12(a)(2)(vi).

This context is important. As summarized in the preceding subsection, the new 494.99 tons PM₁₀ limit is essentially a reconfiguration of prior PM₁₀ limits on various emission units, which were—and are—designed to restrict the PTE of the relevant units such that the emission increases associated with the 2012 WRMP did not constitute a major modification triggering major NSR. According to IDEM, as a result of this reconfiguration (*i.e.*, the establishment of the 494.99 tons limit), the PTE from these units did not change and the allowable emissions from the units will not change. Thus, the Petitioners' challenges to the heat input values used to calculate PTE appear more directly relevant to the 2012 NSR permit action in which the PTE of these units was first evaluated and established, and not to the current permit modification.²⁷

Even if it were appropriate to address the PTE calculations underlying the 2012 permit action (as carried forth in the new 494.99 permit limit), the Petitioners have not argued—much less demonstrated—that their concerns regarding heat input and PTE would impact any NSR-related “applicable requirements” that should be included in the current title V permit. In fact, if one were to accept *arguendo* the Petitioners' arguments concerning overestimated heat input and PTE, the resulting PTE and emissions increases associated with the WRMP would have actually been *lower* than the PTE and emissions increases calculated in 2012 (embodied in the present limit), making the project even *less* likely to trigger major NSR. That is, at worst, IDEM's alleged overestimation of heat input and PTE in 2012 resulted in the state establishing a more restrictive short-term (lb/MMBtu) PM₁₀ limit than was actually necessary to restrict PTE and avoid major NSR at the time. It is unclear how establishing overly conservative limitations on PTE could result in a permit that does not comply or assure compliance with NSR-related applicable requirements. But in any case, the Petitioners have presented no such argument.

The EPA appreciates the Petitioners' concerns that the *practical* effect of the change to a more flexible rolling 12-month emission limit is that BP Whiting may be able to emit more PM₁₀ on a short-term basis than it could while complying with the prior, less flexible permit limits. However, the Petitioners have not demonstrated any bar to this type of change. The current Permit (SPM 43173) appears to authorize the exact same amount of annual PM₁₀ emissions from the 3SPS boilers, duct burners, SCRs, FCCUs, and TGUs as the 2012 permit authorized.²⁸

²⁷ The Petitioners attempt to frame their challenges to annual heat input in terms of the 494.99 tons limit established in the current permit action. However, the Petitioners' suggestion that certain unit-specific annual heat input limits “were clearly used by IDEM to estimate the potential to emit of the 3SPS Steam Plant, which in turn was used to calculate the new rolling 12-month emission limit of 494.99 tons established under Condition D.02.1(a),” Petition at 28, is incomplete if not misleading. The referenced unit-specific annual heat input limits (in conjunction with the short-term lb/MMBtu PM₁₀ emission limits) were used to establish PTE in 2012. Although the current 494.99 tons PM₁₀ limit was designed to be equivalent to the PTE first established in 2012, this new limit was not, strictly speaking, based on the unit-specific heat input limits.

²⁸ Whether the new 494.99 tons PM₁₀ limit is enforceable as a practical matter, and therefore effective to restrict PTE, depends on the sufficiency of monitoring and other provisions designed to assure compliance with this limit. This is a separate issue, discussed further in Claims C and D.

In summary, the question the EPA must resolve is not whether BP Whiting can achieve the heat inputs used to calculate PTE in 2012. The question is not whether IDEM correctly calculated PTE when determining that the 2012 WRMP was a minor modification for NSR purposes. The question is not whether the new 494.99 tons limit is equivalent to the old lb/MMBtu and MMBtu/year limits in terms of its practical effect on emissions. Rather, the question that the EPA must resolve is whether the Petitioners have demonstrated that the new 494.99 tons limit results in the title V permit not including or assuring compliance with an applicable requirement of the Act. The Petitioners have not demonstrated this to be the case, and, therefore, the EPA denies Claim B.

Claim C: The Petitioners Claim That “The Emission Rates Used to Quantify PM₁₀ Emissions from the 3SPS Boilers Are Flawed and Understate Actual Emissions by Up to 25 [Percent].”

Petitioners’ Claim: The Petitioners claim that the title V permit does not assure compliance with the 494.99 tons per 12-month rolling PM₁₀ limit (discussed in Claim B) because it allows the source to calculate PM₁₀ emissions from the 3SPS boilers using an emission rate that underestimates actual emissions due to discrepancies in the method of calculating heat input. Petition at 31.

According to the Petitioners, the Permit requires BP Whiting to calculate PM₁₀ emissions from each boiler stack by multiplying an emission rate (in lbs/MMBtu) derived from a stack test²⁹ by the heat input (in MMBtu) recorded at each boiler each month. *Id.* (citing Permit Conditions D.02.2 and D.02.3).

The Petitioners argue that the emission rates (*i.e.*, emission factors) derived from these stack tests are too low—resulting in underreporting of emissions—because they were developed using calculated “F-Factors” that do not correspond to the heat input rates actually “recorded” or “measured” or “monitored” during the stack tests. *See id.* at 31–35.

The Petitioners provide an example of the differences between (1) the reported heat inputs from the most recent performance tests at each boiler stack and (2) the hypothetical heat inputs that would correspond to the F-Factor-based emission rates. *See id.* at 32–33. The Petitioners also frame this example in a different way, comparing (1) the emission rates that would result from heat input data recorded during the stack test and (2) the emission rates that resulted from using an F-Factor. *Id.* at 33. The Petitioners provide additional calculations of what they contend to be more accurate emission rates, derived from the use of recorded heat input and actual hourly emissions measured during the stack tests. *See id.* at 33–34. The Petitioners assert that the differences between the current F-Factor-based emission rates and the purportedly proper emission rates are significant, with the F-factor emission rates underestimating emissions by 15 to 25 percent. *Id.*

The Petitioners also address IDEM’s response to comments, asserting that the state’s explanation did not address the differences in emission rates based on heat input recorded during the stack test and the F-Factor rates. *Id.* at 32. The Petitioners argue that, if the F-Factor heat input rates

²⁹ The Petitioners’ concerns regarding the frequency of stack tests are separately addressed in Claim D.

developed using Method 19 “are more accurate than the measured heat input obtain[ed] from BP’s own monitors, how can the monitored heat input values be used to quantify emissions?” *Id.* at 35. Put another way, the Petitioners state: “The question is not whether the use of F-Factors is allowed under Method 19, but whether [such F-Factors] can be multiplied by the heat input data reported by BP’s monitoring system to accurate[ly] predict the quantity of PM₁₀ that is being released on a[] . . . monthly, or annual basis” for compliance demonstration purposes. *Id.* at 35.

EPA’s Response: For the following reasons, the EPA grants the Petitioners’ request for an objection on this claim.

The Petitioners have demonstrated that the Permit and permit record are unclear as to how BP is required to calculate heat input for purposes of demonstrating compliance with the 494.99 tons PM₁₀ limit.

The Permit requires BP Whiting to demonstrate compliance with the 494.99 tons PM₁₀ limit by multiplying (1) an emission factor (lb/MMBtu) by (2) monthly heat input (MMBtu). Permit, Condition D.02.2. There are different ways of determining heat input (*i.e.*, the gross calorific value, or amount of energy) of refinery gas combusted in the 3SPS boilers and duct burners. The Petitioners’ concerns are based on a perceived discrepancy between (1) the method of calculating heat input when developing the lb/MMBtu emission factor based on stack test results and (2) the method of calculating heat input (in MMBtu) on a monthly basis when subsequently demonstrating compliance with the 494.99 tons PM₁₀ limit. In other words, if different methods are used to calculate heat input in these two contexts, the resulting emissions values will likely be inaccurate.³⁰

The Petitioners’ concerns are understandable in light of the unclear permit record. The Permit itself does not specify how the stack test-based emission factors must be developed, nor does it specify how heat input is to be subsequently measured or calculated when demonstrating compliance. *See* Permit, Conditions D.02.2 and D.02.3. Further, the IDEM memoranda and technical data associated with the stack tests used to establish the current emission factors contain potentially contradictory information. Specifically, as the Petitioners note, these documents indicate that the emission factors (in lb/MMBtu) were developed using Method 19 F-Factors that do not correspond to the heat input rates (in MMBtu/hr) reflected in these same documents. This mismatch appears to be based on differing methodologies for accounting for heat input.³¹ The Petitioners, perceiving this apparent mismatch and concerned that it would

³⁰ As the Petitioners indicate, not only would the resulting emissions values be inaccurate, but they could result in the facility under-reporting emissions.

³¹ The Petitioners refer to the heat input values reflected on the stack test reports as “actual,” “recorded,” “measured,” or “monitored” heat input values, suggesting that they are more accurate than the F-Factor based heat input values. In reality, heat input is not itself directly measured, and so all heat input values are calculated, whether using F-Factors or other methods. F-Factors are based on ideal stoichiometric equations and assume no excess air (oxygen), and thus assume higher concentrations of fuel gas and thus higher heat input values per volume of fuel gas than would calculations that do not involve adjustments for excess air. It appears that the “Average Operating Rate During Test” (as described in IDEM’s stack test memoranda) or “Total Heat Input” rates (as labeled in the stack test reports), expressed as MMBtu/hr, were not similarly adjusted for excess oxygen, hence the discrepancy. *See* IDEM Memorandum (January 10, 2019), Virtual File Cabinet Document ID 82676356, available at <https://vfc.idem.in.gov>.

persist for compliance demonstration purposes, raised these concerns in their public comments.³² In response, IDEM explains:

Where a process fuel gas may contain significant amounts of other gases that differ from methane with respect to the heats of formation, the F-factor, although required by a monitoring method, may not provide the same results as a direct measurement. To account for this the refinery fuel gas composition is measured during the stack test and throughout the rest of the year. This allows F-factors and Higher Heating Values (HHV) to be calculated from the actual fuel gas composition to make sure that a representative determination of heat input is obtained.

ATSD at 11.

This response does not directly address the issue raised by Petitioners: whether heat input must be calculated the same way when (1) developing the emission factor as it is when (2) demonstrating compliance. For the emission factor-based monitoring regime prescribed by Conditions D.02.2 and D.02.3 to assure compliance with the rolling 12-month PM₁₀ limit, it is critical that monthly heat input be calculated using the same methodology used to develop the emission factor from stack test data. Because neither the Permit nor permit record ensures that this happens, the EPA grants Claim C.

Additionally, the EPA observes that, for a fuel mixture as complex and variable as refinery fuel gas, accurate measurements of gas composition are critical to accurately determining the monthly heat input of fuels combusted in the 3SPS boilers and duct burners (and, thus, for determining compliance with the PM₁₀ limit at issue). Although IDEM states “refinery fuel gas composition is measured during the stack test and throughout the rest of the year,” ATSD at 11, it is not clear where this requirement is embodied in the Permit (if at all) or what it entails.

Direction to IDEM: IDEM must revise the Permit or permit record to ensure that heat input will be calculated the same way when reporting monthly heat input from the 3SPS boilers and duct burners as it was when establishing the stack test-based emission factors. Since the emission factors currently listed in the Permit appear to be based on F-Factor calculations of heat input per volume of fuel, the EPA expects that monthly heat input will also be based on the same calculations (*i.e.*, with F-Factors adjusted to reflect differences in fuel gas composition). The EPA also encourages IDEM to consider specifying within the Permit the method and frequency by which BP Whiting must monitor the refinery fuel gas composition (used to calculate heat input).

³² As the Petitioners concede, the public comments raising this issue were admittedly “awkwardly worded.” Petition at 32.

Claim D: The Petitioners Claim That “SPM 43173 Fails to Establish Testing, Monitoring, or Reporting Requirements Adequate to Determine or Assure Compliance with Applicable Requirements, Including the Proposed 12-Month PM₁₀ Limit.”

Petitioners’ Claim: The Petitioners claim that the Permit does not assure compliance with the 494.99 tons per 12-month rolling PM₁₀ limit on the 3SPS boilers (and other units) because—in addition to the issues discussed in Claim C—the Permit contains insufficient periodic monitoring based exclusively on infrequent stack testing. *See* Petition at 35–45.

In Claim D, the Petitioners explain that the Permit requires performance tests on each 3SPS boiler stack at least once every five years, with one boiler tested each year. If stack test results for a given stack are more than 20 percent higher than the most recent results for that stack, then the frequency of testing is increased such that all stacks are tested within two-and-a-half years. *Id.* at 36–37 (citing Permit Conditions D.02.2 and D.02.3). As explained in Claim C, these stack tests establish emission factors that, combined with the monthly heat input of each of the boilers and duct burners, are used to calculate PM₁₀ emissions on a rolling 12-month basis. *Id.*

The Petitioners assert that this monitoring regime is not sufficient to assure compliance with the 494.99 tons limit for multiple reasons. First, the Petitioners assert that a single stack test every five years cannot assure compliance with an annual limit (particularly an annual limit that applies to multiple emission units). *Id.* at 37. The Petitioners assert that the stack test data may not reflect current operations, and that IDEM provided no justification for testing only once every five years. *Id.* The Petitioners also suggest that the EPA has previously determined that a single stack test every five years is not sufficient to assure compliance with a limit purportedly similar to the one at issue here. *Id.* at 38 (citing *In the Matter of Yuhuang Chemical Inc. Methanol Plant*, Order on Petition No. VI-2015-03, 17–19 (August 31, 2016) (*Yuhuang I Order*)).

Second, the Petitioners express concern that the stack tests may not have been representative of actual operating conditions, including conditions relevant to concentrations of sulfur in fuel gas or ammonia slip. *Id.*

Third, the Petitioners contend that even if the stack tests were capable of establishing an accurate emission factor,³³ simply multiplying this emission factor by monthly heat input cannot reliably predict future emissions because varying levels of other parameters—such as fuel sulfur and ammonia slip—can significantly affect emissions. *Id.* at 39.

The Petitioners also address IDEM’s justification for the selected monitoring, as presented in the state’s response to comments. The Petitioners agree with IDEM’s statements that fuel gas sulfur and ammonia slip can increase condensable PM₁₀ emissions, and that reducing fuel sulfur and controlling ammonia injection can reduce PM₁₀ emissions. *Id.* at 40. However, the problem, according to the Petitioners, is that the Permit does not include any requirements to either

³³ As addressed in Claim C, due to concerns regarding the heat input values associated with the stack tests, the Petitioners assert that the emission factors established through stack tests do not accurately quantify PM₁₀ emissions during the stack test, much less during subsequent time periods. *Id.* at 38–39.

monitor or directly restrict these key variables, either during stack testing or during normal operation thereafter. *See id.* at 40–41, 43.³⁴

The Petitioners address IDEM’s reliance on existing procedures related to the operation of the SCR as a means of ensuring that these variables are properly managed. As the Petitioners note, IDEM concedes that the “operating procedures for SCR” and the “general obligation to operate the source in accordance with good air pollution control practices”—on which IDEM’s justification relies—are “not expressly incorporated” into the Permit and are not enforceable. *Id.* at 41. Moreover, the Petitioners assert that these procedures have not adequately accounted for the additional PM₁₀ emissions associated with the installation of the SCRs, as evidenced by the fact that BP Whiting has failed each of its PM₁₀ performance tests between 2015 and 2019. *Id.* at 41–42. Additionally, the Petitioners question how IDEM’s discussion of NO_x and carbon monoxide (CO) monitoring from the boiler stacks is relevant to PM₁₀ emission limits. *Id.* at 44.

The Petitioners also address IDEM’s suggestion that large gas-fired boilers are not typically required to monitor PM₁₀ because they burn cleanly at a consistent emission rate. The Petitioners argue that these units burn refinery fuel gas, that emissions can fluctuate widely depending on the sulfur content of fuel and ammonia slip, and that the boiler stacks have not successfully demonstrated compliance with the previously applicable 0.010 lb/MMBtu PM₁₀ limit since 2015. *Id.* at 44–45.

The Petitioners conclude by arguing that where no federal rules establish monitoring, title V permits must nonetheless fill those gaps and include monitoring sufficient to assure compliance. *Id.* at 45 (citing 40 C.F.R. § 70.6(c)(1)).

EPA’s Response: For the following reasons, the EPA grants the Petitioners’ request for an objection on this claim.

The Petitioners have demonstrated that the Permit, in relying on an emission factor from a single stack test of each 3SPS boiler every five years, does not contain sufficient monitoring to assure compliance with the 494.99 tons PM₁₀ limit.

To start, the EPA notes that the sufficiency of monitoring is a context-specific and fact-specific inquiry, conducted on a case-by-case basis. Thus, although IDEM’s typical practice for boilers elsewhere may be instructive, what matters is whether the current permit contains sufficient monitoring to assure compliance with the current permit limits.³⁵ Here, as IDEM observes, the monitoring at issue is designed to assure compliance with a limitation that restricts PTE below thresholds at which major NSR requirements would have applied to the WRMP. *See* ATSD at 9.

³⁴ The Petitioners suggest that simply monitoring these variables would not be enough, and that enforceable parametric limits on these variables is necessary as well. *Id.* at 40–41 (citing *In the Matter of Northeast Maryland Waste Disposal Authority, Montgomery Co. Resource Recovery Facility*, Order on Petition No. III-2019-2 at 10 (December 11, 2020)).

³⁵ IDEM’s historical experience with typical gas-fired boilers, which “inherently burn cleanly at a consistent emission rate,” ATSD at 12, does not seem directly relevant to the refinery gas-fired boilers with SCRs at BP’s Whiting Refinery, particularly in light of the issues discussed in the following paragraphs. Moreover, the fact that the current monitoring regime is “more explicit and rigorous” than that contained in a prior permit, ATSD at 9, does not necessarily ensure that the current monitoring is sufficient.

While all federally enforceable terms of a title V permit must be supported by sufficient monitoring, 42 U.S.C. § 7661c(c), 40 C.F.R. § 70.6(c)(1), *Sierra Club v. EPA*, 536 F.3d 673 (D.C. Cir. 2008), it is particularly important to ensure that limitations used to restrict PTE are supported by sufficient monitoring and, thus, are enforceable as a practical matter. *E.g.*, *Yuhuang I Order* at 14.

As the EPA has explained:

Some factors that permitting authorities may consider in determining appropriate monitoring are (1) the variability of emissions from the unit in question; (2) the likelihood of a violation of the requirements; (3) whether add-on controls are being used for the unit to meet the emission limit; (4) the type of monitoring, process, maintenance, or control equipment data already available for the emission unit; and (5) the type and frequency of the monitoring requirements for similar emission units at other facilities.

In the Matter of CITGO Refining and Chemicals Co. L.P., Order on Petition No. VI-2007-01 at 7–8 (May 28, 2009).

Variability of emissions is a key factor in determining the appropriate frequency of monitoring. If emissions are relatively invariable and well-understood (*e.g.*, PM₁₀ emissions from an uncontrolled natural gas-fired boiler), frequent monitoring may not be necessary. However, the more variable or less well-understood the emissions, the less likely that a single stack test will reflect the operating conditions (and emissions) between stack tests, and the greater the need for more frequent stack testing or parametric monitoring between stack tests.

Here, IDEM “acknowledges” the Petitioners’ assertion that “PM₁₀ test results at the No. 3 SPS stacks have shown *considerable* variability.” ATSD at 9 (emphasis added). IDEM’s solution to this problem is to increase the frequency of monitoring if a stack test shows PM₁₀ emissions 20 percent greater than the prior test. In this situation, instead of retesting each stack on a five-year cycle, all stacks would require a retest within two-and-a-half years. However, it is not clear that this is enough to ensure that PM₁₀ emissions are accurately quantified on a monthly basis for purposes of demonstrating compliance with the rolling 12-month PM₁₀ limit.

The problem is not simply that emissions have varied considerably boiler-to-boiler and test-to-test. This problem is compounded by the fact that, since the installation of the SCRs in 2010, PM₁₀ emissions from the 3SPS boilers have consistently eluded accurate prediction and quantification. IDEM states: “The reaction of ammonia with sulfur compounds to form ammonium sulfate or ammonium bisulfite in the operation of SCR control devices for NO_x”—the apparent cause of excess PM₁₀ emissions—“is well documented.” ATSD at 10. But there is a difference between understanding this cause at a theoretical level and being able to accurately quantify these emissions.

As the Petitioners note, IDEM and BP Whiting’s struggle to accurately quantify PM₁₀ emissions is evident from the fact that IDEM has revised the relevant PM₁₀ limits applicable to the 3SPS boilers on two separate occasions, due at least in part to the facility’s inability to comply with

these limits. IDEM remarks that BP Whiting and IDEM initially believed that the original 0.0087 lb/MMBtu limit (established in 2008) would accurately reflect PM₁₀ emission increases from ammonia slip associated with the installation of the SCR. ATSD at 10. BP Whiting and IDEM presumably also believed that the revised 0.010 lb/MMBtu limit (established in 2012) would accurately reflect PM₁₀ emission increases associated with the installation of the SCR. *See id.* However, as the stack test data referenced by the Petitioners show, this was not the case, precipitating the Petitioners' citizen suit enforcement action and apparently necessitating IDEM's latest revision to the PM₁₀ limit. As the Petitioners remark, IDEM largely glosses over this compliance history. Petition at 41–42; *see* ATSD at 9, 10.³⁶ And although BP Whiting's inability to comply with its prior 0.0087 and 0.010 lb/MMBtu limits may not be a direct indicator of its likelihood to violate the new rolling 12-month 494.99 tons limit,³⁷ this compliance history nonetheless demonstrates that PM₁₀ emissions from the 3SPS boilers are not well-understood.

To justify the current monitoring regime, IDEM discusses requirements related to the operation of the SCR and the continuous emission monitoring system (CEMS) for NO_x and carbon CO, which the state suggests are relevant to controlling the variables that can impact PM₁₀ emissions. *See* ATSD at 9, 10, 12. There are various problems with this line of reasoning.

As an initial matter, to the extent that other requirements, associated with a different (non-PM₁₀) emission limit, are relied upon to assure compliance with the PM₁₀ emission limit, the Permit must clearly state this connection and the permit record should elucidate the basis for this connection. *E.g., In the Matter of Owens-Brockway Glass Container Inc.*, Order on Petition No. X-2020-2 at 14–15 (May 10, 2021). Here, IDEM concedes that the Permit does not expressly provide for such a connection. ATSD at 10.

Additionally, not only do the measures identified by IDEM lack an explicit connection to PM₁₀ emissions, but some of these measures do not appear to be independently enforceable requirements of the Permit. Among other measures,³⁸ IDEM alludes to the “control of ammonia injection rate provided by NO_x CEMS.” *Id.* The EPA could not locate in the Permit this purported requirement related to ammonia injection rates. Moreover, as the Petitioners note, the Permit also does not appear to contain any conditions requiring the monitoring of ammonia injection rates, or any monitoring specific to ammonia slip (which is likely responsible for the majority of increased condensable PM₁₀ emissions).

In any case, it is not clear that this collection of other measures is sufficient to assure compliance with the PM₁₀ limit. IDEM suggests generally that these measures, “in combination with the

³⁶ *See also Sierra Club v. BP Products North America, Inc.*, No. 2:19-CV-337, 2021 WL 1399805 (N.D. Ind. April 14, 2021).

³⁷ Although the new 494.99 tons limit is designed to be equivalent to the 0.010 lb/MMBtu limit, this is true only to the extent the 3SPS boilers, duct burners, SCR, FCCUs, and TGU are considered in the aggregate. *See* Claim B for further details.

³⁸ The only permit terms cited by IDEM are general provisions relating to corrective actions that BP must take in response to excursions or exceedances, and which do not specifically address the operation of the SCR in a manner directly relevant to PM₁₀ emissions. *See* ATSD at 10 (citing Condition C.18(I)(a), (II)(a)(1), and (II)(f)(2)). IDEM also mentions a “limit on fuel sulfur” and “continuous monitoring requirements in the permit for fuel sulfur, [CO], and [NO_x].” *Id.* at 10, 12. Although not identified by IDEM, it appears that the fuel sulfur limit and continuous monitoring requirements are contained in Conditions D.24.9 and D.24.12, respectively.

general requirement to operate equipment in accordance with good air pollution control practices, are as a practical matter considered sufficient to demonstrate that the boilers operate at all times in a manner consistent with the most recent test that demonstrates compliance with emissions limits.” ATSD at 10, 12.³⁹ But as the Petitioners observe, the record begs to differ. These measures have not, historically, ensured that PM₁₀ emissions from the 3SPS boilers remained constant from one performance test to the next, much less guaranteed the same during the intervening periods between performance tests. And again, as demonstrated by the source’s compliance history, these measures have historically proven insufficient to ensure that PM₁₀ emissions remained at the levels expected by IDEM and BP Whiting (levels which were necessary for compliance with the prior PM₁₀ emission limit). *See* Petition at 41–42.⁴⁰ IDEM does not dispute these points. *See* ATSD at 9, 10.

Beyond IDEM’s conclusory suggestions, the state has offered no quantitative correlation between these parameters and PM₁₀ emissions, either as observed during the stack tests⁴¹ or persisting between stack tests. Without establishing a more direct relationship between PM₁₀ emissions and the parameters that appear to have a significant impact on condensable PM₁₀ formation (*e.g.*, ammonia injection rates or ammonia slip), these other requirements and measures cannot be said to assure compliance with the PM₁₀ limit.

In sum, the considerable variability in prior stack tests, combined with the source’s consistent inability to demonstrate compliance with the prior 0.010 lb/MMBtu limit, provide serious reasons to question the effectiveness of other measures (*e.g.*, control of ammonia injection rate associated with the NO_x CEMS) or assurances of “good air pollution control practices” that are not directly correlated to PM₁₀ emissions from the 3SPS boilers. Under these circumstances, the Petitioners have demonstrated that the Permit’s reliance on a PM₁₀ emission factor based on stack test spaced five (or even two-and-a-half) years apart is not sufficient to assure compliance with the rolling 12-month 494.99 tons PM₁₀ limit. Therefore, the EPA grants Claim D.

Direction to IDEM: IDEM must revise the Permit (and supplement the permit record accordingly) to establish monitoring associated with the 3SPS boilers, duct burners, and SCRs sufficient to account for their contributions towards assuring compliance with the 494.99 tons PM₁₀ limit. IDEM may consider various options that will better account for the variability and historically poor understanding of PM₁₀ emissions from the 3SPS boilers, duct burners, and SCRs, and the operating parameters that contribute to these emissions. For example, IDEM may consider requiring monitoring of ammonia injection rates and/or ammonia slip and establishing correlations between these (or other parameters) and PM₁₀ emissions. IDEM may also consider establishing enforceable requirements relevant to these parameters both for purposes of stack testing and regular operation. IDEM could also consider increasing the frequency of required stack tests. Additionally, or alternatively, IDEM may also consider establishing a reasonably conservative safety factor on the lb/MMBtu emission factor derived from the stack tests.

³⁹ Similarly, IDEM suggests that “the source has made a good-faith effort to establish operating conditions that demonstrate compliance with the limits” at issue. ATSD at 9. But this good faith effort clearly has not been enough.

⁴⁰ *See also Sierra Club v. BP Products North America, Inc.*, No. 2:19-CV-337, 2021 WL 1399805 (N.D. Ind. April 14, 2021).

⁴¹ IDEM asserts that BP “is required to conduct stack tests under the normal operating conditions for the emissions unit.” ATSD at 12. However, this says little about the values of relevant parameters observed during the stack tests.

V. CONCLUSION

For the reasons set forth in this Order and pursuant to CAA § 505(b)(2) and 40 C.F.R. § 70.8(d), I hereby grant in part and deny in part the Petition as described in this Order.

Dated: MAR - 4 2022



Michael S. Regan
Administrator