

**BEFORE THE ADMINISTRATOR
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

IN THE MATTER OF:)
)
LDEQ Title V Air Operating Permit)
No. 2261-V8)
) Permit No. 2261-V8
For ExxonMobil Fuels & Lubricant)
Company’s Baton Rouge Refinery –)
Reforming Complex)
)
Issued by the Louisiana Department of)
Environmental Quality)

**PETITION TO OBJECT TO THE TITLE V OPERATING PERMIT FOR THE
REFORMING COMPLEX AT EXXONMOBIL FUELS & LUBRICANT COMPANY’S
BATON ROUGE REFINERY**

Pursuant to section 505(b)(2) of the Clean Air Act, 42 U.S.C. § 7661d(b)(2), and 40 C.F.R. § 70.8(d), Louisiana Bucket Brigade, Earthjustice, Environmental Integrity Project, and Sierra Club (“Petitioners”)¹ petition the Administrator of the U.S. Environmental Protection Agency (“EPA”) to object to the above-referenced proposed Title V permit issued by the Louisiana Department of Environmental Quality (“LDEQ”) for the “reforming complex” at the Baton Rouge, Louisiana refinery owned and operated by ExxonMobil Fuels & Lubricant Company (“Exxon”).²

The reforming complex—which includes the refinery’s catalytic reforming unit, three cooling towers, and various furnaces—emits large amounts of volatile organic compounds (“VOCs”) and VOC hazardous air pollutants (“HAPs”). As discussed below in more detail, EPA must object because the proposed permit’s monitoring and reporting requirements are inadequate to ensure compliance with certain VOC limits for the reforming complex—specifically the limits for the catalytic reforming unit’s purge and regenerator vents. Acute environmental justice concerns in the communities surrounding the refinery provide additional reason why EPA must pay special attention to the monitoring and reporting requirements for these limits. EPA must also object for the independent reason that LDEQ failed to provide a reasoned explanation for why the proposed permit ensures compliance with these VOC limits.

¹ The undersigned attorneys submit this petition on behalf of the Petitioners.

² As discussed below in more detail, on May 11, 2020, Petitioners protectively petitioned EPA to object to the draft version of Permit No. 2261-V8. The arguments from this current petition replace those from the May 11, 2020 petition.

In addition, EPA must object because the proposed permit impermissibly allows Exxon to unilaterally revise monitoring requirements and seek approval after-the-fact via administrative permit amendment. EPA must also object because the proposed permit fails to ensure compliance with chemical accident prevention requirements from 40 C.F.R. Part 68.

BACKGROUND

I. THE PROPOSED PERMIT ON WHICH THIS PETITION IS BASED

This petition asks EPA to object to the proposed Title V permit for the “reforming complex” at Exxon’s Baton Rouge, Louisiana refinery (AI No. 2638, Permit No. 2261-V8). The permit action at issue here is a permit renewal combined with a permit modification.

LDEQ released the draft permit for public comment on January 27, 2020, with a comment deadline of March 2, 2020.³ Petitioners timely submitted comments on March 2, raising all of the objections discussed below in this petition, except for their argument that the permit includes a provision that unlawfully allows Exxon to unilaterally revise monitoring requirements and seek approval after-the-fact via administrative permit amendment. *See* Ex. 1, Comments. Petitioners could not have raised this particular objection in comments because LDEQ did not insert this provision into the Title V permit until after the close of the public comment period. On May 11, 2020, Petitioners protectively petitioned EPA to object to the previous, draft version of Permit No. 2261-V8 because LDEQ had forwarded the draft permit to EPA for the agency’s 45-day review period prior to the conclusion of the public comment period.

LDEQ has since responded to Petitioners’ significant comments on the draft permit, revised the permit without resolving all of the concerns raised in Petitioners’ comments, and sent the revised, proposed permit to EPA for its review. This proposed permit restarted the clock for Petitioners to petition EPA on Permit No. 2261-V8, as EPA Region 6 has recognized.⁴ Petitioners are timely filing this petition by the February 1, 2021 deadline listed on Region 6’s website to petition EPA to object to the proposed permit.

II. PETITIONERS

Louisiana Bucket Brigade (“LABB”) is a non-profit environmental health and justice organization based in the state of Louisiana. LABB works with communities that neighbor Louisiana’s oil refineries and chemical plants and uses grassroots action to create an informed,

³ LDEQ’s public notice is available on LDEQ’s Electronic Document Management System (“EDMS”), at: <https://edms.deq.louisiana.gov/app/doc/view.aspx?doc=12018526&ob=yes&child=yes>

⁴ *See* <https://www.epa.gov/caa-permitting/operating-permit-timeline-louisiana> (listing February 1, 2021 as the deadline to petition EPA on the permit and stating that “EPA Received a proposed permit on 10/15/2020 and deadlines adjusted accordingly”) (last visited January 29, 2021).

healthy society with a culture that holds the petrochemical industry and government accountable for the true costs of pollution to create a healthy, prosperous, pollution-free, and just state where people and the environment are valued over profit.

Environmental Integrity Project (“EIP”) is a non-profit, non-partisan watchdog organization that advocates for effective enforcement of environmental laws. EIP has three goals: (1) to illustrate through objective facts and figures how the failure to enforce and implement environmental laws increases pollution and harms public health; (2) to hold federal and state agencies, as well as individual corporations, accountable for failing to enforce or comply with environmental laws; and (3) to help communities obtain protections guaranteed by environmental laws.

Sierra Club is one of the oldest and largest national nonprofit environmental organizations in the country, with approximately 3.5 million members and supporters dedicated to exploring, enjoying, and protecting the wild places and resources of the earth; practicing and promoting the responsible use of the earth’s ecosystems and resources; educating and enlisting humanity to protect and restore the quality of the natural and human environment; and using all lawful means to carry out these objectives. One of Sierra Club’s priority national goals is promoting and improving air quality.

III. GENERAL TITLE V PERMIT REQUIREMENTS

To protect public health and the environment, the Clean Air Act prohibits stationary sources of air pollution from operating without or in violation of a valid Title V permit, which must include conditions sufficient to “assure compliance” with all applicable Clean Air Act requirements. 42 U.S.C. §§ 7661c(a), (c); 40 C.F.R. §§ 70.6(a)(1), (c)(1). “Applicable requirements” include all standards, emissions limits, and requirements of the Clean Air Act. 40 C.F.R. § 70.2. Congress intended for Title V to “substantially strengthen enforcement of the Clean Air Act” by “clarify[ing] and mak[ing] more readily enforceable a source’s pollution control requirements.” S. Rep. No. 101-228 at 347, 348 (1990), *as reprinted in* A Legislative History of the Clean Air Act Amendments of 1990 (1993), at 8687, 8688. As EPA explained when promulgating its Title V regulations, a Title V permit should “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.” Operating Permit Program, Final Rule, 57 Fed. Reg. 32,250, 32,251 (July 21, 1992).

Among other things, a Title V permit must include compliance certification, testing, monitoring, reporting, and recordkeeping requirements sufficient to assure compliance with the terms and conditions of the permit. 42 U.S.C. § 7661c(c); 40 C.F.R. § 70.6(c)(1). The D.C. Circuit has explained that Title V requires that a “monitoring requirement insufficient ‘to assure compliance’ with emission limits has no place in a permit unless and until it is supplemented by more rigorous standards.” *See Sierra Club v. EPA*, 536 F.3d 673, 677 (D.C. Cir. 2008).

If applicable requirements themselves contain no periodic monitoring, EPA’s regulations require permitting authorities to add “periodic monitoring sufficient to yield reliable data from the relevant time period that are representative of the source’s compliance with the permit.” 40 C.F.R. § 70.6(a)(3)(i)(B); *see also In the Matter of Mettiki Coal, LLC*, Order on Petition No. III-2013-1 (Sept. 26, 2014) (“Mettiki Order”) at 7. The D.C. Circuit has also acknowledged that the mere existence of periodic monitoring requirements may not be sufficient. 536 F.3d at 676–77. For example, the court noted that annual testing is unlikely to assure compliance with a daily emission limit. *Id.* at 675. In other words, the frequency of monitoring methods must bear a relationship to the averaging time used to determine compliance. 40 C.F.R. § 70.6(c)(1) of EPA’s regulations acts as a “gap filler” and requires that permit writers must supplement a periodic monitoring requirement inadequate to assure compliance. *Id.* at 675; *see also Mettiki Order* at 7.

In addition to including permit terms sufficient to satisfy EPA’s Title V monitoring and reporting requirements, permitting authorities must include a rationale for the monitoring and reporting requirements selected that is clear and documented in the permit record. *Mettiki Order* at 7-8. *See also* 40 C.F.R. § 70.7(a)(5) (“The permitting authority shall provide a statement that sets for the legal and factual basis for the draft permit conditions”).

If a state proposes a Title V permit that fails to include and assure compliance with all applicable Clean Air Act requirements, EPA must object to the issuance of the permit before the end of its 45-day review period. 42 U.S.C. § 7661d(b)(1); 40 C.F.R. § 70.8(c). If EPA does not object to a Title V permit, “any person may petition the Administrator within 60 days after the expiration of the Administrator’s 45-day review period ... to take such action.” 42 U.S.C. § 7661d(b)(2); 40 C.F.R. § 70.8(d). The Clean Air Act provides that EPA “shall issue an objection ... if the petitioner demonstrates to the Administrator that the 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); *see also N.Y. Pub. Interest Group v. Whitman*, 321 F.3d 316, 333 n.12 (2d Cir. 2003) (explaining that under Title V, “EPA’s duty to object to non-compliant permits is nondiscretionary”). EPA must grant or deny a petition to object within 60 days of its filing. 42 U.S.C. § 7661d(b)(2); 40 C.F.R. § 70.8(d).

GROUNDINGS FOR OBJECTION

For all of the reasons discussed below, EPA must object to the proposed Title V permit for the reforming complex because that permit fails to satisfy substantive requirements of the Clean Air Act and EPA’s Title V regulations.

I. ENVIRONMENTAL JUSTICE CONCERNS MANDATE INCREASED FOCUS AND ACTION BY EPA TO ENSURE THAT THE PERMIT’S PROVISIONS—INCLUDING ITS MONITORING AND REPORTING PROVISIONS—ARE STRONG AND COMPLY WITH TITLE V REQUIREMENTS.

As Petitioners pointed out in their comments to LDEQ (at pages 1-3), the areas surrounding the Exxon Baton Rouge refinery are communities of color with a large, dense, and

low-income population that is overburdened by hazardous and other air pollution, including from Exxon's co-located Baton Rouge chemical plant. Together, Exxon's refinery and chemical plant are part of an industrial complex the size of at least 250 Superdomes.⁵ Together, they released 1,342.9 tons of toxic air pollution in 2018, consisting of chemicals like benzene, chromium, polycyclic aromatic compounds, and a brew of other hazardous air pollutants, carcinogens, and metals.⁶ As of January 1, 2020, Exxon's refinery was the fifth largest petroleum refinery in the U.S. in terms of operable capacity, with a capacity of 517,700 barrels per day.⁷ The chemical plant is currently undergoing a \$469 million expansion to build a new polypropylene resin unit.⁸ And Exxon recently proposed spending several hundred million dollars on its Baton Rouge refinery to position it for a potential major expansion in the coming years.⁹

The state-only limits in the proposed Title V permit for the Exxon refinery's reforming complex alone (one of several Title V permits for the refinery) allow the individual units in the complex to annually emit over 50 tons of HAPs. Proposed Permit's Air Permit Briefing Sheet at 4-6.¹⁰ And the state-only limits in the recently proposed Title V permit for the refinery's "utilities unit," which includes limits for the facility's wastewater treatment train,¹¹ allow the refinery's wastewater treatment facilities and other individual units from the utilities complex to annually emit over 600 tons of HAPs. Ex.2, Utilities Unit Proposed Statement of Basis at 5-6.¹²

⁵ NPR, Baton Rouge's Corroded, Overpolluting Neighbor: Exxon Mobil (May 2013), <https://www.npr.org/2013/05/30/187044721/baton-rouge-s-corroded-overpolluting-neighbor-exxon>

⁶ See EIP & United Church of Christ, Breath to the People (Sacred Air and Toxic Pollution) (Feb. 2020) at 22, 24-25, https://d3n8a8pro7vnm.cloudfront.net/unitedchurchofchrist/pages/24840/attachments/original/1582721312/FINAL_BreathToThePeople_2.26.2020.pdf?1582721312

⁷ <https://www.eia.gov/energyexplained/oil-and-petroleum-products/refining-crude-oil-refinery-rankings.php>

⁸ Business Facilities, ExxonMobil Investing \$469M In Louisiana (March 2019), <https://businessfacilities.com/2019/03/exxonmobil-investing-baton-rouge-louisiana/>

⁹ The Advocate, ExxonMobil looks to invest more than \$240 million in Baton Rouge refinery (December 16, 2020), https://www.theadvocate.com/baton_rouge/news/business/article_0aee8eb0-3fb4-11eb-a169-67bcf868197d.html

¹⁰ The proposed permit and statement of basis are part of LDEQ's proposed permit package, which we obtained via email from EPA Region 6's Brad Toups.

¹¹ Petitioners also intend to petition EPA to object to the Title V permit for the utilities unit because, among other reasons, its monitoring and reporting requirements are inadequate to ensure compliance with limits for VOCs and particulate matter emitted by the wastewater treatment system.

¹² For example, the cited pages from the statement of basis for the utilities unit permit show that the permit's state-only limits allow the following tons per year of the following HAPs regulated under Clean

Further, over the years, the refinery has experienced multiple major fires, explosions, and other accidents. *See infra* at 51.

In addition, other nearby sources also emit large amounts of air toxics and criteria pollutants. Those sources include the Formosa Plastics facility, which manufactures polyvinyl chloride resin and has plans for a \$332 million expansion that will increase its capacity by 20%,¹³ and a Honeywell International facility, which manufactures refrigerant chemicals and may undergo a \$40 million expansion.¹⁴ In 2003, in the span of less than a month, three separate accidents at the Honeywell plant collectively forced the hospitalization of five plant workers, caused the death of another worker, and created one instance where residents within a half-mile radius were required to shelter in their homes.¹⁵ A simple Google Maps search shows that only a 1.5 mile drive separates the Exxon refinery from the Formosa plant, and less than a two mile drive separates the refinery from the Honeywell facility.¹⁶ And across the Mississippi River, in West Baton Rouge, sits the Placid Refining refinery, which may soon undergo an \$86 million expansion.¹⁷ Further, a search on LDEQ's Emissions Reporting and Inventory Center ("ERIC") website¹⁸ for sources of VOC pollution within three miles of the Exxon refinery also reveals other large nearby industrial air polluters, including Enterprise Products Operating LLC's Baton

Air Act § 112(b)(1), 42 U.S.C. § 7412(b)(1): 98.65 tons/year 2,2,4-trimethylpentane, 18.22 tons/year benzene, 5.77 tons/year biphenyl, 19.82 tons/year ethylbenzene, 43.84 tons/year methanol, 40.90 tons/year methyl ethyl ketone, 7.14 tons/year methyl isobutyl ketone, 155.48 tons/year methyl tert-butyl ether, 12.68 tons/year n-hexane, 22.19 tons/year naphthalene, 5.94 tons/year phenol, 85.05 tons/year toluene, and 101.72 tons/year xylene (mixed isomers). These same pages from the statement of basis explain that VOC HAPs may be emitted up to the individual state-only rates listed to "allow for potential variability of upstream operations" but that the utilities unit is limited to total VOCs of 460.78 tons per year.

Like the proposed permit for the reforming complex, we also obtained the proposed Title V permit and statement of basis for the utilities unit via email from EPA Region 6's Brad Toups.

¹³ *See* The Advocate, Formosa Plastics plans \$332M plant expansion in Baton Rouge (August 2019), https://www.theadvocate.com/baton_rouge/news/business/article_5a44175a-c9a9-11e9-a49f-6794530f51bf.html

¹⁴ *See* The Advocate, Honeywell considering investing \$40M in Baton Rouge plant to expand refrigerant capacity (Oct. 2019), https://www.theadvocate.com/baton_rouge/news/business/article_1dccc3c8-f67f-11e9-8af5-873d97bc67d1.html

¹⁵ CSB, Honeywell Chemical Incidents, <https://www.csb.gov/honeywell-chemical-incidents/>

¹⁶ *See* <https://www.google.com/maps>

¹⁷ *See* The Advocate, Crude oil refinery mulls \$86M in West Baton Rouge plant upgrades (Oct. 2019), https://www.theadvocate.com/baton_rouge/news/business/article_2cd80436-eba8-11e9-8e2f-3bde22badfe0.html

¹⁸ <https://business.deq.louisiana.gov/Eric/EricReports/RadiusReportSelector?>

Rouge fractionator and propylene concentrator unit, Coastal Bridge Company LLC's Port Allen asphalt plant, Shell Catalysts & Technologies LP's Port Allen plant, and Intercontinental Terminals Company LLC's Anchorage chemical terminal. *See* Ex.3, ERIC Report of 2018 Actual VOC Emissions Within Three Miles of Exxon Baton Rouge Refinery.

The communities surrounding the refinery include a significant population of people of color and low-income residents, as well as large numbers of community members who face increased vulnerability to health effects from air pollution due to their age (under 18 or over 65).¹⁹ Specifically, EPA found, based on 2010 U.S. Census and American Community Survey data, that 59,493 people live within a three mile radius of the Exxon refinery—of whom 92% are people of color, 28% are minors under the age of 18, 10% are seniors age 65 and older, and nearly two-thirds (38,763) live below the poverty level.²⁰ That same data show that 3,890 people live within a one mile radius of refinery—of whom 97% are people of color, 30% are minors under the age of 18, 9% are seniors age 65 and older, and over two-thirds (2,689) live below the poverty level. And that data shows that 141,275 people live within five miles of the refinery—of whom 81% are people of color, 25% are minors under the age of 18, 10% are seniors age 65 and older, and over half (75,493) live below the poverty level. The reforming complex's regenerator vent, which Exxon indicates annually emits over six tons of VOC HAPs (*see infra* at 37), in particular could easily disperse these HAPs into areas as far away as five miles: the proposed Title V permit indicates that the regenerator vent, which sits at a height of 61 feet above grade, emits gases at massive flow rates (6,477 cubic ft/min) and at velocities that are almost a third of the speed of sound (309.22 feet/second). Proposed Permit Inventories at 2; Ex.4, Decl. of Dr. Ranajit Sahu, at ¶ 33.²¹ At these flow rates and velocities, the gases from the regenerator vent will rise hundreds of feet into the air and disperse over a wide area. *Id.*

In addition, ECHO indicates that the area surrounding the refinery is above the 80th percentile for ten different environmental justice indexes, including the National Air Toxics Assessment (NATA) Air Toxics Cancer Risk index (with a percentile ranking of 96.2), the NATA Respiratory Hazard index (with a percentile ranking of 98.5) and the PM_{2.5} index (with a percentile ranking of 89.4). And ECHO lists the refinery as being in a status of "High Priority

¹⁹ *See* Env'tl Justice Health Alliance for Chemical Policy Reform *et al.*, *Life at the Fenceline: Understanding Cumulative Health Hazards in Environmental Justice Communities* (2018), <https://new.comingcleaninc.org/assets/media/documents/Life%20at%20the%20Fenceline%20-%20English%20-%20Public.pdf>.

²⁰ The Detailed Facility Report for the refinery from EPA's Enforcement and Compliance History Online (ECHO), which contains this information, is available here: <https://echo.epa.gov/detailed-facility-report?fid=110043804185>.

²¹ As noted below, Dr. Ranajit Sahu has expertise in engineering (including engineering issues related to petroleum refineries), the Clean Air Act and air pollution, and issues related to monitoring and testing of emissions of air pollution (including monitoring and testing of emissions from catalytic reforming units) and calculating those emissions. *See id.* at ¶¶ 2, 4-5, Att. A.

Violation” in each of the previous 12 quarters. A recent report by EIP and the United Church of Christ, *Breath to the People*, highlighted the environmental injustice and highly toxic air in the area near this refinery.²²

In these circumstances, as Petitioners’ comments to LDEQ explained (at pages 1-3), there is a compelling need for EPA to devote increased, focused attention to ensure that all Title V requirements have been complied with—especially ensuring that monitoring is adequate to assure compliance with the limits for Exxon’s refinery. EPA has recognized this in responding to a prior Title V permit petition. *See, e.g., In the Matter of United States Steel Corp. – Granite City Works*, Order on Petition No. V-2011-2 (Dec. 3, 2012) (“*Granite City Works Order*”) at 4-6 (because of “potential environmental justice concerns” raised by the fact that “immediate area around the [] facility is home to a high density of low-income and minority populations and a concentration of industrial activity,” “[f]ocused attention to the adequacy of monitoring and other compliance assurance provisions [was] warranted”) (citing in part to Executive Order 12898 (Feb. 11, 1994)).²³

Increased attention to the permit’s monitoring requirements for VOCs from the refinery’s reforming complex is especially important here because the state-only portions of this permit show that the complex is capable of emitting over 50 tons of HAPs, most of which are VOC HAPs. *See Proposed Permit’s Air Permit Briefing Sheet* at 4-6. As particularly relevant to the arguments raised below in this petition, the proposed Title V permit’s state-only limits for the catalytic reforming unit’s purge vent (“PHLA2/PV-PURGE”) allow, among others, the following tons/year of the following VOC HAPs regulated under Clean Air Act § 112(b)(1): 1.13 tons/year benzene, 2.47 tons/year ethyl benzene, 0.66 tons/year n-hexane, 3.58 tons/year toluene, and 5.01 tons/year xylene (mixed isomers). *Proposed Permit’s Emission Rates for TAP/HAP & Other Pollutants* at 3. And the proposed permit’s state-only limits for the reforming unit’s regenerator vent (“PHLA2/PV-REGEN”) allow, among others, the following tons/year of the following VOC HAPs regulated under § 112(b)(1): 0.61 tons/year ethyl benzene, 0.45 tons/year toluene, and 4.58 tons/year xylene (mixed isomers). *Id.* at 3-4. As these limits show, if the purge and regenerator vents were, by themselves, a single, stand-alone source, their combined potential xylene emissions (9.59 tons/year) would come extremely close to the major-source HAP threshold of 10 tons/year of a single HAP.

Relatedly, the benzene fenceline data for the Baton Rouge refinery that Exxon has reported to EPA (under the National Emission Standards for Hazardous Air Pollutants

²² EIP & United Church of Christ, *Breath to the People*, *supra* note 6, at 22-25.

²³ Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, Exec. Order 12898 (Feb. 11, 1994); *see also* EPA, EJ 2020, <https://www.epa.gov/environmentaljustice/ej-2020-action-agenda-epas-environmental-justice-strategy>; EPA, Plan EJ 2014, Considering Environmental Justice in Permitting (2014), <https://nepis.epa.gov/Exe/ZyPDF.cgi/P100ETRR.PDF?Dockkey=P100ETRR.PDF>.

(NESHAP) requirements from 40 C.F.R. § 63.658) shows that the refinery is emitting large amounts of VOC HAPs. In fact, the data available for the refinery shows that has been dangerously close to the benzene level that triggers corrective action under § 63.658: the action level is an annual average of 9 $\mu\text{g}/\text{m}^3$ calculated every 14 days, and, as late as the first quarter of 2020, the refinery's annual average has been as high as 8.3 to 8.5 $\mu\text{g}/\text{m}^3$. *See* Ex.5, Table of Fenceline Data.²⁴ And in the latter half of 2019, the refinery's annual averages were even closer to the action level, reaching as high as 8.9 $\mu\text{g}/\text{m}^3$ in September 2019 and 8.8 $\mu\text{g}/\text{m}^3$ in November 2019. *Id.* Although the refinery's most recently available annual averages have mostly been under 7.0 $\mu\text{g}/\text{m}^3$ (with a most recently available level of 6.6 $\mu\text{g}/\text{m}^3$ as of late September and early October 2020),²⁵ *id.*, these concentrations are still over twice the reference exposure level for inhalation of benzene that indicates chronic health harm to the hematologic system (3 $\mu\text{g}/\text{m}^3$), as determined by the California Office of Environmental Health Hazard Assessment.²⁶ Further, the refinery's two-week benzene fenceline averages in the second and third quarters of 2020 have been as high as 12.3 and 23.3 $\mu\text{g}/\text{m}^3$. Ex. 5.

In establishing its NESHAP fenceline monitoring requirements, EPA used benzene as an indicator pollutant, which it described as a surrogate, for all of the various fugitive HAPs (including VOC HAPs) emitted by refinery units. EPA explained:

[W]e selected benzene as a surrogate ... By selecting a single HAP as a surrogate for all fugitive HAP, we are able to establish a clear action level ... As described in the proposal preamble, benzene is ubiquitous at refineries and present in nearly all refinery process streams, including crude oil, gasoline and wastewater.

80 Fed. Reg. 75,178, 75,196 (Dec. 1, 2015). *See also id.* at 75,192-93 (noting that “the sources addressed by the fenceline monitoring standard” include “refinery fugitive emissions sources such as wastewater collection and treatment operations, equipment leaks, heat exchange systems and storage vessels”). Thus, the high fenceline levels for benzene (which is itself a VOC HAP) reported by Exxon for the Baton Rouge refinery demonstrate that the refinery's units are emitting large amounts of VOC HAPs, and the reforming complex's purge vent and regenerator vent could very easily be a significant source of these VOC HAPs. Without strong monitoring for the VOCs from the reforming complex, there is no way to be sure whether or not this is the case.

²⁴ *See also* EIP, Monitoring for Benzene at Refinery Fencelines (Feb. 2020) at Table 2 (noting Exxon Baton Rouge refinery among those with fenceline values above federal acute minimal risk level), <https://environmentalintegrity.org/wp-content/uploads/2020/02/Benzene-Report-2.6.20.pdf>

²⁵ This data from the third quarter of 2020 is the latest data publicly available on EPA's website. *See* <https://cfpub.epa.gov/webfire/reports/eresearch.cfm> (last visited January 29, 2021).

²⁶ *See* OEHHA List of RELs, <https://oehha.ca.gov/air/general-info/oehha-acute-8-hour-and-chronic-reference-exposure-level-rel-summary>; OEHHA Benzene REL (2014) <https://oehha.ca.gov/media/downloads/crn/benzenereelsjune2014.pdf>

A. LDEQ’s Response Regarding These Environmental Justice Concerns Fails to Demonstrate that EPA Could or Should Ignore These Important Factors.

In its response to Petitioners’ comments, LDEQ does not dispute: that the communities near Exxon’s Baton Rouge refinery are communities of color with a large, dense, low-income population; that these communities include large numbers of community members who face increased vulnerability due to their age; and that the communities near the refinery are also surrounded by multiple other sources that emit large amounts of criteria pollutants and air toxics. Instead, LDEQ contends that environmental justice concerns do not “alter or enhance the ... monitoring obligations under Part 70.” RTC at 5. *See also id.* at 8 (“... EPA cannot object to the permit if it meets the requirements of the Clean Air Act.”).

To begin with, only EPA—not LDEQ—has explicit duties under Executive Order 12898. *See* Executive Order 12898 at § 1-101 (“To the greatest extent practicable and permitted by law, ... *each Federal agency* shall make achieving environmental justice part of its mission....”) (emphasis added). Thus, EPA should give no credence to the state agency’s assertions regarding EPA’s duties under that federal executive order. While LDEQ obviously has primary responsibility for Title V permitting within Louisiana (with oversight from EPA), the state agency’s interpretation of EPA’s responsibilities under Executive Order 12898 carries no weight here. EPA must fulfill its environmental justice obligations, and LDEQ’s suggestion that environmental injustice should not matter is only more reason for EPA to more thoroughly scrutinize the state agency’s insufficient permitting here.

Further, Petitioners are not suggesting that Executive Order 12898 creates an obligation that EPA object to a Title V permit even when that permit meets all Clean Air Act requirements. As EPA recognized in its *Granite City Works* Order, however, Executive Order 12898 does inform EPA’s review of the adequacy of those very requirements—including Title V monitoring requirements for facilities in low-income communities or communities of color that are overburdened by pollution, like the community surrounding Exxon’s Baton Rouge refinery. *See Granite City Works* Order at 4-6. More specifically, in the *Granite City Works* Order, EPA recognized that: Executive Order 12898 “focuses federal attention on the environmental and human health conditions of minority populations and low-income populations with the goal of achieving environmental protection for all communities;” Title V “can help promote environmental justice ... through the requirements for monitoring, compliance certification, reporting and other measures intended to ensure compliance with applicable requirements;” and “[f]ocused attention to the adequacy of monitoring and other compliance assurance provisions is warranted” when the “immediate area around the [relevant] facility is home to a high density of low-income and minority populations and a concentration of industrial activity.” *Id.* at 5-6.²⁷

²⁷ In a Title V order issued at the eleventh hour before the recent change in presidential administrations, EPA asserted that it had no obligation to “conduct an EJ analysis during any of the permit actions at issue.” *In the Matter of AK Steel Dearborn Works*, Order on Petition No. V-2016-16 (Jan. 15, 2021) (“*AK Steel Order*”) at 18. EPA reached a similar conclusion in an order issued in 2019. *See In the Matter of Piedmont Natural Gas, Inc.- Wadesboro Compressor Station*, Order on Petition No. IV-2014-13 (March

As EPA has elsewhere recognized, the “determination whether monitoring is adequate in a particular circumstance generally is a context-specific determination, made on a case-by-case basis.” *In the Matter of Northeast Maryland Waste Disposal Authority- Montgomery County Resource Recovery Facility*, Order on Petition No. III-2019-2 (Dec. 11, 2020) (“*MCRRF Order*”). As part of that case-by-case determination, environmental justice factors, including the demographics of the surrounding community and amount of pollution burden borne by the community, are factors that must be considered in assessing whether a particular facility’s monitoring is adequate to ensure compliance with the relevant applicable requirements. In communities that are disproportionately impacted by large amounts of pollution, it is especially important to ensure that members of the surrounding community can determine whether a facility that is releasing pollution that threatens their health is actually meeting its limits.

LDEQ also suggests that no increased attention to the refinery’s monitoring requirements is due here because (LDEQ asserts) the air quality surrounding the facility is not impaired. RTC at 5-6. Under LDEQ’s apparent position, environmental justice and health concerns related to air pollution can only be present in areas that do not attain the NAAQS or Louisiana’s state-level ambient air standards for toxic air pollutants. Not so. Even in areas that meet the NAAQS (or Louisiana’s toxic standards), emissions in excess of pollution limits at a particular source can severely impact the health of surrounding fence-line communities. For example, ozone and particulate matter have no known safe levels. *E.g.*, *Clean Wisc. v. EPA*, 964 F.3d 1145, 1158 (D.C. Cir. 2020) (“[N]o ‘threshold concentration below which’ ground-level ozone is ‘known to be harmless.’”) (citation omitted); Proposed Particulate Matter NAAQS, 85 Fed. Reg. 24,094, 24,108, 24,109 (Apr. 30, 2020). Similarly, as EPA has emphasized, air pollution during startup, shutdown, and malfunction events at industrial facilities has “real-world consequences that adversely affect public health.” 80 Fed. Reg. 33,840, 33,850 (June 12, 2015). EPA has also recognized that ambient air monitors will not detect every NAAQS violation, particularly given the limited monitoring networks in many states. *Id.* at 33,939.

LDEQ also ignores that Exxon’s reforming complex emits large amounts of VOC HAPs regulated under Clean Air Act § 112, 42 U.S.C. § 7412. Congress listed HAPs under § 112 due to their “inherently harmful characteristics,” even at low levels of exposure. 80 Fed. Reg. 75,025,

20, 2019) (“*Piedmont Natural Gas Order*”) at 10. Even if those orders were correctly decided (which Petitioners do not concede), they are inapposite here: rather than addressing monitoring, reporting, and recordkeeping requirements, the 2021 order addressed a claim that no agency had analyzed the disproportionate impact of the increased emissions permitted by the preconstruction and operating permits at issue, *AK Steel Order* at 16-19, and the 2019 order similarly addressed a claim requesting the evaluation of cumulative or secondary impacts of the facility at issue, *Piedmont Natural Gas Order* at 9-11. Further, these orders did not address EPA’s prior *Granite City Works* order, where the agency, citing Executive Order 12898, correctly concluded that potential environmental justice concerns warranted “[f]ocused attention to the adequacy of monitoring and other compliance assurance provisions.” *Granite City Works Order* at 4-6.

75,031/1 (Dec. 1, 2015); S. Rep. No. 101-228, at 5 (1989), *as reprinted in* 1990 U.S.C.C.A.N. 3385, 3391. Even in small doses, they “cause or contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness.” H.R. Rep. No. 101-490, pt.1, at 315 (1990) (quotation marks omitted). Exxon’s emissions of these HAPs can cause significant health effects—including cancer and chronic non-cancer and acute health risks.²⁸

Here, the individual portions of the reforming complex specifically addressed in this petition are each capable of emitting over a ton of several different individual HAPs. *See infra* at 21, 37. Specifically, the reforming complex’s purge vent can emit 1.13 tons/year benzene, 2.47 tons/year ethyl benzene, 3.58 tons/year toluene, and 5.01 tons/year xylene (mixed isomers); and the complex’s regenerator vent is capable of emitting 4.58 tons/year xylene (mixed isomers). Exposure to these HAPs can cause a range of significant acute and long-term adverse health effects. For example, benzene is a known carcinogen that can cause leukemia.²⁹ California includes toluene as a developmental toxicant.³⁰ The long-term health effects of xylene include memory impairment, red and white blood cell abnormalities, abnormal heartbeat (in laboratory workers), liver damage, mutagenesis (mutations of genes), reproductive system effects, and death due to respiratory failure.³¹ And the International Agency for Research on Cancer (IARC) has determined that ethylbenzene is a possible human carcinogen.³²

Further, LDEQ ignores that the communities surrounding Exxon’s refinery have experienced persistent problems complying with the NAAQS for ground-level ozone. Louisiana and EPA previously agreed that the Baton Rouge area should be designated as nonattainment for the 2015 ozone NAAQS, based on ozone air quality data from 2013-2015.³³ Even though EPA reversed course in 2018, designating the area as attainment/unclassifiable for the 2015 NAAQS,³⁴ the air in Baton Rouge was at 71 ppb ozone (above the 2015 ozone NAAQS of 70

²⁸ See EPA’s Final Residual Risk Assessment for the Petroleum Refining Source Sector (Sept. 2015), EPA-HQ-OAR-2010-0682-0800.

²⁹ CDC, Facts About Benzene, <https://emergency.cdc.gov/agent/benzene/basics/facts.asp#:~:text=The%20Department%20of%20Health%20and,of%20the%20blood%2Dforming%20organs.>

³⁰ OEHHA, Toluene, <https://oehha.ca.gov/chemicals/toluene>

³¹ Zoveidavianpoor, M., A. Samsuri, and S. R. Shadizadeh, ‘The Clean Up of Asphaltene Deposits in Oil Wells’, *Energy Sources, Part A: Recovery, Utilization, and Environmental Effects*, 35 (2013), 22–31 <doi:10.1080/15567036.2011.619630>

³² ATSDR, Toxic Substances Portal – Ethylbenzene, <https://www.atsdr.cdc.gov/toxfaqs/tf.asp?id=382&tid=66>

³³ EPA Technical Support Document, https://www.epa.gov/sites/production/files/2017-12/documents/la_120d_tsd_final.pdf

³⁴ April 30, 2018 Ltr. from EPA, <https://gov.louisiana.gov/assets/docs/Letters/EPA-Ozone-ltr-2018.pdf>

ppb) as late as December 2017.³⁵ And East Baton Rouge Parish, where the refinery is located, was only redesignated from marginal to maintenance for the 2008 ozone NAAQS in 2017.³⁶ Before that, the parish was designated as moderate and severe, respectively, for the 1997 and 1979 ozone NAAQS.³⁷ The area's historic ozone problems are especially relevant here given that VOCs contribute to the formation of ground-level ozone and given the large amounts of VOCs at issue in Exxon's Title V permit for the reforming complex. In sum, LDEQ has not demonstrated that Exxon's emissions do not impair air quality or otherwise harm health in surrounding communities.

In its response to comments, LDEQ also takes issue with Petitioners' discussion of the fact that the area surrounding Exxon's refinery is above the 80th percentile for ten different environmental justice indexes, asserting that it is "not necessarily the case" that communities with a high index are disproportionately impacted. RTC at 6. But, as EPA's website explains, the EJSCREEN tool may help users identify areas with minority and/or low-income populations, potential environmental quality issues, and a combination of environmental and demographic indicators that is greater than usual.³⁸ EPA also explains that the indexes' use of a national percentile "tells you *what percent of the US population has an equal or lower value*, meaning less potential for exposure/ risk/ proximity to certain facilities, or a lower percent minority."³⁹ Here, the EJSCREEN report show that, for all eleven indexes listed, at least 82 percent of the national population has an equal or lower potential for exposure, risk, and proximity than the population surrounding the refinery.⁴⁰ For some indexes, the percentiles are much higher here. For example, for the NATA Air Toxics Cancer Risk index and NATA Respiratory Hazard Index, the communities surrounding Exxon's refinery have a higher potential for exposure, risk, and proximity than 94-plus percent of the U.S. population.⁴¹

In its response to comments, LDEQ also asserts that there have not been new high priority violations at the refinery in each of the previous 12 quarters. RTC at 6-7. Even if this is

³⁵ The Advocate, Don't hold your breath: Louisiana waiting on air quality news that could affect business, gas prices (Dec. 2017), https://www.theadvocate.com/baton_rouge/news/business/article_7d24eec2-dc3c-11e7-b9ad-a37b7b271e25.html

³⁶ EPA Green Book for Louisiana, https://www3.epa.gov/airquality/greenbook/anayo_la.html

³⁷ *Id.*

³⁸ <https://www.epa.gov/ejscreen/purposes-and-uses-ejscreen>

³⁹ <https://www.epa.gov/ejscreen/how-interpret-standard-report-ejscreen> (emphasis added).

⁴⁰ https://ejscreen.epa.gov/mapper/mobile/EJSCREEN_mobile.aspx?geometry={%22x%22:-91.17392,%22y%22:30.484917,%22spatialReference%22:{%22wkid%22:4326}}&unit=9035&areatype=&areaid=&basemap=streets&distance=3

⁴¹ *Id.*

true, the does not make the environmental justice concerns here any less pressing, given the undisputable “high density of low-income and minority populations and [] concentration of industrial activity” at issue here. *See Granite City Works Order* at 4-6. Further, as LDEQ acknowledges, it still has not resolved one of the enforcement actions that LDEQ asserts is the reason for the high priority violation designation—an enforcement action initiated more than six years ago, in April 2014. *See RTC* at 6-7 (stating that “LDEQ and ExxonMobil are currently in settlement negotiations regarding CONOPP AE-CN-12-00215”). The fact that LDEQ has still not resolved violations that are over six years old highlights one reason why it is necessary that the public be able to determine through adequate monitoring whether Exxon is meeting the limits at issue in this permit. Otherwise, if Exxon is violating its limits and LDEQ and EPA do not adequately enforce compliance at the refinery, members of the public will not be able to bring a citizen enforcement suit in federal court to remedy those violations.

LDEQ also takes issue with Petitioners’ discussion of the high benzene fenceline monitoring values at the refinery, citing EPA statements that the $9 \mu\text{g}/\text{m}^3$ benzene action level is not an ambient air standard and does not correlate to any particular metric related to risk. *RTC* at 7. LDEQ ignores the primary reason that Petitioners cited to Exxon’s high benzene fenceline values in the portion of their comments discussing environmental justice issues. As that portion of the comments makes clear (Comments at 3), Petitioners pointed out that the high fenceline levels demonstrate that the refinery’s units are emitting large amounts of VOC HAPs—a fact that LDEQ does not directly dispute.

LDEQ’s response that the benzene action level is not an ambient standard also misses the point in other ways. There are no national ambient standards for any air toxic compounds, including benzene, but lack of an ambient standard does not mean that the risks from exposure are small. Petitioners agree that the actual benzene levels in the densely populated neighborhoods surrounding Exxon’s refinery could be lower than the measurements at the refinery’s fenceline, but those benzene levels in the surrounding neighborhoods could also be higher, depending on multiple factors including emissions from sources other than Exxon’s refinery, weather conditions, and wind direction.⁴² *Sahu Decl.* at ¶¶ 6-7. Regarding risk, LDEQ ignores that Exxon’s benzene fenceline concentrations represent levels that correspond to an increased risk of cancer and other diseases. As discussed in Petitioners comments (at 3) and above (*supra* at 8-9), the fenceline concentrations of benzene at Exxon’s Baton Rouge refinery have been over twice the lowest reference exposure level for inhalation of benzene ($3 \mu\text{g}/\text{m}^3$, as determined by the California Office of Environmental Health Hazard Assessment). And Exxon’s highest two-week net benzene concentration of $30.5 \mu\text{g}/\text{m}^3$ (in late May and early June 2019, *see Ex. 5*)⁴³ was even higher than the U.S. Department of Health and Human Services’ Agency for

⁴² As noted above, ECHO indicates that 59,493 people live within a three mile radius of Exxon’s Baton Rouge refinery and 3,890 people live within a one mile radius of the facility.

⁴³ Exxon claims that the $30.5 \mu\text{g}/\text{m}^3$ value was attributable to a source not regulated under the refinery NESHAP provisions from Subpart CC of 40 C.F.R. Part 63. Ex. 3.

Toxic Substances and Disease Registry minimal risk level for acute inhalation exposure to benzene (9 parts per billion, which is approximately equivalent to 30 $\mu\text{g}/\text{m}^3$).⁴⁴ The 30.5 $\mu\text{g}/\text{m}^3$ value is also higher than the reference exposure level for inhalation of benzene that indicates acute developmental harm, as well as health harm to the immune and hematologic systems (27 $\mu\text{g}/\text{m}^3$), as determined by the California Office of Environmental Health Hazard Assessment.⁴⁵

In sum, LDEQ's response to comments does nothing to change EPA's responsibility to—through ensuring that the Title V permit at issue here fully complies with the Clean Air Act—protect the surrounding overburdened, low-income communities of color in Baton Rouge from disproportionate adverse impacts of air pollution from Exxon's refinery.

II. THE PROPOSED PERMIT'S EMISSION FACTOR FOR VOCS CANNOT ENSURE COMPLIANCE WITH THE HOURLY AND ANNUAL VOC LIMITS FOR THE HIGHLY VARIABLE EMISSIONS FROM THE REFORMING UNIT'S PURGE VENT.

As Petitioners comments generally explained (at pages 10-14), the proposed Title V permit does not include adequate monitoring, reporting, or recordkeeping requirements to ensure compliance with the federally-enforceable hourly and annual VOC limits for the catalytic reforming unit's purge vent, which the proposed permit refers to as the "Powerforming 2 Reactor Purge Vent," "RLP 0160," or "PHLA2/PV-PURGE." *See* Proposed Permit's Inventories at 1. Specifically, in violation of the requirements from 40 C.F.R. §§ 70.6(a)(3)(i) and/or 70.6(c)(1), as well as the requirements from 42 U.S.C. §§ 7661c(a) and 7661c(c), the proposed permit's monitoring, reporting, and other requirements cannot ensure compliance with the federally-enforceable 4.36 average lb/hour, 472.41 maximum lb/hr, and 19.1 tons/year limits for VOCs from the purge vent. *See* Proposed Permit's Emission Rates for Criteria Pollutants and CO_{2e} at 2.⁴⁶

⁴⁴ This is defined as an estimate of daily exposure that is likely to be without appreciable risk of adverse effects over an acute duration (14 days or less). Agency for Toxic Substances and Disease Registry (ATSDR) "Toxicological Profile for Benzene." U.S. Department of Health and Human Services. August 2007, page 21.

⁴⁵ *See* <https://oehha.ca.gov/air/general-info/oehha-acute-8-hour-and-chronic-reference-exposure-level-rel-summary>; <https://oehha.ca.gov/media/downloads/crn/benzenerefsjune2014.pdf>

⁴⁶ Nowhere in the proposed permit package (including the proposed Title V permit and response to comments) does LDEQ specify the source of the VOC limits for the purge vent, *i.e.*, whether they are limits from a New Source Review or Prevention of Significant Deterioration permit, the Louisiana State Implementation Plan, or some other source. The limits are federally enforceable because nothing in the permit designates the limits as "state only." *See* 40 C.F.R. § 70.6(b)(1)-(2) (all terms and conditions in a Title V permit are federally enforceable, except for those specifically designated as not being federally enforceable).

Because we do not know the source of the limits, it could be that the underlying limits were originally accompanied by monitoring or testing requirements that are not listed in the permit, in violation of § 70.6(a)(3)(i)(A)—or that the limits were never accompanied by any monitoring or testing requirements, in

Specific Requirement 157 is the proposed permit's only provision that LDEQ uses to try to ensure compliance with the hourly and annual VOC limits for the purge vent. Specific Requirement 157 provides: "The permittee shall record the number of uncontrolled purge releases each year and calculate actual VOC and TAP emissions by multiplying the number of releases by the average pound per regeneration event factors set forth in the permit application (EDMS Doc ID 12022770, p. 240 of 243)."⁴⁷

The emission factor for VOCs referenced in Specific Requirement 157 is 218.29 pounds VOCs per regeneration event. *See* Draft Permit Package at PDF p. 240. That emission factor is based, apparently primarily, on stack testing that occurred almost a decade ago—in October 2011—as part of EPA's Information Collection Request ("ICR") for the recent petroleum refinery sector NESHAP risk and technology review.⁴⁸ *See* Draft Permit Package at PDF pp. 236, 240-41; Ex. 6, Excerpts of Source Test Report for Oct. 13, 17, 19, 2011 Testing at Purge Vent ("Purge Vent Test Report"). In addition to primarily relying on the 2011 stack testing, Exxon also apparently considered additional, undisclosed stack testing data, among other information, to arrive at the pound/regeneration emission factor for total VOCs—some of that testing even older than the 2011 testing.⁴⁹

which case § 70.6(a)(3)(i)(B) would mandate that LDEQ add sufficient monitoring, reporting, and recordkeeping requirements into the Title V permit to ensure compliance with the limits. Or, if the limits were originally accompanied by monitoring or other related requirements but those requirements cannot ensure compliance with the limits, then § 70.6(c)(1) would require LDEQ to supplement the original monitoring and other requirements.

⁴⁷ EDMS Doc ID 12022770 is LDEQ's permit package associated with the draft renewal Title V permit for the reforming complex. Cites in this petition refer to EDMS Doc ID 12022770 as the "Draft Permit Package."

⁴⁸ LDEQ's response to comments indicates that the pounds per regeneration emission factor for total VOCs was based primarily on the 2011 testing. *See, e.g.*, RTC at 21 (asserting that conditions at the refinery have not changed such that the "emission factors derived from the ICR test results" are no longer accurate). Similarly, although Exxon's application does not explicitly explain how the company arrived at the pound per regeneration emission factor for VOCs, the application states that "[e]missions from the Reforming Complex purge and regen vents were gathered and updated as part of the [ICR]." Draft Permit Package at PDF p. 236. And the application states that "[a]ll emission factors have been determined by the facility" and that the "Reformer Purge and Regen vents were tested in 2011 using methods required by the Refinery [ICR]." *Id.* at PDF p. 240.

⁴⁹ LDEQ's response to comments states: "For most pollutants, including benzene and toluene, the maximum pound per hour emission rates in Permit No. 2261-V8 reflect the highest of the three ICR test runs multiplied by a safety factor of 1.25. However, ExxonMobil also considered other sources of information, including historical test data, test data from its other refineries . . . , and recommendations by [its] Research and Engineering (EMRE) Technology Center in order to derive the pound per regeneration event factors" RTC at 20.

Specific Requirement 157 and the per-regeneration emission factor for VOCs that it references cannot ensure compliance with the hourly and annual VOC limits (4.36 average lb/hour, 472.41 maximum lb/hr, and 19.1 tons/year) for the purge vent for three reasons:

First, use of a single, constant emission factor based on stack testing—especially one based on testing that occurred long ago—cannot account for the highly variable nature of emissions from the purge vent, as discussed in paragraphs 8-18 of the attached declaration from Dr. Ranajit Sahu, who has expertise in engineering (including engineering issues related to petroleum refineries), the Clean Air Act and air pollution, and issues related to monitoring and testing of emissions of air pollution (including monitoring and testing of emissions from catalytic reforming units) and calculating those emissions (*see id.* at ¶¶ 2, 4-5, Att. A).⁵⁰ The 2011 ICR stack testing provided only a snapshot of emissions from the purge vent over a few hours across a few days. No run of the 2011 stack tests lasted more than two hours (the three runs averaged 117 minutes), and the test runs took place over the span of a week, from Oct. 13 through 19. Ex. 6, Purge Vent Test Report at p. 11, Table 4. Even though the 2011 test runs averaged only 117 minutes each, the actual duration of releases from the purge vent could be longer than this, and each run from the 2011 testing likely captured only a portion of a purging event. Sahu Decl. at ¶ 10.

There can be no assurance that, even as of 2011, the snapshot provided by the 2011 testing (or the pound/regeneration emission factor developed from that testing) accurately reflected emissions from the purge vent because the vent’s emissions are highly variable. Sahu Decl. at ¶¶ 11-16. In fact, the contractor that conducted the 2011 testing made clear that emissions could be different at later dates and under different operating conditions: “The results obtained during testing *are only applicable to the date and time noted in this report*. Results are not guaranteed for other dates, times, or operational conditions.” Purge Vent Test Report at 3, § 1.3 (emphasis added).⁵¹ Even LDEQ concedes that VOC emissions from the purge vent vary

⁵⁰ The relevant paragraphs from Dr. Sahu’s declarations are not merely incorporated into this petition by reference. *See* 40 C.F.R. § 70.12(a)(2) (“... the Administrator will not consider arguments ... or other information incorporated into the petition by reference.”). Instead, the cited paragraphs from the declaration directly support the arguments in this petition that the proposed permit’s monitoring and emission calculation provisions are flawed for the reasons discussed herein. In addition, the paragraphs from Dr. Sahu’s declaration cited above and below in this petition also directly support the additional facts and arguments for which we cite the declaration as support.

⁵¹ This is not simply boilerplate language. Sahu Decl. at ¶ 11. For example, the 2011 stack test report for the regenerator vent, discussed below, did not contain such language, even though the same entity (Shaw Environmental & Infrastructure, Inc.) and the same personnel conducted the 2011 testing at the regenerator vent. *See* Purge Vent Test Report at cover page; Ex. 7, Excerpts of Source Test Report for Oct. 17-20, 2011 Testing at Coke Burn Vent (“Regenerator Vent Test Report”) at cover page.

(Although the 2011 test report for the regenerator vent refers to the vent as the “Coke Burn Vent,” that vent is the same as the “regenerator vent” referenced in the proposed Title V permit: the proposed permit only lists two vents from the catalytic reforming unit, and the test report indicates that untreated emissions only exit the catalytic reforming unit from two vents—the purge vent and the “Coke Burn Vent.” *See*

significantly. *See* RTC at 25 (“... unlike the emissions data for the Reactor Purge Vent (RLP 0160), that for the Regenerator Vent does not vary significantly.”).

In addition to LDEQ’s concession and the contractor’s disclaimer, the highly variable nature of the VOC emissions from this vent are shown by the Title V permit’s maximum hourly VOC limit of 472.41 lb/hr, which is over 100 times higher than the 4.36 average lb/hour limit for VOCs from the vent. The maximum hourly limit is even three and a half times higher than the highest lb/hr rate (134.24 lb/hr) from the 2011 test runs, discussed immediately below. Exxon presumably requested a limit for total VOCs higher than the 2011 numbers due to the highly variable nature of the purge vent’s emissions. Sahu Decl. at ¶ 12. That maximum hourly limit, which Exxon’s application states was established through “maximum hourly stack test data” (Draft Permit Package at PDF pp. 240-41),⁵² also shows that the annual limit for the purge vent could be exceeded in any given year. If the vent emitted at that same maximum rate every hour for just 82 hours in a year, it would surpass its annual VOC limit of 19.1 tons/year. In a catalytic reforming unit, since a small batch of catalyst is being regenerated at a time, regeneration can occur between 1,000 and 4,000 (or more) hours per year.⁵³ Sahu Decl. at ¶ 13. Thus, the purge vent could easily release at (or above) its maximum hourly limit of 472.42 lbs/hour for 82 hours in a year. *Id.*

The highly variable nature of the VOC emissions from the purge vent is also shown by the results from the 2011 stack testing. *See* Ex. 6, Purge Vent Test Report. Across three test runs over the span of just a few days in 2011, the lb/hr and ppmv VOC levels from the purge vent were extremely variable—with the runs resulting in lb/hr values of 14.85, 134.24, and 15.02 and concentration (ppmv) values of 810.3, 11,328.0, and 947.8. *Id.* at p. 11, Table 4. The flow rates for these three runs were correspondingly variable, ranging from 1,086 to 1,406 dscfm. *Id.* And the rates of individual VOC HAPs measured were also extremely variable across the three test runs. *See id.* at pp. 9-10, Table 3. For example, the lb/hr values for benzene from the three runs ranged from a low of 2.29 to a high of 57.36 lb/hr (25 times higher than the lowest value), and the lb/hr values for toluene similarly jumped from 5.25 to 74.46 lb/hr (14 times higher than the lowest value). *Id.* There was similar variability for other VOC HAPs, including ethylbenzene, hexane, and xylene. *Id.*

Relatedly, the 2011 stack test data for the purge vent also shows that the vent’s pollution stream can be very concentrated. Of the three test runs, the one with the lowest flow (1,086

Regenerator Vent Test Report at p. 1 (“Untreated off-gases are emitted to atmosphere from two catalytic reforming process emission sources; the Coke Burn and Purge Vents.”).

⁵² Since the maximum hourly data from the 2011 testing does not match the maximum hourly limit, Exxon is presumably referring to other testing. That other testing is not in the permit record.

⁵³ Exxon’s application indicates that the purge vent operates every hour of the year. *See* Draft Permit Package at PDF p. 202.

dscfm) was also the same run that saw the highest pollutant levels, including an estimated 134.24 lb/hr VOCs, 57.36 lb/hr benzene, and 74.46 lb/hr toluene. *Id.* at Tables 3-4.

The proposed Title V permit's maximum hourly limits for individual VOC HAPs show even further variability. These maximum hourly limits are even higher than those from the 2011 test report. According to LDEQ, the maximum hourly limits for most VOC HAPs from the purge vent "reflect the highest of the three ICR test runs multiplied by a safety factor of 1.25." RTC at 20. Presumably Exxon used that "safety factor" due to the variable nature of emissions from the purge vent. Sahu Dec. at ¶ 16. For example, although (as mentioned above) the test report lists the highest lb/hr benzene value as 57.36 lb/hr, the permit's maximum hourly emission rate for benzene is 71.70 lb/hr. *See* Proposed Permit's Emission Rates for TAP/HAP & Other Pollutants at 3. And while the test report lists the highest lb/hr toluene value as 74.46 lb/hr, the permit's maximum hourly emission rate for that VOC HAP is 93.07 lb/hr. *See id.*

In addition to being unable to capture the variability of emissions from the purge vent, the snapshot provided by the 2011 stack testing is even less likely to ensure compliance with the purge vent's hourly and annual VOC limits because of the age of that testing: that snapshot is now almost a decade old. By the time Exxon's Title V permit expires in 2025 or 2026,⁵⁴ the 2011 testing will be roughly 15 years old. And the undisclosed pre-2011 testing, which Exxon also apparently relied upon to arrive at the lb/regeneration emission factor, will be even older than that.

Even if the snapshot of emissions from the 2011 stack testing could have accurately captured the variability of emissions as of that time (it could not have), there is no way to know whether the (now) nine-plus-year-old testing and older testing represent current regenerator process and purge vent conditions without regular monitoring of the purge vent's emissions, as discussed in Dr. Sahu's declaration at paragraphs 17-18. Given that the proposed permit's pound/regeneration emission factor was based on testing that occurred so long ago, it is very unlikely to represent current process (*i.e.*, catalyst and regeneration protocols) and purge vent conditions. Conditions very likely have changed in the catalytic reforming unit (such as replacements of catalysts, for example) and its purge vent over the past nine-plus years, rendering the emission factor no longer accurate. Further, the reforming unit, of which the purge vent is a part, has apparently undergone at least one upgrade since 2011.⁵⁵ And the refinery has an additional upgrade on the horizon. *See supra* at 5.

⁵⁴ It is unclear whether LDEQ has yet issued the permit to Exxon.

⁵⁵ The proposed permit's Specific Requirement 247 provides: "For a period of 5 years following resumption of regular operations after the PHLA-2 Modification, permittee shall monitor and record NOx emissions from all emission units affected by this project in accordance with LAC 33:III.509.R.6." The reforming unit is "PHLA-2" (Proposed Air Permit Briefing Sheet at 1), and the purge ("PHLA2/PV-PURGE") and regenerator vents ("PHLA2/PV-REGEN") are part of the reforming unit. Petitioners cannot determine from the proposed Title V permit materials when the modification to the reforming unit referenced in Specific Requirement 247 took place or whether it could have affected emissions of VOCs from the purge and regenerator vents.

In essence, relying on the emission factor based on testing from 2011 (and before) is akin to allowing Exxon to determine compliance with hourly and annual limits based on a snapshot stack test once every nine to 15 years (or more), depending on the age of the current renewal Title V permit. Testing once every nine to 15 years (or more) cannot ensure compliance with hourly and annual limits.

Although Exxon apparently relied on additional information beyond the 2011 stack testing to calculate the proposed permit's pounds/regeneration emission factor, that additional information cannot ensure compliance with the purge vent's 4.36 average lb/hour, 472.41 maximum lb/hr, and 19.1 tons/year VOC limits because the information has not even been disclosed in the permit record, as discussed in more detail immediately below.

Second, the 218.29 pounds VOCs per regeneration emission factor cannot ensure compliance with the hourly and annual VOC limits for the purge vent because it is impossible for the public or EPA to verify the emission factor's accuracy, as described in Dr. Sahu's declaration at paragraphs 19-20. Although Petitioners gather that this emission factor was based largely on the 2011 emissions testing at the purge vent, *see supra* at 16, it is unclear from the permit materials the exact data and emission rates beyond the 2011 testing that Exxon used to arrive at the emission factor. As noted above, LDEQ indicates that Exxon "also considered other sources of information, including historical test data, test data from its other refineries ..., and recommendations by [its] Research and Engineering (EMRE) Technology Center in order to derive the pound per regeneration event factors" RTC at 20. But the accuracy of those other sources of information—and the soundness of using them to try to ensure compliance here—is impossible to verify, since neither those sources nor the detailed data from those sources are found in the permit materials (including the proposed permit, statement of basis, Exxon's application, or LDEQ's response to comments). It is impossible to tell whether even LDEQ has laid eyes on those other sources of information or their underlying data. Among other things, it is impossible to determine what "historical test data" (including what years the testing took place and the emissions data from that testing), what "test data from ... other refineries" (including what refineries and units/vents were involved, whether those other units/vents or refineries were even comparable to Exxon's Baton Rouge reforming complex and purge vent, when that testing took place, and the resulting emissions data), or what "recommendations by ... EMRE" Exxon relied upon to determine the pounds per regeneration emission factor.

It is also impossible to verify the pounds/regeneration emission factor's accuracy or the soundness of using this as a compliance method because it is unclear from the permit materials how Exxon calculated this emission factor, as discussed in Dr. Sahu's declaration at paragraph 20. Among other things, there is no way for the public or regulators to know from the permit or accompanying materials what numbers or arithmetic Exxon used to arrive at the pounds/regeneration emission factor or how exactly Exxon attempted to account for the extreme variability of VOC emissions from the purge vent in its calculations, including whether Exxon used a certain "safety factor" or if Exxon excluded some data as outliers or based on other considerations. Nor is it possible for the public or regulators to determine the soundness of the internal recommendations that Exxon apparently used to arrive at the emission factor. And there

is no way to tell how long Exxon estimated the duration of purge vent releases to be. Even though the 2011 test runs averaged only 117 minutes each,⁵⁶ the duration of releases (along with the flows and mass emissions) from the purge vent could vary greatly. Any actual releases that last longer than the length of release assumed for purposes of determining the emission factor could easily yield a larger amount of VOCs than the 218.29 lbs VOCs per regeneration emission factor.

Third, a pound per regeneration emission factor cannot ensure continuous compliance with the purge vent's maximum pound per hour limit of 472.41 lbs VOCs per hour, as discussed in Dr. Sahu's declaration at paragraph 21.⁵⁷ *Cf. MCRRF Order* at 9 (agreeing that the frequency of monitoring must bear some relationship to the averaging time used to determine compliance, and concluding that permit's requirement for an annual stack test was insufficient to ensure compliance with an hourly limit). Nowhere do the permit or the accompanying materials explain how Exxon should convert a pound per regeneration emission factor into hourly emissions for each release from the purge vent—including whether Exxon should make some assumption regarding the duration of the release. *See id.* at 10 (“The Petitioners have demonstrated that the Permit lacks specific instructions on how readings from the uncertified HCl monitor might be used to ensure continuous compliance with the 1-hour HCl emissions limit.”). Further, even if it was apparent how hourly emissions are to be calculated, use of a single, constant emission factor would, in all probability, always keep Exxon in compliance with this hourly limit: if the same emission factor is used for each release from the purge vent, each release will presumably be calculated to have the same hourly rate of VOC emissions below the maximum hourly limit. But a calculation method that is set up to always ensure compliance cannot determine whether Exxon is actually meeting this hourly limit—no matter how capacious that limit may appear to be, at least compared to the 2011 stack test data. Ultimately though, as with the annual limit, there is no way to verify the accuracy of the maximum hourly limit or whether it is indeed capacious, since the permit materials do not disclose the data on which the maximum hourly limit was based or how it was calculated.

Environmental justice concerns here mandate increased, focused attention to ensure that all Title V requirements—especially monitoring and reporting requirements—have been complied with for the purge vent's hourly and annual VOC limits. This is especially true because Exxon's permit application indicates that over 13 tons annually of the VOCs from the purge vent are VOC HAPs—over two-thirds of the annual VOC limit of 19.1 tons/year. *See Draft Permit Package* at PDF pp. 202-03.⁵⁸ The application lists benzene, ethylbenzene, hexane, toluene, and

⁵⁶ Purge Vent Test Report at p. 11, Table 4.

⁵⁷ Unlike the maximum hourly limit, the 4.36 average hourly limit appears to just be the 19.1 tons/year annual limit for VOCs divided by 8,760 hours.

⁵⁸ In particular, the cited pages from Exxon's application indicate that purge vent is capable of emitting the following tons/year of the following VOC HAPs (among others): 0.308 tons/year 1,2-dibromoethane, 1.13 tons/year benzene, 2.47 tons/year ethyl benzene, 0.66 tons/year n-hexane, 3.58 tons/year toluene, and 5.01 tons/year xylene (mixed isomers).

xylene as the VOC HAPs with the highest annual emissions from the purge vent, *id.*, and the ICR testing showed high variability for all of these individual HAPs. *See supra* at 18. And as noted above (*supra* at 8), if the purge and regenerator vents were, by themselves, a single, stand-alone source, their combined potential xylene emissions (9.59 tons/year) would come extremely close to the major-source HAP threshold of 10 tons/year of a single HAP.

Increased, focused attention to ensure that all Title V requirements have been complied with is also especially important because, as discussed above, the benzene fenceline data for the refinery shows that it has been dangerously close to the 9 $\mu\text{g}/\text{m}^3$ annual-average level that triggers corrective action under the NESHAP requirements—and that the refinery experiences large spikes in VOC HAP emissions. *See supra* at 8-9. Emissions of VOCs from the purge vent could be contributing to these large spikes in VOC HAPs shown by the fenceline monitoring data—but without adequate monitoring requirements for the VOC emissions from the purge vent,⁵⁹ there is no way to know whether that is the case. Finally, increased, focused attention to ensure that the monitoring requirements for VOCs from the purge vent meet Title V's mandate is necessary here because the communities surrounding Exxon's refinery have experienced persistent problems complying with the NAAQS for ground-level ozone. *See supra* at 12-13.

A. EPA Should Require LDEQ to Revise the Title V Permit to Require VOC CEMS at the Purge Vent.

As Petitioners' comments explained (at page 14) and as discussed in Dr. Sahu's declaration at paragraphs 22-24, to remedy the above-described problems and ensure compliance with the VOC limits for the purge vent, EPA should require LDEQ to revise the proposed Title V permit to mandate the use of VOC CEMS at this vent. Strong monitoring and reporting requirements are especially important here—and EPA should provide specific instruction to LDEQ to require VOC CEMS—because of the environmental justice concerns noted above, the highly variable nature of the VOC emissions from the purge vent (as shown by the 2011 emissions testing and contractor's disclaimer, LDEQ's own concession, the maximum hourly VOC limit, and Exxon's application), the high (and variable) benzene fenceline data reported by Exxon under NESHAP requirements, the large amount of VOC HAPs released from the purge vent, and the Baton Rouge area's persistent problems complying with the NAAQS for ground-level ozone.⁶⁰ *See supra* at 4-9, 12-13, 17-19, 21-22.

Only regular, continuous monitoring can confirm the actual VOC emissions from the purge vent because of the extreme variability of VOC emissions and flow from the purge vent

⁵⁹ Fenceline monitoring data for more than just benzene would also help in this regard.

⁶⁰ Even if EPA does not specifically instruct LDEQ to require VOC CEMS, EPA's order responding to this petition should—because of the environmental justice concerns present here and the highly variable VOC emissions at issue—give LDEQ explicit direction on how it might remedy the permit's inability to ensure compliance with the purge vent's VOC limits, rather than simply leaving it to LDEQ to further explain why it thinks that the current pounds per regeneration emission factor can ensure compliance here.

(see *supra* at 17-19), as well as the fact that releases from the purge vent could vary from short to long periods of time from one purge event to another. Sahu Decl. at ¶ 22. Thus, VOC CEMS is needed to ensure compliance with the purge vent's 4.36 average lb/hour, 472.41 maximum lb/hr, and 19.1 tons/year VOC limits. VOC CEMS are widely used and available. *Id.* at ¶ 23. That VOC CEMS is appropriate and feasible for the purge vent is shown by the fact that a permit for a heavy condensate upgrader facility proposed by Jupiter Brownsville, LLC in Brownsville, Texas requires VOC CEMS (among other CEMS) for a similar vent at that facility's catalytic reforming unit.⁶¹ Ex. 8, Excerpts of Jupiter Upgrader Permit, at Special Condition 39.D.⁶²

Even a permit requirement for frequent stack testing would obviously be better than the proposed permit's current requirement to use the pounds/regeneration emission factor based on testing that occurred in 2011 and before. But, as discussed above (*supra* at 17-19), stack testing cannot capture the variability of VOC emissions. Nor can stack testing capture the variability of both flow from the purge vent and the duration of purging events, given practical constraints on the frequency and duration of stack testing. Sahu Decl. at ¶ 24. To ensure compliance with the hourly and annual VOC limits, a stack test would need to be conducted under conditions that are assured of capturing the maximum potential amount of emissions from the purge vent, which would be impossible due to variability—as shown by, among other things, the fact that Exxon's maximum hourly VOC limit of 472.41 lb/hr is three and a half times the highest lb/hr rate (134.24 lb/hr) from the 2011 stack testing. *Id.* Stack testing would be especially difficult here—and is even less likely to accurately reflect emissions from the purge vent—because some gases likely emit from the vent part of each purging occurrence while others are sent to the refinery's fuel gas system part of each occurrence (see *infra* at 27-28), with the length of time for releases to the atmosphere and that gases are being sent to the fuel gas system varying from one regeneration event to the next. Sahu Decl. at ¶ 24. Thus, VOC CEMS should be required.

B. Petitioners Raised Their Objections Regarding the Purge Vent with Reasonable Specificity During the Comment Period.

LDEQ's draft Title V permit and statement of basis did not list any emission factors or calculation methods that Exxon uses to calculate VOC emissions from the purge vent for purposes of complying with the permit's 4.36 average lb/hour, 472.41 maximum lb/hr, and 19.1 tons/year limits for VOCs. In fact, the draft permit and statement of basis did not include any

⁶¹ The upgrader facility will do much of the same work that a petroleum refinery does, converting condensate into petroleum products. The VOC CEMS there will monitor exhaust from a scrubbing system for the catalytic reformer's regeneration vent. Although Exxon apparently does not use a scrubber to control emissions from its reforming unit's vents at the Baton Rouge refinery, there is no technical or other reason that VOC CEMS could not be installed on the purge vent here at Exxon's refinery. Sahu Decl. at ¶ 23.

The Jupiter permit is being appealed, but the VOC CEMS for the regeneration vent there is not at issue in the appeal.

⁶² Due to the full permit's electronic file size, Petitioners are only including excerpts from this permit. Petitioners can provide the complete permit upon request.

monitoring requirements to ensure compliance with these specific these hourly and annual VOC limits. *See* Comments at 10, 14. Only after the close of the comment period did LDEQ add new Specific Requirement 157 to the proposed permit, which (as discussed above) requires Exxon to determine compliance with the hourly and annual VOC limits for the purge vent by multiplying the number of uncontrolled purge releases each year by the average pounds/regeneration event emission factor set forth in Exxon’s Title V renewal application. *See* RTC at 20 (“LDEQ will amend the proposed permit to specify the methodology ExxonMobil must utilize to demonstrate compliance with [VOC] permit limits [for the purge vent].”).

Even though the draft permit contained no conditions to ensure compliance with these VOC limits, Petitioners—anticipating that Exxon might determine compliance with the VOC limits by using the same emission factors listed in Exxon’s application, which the company apparently used to calculate the VOC limits in the first place⁶³—raised their above objections from this petition with reasonable specificity during the comment period. More specifically, Petitioners’ comments objected that: the draft permit did not ensure compliance with the hourly and annual VOC limits for the purge vent; VOC and VOC HAP emissions from the vent are highly variable; strong monitoring and reporting requirements are important due to environmental justice concerns and the large amounts of VOC HAPs present in the emissions from the purge vent; the emission factors from Exxon’s application, if Exxon indeed used them to calculate emissions for compliance purposes, could not ensure compliance due to the variability of emissions from the purge vent and because the emission factors are impossible to verify and are outdated, given that they are based on 2011 testing; and LDEQ should revise the permit to require VOC CEMS for the purge vent. *See* Comments at 10-14. LDEQ’s response to comments—in which the Department responds to Petitioners’ comments regarding the inadequacy of the draft permit’s monitoring, recordkeeping, and reporting requirements for the purge vent’s VOC limits (including comments regarding the emission factors that Petitioners guessed that might Exxon use for purposes of complying with the purge vent’s limits)—shows that the comments gave LDEQ ample notice of Petitioners’ objections. *See, e.g.,* RTC at 21 (“LDEQ disagrees that the permit cannot allow ExxonMobil to demonstrate compliance using the average pound per regeneration event factors set forth in the permit application.”); *see also id.* at 19-22.

If EPA believes that certain objections above were not raised with reasonable specificity during the comment period,⁶⁴ it was impracticable to raise those objections in comments because

⁶³ *See* Draft Permit Package at PDF p. 240.

⁶⁴ The only one of Petitioners’ objections here even arguably not raised with reasonable specificity in comments is the argument that the emission factor referenced in the permit cannot ensure compliance with the purge vent’s maximum hourly VOC limit. *See supra* at 21. When commenting, however, Petitioners could not have anticipated that LDEQ would use a pounds per regeneration emission factor to attempt to ensure compliance with a pounds per hour permit limit. *See* Comments at 13 n.13 (“[W]e assume that Exxon does not use an emission factor to determine compliance with [the maximum hourly VOC limit for the purge vent]. We cannot even guess how compliance with that limit is to be determined.”).

Petitioners were unable, during the comment period on the draft permit, to review the requirements that LDEQ newly inserted into the proposed permit to purportedly ensure compliance with the hourly and annual VOC limits for the purge vent. *See* 42 U.S.C. § 7661d(b)(2); 40 C.F.R. § 70.8(d). Further, the grounds for any objections not raised in Petitioners’ comments arose after the comment period, when LDEQ inserted the new Specific Requirement 157 into the proposed permit. *See id.* Put another way, Petitioners could not have raised every single detail of their objections to a permit condition that did not exist during the comment period. *See Portland Cement Ass’n v. EPA*, 665 F.3d 177, 186 (D.C. Cir. 2011) (“We should be especially reluctant to require advocates for affected ... groups to anticipate every contingency. To hold otherwise would encourage strategic vagueness on the part of agencies and overly defensive, excessive commentary on the part of interested parties”); *see also Chesapeake Climate Action Network v. EPA*, 952 F.3d 310, 320 (2020) (“It was simply impracticable for Petitioners to predict how EPA would cure the missing [] component and then submit preemptive attacks on such hypothetical solutions.”); *Clean Air Council v. Pruitt*, 862 F.3d 1, 10 (D.C. Cir. 2017) (looking to whether final rule was a “logical outgrowth” of proposed rule to determine whether 42 U.S.C. § 7607(d)(7)(b)’s impracticability prong met,⁶⁵ and holding that final rule fails logical outgrowth test if commenters “would have had to divine the agency’s unspoken thoughts”) (citation and internal quotation marks omitted).

C. LDEQ’s Response to Comments Is Inadequate to Address the Problems with the Permit’s Requirements for the Purge Vent.

LDEQ claims that conditions at Exxon’s refinery “have not fundamentally changed such that the emission factors derived from the ICR test results are no longer accurate.” RTC at 21. To begin with, LDEQ’s assertion assumes that the 2011 stack testing—and the pounds per regeneration emission factor based on that testing—accurately captured the variability of VOC emissions from the purge vent as of 2011. But as discussed above (*supra* at 17-20), the testing and emission factor based on it could not have captured that variability. Nor does LDEQ’s claim address the fact that the emission factor cannot ensure compliance because it is impossible to verify. *See supra* at 20-21.

Putting those problems aside, LDEQ offers no support for its bare assertion that conditions “have not fundamentally changed such that the emission factors derived from the ICR test results are no longer accurate”—and cannot offer any such support because there has apparently been no monitoring (or even testing) of emissions from the vent since 2011. Without

⁶⁵ Using language similar to 42 U.S.C. § 7661d(b)(2), § 7607(d)(7)(B) provides the following with respect to judicial review of rules and other final actions by EPA: “Only an objection to a rule or procedure which was raised with reasonable specificity during the period for public comment ... may be raised during judicial review. *If the person raising an objection can demonstrate to the Administrator that it was impracticable to raise such objection within such time or if the grounds for such objection arose after the period for public comment (but within the time specified for judicial review) ...*, the Administrator shall convene a proceeding for reconsideration of the rule and provide the same procedural rights as would have been afforded had the information been available at the time the rule was proposed.” (Emphasis added)

regular monitoring or testing, how can LDEQ possibly know whether emissions from the purge vent are the same as in the 2011 stack testing? Despite what LDEQ claims, conditions very likely have changed in the catalytic reforming unit (such as replacements of catalysts) and its purge vent over the past nine-plus years. *See supra* at 19; Sahu Decl. at ¶¶ 18, 25. In fact, the reforming unit has apparently undergone a recent upgrade. *See supra* at 19, n.55. And as noted above (*supra* at 17), even the contractor that conducted the 2011 testing made very clear that emissions could change at later dates and under different operating conditions.

LDEQ also ignores that the point of requiring adequate monitoring and reporting is to enable the regulators and the public to determine whether emissions at a permitted unit or source are above permitted levels—something that can indicate that conditions at a source have changed. If state air agencies could legitimately refuse to supplement inadequate monitoring based on bare assertions that emissions or conditions have not changed, that would negate the whole purpose of requiring Title V permits to contain monitoring, reporting, and recordkeeping requirements sufficient to ensure compliance with permitted limits.

In its response to comments, LDEQ also asserts that, if “conditions were to change such that the average pound per regeneration event factors were no longer representative of actual operations,” Exxon would “be obligated to apply for a permit modification per LAC 33:III.501.” RTC at 21. But LAC 33:III.501 says no such thing.⁶⁶ Even if Exxon were required to apply for a permit modification under these circumstances, the current permit proceeding should not simply leave Exxon to its own devices to determine whether the purge vent’s emission factor for total VOCs is “no longer representative.” That would undermine the purpose of Title V’s mandate that operating permits contain monitoring, reporting, and recordkeeping sufficient to assure compliance. Instead, the Title V permit here should require Exxon to conduct regular monitoring of emissions from the purge vent, which would allow the company, regulators, and the public to determine the actual emissions from the vent based on current operations.

Regarding variability, LDEQ cites to an Exxon statement that was apparently provided in response an EPA inquiry about the 2011 ICR testing. RTC at 21-22. There, Exxon asserted that purge emissions “similar to those in Run 2” from the 2011 testing, which was the test run with the highest VOC emissions by far, “*are expected to occur* approximately 1 in 40 regenerations (average less than 0.05% of a year)” and that lower nitrogen purge gas flow “*was believed to be*

⁶⁶ LDEQ may possibly be referring to LAC 33:III.501(C)(13), but that subsection would only require Exxon to notify LDEQ in its annual Title V certification if the company, in preparing its annual emissions inventory, decides to use emission factors or estimation methods that differ from the factors or methods used in the current permit and if the calculated inventory emissions “reflect a significant change.” With the notification, Exxon would be required to include the “intended time frame to reconcile the emission limits in the applicable permit.” LAC 33:III.501(C)(13). A “significant change” is defined as the lesser of: a 5 percent change in the total emissions from the facility; a 50 ton change in emissions from the facility; or a 10 ton change in the emissions from any single emission point. *Id.* In other words, subsection (C)(13) only comes into play if Exxon decides to use a different emission factor to estimate the purge vent’s emissions for purposes of its annual emissions inventory and use of that new emission factor results in at least a 10 ton change in calculated emissions from the vent.

a primary method of verification” of such high emissions. RTC at 21-22 (emphasis added). Exxon also asserted that it reviewed “nitrogen flow, reactor inlet pressure, and purge system pressure (which are *potentially* indicators of emissions similar to Run 2)” for 2010-13 and that this review showed that “low nitrogen flow *may have occurred* 8 out of 292 times during a 4-year period.”⁶⁷ *Id.* (emphasis added). The emphasized quoted language above makes clear that Exxon is far from certain regarding how often emissions similar to those from run 2 occur—or even what the indicators of such high emissions may be. Sahu Decl. at ¶ 26. Ultimately, the quoted Exxon statement amounts to no more than thinly-supported conjecture regarding what emissions may be like from the purge vent. *Id.*

Further, the time period of the data that Exxon analyzed (from 2010-13) is now seven-plus years old, and there has apparently been no further monitoring or testing to confirm Exxon’s hypothesis that emissions consistent with 2011 run 2 will only occur 1 in 40 regenerations. Even if that hypothesis was correct as of the end of 2013 (again, there is little to no support for this), VOC emissions from the purge vent or conditions at the reforming complex or purge vent (such as the catalyst used) could have changed that would render the hypothesis no longer accurate. *Id.*

LDEQ’s citation to Exxon’s statement also ignores that Exxon’s requested maximum hourly limit for VOCs from the purge vent (472.41 lbs/hour) is more than triple the 134.24 lbs/hour rate of VOCs from the second run of the 2011 testing—meaning that Exxon believes that VOC emissions from the purge vent can be far higher, and even more variable, than those experienced during that 2011 test run. *Id.* at ¶ 27. Most importantly, LDEQ’s citation to Exxon’s statement again attempts to turn on its head the Title V requirement that permits contain monitoring, reporting, and recordkeeping provisions sufficient to ensure compliance with applicable limits. Only regular monitoring can confirm how often emissions like—or higher than—those from 2011 test run 2 occur.

In the response to comments, LDEQ also asserts that neither CEMS nor stack testing are warranted because (1) emissions from the purge vent are “typically” routed to the refinery’s fuel gas system and (2) the VOC permit limits are supposedly conservative in that, even if all purge releases were vented to the atmosphere, the permit limits account for the higher emission rates associated with test run 2 from the 2011 ICR testing—which LDEQ again states is an “operational scenario anticipated to occur in only about 1 in 40 regenerations.” RTC at 22. Regarding the first of these assertions, there is no provision in the proposed permit requiring Exxon to send all—or even some fraction of—purge emissions to the fuel gas system or limit the number of releases to the atmosphere through the purge vent. Thus, Exxon is allowed to emit through the purge vent as often as it pleases. In fact, it is likely that the purge vent releases at least some gases to the atmosphere—rather than all of the gases going to the fuel gas system—almost every time there is a purge, since it is unlikely that all of the purge gases have enough heating value to warrant sending them to the fuel gas system. Sahu Decl. at ¶ 28. Because a small batch of catalyst is being regenerated at a time in a catalytic reforming unit (and because

⁶⁷ Exxon simultaneously asserts both that (a) emissions similar to those from run 2 are expected to occur 1 in 40 times and (b) that historical data from 2010-13 show that such high emissions may have occurred more frequently—8 out of 292 regenerations, which equates to 1 in 36.5 times.

different sections of catalyst can be purged and regenerated separately), regeneration and releases through the purge vent could occur between 1,000 to 4,000 hours per year, or more. *Id.* Even if LDEQ is correct that purge emissions are “typically” routed to the fuel gas system (which seems unlikely), the purge vent would still experience some number of (uncontrolled) releases to the atmosphere each year,⁶⁸ and those releases can result in extremely high and variable VOC emissions, as discussed above. Given that Exxon’s own permit application requests a VOC limit of 19.1 tons/year, which includes over 13 tons annually of VOC HAPs,⁶⁹ even the company apparently recognizes that the purge vent is capable of releasing large amounts of VOCs, even if purge emissions are “typically” routed to the fuel gas system. Those releases should be regularly monitored.

Other than repeating Exxon’s untested hypothesis that emissions consistent with 2011 test run 2 are only expected to occur 1 in 40 regenerations, LDEQ provides no support for its assertion that the purge vent’s annual VOC limit is conservative and accounts for the higher emission rates associated with 2011 test run 2. In addition to being unsupported, EPA should not credit LDEQ’s assertion that the annual limit is capacious because there is no way to verify the accuracy of the permit’s 218.29 pounds VOCs per regeneration emission factor that was used to calculate the annual VOC limit in the first place⁷⁰—and is to be used to determine compliance with that limit. As discussed above (*supra* at 20-21), among other things, it is unclear from the permit materials how Exxon calculated the lbs/regeneration emission factor or the exact data and emission rates beyond the 2011 testing that Exxon used to arrive at the emission factor. In addition, it is unclear how Exxon arrived at the assumed number of 175 regenerations per year used to calculate the annual limit.

LDEQ’s assertion that the annual limit accounts for the rates associated with 2011 test run 2 ignores that the snapshot of emissions from the 2011 testing was unlikely to capture the variability of emissions from the purge vent. *See supra* at 17-20. Without additional monitoring (which apparently has not occurred), there is no way to know whether the 2011 emission rates are accurate. Actual emission rates could be much higher than those from test run 2 in 2011.

Further, the emissions from 2011 test run 2 and the maximum hourly VOC limit for the purge vent show that the annual limit is not conservative. Only 286 hours (or a little less than 12 days) per year at the 134.24 lb/hr emission rate from 2011 test run 2 would equal 19.2 tons of

⁶⁸ LDEQ at one point states that Exxon “is not likely to vent [through the purge vent] to the atmosphere at all.” RTC at 22. To the extent LDEQ is implying that the purge vent may never experience releases, that would seem to be contradicted by the Department’s assertions that purge releases are only “typically” routed to the fuel gas system and that Exxon has no plans to “routinely” vent to the atmosphere through the purge vent (*id.*)—and by Exxon’s statement that purge emissions similar to those from 2011 test run 2 are expected to occur approximately 1 in 40 regenerations.

⁶⁹ Draft Permit Package at PDF pp. 202-03.

⁷⁰ Exxon’s application indicates that the 19.1 tons/year annual limit was determined by multiplying the 218.29 pounds VOCs per regeneration emission factor by 175 regenerations per year. Draft Permit Package at PDF p. 240.

VOCs—above the 19.1 tons/year annual limit. Given that Exxon’s application indicates that the purge vent operates every hour of the year (Draft Permit Package at PDF p. 202) and that releases through the purge vent could occur between 1,000 to 4,000 hours per year or more (Sahu Decl. at ¶ 29), the vent will in all likelihood annually release to the atmosphere at least 286 hours every a year. Sahu Decl. at ¶ 29. And as noted above, the maximum hourly VOC limit of 472.41 lb/hr is over 100 times higher than the 4.36 average lb/hour limit for VOCs from the purge vent—and more than triple the highest hourly rate from the 2011 test. If the vent emitted at the maximum permitted hourly rate for just 82 hours (around three and a half days) in a year, which is entirely feasible (*id.* at ¶¶ 13, 29), it would surpass its annual VOC limit of 19.1 tons/year.

Although the purge vent’s hourly maximum VOC limit appears that it may be fairly conservative compared to the 2011 testing, again there has apparently been no further monitoring or testing of the vent’s emissions since that time, which represented only a snapshot of emissions over a few hours across a few-day period. Hourly emissions could be higher than the maximum limit, but without regular monitoring, there is no way to know. Sahu Decl. at ¶ 30. And, as with the annual limit, there is no way to verify the accuracy of the maximum hourly limit, since it is unclear how Exxon calculated it or what data supports it.⁷¹ Even if the maximum hourly limit is conservative, use of a pound per regeneration emission factor cannot ensure compliance with that hourly limit because, as discussed above (*supra* at 21), nowhere do the permit and the accompanying materials explain how Exxon should convert such an emission factor into hourly emissions for each release from the purge vent.

Finally, although LDEQ concedes that the NESHAP requirements applicable to the purge vent “do[] not require ExxonMobil to directly monitor emissions” from the vent (RTC at 20), LDEQ suggests that these requirements (Proposed Permit’s Specific Requirements 154-56) may help ensure compliance with the vent’s VOC limits. *See* RTC at 20 (stating that NESHAP provisions “serve to ensure that emissions are controlled as required, that any control devices utilized are maintained and operated properly, and that good air pollution control practices for minimizing emissions are employed”). These federal requirements, however, cannot ensure compliance with the very specific hourly and annual VOC limits for the purge vent. To begin with, LDEQ’s assertion regarding control devices is irrelevant here because Exxon does not use controls to limit emissions to the atmosphere from the purge vent, which are the emissions at issue in this petition.⁷² Further, these NESHAP requirements cannot ensure compliance with the VOC limits because nothing in the permit ties the NESHAP requirements to the specific hourly or annual VOC limits or explains how the NESHAP requirements can be used to determine or

⁷¹ Although Exxon’s application states that the maximum hourly limit reflects “maximum hourly stack test data” (Draft Permit Package at PDF pp. 240-41), the limit does not match any stack test data in the permit record.

⁷² The proposed permit states that the emissions from the purge vent are typically routed to the fuel gas system. Proposed Permit’s Specific Requirement 154. But the permit also indicates that emissions from the purge vent are uncontrolled when they are not routed to the fuel gas system. *See id.* (“[A]ny uncontrolled emissions to the atmosphere ...”). LDEQ indicates the same in its response to comments. *See* RTC at 19 (stating that RLP 0160 “reflects only uncontrolled purge releases”).

calculate specific, actual emissions of VOCs from the purge vent. *See Shell Deer Park Order* at 21-23. Nor does the permit record explain how the NESHAP requirements can be used to determine actual hourly or annual VOC emissions from the purge vent.

The NESHAP requirements also cannot ensure compliance with the VOC limits because, as explained in Dr. Sahu's declaration at paragraph 31, those requirements only mandate a one-time performance test and compliance with an operation, maintenance, and monitoring plan.⁷³ The permit materials do not give any indication that a performance test was ever conducted, and it may be that Exxon used the 2011 ICR stack testing as that one-time performance test. Regardless, a one-time test cannot ensure compliance with the hourly and annual VOC limits because VOC emissions from the purge vent are highly variable and stack testing cannot capture the relevant variability, as discussed above. That plan cannot ensure compliance with the purge vent's hourly and annual VOC limits because the NESHAP requirements for the content of the plan essentially leave it up to Exxon to determine what operating practices are to be used for uncontrolled emissions from the purge vent, which may or may not reduce VOC emissions at all—or reduce them to the point of ensuring compliance with the hourly and annual VOC limits. In addition, the plan cannot ensure compliance with the hourly and annual VOC limits due to the highly variable nature of the VOC emissions from the purge vent, as discussed above. Finally, under § 63.1574(f)(1), Exxon is not required to include the operation, maintenance, and monitoring plan in its Title V permit. But without the specific contents of that plan being included in the permit, there is no way that it could possibly ensure compliance the specific hourly and annual VOC limits for the purge vent.

⁷³ When the emissions are not routed to the fuel gas system, they are subject to a NESHAP requirement that total organic compounds (TOC) or nonmethane TOC must be reduced by 98% weight using a control device or to a concentration of 20 ppmv (dry basis as hexane), corrected to 3% oxygen. *See Proposed Permit's Specific Requirement 154*; 40 C.F.R. § 63.1566(a)(1)(ii); 40 C.F.R. Part 63, Subpart UUU, Table 15). This limit and accompanying operating limit apply to emissions from reforming unit process vents associated with initial catalyst depressuring and catalyst purging operations that occur prior to the coke burn-off cycle. 40 C.F.R. § 63.1566(a)(3). The limits do not apply to coke burn-off, catalyst rejuvenation, reduction or activation vents, or to the control systems used for these vents—or emissions during passive depressuring when reactor vent pressure is 5 psig or less. *Id.* § 63.1566(a)(3)-(4).

Here for Exxon's reforming unit, to comply with the above limit, 40 C.F.R. § 63.1566 only requires a one-time performance test under subsection (b) and compliance with the procedures in an operation, maintenance, and monitoring plan. More specifically, § 63.1566(a)(2) requires reforming units to comply with a site-specific operating limit from Subpart UUU's Table 16, and that table provides the following operating limit (which is also found in the Title V permit) when no control device is being used: "Operate at all times according to your operation, maintenance, and monitoring plan regarding minimum catalyst purging conditions that must be met prior to allowing uncontrolled purge releases." That plan must include: "Procedures that will be used for purging the catalyst if you do not use a control device ... These procedures will include, but are not limited to, specification of the minimum catalyst temperature and the minimum cumulative volume of gas per mass of catalyst used for purging prior to uncontrolled releases (i.e., during controlled purging events); the maximum purge gas temperature for uncontrolled purge events; and specification of the monitoring systems that will be used to monitor and record data during each purge event." 40 C.F.R. § 63.1574(f)(2)(xii).

III. THE PROPOSED PERMIT'S EMISSION FACTOR FOR VOCs CANNOT ACCOUNT FOR THE VARIABILITY OF EMISSIONS AND PROCESS AT THE REFORMING UNIT'S REGENERATOR VENT.

As Petitioners' comments generally explained (at pages 14-17), Exxon's proposed Title V permit also does not include adequate monitoring, reporting, or recordkeeping requirements to ensure compliance with the federally-enforceable hourly and annual VOC limits for the catalytic reforming unit's regenerator vent, which the draft Title V permit refers to as the "Powerformer 2 Regenerator Vent," "RLP 0161" or "PHLA2/PV-REGEN." *See* Proposed Permit's Inventories at 1. Specifically, in violation of the requirements from 40 C.F.R. §§ 70.6(a)(3)(i) and/or 70.6(c)(1), as well as the requirements from 42 U.S.C. §§ 7661c(a) and 7661c(c), the proposed permit's monitoring, reporting, and other requirements cannot ensure compliance with the federally-enforceable 2.65 average lb/hour, 13.0 maximum lb/hr, and 11.6 tons/year limits for VOCs from the regenerator vent. *See* Proposed Permit's Emission Rates for Criteria Pollutants and CO_{2e} at 2.⁷⁴

Specific Requirement 173 is the proposed permit's only provision used to ensure compliance with the hourly and annual VOC limits for the purge vent. Specific Requirement 173 provides: "The permittee shall record the number of regeneration events each year and calculate actual VOC and TAP emissions by multiplying the number of events by the average pound per regeneration event factors set forth in the permit application (EDMS Doc ID 12022770, p. 237 of 243)."⁷⁵

The emission factor for VOCs referenced in Specific Requirement 173 is 132.54 pounds VOC per regeneration event. *See* Draft Permit Package at PDF p. 237. That emission factor is based, apparently primarily, on stack testing that occurred almost a decade ago—in October

⁷⁴ As with the purge vent limits discussed above, the proposed Title V permit does not specify the source of the VOC limits for the regenerator vent, *i.e.*, whether they are limits from a New Source Review or Prevention of Significant Deterioration permit, the Louisiana State Implementation Plan, or some other source. The limits are federally enforceable because nothing in the permit designates the limits as "state only." *See* 40 C.F.R. § 70.6(b)(1)-(2) (all terms and conditions in a Title V permit are federally enforceable, except for those specifically designated as not being federally enforceable).

Because we do not know the source of the limits, it could be that the underlying limits were originally accompanied by monitoring or testing requirements that are not listed in the permit, in violation of § 70.6(a)(3)(i)(A)—or that the limits were never accompanied by any monitoring or testing requirements, in which case § 70.6(a)(3)(i)(B) would mandate that LDEQ add sufficient monitoring, reporting, and recordkeeping requirements into the Title V permit to ensure compliance with the limits. Or, if the limits were originally accompanied by monitoring or other related requirements but those requirements cannot ensure compliance with the limits, then § 70.6(c)(1) would require LDEQ to supplement the original monitoring and other requirements.

⁷⁵ EDMS Doc ID 12022770 is the same document referenced in the permit provision for the purge vent—LDEQ's permit package for the draft renewal Title V permit for the reforming complex.

2011—as part of the ICR for EPA’s recent NESHAP risk and technology review for petroleum refineries.⁷⁶ See Draft Permit Package at PDF pp. 236-38; Ex. 7, Regenerator Vent Test Report.⁷⁷

Specific Requirement 173 and the per-regeneration emission factor for VOCs that it references cannot ensure compliance with the hourly and annual VOC limits for the regenerator vent (2.65 average lb/hour, 13.0 maximum lb/hr, and 11.6 tons/year) for three reasons:

First, use of a single, constant emission factor based on stack testing—especially one based on testing that occurred long ago—cannot account for the variability of the regeneration process or the variability of emissions at the regenerator vent, as discussed in Dr. Sahu’s declaration at paragraphs 32-45. As the contractor for the stack testing recognized, the regeneration “process is a twenty-four hour operation.” Regenerator Vent Test Report at p. 4. As part of that operation, “[p]rocess gases are routed to the [regenerator vent] during two process events; Coke Burn and Coke Burn Purge during the Regeneration System Cycle.”⁷⁸ *Id.* The “coke burn” and “coke burn purge” events involve multiple steps, and those steps can vary greatly in their duration, as shown by this table from the stack test report, which was based on process information from some time preceding the report:

Table 1 Coke Burn [Regenerator] Vent Regeneration System Cycle

⁷⁶ Like with the purge vent, LDEQ’s response to comments indicates that the pounds per regeneration emission factor for total VOCs from the regenerator vent was based primarily on the 2011 testing. See, e.g., RTC at 26 (asserting that conditions at the refinery have not changed such that the “emission factors derived from the ICR test results” are no longer accurate), 27 (“[T]here is no data that suggest the [2011] test results do not remain representative of actual operations”). Although Exxon’s application does not explicitly explain how the company arrived at the pounds per regeneration emission factor for VOCs, the application states that “[e]missions from the Reforming Complex purge and regen vents were gathered and updated as part of the [ICR].” Draft Permit Package at PDF p. 236. Similarly, the application states that “[a]ll emission factors have been determined by the facility” and that the “Reformer Purge and Regen vents were tested in 2011 using methods required by the Refinery [ICR].” *Id.* at PDF p. 237.

In addition to primarily relying on the 2011 stack testing, Exxon also apparently considered additional unidentified and undisclosed information to arrive at the permit’s pounds/regeneration emission factor for total VOCs from the regenerator vent. See RTC at 25 (“For most pollutants, the maximum pound per hour emission rates in [the Title V permit] reflect the highest of the three ICR test runs multiplied by a safety factor of 1.25. However, the pound per regeneration event factors cannot be derived solely from the ICR test results.”).

⁷⁷ As noted above, although this 2011 test report refers to this vent as the “Coke Burn Vent,” that vent is the same as the “regenerator vent” referenced in the proposed Title V permit: the proposed permit only lists two vents from the catalytic reforming unit, and the test report indicates that untreated emissions only exit the catalytic reforming unit from two vents—the purge vent and the “Coke Burn Vent.” See Regenerator Vent Test Report at p. 1.

⁷⁸ The regenerator vent’s hourly and annual VOC limits from the proposed Title V permit apply to VOC emissions from both of these types of “process events,” since the permit does not indicate that the limits only apply at limited times.

Step	Description	Activity	Duration (hrs) *		Test Group
			R-4	R-2	
Step 10	Primary burn	Coke Burn	22:25	5:45	Coke Burn
Step 20	Secondary burn	Coke Burn	3:20	3:20	
Step 30	Chloride treat	Catalyst rejuvenation, activation	3:35	5:25	Coke Burn Purge
Step 40	O ₂ removal, cool down	Reduction	1:35	2:25	
Step 50	H ₂ and Sulfrzol	Reduction	~4	~4	

* Approximation based on previous process information.

Id. at p. 4, Table 1. For example, in the above examples (which are typical of the catalyst regeneration process, Sahu Decl. ¶¶ 35-36), the regeneration process lasted from almost 21 hours on one occasion and much longer (almost 35 hours) on another occasion, with the duration of the “primary burn” step in particular varying greatly (from 5:45 on one occasion and 22:25 on another).⁷⁹ As the above table shows, gases are emitted from the regenerator vent across the multiple steps and many hours of the regeneration process. And the amount of VOCs (and VOC HAPs) emitted from the regenerator vent will vary from step to step in the coke burn and coke burn purge stages, just as the amount of VOCs (and VOCs HAPs) emitted during these multiple steps will also vary from one regeneration to the next. Sahu Decl. at ¶¶ 35-37.

Despite the long and varied duration of emissions from the regenerator vent and the multiple steps of the regeneration process (each with their own emissions profile), the 2011 stack testing only attempted to provide a snapshot of emissions from that vent over a few hours across a few days. Although the testing was conducted during both the “coke burn” and “coke burn purge” process events, there were just four stack test runs for VOCs during the coke burn stage and only three runs during the coke burn purge stage, each lasting only an hour. Regenerator Vent Test Report at pp. 4-5, Tables 2, 4. These test runs took place over the span of just four days, from Oct. 17 through 20. *Id.*

There can be no assurance that, even as of 2011, the snapshot provided by the 2011 stack testing—or the proposed permit’s pounds/regeneration emission factor developed from that testing—accurately reflected emissions from the regenerator vent because of the variable, complicated, and multi-step nature of the regeneration process. Sahu. Decl. at ¶¶ 38-39. In fact, LDEQ effectively concedes the same thing:

For most pollutants, the maximum pound per hour emission rates [for the regenerator vent] in Permit No. 2261-V8 reflect the highest of the three ICR test runs multiplied by a safety factor of 1.25. However, *the pound per regeneration event factors cannot be derived solely from the ICR test results.* As noted above, there are two primary stages of the regeneration cycle – coke burn and coke burn purge. Moreover, *there are multiple operational steps within each phase –*

⁷⁹ Catalyst regeneration is a slow, long process, as it involves replacing active sites on the catalyst surface. Sahu Decl. at ¶ 36. The coke burn and coke burn purge stages could last even longer than in these historic examples, depending on the length of time since the last regeneration event, the severity of coke deposits, and the extent of deactivation of the active sites on the catalysts, among other factors. *Id.*

primary burn and secondary burn in the coke burn phase and chloride treatment, oxygen removal, and sulfiding the catalyst in the coke burn purge phase. *Each step has a different emissions profile, and the amount of time required to complete each step may vary.*

RTC at 25 (emphasis added); *see also* Sahu Decl. at ¶ 39. The extended length of the regeneration process, during much of which gases can be emitted from the regenerator vent, provides another reason that the snapshot from the 2011 testing—lasting only one hour for each test run—could not have accurately reflected emissions from the regenerator vent. *Id.* at ¶ 40.

There also can be no assurance that the snapshot provided by the 2011 stack testing—or the pounds/regeneration emission factor developed from that testing—ever accurately reflected emissions from the regenerator vent because of the variable nature of VOC emissions from the vent, as discussed in Dr. Sahu’s declaration at paragraphs 41-43. The variable nature of the VOC emissions from the vent is shown first by the proposed Title V permit’s maximum hourly VOC limit of 13.0 lb/hr, which is nearly five times higher than the 2.65 average lb/hour limit for VOCs from the vent. That maximum hourly limit also shows that the annual limit for the regenerator vent could easily be exceeded in any given year. If the vent emitted at that same rate over 1,800 hours in a given year, which is entirely feasible (*id.* at ¶ 41),⁸⁰ it would emit 11.7 tons of VOCs—above its annual VOC limit of 11.6 tons/year.

The highly variable nature of the VOC emissions from the regenerator vent is also shown by the results from the 2011 stack testing. Across four test runs during “coke burn” events over the span of just a few days in 2011, the results for at least two VOC HAPs (xylene and ethylbenzene) were highly variable—with the runs resulting in concentration (ppmv) values of 82.4, 3.4, 9.0, and 9.8 (for xylene) and 10.8, 0.5, 1.3, and 1.3 (for ethylbenzene) and also similar variability among the lb/hr values. Regenerator Vent Test Report at pp. 6-7, Table 5. Even LDEQ concedes that the xylene emissions from the regenerator vent varied significantly. *See* RTC at 25 (“... only xylene ... exhibited significant variability.”).⁸¹ The 2011 VOC rates across three test runs during “coke burn purge” events over the span of just a few hours were also highly variable—with the runs resulting in ppm values of 10.7, 8.46, and 6.46 and similar variability for the lb/hr values. *Id.* at p. 20, Table 16.⁸² In other words, the highest VOC concentration value from the testing during the coke burn purge stage (10.7 ppm) was over 65% higher than the lowest value (6.46 ppm).

⁸⁰ Exxon’s application indicates that the regenerator vent operates every hour of the year. *See* Draft Permit Package at PDF p. 199. This is consistent with the 2011 stack-test contractor’s statement that the regeneration “process is a twenty-four hour operation.” Regenerator Vent Test Report at p. 4.

⁸¹ Separately, LDEQ states that “the ICR test results show the emissions rates of several compounds can vary somewhat during the regeneration cycle” RTC at 27.

⁸² Unlike for the “coke burn purge” stage, the stack test report, based on Petitioners’ review, does not list emission data for total VOCs during the “coke burn” stage—only data for VOC HAPs.

The proposed Title V permit's maximum hourly limits for individual VOC HAPs show even further variability. As noted above, according to LDEQ, the maximum hourly limits for most VOC HAPs from the regenerator vent "reflect the highest of the three ICR test runs multiplied by a safety factor of 1.25." RTC at 25. Presumably Exxon used that "safety factor" due to the variable nature of emissions of these HAPs from the regenerator vent.

In addition to being unable to capture the variability of processes and emissions associated with the regenerator vent, the snapshot provided by the 2011 stack testing is even less likely to ensure compliance with that vent's hourly and annual VOC limits because of the age of that testing: like the testing for the purge vent, that snapshot is now almost a decade old. By the time Exxon's Title V permit expires in 2025 or 2026,⁸³ the 2011 testing will be roughly 15 years old.

Even if the snapshot of emissions from the 2011 stack testing could have accurately captured the variability of emissions as of that time (it could not have), there is no way to know whether the (now) nine-plus-year-old testing represent current regenerator process and regenerator vent conditions without regular monitoring of the vent's emissions, as discussed in Dr. Sahu's declaration at paragraphs 44-45. Given that the proposed permit's pounds/regeneration emission factor was based on testing that occurred so long ago, it is very unlikely to represent current process and regenerator vent conditions. Conditions very likely have changed in the catalytic reforming unit (such as replacements of catalysts and the rate and severity of catalytic reactions) and its regenerator vent over the past nine-plus years, rendering the emission factor no longer accurate. Further, the reforming unit, of which the regenerator vent is a part, has apparently undergone at least one upgrade since 2011. *See supra* at 19, n.55. And the refinery has an additional upgrade on the horizon. *See supra* at 5.

In essence, relying on the emission factor based on testing from 2011 (and before) is akin to allowing Exxon to determine compliance with hourly and annual limits based on a stack test once every nine to 15 years (or more), depending on the age of the current renewal Title V permit. Testing once every nine to 15 years (or more) cannot ensure compliance with hourly and annual limits.

Although Exxon apparently relied on additional information beyond the 2011 stack testing to calculate the proposed permit's pounds/regeneration emission factor for the regenerator vent,⁸⁴ that additional information cannot ensure compliance with the vent's 2.65 average lb/hour, 13.0 maximum lb/hr, and 11.6 tons/year VOC limits because the information has not even been identified by LDEQ or Exxon, much less disclosed in the permit record, as discussed in more detail immediately below.

⁸³ Again, it is unclear whether LDEQ has yet issued the permit to Exxon.

⁸⁴ *See* RTC at 25 ("However, the pound per regeneration event factors cannot be derived solely from the ICR test results.").

Second, the 132.54 pounds VOC per regeneration event emission factor cannot ensure compliance with the hourly and annual VOC limits for the regenerator vent because it is impossible for the public or EPA to verify the emission factor's accuracy, as described in Dr. Sahu's declaration at paragraphs 46-47. Although Petitioners gather that this emission factor was based largely on the 2011 emissions testing at the regenerator vent, *see supra* at 31-32, LDEQ indicates that the emission factor was also based on additional information. RTC at 25 (“[T]he pound per regeneration event factors cannot be derived solely from the ICR test results.”). But the accuracy of that additional information—and the soundness of using it to try to ensure compliance here—is impossible to verify, since the permit materials (including the proposed permit, statement of basis, Exxon's application, and LDEQ's response to comments) do not even identify that additional information. It is impossible to tell whether even LDEQ has laid eyes on any other sources of information or their underlying data that Exxon relied upon to calculate the relevant emission factor here.

It is also impossible to verify the pounds/regeneration emission factor's accuracy or the soundness of using this as a compliance method because it is unclear from the permit materials how Exxon calculated this emission factor, as discussed in Dr. Sahu's declaration at paragraph 47. Among other things, there is no way for the public or regulators to know from the permit or accompanying materials what numbers or arithmetic Exxon used to arrive at the pounds/regeneration emission factor or how exactly Exxon attempted to account for the variability of the regeneration process and the variability of VOC emissions from the regenerator vent in its calculations, including whether Exxon used a certain “safety factor” or excluded some data as outliers or based on other considerations. And there is no way to tell how long Exxon estimated that each release from the regenerator vent would last. Even though the 2011 stack test runs lasted only an hour each, the duration of releases from the regenerator vent varies greatly, as shown by just the two historic examples discussed above, which lasted from almost 21 hours on one occasion to almost 35 hours on another. *See supra* at 32-33. Any actual releases that last longer than the length of release assumed for purposes of determining the emission factor could easily yield a larger amount of VOCs than the 132.54 lbs VOCs per regeneration emission factor.

Third, a pound per regeneration emission factor cannot ensure continuous compliance with the regenerator vent's maximum pound per hour limit of 13.0 VOCs per hour, as discussed in Dr. Sahu's declaration at paragraph 48.⁸⁵ *Cf. MCRRF* Order at 9 (agreeing that the frequency of monitoring must bear some relationship to the averaging time used to determine compliance, and concluding that permit's requirement for an annual stack test was insufficient to ensure compliance with an hourly limit). Nowhere do the permit or the accompanying materials explain how Exxon should convert a pound per regeneration emission factor into hourly emissions for each release from the regenerator vent. *See id.* at 10 (“The Petitioners have demonstrated that the Permit lacks specific instructions on how readings from the uncertified HCl monitor might be

⁸⁵ Unlike the maximum hourly limit, the 2.65 average hourly limit appears to just be the 11.6 tons/year annual limit for VOCs divided by 8,760 hours.

used to ensure continuous compliance with the 1-hour HCl emissions limit.”). Further, even if it was apparent how hourly emissions are to be calculated, use of a single, constant emission factor would, in all probability, always keep Exxon in compliance with this hourly limit: if the same emission factor is used for each release from the regenerator vent, each release will presumably be calculated to have the same hourly rate of VOC emissions below the maximum hourly limit. But a calculation method that is set up to always ensure compliance cannot determine whether Exxon is actually meeting this hourly limit.

As with the VOC limits for the purge vent, environmental justice concerns here mandate increased, focused attention to ensure that all Title V requirements—especially monitoring and reporting requirements—have been complied with for the regenerator vent’s hourly and annual VOC limits. This is especially true because Exxon’s permit application indicates that over six tons annually of the VOCs from the regenerator vent are VOC HAPs—over half of the 11.6 tons/year VOC limit. *See* Draft Permit Package at PDF pp. 199-201.⁸⁶ The application lists xylene as the VOC HAP with the highest annual emissions from the regenerator vent (4.58 tons/year), *id.*—a HAP that the 2011 stack testing showed extremely high variability for. *See supra* at 34. As noted above (*supra* at 8), if the purge and regenerator vents were, by themselves, a single, stand-alone source, their combined potential xylene emissions (9.59 tons/year) would come extremely close to the major-source HAP threshold of 10 tons/year of a single HAP. And, as discussed above (*supra* at 7), the regenerator vent could easily disperse xylene and other HAPs several miles from the refinery: the vent sits at a height of 61 feet above grade, emits gases at massive flow rates (6,477 cubic ft/min) and at velocities that are almost a third of the speed of sound (309.22 feet/second). Proposed Permit Inventories at 2; Sahu Decl. at ¶ 33. At these flow rates and velocities, the gases from the regenerator vent will rise hundreds of feet into the air and disperse over a wide area. Sahu Decl. at ¶ 33.

Increased, focused attention to ensure that all Title V requirements have been complied with is also especially important because, as discussed above, the benzene fenceline data for the refinery shows that it has been dangerously close to the 9 $\mu\text{g}/\text{m}^3$ annual-average level that triggers corrective action under the NESHAP requirements—and that the refinery experiences large spikes in VOC HAP emissions. *See supra* at 8-9. Emissions of VOCs from the regenerator vent could be contributing to these large spikes in VOC HAPs shown by the fenceline monitoring data—but without adequate monitoring requirements for the VOC emissions from the regenerator vent,⁸⁷ there is no way to know whether that is the case. Finally, increased, focused attention to ensure that the monitoring requirements for VOCs from the regenerator vent meet Title V’s mandate is necessary here because the communities surrounding Exxon’s refinery

⁸⁶ In particular, the cited pages from Exxon’s application indicate that regenerator vent is capable of emitting the following tons/year of the following VOC HAPs (among others): 0.247 tons/year 1,2-dibromoethane, 0.30 tons/year benzene, 0.61 tons/year ethyl benzene, 0.05 tons/year n-hexane, 0.20 tons/year nitrobenzene, 0.45 tons/year toluene, 0.24 tons/year trichloroethylene, and 4.58 tons/year xylene (mixed isomers).

⁸⁷ Fenceline monitoring for more than just benzene would also help in this regard.

have experienced persistent problems complying with the NAAQS for ground-level ozone. *See supra* at 12-13.

A. EPA Should Require LDEQ to Revise the Title V Permit to Require VOC CEMS for the Regenerator Vent.

As Petitioners' comments explained (at page 17) and as discussed in Dr. Sahu's declaration at paragraphs 49-50, to remedy the above-described problems and ensure compliance with the VOC limits for the regenerator vent, EPA should require LDEQ to revise the proposed Title V permit to mandate the use of VOC CEMS at this vent. Strong monitoring and reporting requirements are especially important here—and EPA should provide specific instruction to LDEQ to require VOC CEMS—because of the environmental justice concerns noted above, the variable nature of the regeneration process and VOC emissions from the regenerator vent, the high (and variable) benzene fenceline data reported by Exxon under NESHAP requirements, the large amount of VOC HAPs released from the regenerator vent, and the Baton Rouge area's persistent problems complying with the NAAQS for ground-level ozone.⁸⁸ *See supra* at 4-9, 12-13, 32-35, 37.

Only regular, continuous monitoring can confirm the actual VOC emissions from the regenerator vent because of the variable and complicated nature of the regeneration process (including its multiple steps with varying lengths of time and emission profiles, as LDEQ concedes), the length of the regeneration process, and the variability of VOC emissions from the regenerator vent. *See supra* at 32-35; Sahu Decl. at ¶ 49. Thus, VOC CEMS is needed to ensure compliance with the regenerator vent's 2.65 average lb/hour, 13.0 maximum lb/hr, and 11.6 tons/year VOC limits. VOC CEMS are widely used and available. Sahu Decl. at ¶ 49. That VOC CEMS are appropriate and feasible for the regenerator vent is shown by the fact that the permit for the proposed upgrader facility in Brownsville, Texas requires VOC CEMS (among other CEMS) for a similar vent at that facility's catalytic reforming unit.⁸⁹ *See Ex. 8, Jupiter Upgrader Permit Excerpts, at Special Condition 39.D.*

Even requiring frequent stack testing would obviously be better than the proposed permit's current requirement to use the pounds/regeneration emission factor based on testing that

⁸⁸ Even if EPA does not specifically instruct LDEQ to require VOC CEMS, EPA's order responding to this petition should—because of the environmental justice concerns present here and the variable regeneration process and VOC emissions at issue— give LDEQ explicit direction on how it might remedy the permit's inability to ensure compliance with the regenerator vent's VOC limits, rather than simply leaving it to LDEQ to further explain why it thinks that the current pounds per regeneration emission factor can ensure compliance here.

⁸⁹ As noted above in the discussion regarding the purge vent, the upgrader facility will do much of the same work that a petroleum refinery does, converting condensate into petroleum products. The VOC CEMS there will monitor exhaust from a scrubbing system for the catalytic reformer's regeneration vent. But there is no technical or other reason that VOC CEMS could not be installed on the regenerator vent here at Exxon's refinery. Sahu Decl. ¶ 49. As also noted above, the Jupiter permit is being appealed, but the VOC CEMS for the regenerator vent there is not at issue in the appeal.

occurred in 2011. But, as discussed above (*supra* at 32-35), stack testing cannot be done frequently enough or for long enough periods to capture the variability of the regeneration processes or the variability of the VOC emissions from the regenerator vent. Sahu Decl. at ¶ 50. To ensure compliance with the hourly and annual VOC limits, a stack test would need to be conducted under conditions that are assured of capturing the maximum potential amount of emissions from the regenerator vent. But no stack test could assure representative conditions in the multiple steps of the regeneration process given the length of time these processes take (which can vary from one regeneration to another), their varying emissions profiles, and the variability of VOC emissions during the processes. *Id.* Thus, VOC CEMS should be required.

B. Petitioners Raised Their Objections Regarding the Regenerator Vent with Reasonable Specificity During the Comment Period.

LDEQ's draft Title V permit and statement of basis did not list any emission factors or calculation methods that Exxon uses to calculate VOC emissions from the regenerator vent for purposes of complying with the permit's 2.65 average lb/hour, 13.0 maximum lb/hr, and 11.6 tons/year limits for VOCs. In fact, the draft permit and statement of basis did not include any monitoring requirements to ensure compliance with these specific these hourly and annual VOC limits. *See* Comments at 14, 17. Only after the close of the comment period did LDEQ add new Specific Requirement 173 to the proposed permit, which (as discussed above) requires Exxon to determine compliance with the hourly and annual VOC limits for the regenerator vent by multiplying the number of regeneration events each year by the average pounds/regeneration event emission factor set forth in Exxon's Title V renewal application. *See* RTC at 25 ("...LDEQ will amend the proposed permit to specify the methodology ExxonMobil must utilize to demonstrate compliance with [VOC] permit limits [for the regenerator vent].").

Even though the draft permit contained no conditions to ensure compliance with these VOC limits for the regenerator, Petitioners—anticipating that Exxon might determine compliance with the VOC limits by using the same emission factors listed in Exxon's application, which the company apparently used to calculate the VOC limits in the first place⁹⁰—raised their above objections from this petition with reasonable specificity during the comment period. More specifically, Petitioners commented that: the draft permit did not ensure compliance with the hourly and annual VOC limits for the regenerator vent; VOC and VOC HAP emissions from the vent are highly variable; the regeneration process includes multiple steps, including the coke burn and coke burn purge stages; strong monitoring and reporting requirements are important due to environmental justice concerns and the large amounts of VOC HAPs present in the emissions from the regenerator vent; the emission factors from Exxon's application, if Exxon indeed used them to calculate emissions for compliance purposes, could not ensure compliance due to variability and because the emission factors are impossible to verify and are outdated, given that they are based on 2011 testing; and LDEQ should revise the permit to require VOC CEMS for the regenerator vent. *See* Comments at 14-17. LDEQ's response to comments—in which the Department responds to Petitioners' comments regarding

⁹⁰ *See* Draft Permit Package at PDF pp. 237-38.

the inadequacy of the draft permit’s monitoring, recordkeeping, and reporting requirements for the regenerator vent’s VOC limits (including comments regarding the emission factor that Petitioners guessed that might Exxon use for purposes of complying with the regenerator vent’s limits)—shows that the comments gave LDEQ ample notice of Petitioners’ objections. *See, e.g.*, RTC at 26 (“LDEQ disagrees that the permit cannot allow ExxonMobil to demonstrate compliance using the average pound per regeneration event factors set forth in the permit application.”); *see also id.* at 23-27.

If EPA believes that certain objections above were not raised with reasonable specificity during the comment period,⁹¹ it was impracticable to raise those objections in comments because Petitioners were unable, during the comment period on the draft permit, to review the requirements that LDEQ newly inserted into the proposed permit to purportedly ensure compliance with the hourly and annual VOC limits for the regenerator vent. *See* 42 U.S.C. § 7661d(b)(2); 40 C.F.R. § 70.8(d). Further, the grounds for any objections not raised in Petitioners’ comments arose after the comment period, when LDEQ inserted the new Specific Requirement 173 into the proposed permit. *See id.* Put another way, Petitioners could not have raised every single detail of their objections to a permit condition that did not exist during the comment period. *See Portland Cement Ass’n*, 665 F.3d at 186 (“We should be especially

⁹¹ The only portions of Petitioners’ objections here even arguably not raised with reasonable specificity in comments are the argument regarding the variability of the regeneration process (as opposed to the variability of emissions during that process) and the argument that the emission factor referenced in the permit cannot ensure compliance with the regenerator vent’s maximum hourly VOC limit. *See supra* at 32-34, 36-37. Regarding the first of these objections, Petitioners’ comments put LDEQ on notice regarding variability at the regenerator vent, pointing out that emissions from the vent are variable and that the regeneration process involves multiple steps, as noted above. The point of the Title V petition requirement that comments raise the relevant objection is to put the state permitting agency on notice regarding the objection, and here LDEQ was well aware of the variability associated with the regeneration process, as shown by the fact that the Department directly discusses that variability in the portion of its response to comments quoted above (*supra* at 33-34), where LDEQ notes that “there are multiple operational steps within” the coke burn and coke burn purge stages of the regeneration cycle and that “[e]ach step has a different emissions profile, and the amount of time required to complete each step may vary.” RTC at 25.

The comment exhaustion bar does not apply to this objection regarding process variability for the independent reason that agencies have a duty to “examine key assumptions” as part of taking non-arbitrary actions and must justify such assumptions even if nobody objects in comments. *Appalachian Power Co. v. EPA*, 135 F.3d 791, 818 (D.C. Cir. 1998). The variability of the regeneration process is a key assumption underlying the permitting action that LDEQ took regarding monitoring for the regenerator vent, as shown by LDEQ’s direct invocation of that variability. *See* RTC at 25.

Regarding the second of these objections, when commenting, Petitioners could not have anticipated that LDEQ would use a pounds per regeneration emission factor to attempt to ensure compliance with a pounds per hour permit limit. *See* Comments at 17 n.16 (“[W]e assume that Exxon does not use an emission factor, per se, to determine compliance with [the maximum hourly VOC limit for the regenerator vent] ... [W]e cannot even guess how compliance with the maximum hourly limit ... is to be determined.”).

reluctant to require advocates for affected ... groups to anticipate every contingency. To hold otherwise would encourage strategic vagueness on the part of agencies and overly defensive, excessive commentary on the part of interested parties"); *see also Chesapeake Climate Action Network*, 952 F.3d at 320 ("It was simply impracticable for Petitioners to predict how EPA would cure the missing [] component and then submit preemptive attacks on such hypothetical solutions."); *Clean Air Council*, 862 F.3d at 10 (holding that final rule fails logical outgrowth test if commenters "would have had to divine the agency's unspoken thoughts") (citation and internal quotation marks omitted).

C. LDEQ's Response to Comments Is Inadequate to Address the Problems with the Permit's Requirements for the Regenerator Vent.

As with its response to comments regarding the purge vent, LDEQ claims that conditions at Exxon's refinery "have not fundamentally changed such that the emission factors [for the regenerator vent] derived from the ICR test results are no longer accurate." RTC at 26. To begin with, like with its same claim regarding the purge vent, LDEQ's assertion incorrectly assumes that the 2011 stack testing—and the pounds per regeneration emission factor based on that testing—accurately captured the variability of processes and VOC emissions associated with the regenerator vent as of 2011. As discussed above (*supra* at 32-35), however, the testing and emission factor based on it could not have captured that variability. Nor does LDEQ's claim address the fact that the emission factor cannot ensure compliance because it is impossible to verify. *See supra* at 36.

Further, as with the purge vent, LDEQ offers no support for its bare assertion that conditions associated with the regenerator vent "have not fundamentally changed such that the emission factors derived from the ICR test results are no longer accurate"—and cannot offer any such support because there has apparently been no monitoring (or even testing) of emissions from the regenerator vent since 2011. Without regular monitoring or testing, LDEQ cannot possibly know whether emissions from the vent are the same as in the 2011 stack testing. Despite what LDEQ claims, conditions very likely have changed in the catalytic reforming unit (such as replacements of catalysts and the rate and severity of catalytic reactions) and its regenerator vent over the past nine-plus years. *See supra* at 35; Sahu Decl. at ¶¶ 45, 51. In fact, as noted above, the reforming unit has apparently undergone a recent upgrade. *See supra* at 19, n.55.

LDEQ also again ignores that the point of requiring adequate monitoring and reporting is to enable the regulators and the public to determine whether emissions at a permitted unit or source are above permitted levels—which can indicate that conditions at a source have changed. If state air agencies could legitimately refuse to supplement inadequate monitoring based on bare assertions that emissions or conditions have not changed, that would negate the whole purpose of requiring Title V permits to contain monitoring, reporting, and recordkeeping requirements sufficient to ensure compliance with permitted limits.

In its response to comments, LDEQ also asserts (as it did when discussing the purge vent) that, if "conditions were to change such that the average pound per regeneration event factors

were no longer representative of actual operations,” Exxon would “be obligated to apply for a permit modification per LAC 33:III.501.” RTC at 26. But, as noted above, LAC 33:III.501 says no such thing. *See supra* at 26, n.66. Even if Exxon were required to apply for a permit modification under these circumstances, the current permit proceeding should not simply leave Exxon to its own devices to determine whether the regenerator vent’s emission factor for total VOCs is “no longer representative.” That would suffer from the same problem noted above for the purge vent: it would undermine the purpose of Title V’s mandate that operating permits contain monitoring, reporting, and recordkeeping sufficient to assure compliance. Instead, the Title V permit here should require Exxon to conduct regular monitoring of emissions from the regenerator vent, which would allow the company, regulators, and the public to determine the actual emissions from the vent based on current operations.

Regarding variability, LDEQ asserts that the regenerator vent will not emit at its maximum lb/hour limit continuously because (1) gases are “routed to the vent only during the coke burn and coke burn purge stages of the regeneration cycle” and (2) the 2011 stack test data “shows that the vent is not emitting at the highest observed rates at all times.” RTC at 25. As to the first of these assertions, regardless whether gases may be routed to other parts of the refinery system during some minor stages of the regeneration cycle, coke burn and coke burn purge are the “two primary stages of the regeneration cycle,” as LDEQ itself recognizes. *Id.* And the coke burn and coke burn purge stages, during which LDEQ concedes gases are routed to the regenerator vent, can last many hours—as long as between approximately 21 and 35 hours combined, based on the historic examples discussed above. *See supra* at 32-33. These stages could last even longer, depending on the length of time since the last regeneration event, the severity of coke deposits, and the extent of deactivation of the active sites on the catalysts, among other factors. Sahu Decl. at ¶ 52.

As to LDEQ’s assertion that the 2011 stack test data “shows that the vent is not emitting at the highest observed rates at all times,” if the vent emitted at its maximum hourly VOC limit of 13.0 lb/hr only 1,800 hours in a given year, it would emit 11.7 tons of VOCs—above its annual VOC limit of 11.6 tons/year. It is entirely feasible that the regenerator vent would emit at its maximum hourly rate (whatever that rate might be, since the 2011 testing likely did not capture it) at least 1,800 hours in a given year (Sahu Decl. at ¶ 53)—especially given that Exxon’s application indicates that the regenerator vent operates every hour of the year (Draft Permit Package at PDF p. 199), the contractor for the 2011 stack testing similarly noted that the regeneration “process is a twenty-four hour operation” (Regenerator Vent Test Report at p. 4), and the fact that regeneration can occur between 1,000 and 4,000 (or more) hours per year (Sahu Decl. at ¶¶ 28, 36, 53). Further, there is no way to know whether the vent is “emitting at the highest observed rates” —or higher rates—“at all times” because the vent has not been monitored or tested since 2011, and the 2011 testing could not have captured the variability of the processes or emissions associated with this vent. *See supra* at 32-35. Finally, to the extent that LDEQ is suggesting that the annual VOC limit for the regenerator vent is capacious, EPA should not credit that suggestion because there is no way to verify the accuracy of the permit’s 132.54

pounds VOC per regeneration event emission factor that was used to calculate the annual VOC limit in the first place.⁹² *See supra* at 36.

Regarding the variability of the 2011 stack testing, LDEQ also asserts that, “unlike the emissions data for the [purge vent], that for the Regenerator Vent does not vary significantly.” RTC at 25. But at the same time, LDEQ concedes that one VOC HAP—xylene—“exhibited significant variability” in the 2011 testing. *Id.* LDEQ attempts to discount the significant variability among the 2011 concentration values for another VOC HAP—ethylbenzene, *see supra* at 34—by arguing that, “even at its highest observed concentration, mass emissions totaled only 0.57 pounds per hour, and the average emission rate was 0.18 pounds per hour.” RTC at 25. This argument does not even address the variability of ethylbenzene emissions in the 2011 testing. Further, even if the regenerator vent emitted at no more than the average 0.18 lbs/hour rate from the 2011 testing (which is impossible to know, given that there has been no monitoring or testing since 2011) for every hour in a given year, its emissions of this hazardous air pollutant regulated under Clean Air Act § 112 would still total 0.79 tons—which is by no means a trivial amount. Importantly, LDEQ’s assertions regarding the 2011 testing ignore that VOC rates across three test runs during coke burn purge events were highly variable—with the testing during this stage resulting in a highest concentration value (10.7 ppm) that was over 65% higher than the lowest value (6.46 ppm). *See supra* at 34.

In the response to comments, LDEQ also asserts that neither CEMS nor stack testing are warranted because (1) potential emissions from the regenerator vent are “only” 11.6 tons/year; (2) “process gases do not continuously discharge from the vent”; (3) “although the ICR test results show the emissions rates of several compounds can vary somewhat during the regeneration cycle, concentrations of most [HAPs] were found to be below method detection limits” and “mass emissions of those compounds detected were very low and not emitted at rates that could potentially adversely impact human health or the environment”; and (4) “there is no data that suggest the test results do not remain representative of actual operations.” RTC at 27. EPA should not credit the first of these assertions, since there is no way to verify the accuracy of the permit’s 132.54 pounds VOC per regeneration event emission factor that was used to calculate the annual VOC limit in the first place, and there has been no monitoring or testing since the 2011 testing (which did not capture the relevant variability in the first place) to determine annual emissions from the regenerator vent. The regenerator vent could be emitting far more than 11.6 tons of VOCs per year, but without regular monitoring, there is no way to know whether or not that is the case. Sahu Decl. at ¶ 54. Further, despite what LDEQ seems to assert, there is no ton-per-year cutoff below which neither regular monitoring nor testing is required. Title V’s requirement that operating permits include monitoring reporting, and testing requirements sufficient to ensure compliance still applies no matter how small or large the relevant limit is.

⁹² Exxon’s application indicates that the 11.6 tons/year annual limit was determined by multiplying the 132.54 pounds VOCs per regeneration emission factor by 175 regenerations per year. Draft Permit Package at PDF pp. 237-38.

Regarding the second of LDEQ's assertions (that "process gases do not continuously discharge from the vent"), as noted above, regardless whether gases may be routed to other parts of the refinery system during some minor stages of the regeneration cycle, coke burn and coke burn purge, during which gases are routed to the regenerator vent, are (as LDEQ concedes) the "two primary stages of the regeneration cycle." RTC at 25. And LDEQ ignores that these two primary stages can last many hours—as long as between approximately 21 and 35 hours (based on historic examples) or even longer. *See supra* at 32-33. Further, Exxon's application indicates that the regenerator vent operates every hour of the year (Draft Permit Package at PDF p. 199), and the contractor for the 2011 stack testing likewise noted that the regeneration "process is a twenty-four hour operation" (Regenerator Vent Test Report at p. 4). Ultimately, regardless whether gases continuously discharge from the vent, they indisputably do discharge from the vent large amounts of time, and those variable discharges of VOCs should be regularly monitored.

LDEQ's third assertion, regarding the HAPs that are emitted from the regenerator vent, ignores that the 2011 testing showed that at least two HAPs—xylene and ethylbenzene—were emitted at significant and variable amounts. *See supra* at 34. And even Exxon's permit application indicates that the vent is capable of emitting non-insignificant amounts of other VOC HAPs, including 0.30 tons/year benzene and 0.45 tons/year toluene (along with 0.61 tons/year ethyl benzene and 4.58 tons/year xylene). Draft Permit Package at PDF pp. 199-201. In addition, the 2011 testing could not have captured the variability of VOC HAPs emitted by the regenerator vent, for all of the same reasons that it could not have captured the variability of the regeneration process or of total VOC emissions from the vent (*see supra* at 32-35). Sahu Decl. at ¶ 55. Thus, the regenerator vent could be releasing VOC HAPs at much higher rates than shown in the 2011 testing. *Id.* Further, although the level of HAPs emitted through the regenerator vent counsels in favor of strong monitoring requirements given the environmental justice concerns present here, there is no dispute that the vent emits total VOCs—which is the pollutant limited by the hourly and annual permit limits at issue here—at measurable levels.

LDEQ's fourth assertion for why regular monitoring and testing are not warranted—that "there is no data that suggest the test results do not remain representative of actual operations"—fails for the same reasons that its similar argument (that conditions at the refinery "have not fundamentally changed such that the emission factors derived from the ICR test results are no longer accurate") fails. *See supra* at 41. Once again, LDEQ attempts to turn on its head Title V's requirement that operating permits include monitoring, reporting, and recordkeeping sufficient to ensure compliance. There has been "no data" since 2011 because there has been no monitoring or testing since that time.

Importantly, LDEQ's arguments for why regular monitoring is not appropriate do not address how LDEQ expects Exxon to ensure compliance with the proposed permit's maximum hourly VOC limit for the regenerator vent—or how use of a pound per regeneration emission factor can ensure compliance with that hourly limit. Nor does any other portion of LDEQ's response to comments address this issue.

Finally, while conceding that the NESHAP requirements applicable to the regenerator vent “do[] not mandate that ExxonMobil directly monitor emissions” (RTC at 25), LDEQ states that 40 C.F.R. Part 63, Subpart UUU “does require an operation, maintenance, and monitoring plan to ensure that good air pollution control practices for minimizing emissions are employed.” RTC at 25. To the extent LDEQ is suggesting that this requirement may help ensure compliance with the vent’s hourly and annual VOC limits, LDEQ is wrong. This NESHAP requirement cannot ensure compliance with the VOC limits because nothing in the permit ties the requirement to have an operation, maintenance, and monitoring plan to the specific hourly or annual VOC permit limits—or explains how the requirement for a plan can be used to determine or calculate specific, actual emissions of VOCs from the regenerator vent. *See Shell Deer Park Order* at 21-23. Nor does the permit record explain how the NESHAP requirement can be used to determine actual hourly or annual VOC emissions from this vent.

The NESHAP requirement for an operation, maintenance, and monitoring plan also cannot ensure compliance with the VOC limits because the Subpart UUU requirements for the content of the plan leave it up to Exxon to determine what operating practices are to be used, which may or may not reduce VOC emissions at all—much less reduce them to the point of ensuring compliance with the hourly and annual VOC limits. *See Sahu Decl.* at ¶ 56. In fact, the relevant NESHAP provisions covering regenerator vent emissions do not even specify any minimum requirements that the plan must contain. *See* 40 C.F.R. § 63.1574(f). In addition, the plan cannot ensure compliance with the hourly and annual VOC limits due to the variable nature of regeneration processes and of the VOC emissions from the regenerator vent, as discussed above. Finally, under § 63.1574(f)(1), Exxon is not required to include the operation, maintenance, and monitoring plan in its Title V permit. But without the specific contents of that plan being included in the permit, there is no way that it could possibly ensure compliance the specific hourly and annual VOC limits for the regenerator vent.

IV. IN VIOLATION OF 40 C.F.R. § 70.7(A)(5), LDEQ FAILED TO PROVIDE A REASONED EXPLANATION FOR WHY THE PROPOSED PERMIT ENSURES COMPLIANCE WITH THE VOC LIMITS FOR THE PURGE AND REGENERATOR VENTS.

As Petitioners’ comments explained (at pages 7, 13, and 16), in addition to the failure of the proposed Title V permit to ensure compliance with the hourly and annual VOC limits for the purge and regenerator vents (as discussed in the preceding pages), the permit and permit record are also deficient for the independent and separate reason that LDEQ has not adequately explained how the proposed Title V permit provisions can ensure compliance with these limits. LDEQ’s statement of basis does not even discuss why the permit’s monitoring, reporting, or other requirements are adequate to ensure compliance with these limits. And, as discussed above, LDEQ’s response to comments does not provide a reasoned explanation for how the proposed Title V permit provisions can ensure compliance with these limits.

LDEQ’s failure to provide a reasoned explanation in the permit record for why it believes the permit conditions are sufficient to assure the refinery’s compliance with the hourly and annual VOC limits for the purge and regenerator vents violates 40 C.F.R. § 70.7(a)(5)’s

requirement that permitting authorities “provide a statement that sets forth the legal and factual basis for the draft permit conditions.” *See also* Mettiki Order at 7-8 (“In addition to including permit terms sufficient to satisfy EPA's part 70 monitoring requirements, permitting authorities must include a rationale for the monitoring requirements selected that is clear and documented in the permit record.”) (citing § 70.7(a)(5) and prior Title V orders).

In violation of Title V requirements (as reflected in 40 C.F.R. § 70.7(h)(6)), LDEQ did not respond to Petitioners’ comments raising these precise objections regarding LDEQ’s failure to offer a reasoned explanation for why the monitoring and other permit requirements ensure compliance with the VOC limits. Thus, Petitioners cannot “explain how [LDEQ’s] response to the comment is inadequate to address the issue raised in the public comment.” *See* 40 C.F.R. § 70.12(a)(2)(vi).

V. THE PROPOSED PERMIT IMPERMISSIBLY ALLOWS EXXON TO UNILATERALLY REVISE MONITORING REQUIREMENTS AND SEEK APPROVAL AFTER-THE-FACT VIA ADMINISTRATIVE PERMIT AMENDMENT.

After the close of the comment period on the draft Title V permit, LDEQ inserted a new permit provision—not contained in the draft permit—that allows Exxon to unilaterally revise the Title V permit’s emission calculation methods and later seek approval for the change through administrative permit amendment. *See* Proposed Permit Specific Requirement 246. Specific Requirement 246 provides:

In the event the permittee determines that a method of calculating emissions is more appropriate or more accurate than a method prescribed herein, the permittee shall employ the more appropriate or more accurate method for purposes of determining compliance with the emission limitations of this permit and for reporting actual emissions in accordance with LAC 33:III.919 and LAC 33:III.5107.A.⁹³ The permittee shall request an administrative amendment to incorporate the more appropriate or more accurate method into the permit no later than 30 days after the submittal of the reports required by LAC 33:III.919 and LAC 33:III.5107.A.

This provision suffers from two major flaws:

First, it effectively allows Exxon to unilaterally revise—for a period that can be even longer than a year—the proposed Title V permit’s emission calculation methods used “for purposes of determining compliance with the emissions limitations of this permit” (*i.e.*, the permit’s monitoring requirements) whenever Exxon alone (without approval from LDEQ or review by the public, EPA, or affected states) determines that a new method is “more appropriate” or more accurate. Under the provision, Exxon is not required to submit an

⁹³ LAC 33:III.919 addresses emissions inventories, and LAC 33:III.5107.A addresses emissions reports for toxic air pollutants.

application to revise the permit’s calculation methods until 30 days after it submits its annual emissions inventory report.⁹⁴ Thus, the provision could allow Exxon, for purposes of complying with its permit limits, to “employ” a new emission calculation method not specified in its Title V permit on May 1 of a given year, but not submit a permit application for that change until May 31 of the following year—more than a year later.

Allowing Exxon to unilaterally revise the permit in this manner violates both EPA’s Part 70 regulations and Louisiana’s permitting regulations. Under Part 70, any change to Exxon’s emission calculation methods from the permit would be a significant change to monitoring requirements that would require a significant permit modification. *See* 40 C.F.R. § 70.7(e)(4)(i) (“At a minimum, every significant change in existing monitoring permit terms or conditions and every relaxation of reporting or recordkeeping permit terms or conditions shall be considered significant.”). Louisiana’s permitting regulations provide the same. LAC 33:III.527.A.2.b-c. Significant permit modifications are not effective until after there has been an opportunity for public comment and review by EPA and affected states. 40 C.F.R. § 70.7(a), (e)(4)(ii); LAC 33:III.519.C-1-2, 527.B-3-5, 531.A.1.c, A.3.c, B.1, 533.C.1. Contrary to these requirements, Specific Requirement 246 would allow Exxon to begin using new emission calculation methods for purposes of complying with its permit limits before public notice and review by EPA and affected states—or even review by LDEQ.

Even if a revision to the permit’s emission calculation methods did not constitute a significant change to monitoring requirements (it would) that could only be approved through a significant permit modification, it would at the least constitute a non-significant change to monitoring, reporting, or recordkeeping requirements that could only be approved through a minor permit modification. *See* 40 C.F.R. § 70.7(e)(2)(i)(A)(2) (“Minor permit modification procedures may be used only for those permit modifications that ... [d]o not involve significant changes to existing monitoring, reporting, or recordkeeping requirements in the permit”); LAC 33:III.525.A.2.c. Under Part 70, such a permit change through the minor modification process would still require Exxon to submit an application to revise the permit before Exxon could implement the change. 40 C.F.R. § 70.7(e)(2)(iv). The Louisiana permitting regulations are even stricter, not allowing minor modifications to be implemented until after approval by LDEQ and review by EPA. LAC 33:III.525.B.⁹⁵

Second, Specific Requirement 246 also impermissibly allows Exxon to revise the proposed Title V permit’s emission calculation methods through an administrative permit

⁹⁴ LAC 33:III.919.F.1 provides: “Data for emissions inventory and the certification statements shall be collected annually.” And LAC 33:III.919.F.1.d provides: “Both the emissions inventory and the certification statement ... shall be submitted ... by April 30 of each year ..., unless otherwise directed by the department.”

⁹⁵ Even for administrative permit amendments, Part 70 requires permittees to at least submit an application before any permit change can be implemented. 40 C.F.R. § 70.7(d)(3)(iii). Again the Louisiana regulations appear to be stricter, apparently not allowing administrative amendments to be implemented until after approval by LDEQ. LAC 33:III.521.B.

amendment. Because administrative amendments to Title V permits do not require public notice and comment or review by affected states and EPA (or, thus, allow for Title V petitions from the public),⁹⁶ this new permit provision would allow Exxon to revise the emission calculation methods discussed above for the purge and regenerator vents—or any other permit emission calculation methods, including future monitoring or calculation methods that EPA or LDEQ might require as a result of this petition—with no input from the public, EPA, or affected states. Allowing Exxon to revise its emissions calculation methods without scrutiny from the public or EPA is especially egregious here given the environmental justice concerns presented by Exxon’s refinery and the large amounts of VOCs (and VOC HAPs) that the proposed permit allows the refinery to emit.

Allowing Exxon to change the permit’s emission calculation methods through an administrative permit amendment violates both EPA’s Part 70 regulations and Louisiana’s permitting regulations. 40 C.F.R. § 70.7(d)(1) only allows administrative permit amendments to be used in certain limited circumstances: to correct typographical errors; to identify changes in the name or contact information of any person identified in the permit; to require more frequent monitoring or reporting; to allow for a change in ownership or operational control of a source; to incorporate requirements from preconstruction permits in certain circumstances; and to incorporate any other type of change that EPA “has determined as part of the approved part 70 program to be similar to” the other changes identified above. None of those circumstances apply here. Although certain changes to emission calculation methods could conceivably involve adding “more frequent monitoring or reporting,” Specific Requirement 246 is in no way limited to those circumstances where Exxon seeks to implement more robust monitoring. In fact, that § 70.7(d)(1) only allows changes to monitoring and reporting requirements to be made through administrative amendment when more frequent monitoring or reporting is required makes clear that administrative amendment cannot be used in the circumstances that Specific Requirement 246 would allow—when Exxon unilaterally decides that a certain emission calculation method is no longer “accurate” or “appropriate,” which on its face would include circumstances that Exxon decides use of a less robust calculation method is “more appropriate.”

Part 70’s provisions covering permit modification also make clear that administrative permit amendment cannot be used in the circumstance that Specific Requirement 246 would allow. Unlike administrative amendments, minor permit modifications allow for review by affected states and EPA (and thus provide an opportunity to petition EPA to object), and significant modifications require both public notice and comment and review by affected states and EPA. 40 C.F.R. § 70.7(a)(1)(ii), (e)(2)(iii), (e)(4)(ii), (h).⁹⁷ As discussed above, Part 70 only allows minor permit modifications related to monitoring, reporting, or recordkeeping requirements when changes to those requirements are not “significant”—and explicitly requires significant modification procedures to be used for significant changes in monitoring provisions

⁹⁶ See 40 C.F.R. § 70.7(d)(3), LAC 33:III.531.A.2, 531.B.1, 533.B.1.

⁹⁷ Louisiana’s permitting regulations provide the same. See LAC 33:III.525.B.6, 527.B.5, 531.A.2.c, 531.B.1, 533.B.1.

and every relaxation of reporting or recordkeeping provisions. 40 C.F.R. § 70.7(e)(2)(i)(A), (e)(4)(i). At the very least, a change to Exxon’s permit’s emission calculation methods would constitute a non-significant change to monitoring, reporting, or recordkeeping requirements (and actually constitutes a significant change to these requirements, as discussed above). Contrary to the requirements from Part 70, however, Specific Requirement 246 would not even require minor permit modification procedures to be used when revising the permit’s emission calculation methods.

Specific Requirement 246’s language allowing Exxon to revise the permit’s emission calculation methods through administrative amendment also violates Louisiana’s permitting regulations. Like Part 70, Louisiana’s regulations only allow administrative permit amendments in certain limited circumstances such as to correct typographical errors, none of which would apply here. LAC 33:III.521.A.⁹⁸ Unlike Part 70, the Louisiana regulations do not even allow administrative permit amendments when the permittee seeks to require more frequent monitoring or reporting. *Id.* And as noted above, the state’s regulations also only allow minor modifications related to Title V permit monitoring, reporting, or recordkeeping requirements when changes to those requirements are not “significant” —and explicitly require significant modification procedures to be used for significant changes in monitoring provisions and relaxations of reporting or recordkeeping provisions. *Id.* at 525.A.2.c, 527.A.2.b-c.

As authority for Specific Requirement 246, the proposed permit cites LAC 33:III.501.C.6. That provision from LDEQ’s regulations, however, cannot authorize Exxon to unilaterally revise the permit or later seek approval through an administrative amendment in the circumstances that Specific Requirement 246 does; LAC 33:III.501.C.6 only contains the general requirement that each permit contain sufficient terms and conditions to ensure compliance with applicable requirements.

Because Specific Requirement 246 is contrary to Part 70 and Louisiana’s permitting regulations in the two ways discussed above, EPA should require LDEQ to remove this permit provision. Doing so would require Exxon to comply with the applicable significant permit modification procedures whenever it wants to revise the proposed permit’s emission calculation methods, thus ensuring public notice and comment and an opportunity for review by EPA and affected states.

Because the draft Title V permit here did not contain Specific Requirement 246 and LDEQ inserted this requirement into the Title V permit only after the close of the public comment period on the draft Title V permit, it was impracticable for Petitioners to raise their objections to Specific Requirement 246. *See* 42 U.S.C. § 7661d(b)(2); 40 C.F.R. § 70.8(d).

⁹⁸ LAC 33:III.507.D.2.a provides: “Revisions to the initial [Title V] permit shall be accomplished in accordance with the procedures provided for in LAC:III.521, 525, or 527.” This presumably also addresses revisions to Title V permits issued after the initial permit, since there are no separate provisions that address revisions to renewal permits.

Further, the grounds for Petitioners' objections to Specific Requirement 246 arose after the comment period, when LDEQ inserted this new requirement into the proposed permit. *See id.*

VI. THE DRAFT PERMIT FAILS TO ENSURE COMPLIANCE WITH 40 C.F.R. PART 68 REQUIREMENTS.

As Petitioners' comments pointed out (at page 18), the proposed Title V permit fails to ensure compliance with requirements from 40 C.F.R. Part 68, in violation of 40 C.F.R. § 70.6(a)(1) and 42 U.S.C. § 7661c(a).

The Exxon Baton Rouge refinery is subject to EPA's Accidental Release Prevention Requirements (also known as the EPA Risk Management Program) found in 40 C.F.R. Part 68. *See Proposed Permit's Specific Requirements 227-28, 258; Proposed Permit's General Information at 1 (noting a Risk Management Plan for the refinery).*⁹⁹ The proposed permit, however, unlawfully relaxes certain requirements from Part 68. Specifically, the permit (at Specific Requirement 258) provides that Exxon shall comply with the provisions in Part 68, "except as specified in LAC 33:III.5901."¹⁰⁰ That section of the Louisiana Administrative Code relaxes the Part 68 requirements in at least two ways. First, it amends compliance deadlines from 40 C.F.R. §§ 68.10(a)(2) and 68.190(b)(2) by adding that such deadlines are "[t]hree years after the date on which a new regulated substance is first listed by EPA under 40 CFR 68.130, *provided that the Department shall have adopted the addition of the new substance to 40 CFR 68.130 by three years after the date of the new EPA listing.*" LAC 33:III.5901(C)(3) (emphasis added). Second, LAC 33:III.5901(C)(4) provides: "In 40 CFR 68.210, the availability of information to the public shall be ensured by the Louisiana Public Records Act, R.S. 44:1 et seq., except as otherwise declared confidential pursuant to R.S. 30:2030 and all regulations promulgated thereto including LAC 33:I.Chapter 5." Rather than being subject to Louisiana confidentiality provisions, 40 C.F.R. § 68.210(a) provides that the "RMP required under subpart G of this part shall be available to the public under 42 U.S.C. 7414(c) and 40 CFR part 1400."

The requirements from Part 68 are applicable requirements that Exxon's Title V permit must assure compliance with. *See* 40 C.F.R. 70.2 (defining "applicable requirement" to include "[a]ny standard or other requirement under section 112 of the Act, including any requirement concerning accident prevention under section 112(r)(7) of the Act"). *See also id.* § 70.6(a)(1), 42 U.S.C. § 7661c(a). But because the proposed permit includes LAC 33:III.5901's qualifiers on the Part 68 requirements, the permit cannot ensure compliance with all Part 68 requirements. EPA

⁹⁹ See also LDEQ's response to comments at page 28, where the Department "agrees that 40 CFR Part 68 (Chemical Accident Prevent Provisions) should be identified as an applicable requirement . . ." In addition, these EPA databases also indicate that the refinery is subject to the Risk Management Plan requirements from Part 68:

https://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110043804185;
https://hifld-geoplatfrom.opendata.arcgis.com/datasets/72bf420c0ec149f59464f83b36ccf5bd_0?geometry=-91.347%2C30.449%2C-91.020%2C30.501.

¹⁰⁰ This provision is seemingly in tension with Specific Requirement 227, which states that Exxon "shall comply with all applicable provisions of 40 CFR 68," without the qualifying language regarding LAC 33:III.5901.

should require LDEQ to revise the permit to unequivocally state that Part 68 is an applicable requirement—and remove the language stating “except as specified in LAC 33:III.5901.”

Requiring LDEQ to fix the above-discussed Part 68 problems in the Title V permit is especially important here because, over the years, Exxon’s Baton Rouge refinery has experienced multiple major fires, explosions, and other problems. For example, on February 11, 2020, a release and subsequent combustion of hydrocarbons from an elevated pipe rack at the refinery caused a massive fireball to erupt.¹⁰¹ Exxon reported that large amounts of air pollution were released during the ensuing fire (which lasted over six hours), including over 13,000 pounds of sulfur dioxide, 2,681 pounds of cancer-causing 1,3 butadiene, 33 pounds of benzene, 35,290 pounds of sulfuric acid, and over 62,000 pounds of “flammable vapor.”¹⁰² Earlier, in November 2017, a fire sent large flames and plumes of smoke into the air.¹⁰³ On November 22, 2016, an isobutane release occurred in the sulfuric acid alkylation unit at the refinery, resulting in four serious injuries to workers and injuries to two others.¹⁰⁴ In July 2012, an EPA inspection at the refinery revealed heavily corroded pipes and ruptured pipelines, pipes and other equipment that were overdue for inspection, inadequate documentation for emergency and shutdown procedures, and valves wrapped in garbage bags and secured with duct tape to protect them from corrosive vapors.¹⁰⁵ That inspection was preceded by a June 12, 2012 incident at Exxon’s Baton Rouge chemical plant, in which a chemical leak resulted in the release of over 31,000 pounds of benzene and more than 13,000 pounds of toluene.¹⁰⁶ And on Christmas Eve 1989, several tanks at the refinery exploded, killing two plant workers and injuring five others, and also damaging buildings up to six miles away.¹⁰⁷

In violation of Title V requirements (as reflected in 40 C.F.R. § 70.7(h)(6)), LDEQ has not yet responded to Petitioners’ comments raising this specific objection regarding the above

¹⁰¹ See Ex. 9, Feb. 18, 2020 Letter of Notification from Exxon to LDEQ;
<https://www.wbrz.com/news/crews-on-scene-of-large-chemical-plant-fire-in-north-baton-rouge/>

¹⁰² See Feb. 18, 2020 Letter of Notification;
https://www.theadvocate.com/baton_rouge/news/article_7c9cff22-5277-11ea-8371-775fba1a956e.html

¹⁰³ <https://www.cbsnews.com/news/baton-rouge-refinery-exxonmobil-fire-breaks-out/>.

¹⁰⁴ <https://www.csb.gov/exxonmobil-refinery-chemical-release-and-fire/>.

¹⁰⁵ <http://www.louisianaweekly.com/exxonmobil-is-scrutinized-in-baton-rouge-after-past-leaks/>;
<https://www.npr.org/2013/05/30/187044721/baton-rouge-s-corroded-overpolluting-neighbor-exxon>

¹⁰⁶ <https://www.npr.org/2013/05/30/187044721/baton-rouge-s-corroded-overpolluting-neighbor-exxon>;
<https://media.npr.org/documents/2013/may/exxon-60-day-8-14-12.pdf>

¹⁰⁷ <https://www.upi.com/Archives/1989/12/24/Exxon-storage-tanks-explode/4958630478800/?ur3=1>;
<https://www.latimes.com/archives/la-xpm-1989-12-27-mn-1106-story.html>. See also
<https://earthjustice.org/features/toxic-catastrophes-texas-national-chemical-disaster-rule> at Testimonial of Baton Rouge resident William Fontenot.

Part 68 issues.¹⁰⁸ Thus, Petitioners cannot “explain how [LDEQ’s] response to the comment is inadequate to address the issue raised in the public comment.” *See* 40 C.F.R. § 70.12(a)(2)(vi).

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¹⁰⁸ LDEQ revised the Title V permit to address other of Petitioners’ concerns regarding Part 68 requirements but failed to address the above concern. *See* RTC at 27-28.

LIST OF EXHIBITS

- 1) Comments of Louisiana Bucket Brigade, EIP, Earthjustice, and Sierra Club on draft Title V permit for Exxon Baton Rouge refinery reforming complex
- 2) Exxon Utilities Unit - statement of basis for proposed Title V permit
- 3) ERIC report of actual VOC emissions within three miles of Exxon Baton Rouge refinery
- 4) Declaration of Dr. Ranajit Sahu
- 5) Table of Exxon Baton Rouge NESHAP fenceline benzene data
- 6) Excerpts of Source Test Report for Oct. 13, 17, 19, 2011 Testing at Purge Vent
- 7) Excerpts of Source Test Report for Oct. 17-20, 2011 Testing at Coke Burn (Regenerator) Vent
- 8) Jupiter Brownsville, LLC upgrader facility permit excerpts
- 9) February 18, 2020 Letter of Notification from Exxon to LDEQ