

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

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| IN THE MATTER OF | * | PETITION FOR |
| | * | OBJECTION |
| Clean Air Act Title V Permit No. 2560-00295-V1 | * | |
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| for Yuhuang Chemical Inc., YCI Methanol Plant | * | Permit No. 2560-00295-V1 |
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| Issued by the Louisiana Department of Environmental Quality | * | |
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PETITION REQUESTING THAT THE ADMINISTRATOR OBJECT TO TITLE V AIR PERMIT MODIFICATION NO. 2560-00295-V1 ISSUED BY LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY TO YUHUANG CHEMICAL INC. FOR THE YCI METHANOL PLANT

Pursuant to Clean Air Act § 505(b)(2), 42 U.S.C. § 7661d(b)(2), and 40 C.F.R. § 70.8(d), Sierra Club and Louisiana Environmental Action Network (“Petitioners”) petition the Administrator of the United States Environmental Protection Agency to object to Title V air permit modification no. 2560-00295-V1 (the “permit” or “permit modification”) issued to Yuhuang Chemical Inc. for the YCI Methanol Plant in St. James, Louisiana (“plant” or “facility”) on June 30, 2017.

Because the permit was issued by LDEQ in response to an EPA objection order more than 90 days after the objection order was issued and because the reissued permit fails to resolve EPA’s objections, the Clean Air Act requires that the Administrator take final action to resolve the permits’ deficiencies. 42 U.S.C. § 7661d(c). Accordingly, the Administrator may not remand the objectionable permits back to LDEQ. Instead, he must object to the permit and then take action to modify and reissue the permit himself, consistent with the requirements of the Act.

I. INTRODUCTION

The permit is a modification of the initial permit that LDEQ issued on May 5, 2015 and to which EPA objected on August 31, 2016.¹ EPA bases its objections on the petition that Petitioners submitted to the agency on May 19, 2015 (“EPA Objection”).² LDEQ claims that it

¹ *In the Matter of Yuhuang Chemical Inc.*, Order on Petition No. VI-2015-03, Aug. 31, 2016, (Yuhuang Order), https://www.epa.gov/sites/production/files/2016-09/documents/yuhuang_response2015_0.pdf

² *Id.*

modified the initial permit in an attempt to resolve EPA's objections.³ But as detailed in the tables in Section V below, the permit fails to resolve the bulk of EPA's objection. Petitioners submit this petition requesting that the Administrator object to the permit because it remains deficient and does not comply with the requirements of the Act.

The Clean Air Act mandates that the Administrator "shall issue an objection . . . if the petitioner demonstrates to the Administrator that the permit is not in compliance with the requirements of the . . . [Clean Air Act]." 42 U.S.C. § 7661d(b)(2); *see also* 40 C.F.R. § 70.8(c)(1). The Administrator must grant or deny a petition to object within 60 days of its filing. 42 U.S.C. § 7661d(b)(2). Because the permit at issue fails to comply with the Clean Air Act's requirements, EPA has a "duty to object to [the] non-compliant." *See New York Public Interest Group v. Whitman*, 321 F.3d 316, 332-34, nl2 (2nd Cir. 2003).

II. STATUTORY & REGULATORY FRAMEWORK

Section 502(d)(1) of the Clean Air Act, 42 U.S.C. § 7661a(d)(1), requires each state to develop and submit to EPA an operating permit program to meet the requirements of Title V of the Act. Louisiana's approved Title V program is in the Louisiana Administrative Code at LAC 33:III.507.

Any person wishing to construct a new major stationary source of air pollutants must apply for and obtain a Title V permit before commencing construction. 42 U.S.C. § 7661b(c); *see also* LAC 33:III.507.C.2.1. The Title V permit must "include enforceable emission limitations and standards . . . and such other conditions as are necessary to assure compliance with *applicable requirements* of [the Clean Air Act and applicable State Implementation Plan ("SIP")]." 42 U.S.C. § 7661c(a) (emphasis added).

The regulations make clear that the term "applicable requirement" is broad and includes, among other things, "[a]ny term or condition of any preconstruction permit" or "[a]ny standard or other requirement provided for in the applicable implementation plan approved or promulgated by EPA through rulemaking under title I of the [Clean Air] Act." 40 C.F.R. § 70.2; *see also* LAC 33:III.507.A.3 ("Any permit issued under the requirements of this Section shall incorporate all federally applicable requirements for each emissions unit at the source."). Indeed, "applicable requirements" includes the duty to obtain a construction permit that meets the requirements of the Act's Prevention of Significant Deterioration ("PSD") program. *See* 42 U.S.C. § 7475.

Clean Air Act regulations command that "each applicable State Implementation Plan . . . shall contain emission limitations and such other measures as may be necessary to prevent significant deterioration of air quality." 40 C.F.R. § 51.166. Louisiana SIP provisions that incorporate the Clean Air Act's PSD requirements are in LAC 33:III.509. 40 C.F.R. § 52.970 (identifying EPA approved regulations in the Louisiana SIP). The Louisiana PSD regulations apply to the construction of a "major stationary source," which include certain listed sources, such as a chemical process plant like Yuhuang's methanol plant, that "ha[ve] the potential to

³ Briefing Sheet, p. 6 ("LDEQ has amended the proposed permit as directed by EPA).

emit[] 100 tons per year or more” of any PSD regulated pollutant (except greenhouse gases). LAC 33:III.509.B. PSD regulated pollutants include, among others, nitrogen oxides (“NO_x”), sulfur dioxide (“SO₂”), particulate matter (“PM”), volatile organic compounds (“VOC”), carbon monoxide (“CO”), and greenhouse gases. *Id.* “Potential to emit” is “the maximum capacity of a stationary source to emit a pollutant under its physical and operational design.” 33 LAC Pt III, § 509. “Any physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is federally enforceable.” *Id.*

Major stationary sources, as defined under LAC 33:III.509.B, must meet the state’s PSD requirements under LAC 33:III.509.J-R. LAC 33:III.509(A)(2). These requirements include (1) an analysis of whether the source will cause a violation of any national ambient air quality standard (“NAAQS”); (2) application of the best available control technology (“BACT”) *for each PSD regulated pollutant emitted from the facility*; and (3) an opportunity for the public to participate in the process. 40 U.S.C. § 7475(a)(2)-(8); *see also Alaska Dep’t of Env’tl. Conservation v. EPA*, 540 U.S. 461, (2004). The purposes of requiring PSD review are, among other things, “(1) to protect public health and welfare from any actual or potential adverse effect which ... may reasonably be anticipated to occur from air pollution, notwithstanding attainment and maintenance of all national ambient air quality standards; ... (3) to insure that economic growth will occur in a manner consistent with the preservation of existing clean air resources; ... and (5) to assure that any decision to permit increased air pollution is made only after careful evaluation of all the consequences of such a decision and after adequate procedural opportunities for informed public participation in the decisionmaking process.” 42 U.S.C. § 7470.

Louisiana PSD regulations command: “No new major stationary source . . . to which the requirements of Subsection J-Paragraph R.5 of this Section apply shall begin actual construction without a permit that states the major stationary source . . . will meet those requirements.” LAC 33:III.509(A)(3). Title V permits must incorporate the terms and conditions of the PSD permit where a PSD permit is required. If the Title V permit does not incorporate the terms and conditions of a required PSD permit, the Title V permit is not in compliance with the Clean Air Act.

The Title V operating permit program does not generally impose new substantive air quality control requirements, but does require permits to contain monitoring, recordkeeping, reporting, and other requirements to assure compliance by sources with existing applicable emission control requirements. 57 Fed. Reg. 32250, 32251 (July 21, 1992) (EPA final action promulgating the Part 70 rule). U.S. EPA policy requires Title V permits to be “enforceable as a practical matter.”⁴ To be enforceable, the permit must create mandatory obligations (standards, time periods, methods). Specifically, a permit condition must: (1) provide a clear explanation of

⁴ See U.S. Environmental Protection Agency, *Region 9, Title V Permit Review Guidelines: Practical Enforceability*, September 9, 1999, (hereafter “Region 9 Guidelines”); Available at: http://webcache.googleusercontent.com/search?q=cache:P7YnEX6ssOkJ:itepsrv1.itep.nau.edu/itep_courses_downloads/TitleV_Resources/R9TitleVPermitReviewGuidelines_FULLL.pdf+&cd=1&hl=en&ct=clnk&gl=us.

how the actual limitation or requirement applies to the facility; and (2) make it possible for the state agency, the U.S. EPA, and citizens to determine whether the facility is complying with the condition.⁵

EPA must object to a state-issued Title V permit if it fails to include and assure compliance with all applicable requirements. 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 make such objection.” 42 U.S.C. § 7661d(b)(2); 40 C.F.R. § 70.8(d). The Administrator “shall issue an objection . . . if the petitioner demonstrates to the Administrator that the permit is not in compliance with the requirements of the . . . [Clean Air Act].” 42 U.S.C. § 7661d(b)(2); *see also very few*, 40 C.F.R. § 70.8(c)(1). The Administrator must grant or deny a petition to object within 60 days of its filing. 42 U.S.C. § 7661d(b)(2).

Where EPA objects to a state-issued Title V permit, the state permitting authority must revise the permit within 90 days to resolve deficiencies identified in EPA’s objection order. 42 U.S.C. §§ 7661d(b)(3) and (c). Where the state permitting authority fails to revise an objectionable permit within 90 days, the Clean Air Act requires the Administrator to take over the permitting process and to “modify, terminate, or revoke such permit.” 42 U.S.C. 7661d(b)(3); *see also, id.* at § 7661d(c); 40 C.F.R. §§ 70.7(g)(4) and (5) and 70.8(d). EPA’s failure to promptly perform this duty undermines Title V’s primary goals of providing operators with certainty about which requirements apply to their major sources and improving enforcement of public health protections that apply to major sources of air pollution. 57 Fed. Reg. 32265-66.

III. PETITIONERS’ INTEREST IN THE PERMIT.

Sierra Club is the oldest and largest grassroots environmental group in the United States, with more than 621,000 members throughout the United States, including Louisiana. Sierra Club’s mission is to protect and enhance the quality of the natural and human environment. Its activities include public education, advocacy, and litigation to enforce environmental laws. Sierra Club and its members are concerned about the effects of air pollution on human health and the environment and have a long history of involvement in activities related to air quality. One way Sierra Club works to protect the environment and human health is to comment on and challenge air permits that do not conform to the law.

LEAN is a non-profit corporation organized under the laws of the State of Louisiana. Its purpose is to preserve and protect the state’s land, air, water, and other natural resources, and to protect its members and other residents of the state from threats of pollution. One way LEAN works to protect the environment and the health of state residents is to comment on and challenge air permits issued by LDEQ that do not conform to the law.

The plant is located within the community of St. James. St. James is approximately 95 percent African-American and it is already inundated with air pollution from area facilities that operate pursuant to LDEQ permits. The air pollution that LDEQ would authorize under the

⁵ *See, e.g., Sierra Club v. Ga. Power Co.*, 365 F. Supp. 2d 1297, 1308 (D. Ga. 2004) (citing *Sierra Club v. Public Serv. Co.*, 894 F. Supp. 1455, 1460 (D. Colo. 1995)).

modified permit would add to the overwhelming air pollution that already inundates the community and would disproportionately affect African-Americans.

Petitioners have members who reside, work, and recreate in these residential areas and in other areas where they will be exposed to excess pollutants allowed by the permit against the Clean Air Act.

IV. PETITIONERS MEET THE PROCEDURAL REQUIREMENTS FOR THIS TITLE V PETITION.

Yuhuang Chemical Inc. submitted an application to LDEQ requesting a modification to its initial permit (no. 2560-00295-V0) on June 15, 2016, along with supplemental application materials on June 24, October 3, November 1 & 2, and November 11, 2016.^{6,7} LDEQ issued proposed modification permit Title V permit no. 2560-00295-V1 (i.e., the permit at issue in this petition) for public comment on December 15, 2016.⁸ The public comment period for the proposed permit ended on January 30, 2017.⁹ Phyllis Fox, Ph.D., PE submitted timely public comments with LDEQ on behalf of Petitioners regarding the proposed permit on January 30, 2017. January 30, 2017 Affidavit of J. Phyllis Fox, Ph.D., PE, Attachment A, attaching January 30, 2017 Comments as Exhibit 2 and resubmitting October 3, 2016 Comments as Exhibit 3.¹⁰

Section 505(a) of the Act, 42 U.S.C. § 7661d(a), and 40 C.F.R. § 70.8(a) requires states to submit each proposed Title V operating permit to EPA for review. LDEQ submitted the proposed permit to EPA Region 6 on December 16, 2016.¹¹ EPA had 45 days from receipt of the proposed permit to object to the final issuance of the permit if it had determined that the proposed permit is not in compliance with applicable requirements of the Act. EPA did not object to the proposed permit within its 45-day review period, which ended on January 29,

⁶ Proposed Permit, Briefing Sheet, p. 1.

⁷ On August 18, 2016, LDEQ issued a modified proposed permit for public comment based on Yuhuang's June 2016 application for a permit modification. Petitioners submitted comments on this proposed permit modification. After EPA issued its Order objecting to the initial permit, Yuhuang submitted an additional permit modification application, purportedly to address EPA's objections. On December 15, 2016, the LDEQ issued the proposed permit modification at issue here with the same permit number as the August 18, 2016 proposal. The December 15, 2016 proposed modification (the permit at issue here) replaces the earlier proposed modification.

⁸ See Public Notice, <http://www.deq.louisiana.gov/apps/pubNotice/show.asp?qPostID=9092&SearchText=yuhuang&startDate=1/1/2016&endDate=3/29/2017&category=>

⁹ *Id.*

¹⁰ See also LDEQ Electronic Document Management System ("EDMS"), Doc. # 10490729, <http://edms.deq.louisiana.gov/app/doc/view.aspx?doc=10490729&ob=yes&child=yes>

¹¹ See EPA indicated on the Region 6 database of Louisiana Title V submissions that it received the proposed permit from LDEQ on December 6, 2016. <https://yosemite.epa.gov/r6/Apermit.nsf/AirLA?OpenView&Start=1&Count=4000&Expand=1#main-content>

2017.¹² Petitioners filed a petition with EPA on March 30, 2017 via EPA’s Central Data Exchange based on comments that it submitted to LDEQ during the public comment period, thus meeting the requirements of 42 U.S.C. § 7661d(b)(2) and 40 C.F.R. § 70.8(d) (providing that if EPA does not object to a permit, any person may petition the Administrator to object to the permit within 60 days of the expiration of EPA’s 45-day review period).

EPA stated that it “received the proposed permit and LDEQ’s response to comments” for its review on April 20, 2017. *See* Email from Jeff Robinson, Air Permits Section Chief for EPA Region 6 to Corinne Van Dalen, Counsel for Petitioners, April 26, 2017, Attach. B; *see also* EPA Region 6 Louisiana Air Permits Database. Based on this submission from LDEQ, EPA established a new 45-day review period beginning April 4, 2017 and ending on June 4, 2017, with a subsequent public petition period from June 5, 2017 to August 3, 2017. LDEQ issued the final permit modification on June 30, 2017. Petitioners submit this petition within the public petition period. Petitioners base their petition on comments that they submitted to LDEQ on January 30, 2017, which was during the public comment period that LDEQ established for the proposed permit modification. *See* Attach. A, Ex. 2 & 3. Additionally, Petitioners address LDEQ’s response to public comments and its final permit modification decision.

V. THE PERMIT DOES NOT RESOLVE EPA’S OBJECTIONS AND THEREFORE DOES NOT MEET CLEAN AIR ACT REQUIREMENTS.

As shown in the tables below, the permit does not (with some exceptions) resolve the objections in EPA’s August 31, 2016 Order.

| EPA’s Objections – CO & VOC Emissions from SMR & Aux Boiler | Did LDEQ Resolve the Objections? |
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| Stack Test - CO | |
| The 5 year stack testing frequency for the auxiliary boiler is inadequate to ensure compliance with the auxiliary boiler CO emission limit of 49.67 TYP and the permit record lacks any justification for the frequency of this stack testing condition. EPA Order at 18. | No. Specific Requirements (SR) 75 and 117 require annual stack testing for CO emissions from the steam methane boiler and auxiliary boiler, respectively. LDEQ’s RTC 21 does not demonstrate that annual testing is sufficient to accurately estimate annual emissions. LDEQ does not specify the method for developing operating rate-specific emission factors. Furthermore, a 5-yr tune-up schedule does not ensure proper ongoing operations. The permit must be modified to require a CEMS to continuously measure CO as used for NOx. This is critically important because CO emissions are close to the major source threshold and the modification lowered the |

¹² *Id.*

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| | boiler CO concentration from 30 ppm to 10 ppm, which is very aggressive. |
| <p>LDEQ also did not explain and the permit does not specify how the stack test information for the auxiliary boiler would be used to demonstrate compliance with the annual CO limit. It is not clear, for example, whether the stack test would serve as a direct indicator of the facility's emissions, or as a means to periodically confirm the accuracy of (or to establish) an emission factor or other parameter that is used in the compliance demonstration. EPA Order at 18.</p> | <p>No. SR 116 explains that performance tests will be used to calculate operating-specific emission factors in lb./MMBtu and used to calculate monthly emissions based on actual operating rates. The permit fails to require that the emission factor(s) be reviewed and updated after each annual stack test. While LDEQ stated in RTC 22 that it will amend the permit to clarify that the emission factors must be derived from the most recent performance test, LDEQ did not include such a requirement in the permit. See SR 116.</p> <p>LDEQ further fails to require that monthly emissions be summed to calculate annual emissions and compared to the revised annual CO emission limit for the auxiliary boiler of 16.87 ton/yr. In RTC 22, LDEQ points to its Compliance Demonstration Methodologies table. But footnote 2 of that table states that “[t]his table replicates compliance demonstration methodologies set for in the ‘Specific Requirements’ section of this permit.” The requirement that monthly CO emissions be summed to estimate annual emissions must therefore be in the Specific Requirements. The table serves as a summary for compliance methods that are in the Specific Requirements. The compliance methods therefore must be in the Specific Requirements.</p> |
| <p>LDEQ's response appears to suggest that this infrequent stack testing, in combination with the use of a continuous oxygen trim system, would be sufficient to ensure compliance with the annual CO emission limits. However, LDEQ does not point to any permit term that would require the facility to install or use a continuous oxygen trim system. Moreover, even if such a system were required by the permit, LDEQ does not explain how data from such a system would be used to demonstrate</p> | <p>No. The permit does not require the use of a continuous oxygen trim system on the auxiliary boiler. SR 113 states “Equip the Auxiliary Boiler with and utilize an oxygen trim system as defined in 40 CFR 63.7575. This requirement does not specific that the oxygen trim shall be “continuous.” Further, LDEQ’s RTC 23 does not provide a sufficient compliance demonstration method for annual CO and VOC limits on the boiler. LDEQ only explains how the</p> |

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| <p>compliance with the annual CO limit on the boiler. EPA Order at 18.</p> | <p>oxygen trim system functions but does not explain how this system will be used to actually demonstrate compliance. Moreover, the Compliance Demonstration Methodologies table that LDEQ references provides no information as to how the oxygen trim system will be used to determine compliance.</p> |
| <p>Stack Test – VOC</p> | |
| <p>LDEQ did not identify any permit terms or conditions related to the enforceability of the VOC TYP limit on the auxiliary boiler or otherwise specifically address the enforceability of the annual boiler VOC emission limit. EPA Order at 19. The Final Permit does not appear to require any stack testing for VOC from the boiler and the permit record does not identify other requirements. The Final Permit does not appear to specify a compliance demonstration methodology for the limit, so it is not clear how compliance with the limit will be determined. EPA Order at 20.</p> | <p>No. SR 115 indicates that VOC emissions would be calculated using an emission factor from AP-42 of 5.5 lb./MMscf. But the introduction to AP-42 clearly states that “Use of these factors as source-specific permit limits and/or as emission regulation compliance determinations is not recommended by EPA...As such, a permit limit using an AP-42 emission factor would result in half of the sources being in noncompliance.”¹³ LDEQ responded to this comment (RTC 24) referencing an EPA proposed rule that recognizes that the use of emission factors has expanded. But EPA did not state that it supports the use of emission factors to determine compliance with permit limits.</p> <p>Furthermore, the permit does not require any testing at all for VOC emissions from the auxiliary boiler. LDEQ stated in RTC 24 that “VOC emissions from the Auxiliary Boiler are due to incomplete combustion; it does not serve as a control device for any process vent streams. For this reason, LDEQ did not require YCI to conduct a performance test.” But this is incorrect. The auxiliary boiler is a combustion source, which means it emits pollutants to the atmosphere. Therefore, to assure that the emission limits on this boiler are enforceable as a practical matter, performance tests must be performed.</p> |

¹³ AP-42, Introduction, p. 2; Available at: <https://www3.epa.gov/ttnchie1/ap42/c00s00.pdf>.

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| | <p>Further, SR 115 fails to require that monthly VOC emissions be summed to estimate annual emissions, which must be less than 12.45 ton/yr.¹⁴ Instead, LDEQ in its RTC 24 points to its Compliance Demonstration Methodologies table. But footnote 2 of that table states that “[t]his table replicates compliance demonstration methodologies set for in the ‘Specific Requirements’ section of this permit.” The requirement that monthly VOC emissions be summed to estimate annual emissions must therefore be in SR 115. The table serves as a summary for compliance methods that are in the Specific Requirements. The compliance methods therefore must be in the Specific Requirements.</p> |
| <p>LDEQ added VOC to the permit condition requiring a single stack test, repeated every five years, for purposes of demonstrating compliance with the permit limits for the SMR. However, LDEQ did not explain further why this permit term, or any other permit terms relevant to VOC from the SMR, are adequate to ensure that the annual 28.34 TPY VOC emission limit is enforceable. Among other things, neither the Final Permit nor the permit record contains any compliance demonstration method for the 28.34 TPY limit on VOC emissions from the SMR. EPA Order at 20.</p> | <p>No. LDEQ states in its RTC 25 that it “will amend the permit to require the performance test for VOC emissions to be repeated annually.” However, LDEQ did not include a requirement that a performance test for VOC emissions from the Aux Boiler be conducted annually. And the record does not contain any demonstration that a stack test every five years is adequate to assure continuous compliance with the annual TPY limit.</p> <p>Furthermore, as explained above, LDEQ does not demonstrate that annual testing for CO from the Aux Boiler is sufficient to accurately estimate annual emissions. LDEQ does not specify the method for developing operating rate-specific emission factors. Furthermore, a 5-yr tune-up schedule does not ensure proper ongoing operations. The permit must be modified to require a CEMS to continuously measure CO as used for NOx. LDEQ also fails to justify annual testing for VOC and CO emissions from the Steam Methane Reformer.</p> |

¹⁴ Compliance Demonstration Methodologies, p. 31.

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| Emission Factor - CO | |
| <p>To the extent that LDEQ intended for Yuhuang to demonstrate compliance with the annual CO emission limit for the boiler/SMR (i.e., daily fuel combustion for the SMR) through calculations based on a specific emission factor, this compliance demonstration methodology does not appear to be specified anywhere in the Final Permit or the permit record. EPA Order 19.</p> | <p>No. SR 74, 115, and 116 require calculation of monthly emissions, but fails to require summing of monthly totals to estimate annual emissions and comparison of the annual totals with the annual permit limits. Again, LDEQ in its RTC 25 points to its Compliance Demonstration Methodologies table. But footnote 2 of that table states that “[t]his table replicates compliance demonstration methodologies set for in the ‘Specific Requirements’ section of this permit.” The requirement that monthly CO emissions be summed to estimate annual emissions must therefore be in the Specific Requirements. The table serves as a summary for compliance methods that are in the Specific Requirements. The compliance methods therefore must be in the Specific Requirements.</p> |
| <p>The Final Permit does not specify the value of any emission factor to be used in compliance demonstration calculations, or indicate whether the 30 ppm CO emission factor for the Aux Boiler or 10 ppm CO for the SMR used in the initial emission calculations (which the Petitioners have challenged) will also be used for purposes of demonstrating compliance with the annual CO limit that is intended to restrict the facility's PTE from the boiler. EPA Order at 21.</p> | <p>No. New SR 74 and 116 explain how monthly CO emissions will be determined, but fail to require calculation of annual emissions. Again, LDEQ in its RTC 25 points to its Compliance Demonstration Methodologies table. But footnote 2 of that table states that “[t]his table replicates compliance demonstration methodologies set for in the ‘Specific Requirements’ section of this permit.” The requirement that monthly CO emissions be summed to estimate annual emissions must therefore be in the Specific Requirements. The table serves as a summary for compliance methods that are in the Specific Requirements. The compliance methods therefore must be in the Specific Requirements.</p> |
| SSM – CO & VOC | |
| <p>It is unclear as to whether all actual emissions, including emissions during SSM are included when determining compliance with the annual VOC emission limit for the boiler. EPA Order at 19-22.</p> | <p>No. The permit does not require that all emissions from the boiler, including during startup, shutdown, and maintenance be monitored or estimated, as feasible, and reported. Nor does the permit require that such emission be summed on an annual</p> |

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| | <p>basis and compared to permitted annual VOC emissions limit. LDEQ refers to SR 372 [now 374 in final permit] in its RTC 27 requiring reporting as LAC 33:III.919.F.1.b. But the Specific Conditions must provide that VOC emissions from the boiler during SSM events be included when determining compliance with the annual emission limit for the boiler.</p> |
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| EPA’s Objections –Fugitive CO Emissions | Did LDEQ Resolve the Objections? |
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| <p>The Final Permit does not clearly state whether or how fugitive CO emissions would be monitored or determined for purposes of demonstrating compliance with the 0.14 TPY CO limit. EPA Order at 22.</p> | <p>No. The 12/15/16 permit includes SR 247, which requires CO emissions to be calculated using EPA protocols assuming CO gas stream composition based only on “process engineering knowledge” or 52%. This is not adequate because it does not require any measurements of CO in the gas streams. Further, there is no basis for or public disclosure of either. Presumably, the "engineering knowledge" is currently knowable and should be in the record. LDEQ’s RTC 29 does not justify why there is no requirement to measure the actual CO in the gas streams, nor does it provide the “engineering knowledge.”</p> |

| VOCs - Methanol Transfer & Storage Cap (MTSCAP) | Did LDEQ Resolve the Objections? |
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| <p>Loading Operations The Final Permit does not specify how emissions from loading operations will be determined for purposes of recording emissions monthly or demonstrating compliance with the MTSCAP. For</p> | <p>No. SR 255-257 were added to the 12/15/16 permit. However, those requirements are insufficient. Pressure must be continuously monitored and</p> |

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| <p>example, regarding truck and railcar loading, although LDEQ specifically references the organic monitoring device equipped with a continuous recorder, and generally references other 40 C.F.R. part 63 subpart G controls, monitoring, recordkeeping and reporting requirements, neither LDEQ's RTC nor the Final Permit explains how these conditions, which are designed to ensure compliance with a particular NESHAP, would be used to calculate the actual emissions from loading for purposes of demonstrating compliance with the MTSCAP. See RTC at 25, 29; Final Permit SR 122. EPA Order at 23-24.</p> | <p>recorded. Further, the loading system is NOT designed to automatically shutdown on any occurrence of positive pressure therefore the requirement that YCI load methanol under negative pressure is not practical or enforceable.</p> |
| <p>LDEQ's RTC did not address any permit conditions relevant to monitoring emissions from the marine loading emissions and it is unclear in the Final Permit whether and how these emissions would be accounted for in MTSCAP compliance demonstrations. EPA Order at 24.</p> | <p>No. RTC 255 was added to the 12/15/16 permit. However, those requirements are insufficient. Pressure must be continuously monitored and recorded. Further, the loading system is NOT designed to automatically shutdown on any occurrence of positive pressure therefore the requirement that YCI load methanol under negative pressure is not practical or enforceable.</p> |
| <p>It is unclear from the Final Permit and permit record whether LDEQ intended to include an enforceable throughput limit in the Final Permit as an enforceable means of restricting the facility's PTE from loading, and whether it intended for such a throughput limit to be related to compliance with the MTSCAP. Although LDEQ claims that "the permit limits throughput to 308,639,340 gallons per year," RTC at 27, the Final Permit does not appear to actually establish a legally enforceable limit on throughput. The figure cited by LDEQ is contained in the "Inventories" section of the Final Permit as the "Max. Operating Rate" for both truck and rail car as well as marine loading operations. Final Permit at pdf 23. EPA Order at 24.</p> | <p>No. The 12/15/16 permit does not include any enforceable throughput limits. Further, the 12/15/16 permit does not require any limits, monitoring, calculation, or reporting of VOC, CO, NOx, or PM emissions from marine, railcar, and tank truck loading operations. Regarding LDEQ RTC 32, it remains unclear how the figures in the "Inventories" section apply as enforceable limits. Furthermore, there are no annual limits for PM, NOx, CO, or VOCs and no hourly limits for PM or NOx.</p> |
| <p>Because this figure of 308,639,340 gallons per year is listed twice, it is unclear whether it is intended to apply to all loading operations combined, or independently to both the truck and railcar operations as well as the marine loading operations (which would effectively double the gallons per</p> | <p>No. The permit does not include any enforceable throughput limits. Further, the permit does not require any limits, monitoring, calculation, or reporting of VOC, CO, NOx, or PM emissions from marine, railcar, and tank truck loading operations. Regarding LDEQ RTC 32,</p> |

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| <p>year that could be legally processed). EPA Order at 24.</p> | <p>it remains unclear how the figures in the “Inventories” section apply as enforceable limits. Furthermore, there are no annual limits for PM, NOx, CO, or VOCs and no hourly limits for PM or NOx.</p> |
| <p>Storage Tanks</p> | |
| <p>The Final Permit and permit record are unclear as to whether the required emission calculation methods properly account for all actual emissions that may be emitted from the tanks. For example, while the Tanks 4.09 program can account for emissions from tank roof landings when used according to the EPA's guidance, the equations in AP-42 Section 7.1.3.2.2 explicitly provide a method for calculating roof landing emissions. The Final Permit currently allows for either of these methods to be used to demonstrate compliance with the MTSCAP without requiring or specifying how roof landing emissions would be calculated. EPA Order at 25.</p> | <p>No. SR 252 and 255 in the 12/15/16 permit address tank VOC emission calculations, including roof landings and tank cleaning. However, these and other conditions fail to require that tank temperature, vapor pressure, and vapor molecular weight be monitored and used in these calculations. RTC 33 stating that emissions are calculated based on “average daily temperature of the methanol stored during the calendar month” is not enough to demonstrate compliance since this does not require monitoring of the actual temperatures, which will vary. The permit must be revised to require that the actual tank temperature, vapor pressure, and vapor molecular weight be monitored and used in these calculations.</p> <p>Further, these conditions are silent on whether HAP emissions would be included. As LDEQ admits in its RTC 34, methanol contains various impurities that are HAP. The permit must also specify whether HAP emissions would be included.</p> |
| <p>The permit record contains no explanation for how the permit term requiring Yuhuang to record the number and duration of roof landings and the number of tank cleanings would be used to assure compliance with the MTSCAP. See Final Permit SR 263. EPA Order at 25.</p> | <p>No. LDEQ added SR 252 and 255 to the permit, which specifically require that roof landing and tank cleaning VOC emissions be calculated and included in tank emission calculations, using standard methods. However, these conditions are silent on whether HAP emissions would be included. As LDEQ admits in its RTC 34, methanol contains various impurities that are HAP. The permit must be revised to</p> |

| | |
|---|--|
| | specify whether HAP emissions would be included. |
| <p>The Final Permit does not contain any provisions to assure that the MTSCAP compliance demonstration calculations accurately reflect the site-specific storage temperature and pressure conditions at the facility, and thereby that the emissions calculations represent the facility's actual emissions. For example, nothing in the permit requires any testing or monitoring to confirm that the emissions calculations are based on the actual temperature or pressure values at the source, nor does the permit require the facility to use any specific temperature values initially relied upon to estimate the facility's emissions in its compliance demonstrations. Moreover, to the extent that the latter approach was intended, the permit record does not provide any substantive justification for why the temperature and pressure values in the permit application in fact represent the "highest possible temperature[s] at which methanol can be delivered" to the crude methanol and methanol product tanks. RTC at 31. EPA Order at 26.</p> <p>The EPA notes that these temperature and pressure values were revised two times after Yuhuang submitted its initial permit application, including once after the public comment period. See RTC at 30-31. Further, because the permit record does not explain why the temperature and pressure values in the permit application reflect the highest possible temperature and pressure values, the EPA cannot make a determination regarding the Petitioners' and LDEQ's contentions regarding the applicability of 40 C.F.R. § 63.119(a)(2) and LAC 33:111.2103.F. EPA Order at n. 22.</p> | <p>No. LDEQ added SR 302 to the permit requiring daily monitoring and recording of the temperature of the methanol stored in each tank. However, monitoring is not required for vapor pressure and vapor molecular weight, which are key inputs for tank VOC and HAP emission calculations. This is especially important for "raw methanol" or "crude methanol" as it contains impurities, unconverted reactants, and traces of dissolved gases that would affect vapor pressure and hence VOC emissions. LDEQ's RTC 34 does not justify the use of pure methanol as a surrogate given the fact that the methanol contains impurities. LDEQ's general assertion about the concentration of typical impurities is not substantiated. Thus, the permit must be revised to require monitoring of vapor pressure and vapor molecular weight from all tanks containing any methanol product except pure methanol.</p> |

In addition to failing to resolve EPA's objects as detailed above, the permit does not include sufficient compliance demonstration requirements for VOC or PM emissions from the flare. The permit should be revised to require that VOC be continuously monitored in the vent gases at the flare manifold and VOC emissions calculated from the volume of vent gas, VOC concentration, and vendor guaranteed flare combustion efficiency. LDEQ states in RTC 28 that it "will prescribe compliance demonstration methods for PM and VOC in the final permit. But SR 123 indicates that PM10/PM2.5 and VOC emissions would be calculated using an emission factor from AP-42. The introduction to AP-42 clearly states that "Use of these factors

as source-specific permit limits and/or as emission regulation compliance determinations is not recommended by EPA...As such, a permit limit using an AP-42 emission factor would result in half of the sources being in noncompliance.” LDEQ responded to this comment (RTC 24) referencing an EPA proposed rule that recognizes that the use of emission factors has expanded. But EPA did not state that it supports the use of emission factors to determine compliance with permit limits. Furthermore, there is no requirement that these PM10/PM2.5 and VOC emissions be summed to estimate annual emissions.

VI. THE PERMIT DOES NOT MEET THE REQUIREMENTS OF THE CLEAN AIR ACT BECAUSE IT DOES NOT COMPLY WITH PSD REQUIREMENTS.

As shown in the tables above, Yuhuang cannot prove that the potential to emit CO and VOCs does not exceed the PSD threshold for major sources because the emission limits remain unenforceable as a practical matter. The plant, therefore, is a major source of criteria pollutants subject to all PSD requirements under the Clean Air Act and the Louisiana SIP. Because the permit does not meet PSD requirements.

LDEQ claims that “the YCI Methanol Plant does not have the potential to emit more than 100 tons per year of carbon monoxide (CO).”¹⁵ But as explained in Section II.A-B of Dr. Fox’s October 3, 2016 comments, the plant has the potential to emit more than 100 tons per year of CO. *See* Jan. 30, 2017 Affidavit of J. Phyllis Fox, Ph.D., PE, Attach A, attaching January 30, 2017 Comments as Exhibit 2 and resubmitting October 3, 2016 Comments as Exhibit 3.¹⁶ Dr. Fox’s October 3, 2016 Comments addressed the withdrawn proposed permit issued August 18, 2016. Because Dr. Fox resubmitted her October 3, 2016 comments during the public comment period on the proposed permit at issue, those comments were submitted during the relevant public comment period. Petitioners repeat those comments below and make them part of this petition.

A. CO Emissions from Steam Methane Reformer

The Application estimated the annual CO emissions from the Steam Methane Reformer (SMR) as 38.15 ton/yr,¹⁷ based on an unsupported “average” emission rate of 8.69 lb./hr, which includes an unspecified number of hours operating under various unidentified load conditions.¹⁸ The Application admits this unit does not operate at a steady state. The maximum CO emissions, 78.80 lb./hr, are nine times higher than the average, 8.69 lb./hr.¹⁹ How many “maximum” hours are in the average and how was this average determined? The Application is silent on how this

¹⁵ Statement of Basis, p. 6.

¹⁶ *See also* LDEQ Electronic Document Management System (“EDMS”), Doc. # 10490729, <http://edms.deq.louisiana.gov/app/doc/view.aspx?doc=10490729&ob=yes&child=yes>

¹⁷ Annual CO emissions from SMR = 8.69 lb./hr x 8784 hr/yr/2000 lb./ton = 38.17 ton/yr.

¹⁸ SMR Emission Calculations, EDMS No. 10310896, pdf. 211, <http://edms.deq.louisiana.gov/app/doc/view.aspx?doc=10310896&ob=yes&child=yes>

¹⁹ Proposed Permit, Emission Calculations for Criteria Pollutants – Table.

“average”, used to estimate potential to emit, was calculated. The potential to emit is based on the maximum emission rate, not the average, unless specifically limited.²⁰

If the maximum were used to calculate CO emissions from the SMR, the emissions from this unit alone would equal 346 ton/yr,²¹ triggering PSD review for the facility. This is plausible, as the permit does not contain any limit on the number of hours the facility may operate at the maximum rate.

Alternatively, if one accepts the unsupported argument of the applicant that the SMR would not operate all of the time at the maximum, CO emissions could still exceed 100 ton/yr. For example, if the SMR operated only 326 more hours per year at the maximum rate²² than assumed in estimating the “average” CO emission rate of 8.69 lb./hr, or about an hour per day longer at the maximum rate, total facility CO emissions would equal or exceed 100 ton/yr, classifying the facility as a major source.²³

The permit does not include sufficient monitoring to discover this and other similar situations that could increase CO emissions above 100 ton/yr. Continuous monitoring of CO from the SMR and auxiliary boiler is required to assure the source remains minor for CO.

In LDEQ’s RTC 35, it refers to its RTC 21. As petitioners stated in its response to RTC 21, Specific Requirements (SR) 75 and 117 require annual stack testing for CO emissions from the steam methane boiler and auxiliary boiler, respectively. LDEQ’s RTC 21 does not demonstrate that annual testing is sufficient to accurately estimate annual emissions. LDEQ does not specify the method for developing operating rate-specific emission factors. Furthermore, a 5-yr tune-up schedule does not ensure proper ongoing operations. The permit must be modified to require a CEMS to continuously measure CO as used for NOx. This is critically important because CO emissions are close to the major source threshold and the modification lowered the boiler CO concentration from 30 ppm to 10 ppm, which is very aggressive.

B. CO Emissions from Flare

The Application estimated annual CO emissions from the flare of 28.72 ton/yr, comprising 33% of the total CO emissions. Hourly CO emissions were estimated to range from an average of 6.56 lb./hr up to a maximum of 739.6 lb./hr for various flared sources.²⁴ If the flare operated only 35 hours at its maximum rate, a scenario that is highly probable during upset

²⁰ See, e.g., NSR Manual at A.1 (The “potential to emit”...“is its capability at maximum design capacity to emit a pollutant, except as constrained by federally-enforceable conditions (which include the effect of installed air pollution control equipment and restrictions on the hours of operation, or the type or amount of material combusted, stored or processed.”)

²¹ Maximum emissions of CO from SMR = (78.80 lb./hr)(8784 hr/yr)/2000 lb./ton = 346.1 ton/yr.

²² Number of hours of SMR at maximum rate to equal 100 ton/yr: (100 ton/yr – 87.17 ton/yr)(2000 lb./ton)/78.80 lb./hr = 325.63 hrs.

²³ Total revised facility CO emissions = 87.17 ton/yr + (78.80 lb./hr)(326 hr/yr)/2000 = 100.01 ton/yr.

²⁴ Proposed Permit, Emission Calculations for Criteria Pollutants – Table.

conditions, total facility CO emissions would equal or exceed 100 ton/yr.²⁵ Consider the following.

The flare emissions in tons/year were calculated in the Application as the sum of emissions from: (1) the flare pilot (Pilot); (2) venting of once through nitrogen heating from the reformer (Nitrogen Heating); (3) startup of the methanol unit (MeOH Unit Startup); (4) methanol catalyst reduction (MeOH Catalyst); (5) methanol purge stream (MeOH Purge); and (6) venting of the slop oil tank (Slop Oil Tank). Table 2.

**Table 2:
Summary of Flare CO Emissions.²⁶**

| Flared Source | CO (lb/hr) | CO (ton/yr) | Hours | Frequency |
|-------------------|------------|-------------|--------|---------------|
| Pilot | 0.04 | 0.17 | 8784 | Per year |
| Nitrogen Heating | 5.21 | 0.12 | 48 | Per year |
| MeOH Unit Startup | 739.60 | 17.75 | 48 | Per year |
| MeOH Catalyst | 443.76 | 10.65 | 48 | Every 4 years |
| MeOH Purge | 0.23 | 0.02 | 168 | Per year |
| Slop Oil Tank | 0.001 | 0.004 | 8760 | Per year |
| TOTAL | | 28.71 | 17,856 | |
| AVERAGE | 3.22 | | | |

This table shows that the maximum hourly CO emission rate, 739.6 lb./hr, occurs during startup of the methanol unit. The design basis of the methanol unit and the basis of the methanol unit startup emissions are two startups per year, each lasting 24 hours for a total of 48 hours of startup.²⁷ The draft permit does not limit the number of, nor the duration of, startups of the methanol unit or any other unit that is vented to the flare. Thus, if four startups were required in a year, due to, for example, equipment failure, the total Project CO emissions would increase to 104.9 ton/yr,²⁸ exceeding the major source threshold.

In LDEQ’s RTC 36, it claims that “[b]ecause the net heating value of the vent gases are known, compliance with the emission limitations of the permit can be readily verified. Therefore, it is not necessary for the permit to restrict the number or duration of startups or any other operating condition.” But the permit must include limits that are practically enforceable.

²⁵ Number of hours flare at maximum rate to equal 100 ton/yr: $(100 \text{ ton/yr} - 87.17 \text{ ton/yr})(2000 \text{ lb./ton})/739.6 \text{ lb./hr} = 34.69 \text{ hrs}$. Total revised facility CO emissions = $87.17 \text{ ton/yr} + (739.60)(35 \text{ hr/yr})/2000 = 100.1 \text{ ton/yr}$.

²⁶ Flare Emission Calculations EDMS No. 10310896, pdf 221 – 226, <http://edms.deq.louisiana.gov/app/doc/view.aspx?doc=10310896&ob=yes&child=yes>

²⁷ Flare SUSD Emission Calculations, EDMS No. 10310896, pdf. 222, <http://edms.deq.louisiana.gov/app/doc/view.aspx?doc=10310896&ob=yes&child=yes>

²⁸ Flare CO emissions, if four startups of the methanol unit occurred in one year: $87.18 \text{ ton/yr} + 2 \times 17.75 = 122.68 \text{ ton/yr}$.

Therefore, it is necessary that to limit the number of, nor the duration of, startups of the methanol unit or any other unit that is vented to the flare.

VII. CONCLUSION

For the foregoing reasons, EPA should object to the Title V permit modification No. 2560-00295-V1 for the YCI Methanol Plant.

Respectfully submitted on August 3, 2017 via
EPA's Central Data Exchange by,

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